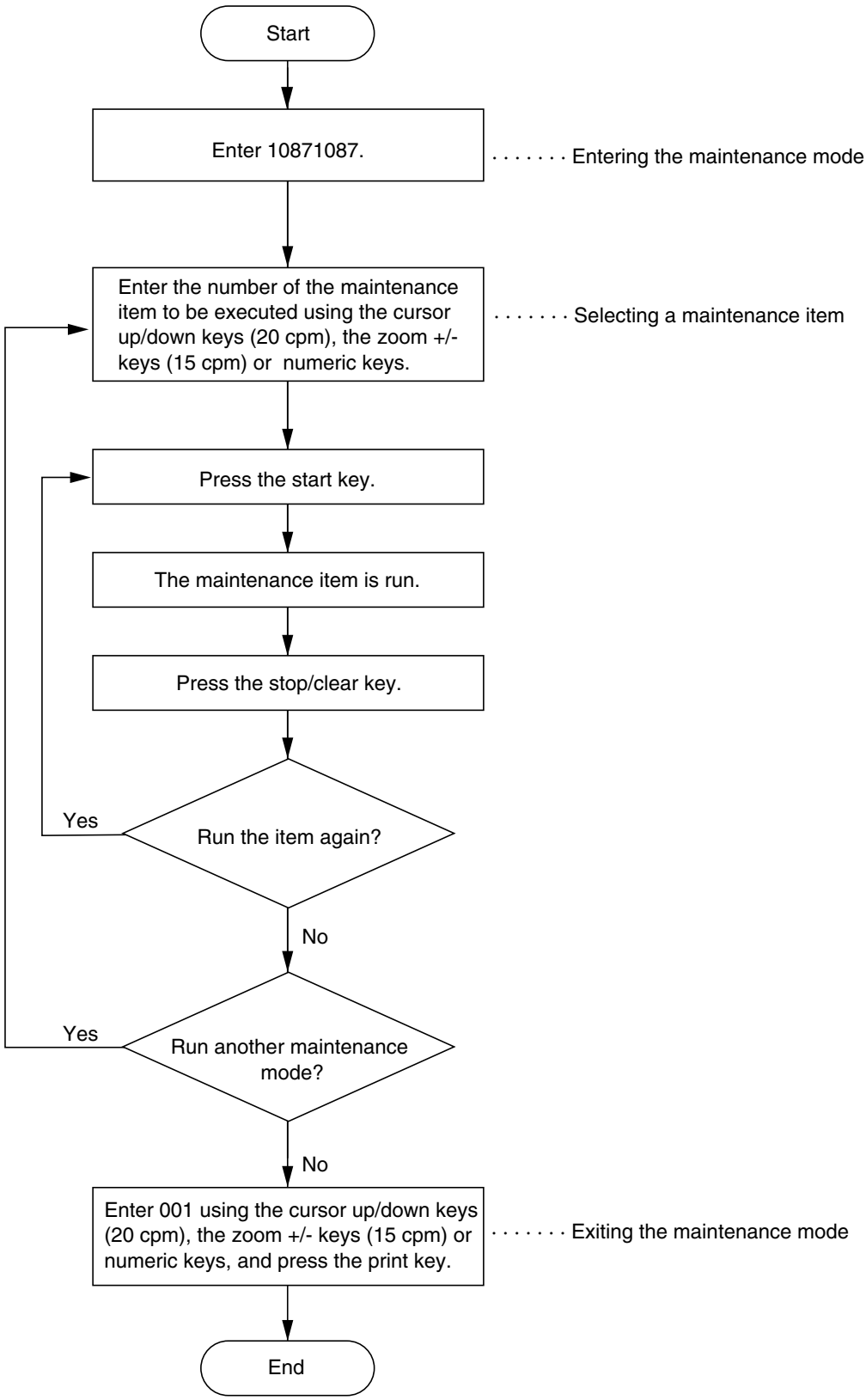
1-4-1 Maintenance mode

The copier is equipped with a maintenance function which can be used to maintain and service the machine.

(1) Executing a maintenance item



(2) Maintenance mode item list (for 20 cpm copier)

Section	Item No.	Maintenance item contents	Initial setting*
General	U000	Outputting an own-status report	—
	U001	Exiting the maintenance mode	—
	U003	Setting the service telephone number	**********
	U004	Setting the machine number	0
	U005	Copying without paper	—
	U019	Displaying the ROM version	—
Initialization	U020	Initializing all data	—
	U021	Initializing memories	—
	U022	Initializing backup data	—
Drive, paper feed, paper conveying and cooling system	U030	Checking motor operation	—
	U031	Checking switches for paper conveying	—
	U032	Checking clutch operation	—
	U033	Checking solenoid operation	—
	U034	Adjusting the print start timing Adjusting leading edge registration Adjusting the center line	 0 0
	U035	Setting folio size Length Width	 330 210
	U051	Adjusting the amount of slack in the paper At the registration roller At the paper feed roller	 0 0
	U053	Performing fine adjustment of the motor speed Drive motor/Polygon motor/Feedshift motor	 0
Optical	U060	Adjusting the scanner input properties	12
	U061	Turning the exposure lamp on	—
	U063	Adjusting the shading position	0
	U065	Adjusting the scanner magnification Main scannning direction/auxiliary scanning direction	 0/0
	U066	Adjusting the leading edge registration for scanning an original on the contact glass	 0
	U067	Adjusting the center line for scanning an original on the contact glass	0
	U070	Adjusting the DF magnification	0
	U071	Adjusting the DF scanning timing Adjusting the DF leading edge registration Adjusting the DF trailing edge registration	 0 0
	U072	Adjusting the DF center line	0
	U073	Checking scanner operation	—
	U074	Adjusting the DF input light luminosity	1
	U087	Turning the DF scanning position adjust mode on/off	On
	U088	Setting the input filter (moiré reduction mode)	Off
	U091	Checking shading	—
	U092	Adjusting the scanner automatically	—
	U093	Setting the exposure density gradient	0
	U099	Checking the original size detection	—
High voltage	U100	Setting the surface potential	184
	U101	Setting high voltages Developing bias control voltage during image formation Developing bias control voltage during no image formation Transfer control voltage Transfer voltage output timing	 193 38 115 –176
	U109	Setting the drum type	H type
	U110	Checking/clearing the drum count	—

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
High voltage	U111	Checking/clearing the drum drive time	—
Developing	U130	Initial setting for the developer	—
	U131	Setting the toner sensor control voltage	155
	U132	Replenishing toner forcibly	—
	U135	Checking toner feed motor operation	—
	U155	Displaying the toner sensor output	—
	U156	Changing the toner control level Toner feed start level Toner empty level	 100 44
	U157	Checking/clearing the developing drive time	—
	U158	Checking/clearing the developing count	—
Fixing and cleaning	U161	Setting the fixing control temperature Primary stabilization fixing temperature Secondary stabilization fixing temperature Control temperature during copying Temperature to be deducted from the control temperature when copying onto paper with a width of 220 mm or smaller	 135 160 180 0
	U162	Stabilizing fixing forcibly	—
	U163	Resetting the fixing problem data	—
	U196	Turning the fixing heater on	—
	U199	Checking the fixing temperature	—
Operation panel and support equipment	U200	Turning all LEDs on	—
	U203	Operating DF separately	—
	U204	Setting the presence or absence of a key card or key counter	Off
	U207	Checking the operation panel keys	—
	U210	Reversing the LCD	Off
	U211	Setting DF type	SRDF
	U240	Checking the operation of finisher motors and solenoids	—
	U241	Checking the finisher switches	—
	U243	Checking the operation of the DF motors, solenoids and clutch	—
	U244	Checking the DF switches (when installing the optional SRDF) Checking the DF switches (when installing the optional STDF)	— —
	U245	Checking messages	—
Mode setting	U250	Setting the maintenance cycle	100
	U251	Checking/clearing the maintenance count	—
	U252	Setting the destination	Japan
	U253	Switching between double and single counts	Double
	U254	Turning auto start function on/off	On
	U255	Setting auto clear time	90
	U256	Turning auto preheat/energy saver function on/off	On
	U258	Switching copy operation at toner empty detection	Single/70
	U260	Changing the copy count timing	Eject
	U265	Setting the destination specifications	0
	U330	Setting the number of sheets to enter stacking mode during sort operation	100
	U332	Setting the size conversion factor	—
	U342	Setting the ejection restriction	On
	U343	Switching between duplex/simplex copy mode	Off
	U344	Setting preheat/energy saver mode	Energy star
	U345	Setting the value for maintenance due indication	0
	U348	Setting the copy density adjustment range	Special
Image processing	U402	Adjusting margins of image printing	—
	U403	Adjusting margins for scanning an original on the contact glass	—

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Image processing	U404	Adjusting margins for scanning an original from the DF	—
	U407	Adjusting the leading edge registration for memory image printing	—
Others	U901	Checking/clearing copy counts by paper feed locations	—
	U903	Checking/clearing the paper jam counts	—
	U904	Checking/clearing the service call counts	—
	U905	Checking/clearing counts by optional devices	—
	U906	Resetting partial operation control	—
	U908	Changing the total counter value	—
	U910	Clearing the black ratio data	—
	U914	Switching between fax and copier modes	Copier mode
	U917	Setting the reading/writing of backup data	Read
	U990	Checking/clearing the time for the exposure lamp to light	—
	U992	Checking or clearing the printer/fax count	—
	U993	Outputting a VTC-PG pattern	—
	U998	Outptting the memory list	—

* Initial setting for executing maintenance item U020

(3) Contents of maintenance mode items (for 20 cpm copier)

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U000</td><td>
Outputting an own-status report
Description
Outputs lists of the current settings of the maintenance items, and paper jam and service call occurrences.
Purpose
To check the current setting of the maintenance items, or paper jam or service call occurrences.
Before initializing or replacing the backup RAM, output a list of the current settings of the maintenance items to reenter the settings after initialization or replacement.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be output using the cursor up/down keys. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Output list</th></tr>
<tr><td>MAINTENANCE
JAM
SERVICE CALL</td><td>List of the current settings of the maintenance modes
List of the paper jam occurrences
List of the service call occurrences</td></tr>
</table>
3. Press the start key. The interrupt copy mode is entered and a list is output.
When A4/11" × 8¹/₂" paper is available, a report of this size is output. If not, specify the paper feed location.
When output is complete, the screen for selecting an item is displayed.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U001</td><td>
Exiting the maintenance mode
Description
Exits the maintenance mode and returns to the normal copy mode.
Purpose
To exit the maintenance mode.
Method
Press the start key. The normal copy mode is entered.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U003</td><td>
Setting the service telephone number
Description
Sets the telephone number to be displayed when a service call code is detected.
Purpose
To set the telephone number to call service when installing the machine.
Method
Press the start key. The currently set telephone number is displayed.
Setting
1. Enter a telephone number (up to 16 digits) using the numeric keys.
Move the cursor using the cursor left/right keys and select a number or symbol using the cursor up/down keys.
To enter symbols, press the keys shown below as required.
<table>
<tr><th>Key</th><th>Symbol</th></tr>
<tr><td>* key</td><td>*</td></tr>
<tr><td># key</td><td>#</td></tr>
<tr><td>Auto mode selection key</td><td>(</td></tr>
<tr><td>Image mode selection key</td><td>)</td></tr>
<tr><td>Copy exposure adjustment key (lighter)</td><td>–</td></tr>
<tr><td>Copy exposure adjustment key (darker)</td><td>(Space)</td></tr>
</table>
2. Press the start key. The phone number is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U004</td><td>
Setting the machine number
Description
Displays and changes the machine number.
Purpose
To check or set the machine number.
Method
Press the start key. The currently set machine number is displayed.
Setting
1. Enter the last six digits of the machine number using the numeric key.
Do not enter the first two digits, 3 and 7.
2. Press the start key. The machine number is set.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U005</td><td>
Copying without paper
Description
Simulates the copy operation without paper feed.
Purpose
To check the overall operation of the machine.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be operated using the cursor up/down keys. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>PPC
PPC + DF</td><td>Only the copier operates.
Both the copier and SRDF operate (continuous operation).</td></tr>
</table>
3. Press the interrupt key. The copy mode screen is displayed.
4. Set the operation conditions required on the copy mode screen. Changes in the following settings can be made.
• Paper feed locations
• Magnifications
• Simplex or duplex copy mode
• Number of copies: continuous copying is performed when set to 250.
• Copy density
• Keys on the operation panel other than the energy saver (preheat) key
5. To control the paper feed pulley, remove all the paper in the drawers, or the drawers. With the paper present, the paper feed pulley does not operate.
6. Press the start key. The operation starts.
Copy operation is simulated without paper under the set conditions. When operation is complete, the screen for selecting an item is displayed.
7. To stop continuous operation, press the stop/clear key.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U019</td><td>
Displaying the ROM version
Description
Displays the part number of the ROM fitted to each PCB.
Purpose
To check the part number or to decide if the ROM version is new from the last digit of the number.
Method
Press the start key. The last six digits of the part number indicating the ROM version are displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MAIN
MMI</td><td>Main ROM IC
Operation 1 ROM IC</td></tr>
</table>
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U020	**Initializing all data** **Description** Initializes all the backup RAM on the main PCB to return to the original settings. **Purpose** Used when replacing the backup RAM on the main PCB. **Method** 1. Press the start key. The screen for executing is displayed. 2. Select EXECUTE using the cursor up/down keys. It is displayed in reverse. 3. Press the start key. All data in the backup RAM is initialized, and the original settings for Japan specifications are set. When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on and the display language to the initial setting of English. **Completion** To exit this maintenance item without executing initialization, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U021	**Initializing memories** **Description** Initializes the setting data other than that for adjustments due to variations between respective machines, i.e., settings for counters, service call history and mode settings. As a result, initializes the backup RAM according to the specifications depending on the destination selected in U252. **Purpose** Used to return the machine settings to the factory settings. **Method** 1. Press the start key. The screen for executing is displayed. 2. Select EXECUTE using the cursor up/down keys. It is displayed in reverse. 3. Press the start key. All data other than that for adjustments due to variations between machines is initialized based on the destination setting. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U022	**Initializing backup data** **Description** Initializes only the data set for the optical section. **Purpose** To be executed after replacing the scanner unit. **Method** 1. Press the start key. The screen for executing is displayed. 2. Select SCANNER using the cursor up/down keys. 3. Press the start key. 4. Select EXECUTE using the cursor up/down keys. It is displayed in reverse. 5. Press the start key. The data for the optical section (U060 to 099, U403, U404 and U990) is initialized. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U030	**Checking motor operation** **Description** Drives each motor. **Purpose** To check the operation of each motor. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the motor to be operated using the cursor up/down keys. 3. Press the start key. The selected item is displayed in reverse and the operation starts.

Display	Operation
MAIN	Drive motor turns on and developing bias turns on
Tumiki1	Drawer drive motor turns on
Tumiki2	Drawer drive motor (ST) 1* turns on
Tumiki3	Drawer drive motor (ST) 2* turns on
DUP (F, L)	Feedshift motor* rotates forward at low speed
DUP (F, H)	Feedshift motor* rotates forward at high speed
DUP (R, L)	Feedshift motor* rotates in reverse at low speed
DUP (R, H)	Feedshift motor* rotates in reverse at high speed

* Optional.

4. To stop operation, press the stop/clear key.

Completion

Press the stop key after operation stops. The screen for selecting a maintenance item No. is displayed.

U031 **Checking switches for paper conveying**

Description

Displays the on-off status of each paper detection switch on the paper path.

Purpose

To check if the switches for paper conveying operate correctly.

Method

1. Press the start key. A list of the switches, the on-off status of which can be checked, are displayed.
2. Turn each switch on and off manually to check the status.
   When the on-status of a switch is detected, that switch is displayed in reverse.

Display	Switches
T2	Drawer feed switch (DFSW)
T3	Drawer feed switch (ST) 1* (DFSW (ST) 1)
T4	Drawer feed switch (ST) 2* (DFSW (ST) 2)
RES	Registration switch (RSW)
EJE	Eject switch (ESW)
DUP1	Duplex paper conveying switch 1* (DUPPCSW1)
DUP2	Duplex paper conveying switch 2* (DUPPCSW2)
JOB	Job separator eject switch* (JBESW)
DUP SF	Duplex open/close switch* (DUPOCSW)

*Optional.

Completion

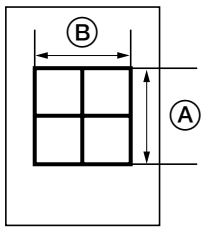
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U032</td><td>
Checking clutch operation
Description
Turns each clutch on.
Purpose
To check the operation of each clutch.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the clutch to be operated using the cursor up/down keys.
3. Press the start key. The selected item is displayed in reverse, and the clutch turns on for 1 s.
<table>
<tr><th>Display</th><th>Clutches</th></tr>
<tr><td>PFHON</td><td>Upper paper feed clutch (PFCL-U)</td></tr>
<tr><td>PFBYP</td><td>Bypass paper feed clutch (BYPPFCL)</td></tr>
<tr><td>T1</td><td>Lower paper feed clutch (PFCL-L)</td></tr>
<tr><td>T2</td><td>Paper feed clutch (ST) 1* (PFCL (ST) 1)</td></tr>
<tr><td>T3</td><td>Paper feed clutch (ST) 2* (PFCL (ST) 2)</td></tr>
<tr><td>RES</td><td>Registration clutch (RCL)</td></tr>
</table>
*Optional.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U033</td><td>
Checking solenoid operation
Description
Turns each solenoid on.
Purpose
To check the operation of each solenoid.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the solenoid to be operated using the cursor up/down keys.
3. Press the start key. The selected item is displayed in reverse, and the solenoid turns on for 1 s.
<table>
<tr><th>Display</th><th>Solenoids</th></tr>
<tr><td>BRA_ACT</td><td>Feedshift solenoid (FSSOL)*1 latch-on</td></tr>
<tr><td>BRA_RET</td><td>Feedshift solenoid (FSSOL)*1 release</td></tr>
<tr><td>MAIN SW</td><td>Main switch turns off</td></tr>
<tr><td>DUP_ACT</td><td>Feedshift solenoid (FSSOL)*2 latch-on</td></tr>
<tr><td>DUP_RET</td><td>Feedshift solenoid (FSSOL)*2 release</td></tr>
<tr><td>DUP_ACT2</td><td>Duplex feedshift solenoid (DUPFSSOL)*2 latch-on</td></tr>
<tr><td>DUP_RET2</td><td>Duplex feedshift solenoid (DUPFSSOL)*2 release</td></tr>
</table>
*1: Optional finisher.
*2: Optional duplex unit.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U034</td><td>
Adjusting the print start timing
Adjustment
See pages 1-6-10 and 13.
</td></tr>
</table>

Maintenance item No.	Description
U035	**Setting folio size** **Description** Changes the image area for copying onto folio size paper. **Purpose** To prevent the image at the trailing edge, or right or left side of the paper from not being copied by setting the actual size of the folio paper used. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys. 3. Press the start key. The value is set. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U051	**Adjusting the amount of slack in the paper** **Adjustment** See page 1-6-17.
U053	**Performing fine adjustment of the motor speed** **Description** Performs fine adjustment of the speeds of the motors. **Purpose** Used to adjust the speed of the respective motors when the magnification is not correct. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys. * Optional. MAIN MOTOR Increasing the setting makes the image longer in the auxiliary scanning direction, and decreasing it makes the image shorter in the auxiliary scanning direction. POLYGON MOTOR Increasing the setting makes the image longer in the main scanning direction and shorter in the auxiliary scanning direction; decreasing the setting makes the image shorter in the main scanning direction and longer in the auxiliary scanning direction. 3. Press the start key. The value is set.

Display	Setting	Setting range	Initial setting
LENGTH DATA	Length	330 to 356 mm	330
WIDTH DATA	Width	200 to 220 mm	210

Display	Description	Setting range	Initial setting
MAIN MOTOR	Drive motor speed adjustment	–5 to +5	0
POLYGON MOTOR	Polygon motor speed adjustment	–5 to +5	0
DUP MOTOR	Feedshift motor* speed adjustment	–5 to +5	0

Maintenance item No.	Description
U053	**Interrupt copy mode** While this maintenance item is being performed, a VTC pattern shown below is output in interrupt copy mode. Correct values for an A3/11" × 17" output are: Ⓐ = 300 ± 0.75 mm Ⓑ = 260 ± 1.3 mm  **Figure 1-4-1** **Adjustment** 1. Output an A3/11" × 17" VTC pattern in interrupt mode. 2. Measure Ⓐ and Ⓑ on the VTC pattern (Figure 1-4-1), and perform the following adjustments if they are different from the correct sizes: Ⓐ: Drive motor speed adjustment Ⓑ: Polygon motor speed adjustment **Completion** Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
U060	**Adjusting the scanner input properties** **Description** Adjusts the image scanning density in text, text and photo, or photo mode. **Purpose** Used when the entire image appears too dark or light. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Change the setting using the cursor left/right keys. Increasing the setting makes the density lower, and decreasing it makes the density higher. 2. Press the start key. The value is set. **Interrupt copy mode** While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. **Completion** Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed. **Caution** The following settings are also reset to the initial values by performing this maintenance item: • Exposure density gradient set in maintenance mode (U093) • Exposure set in the copy default item of the copier management mode

Display	Setting range	Initial setting
γ ADJ	0 to 23	12

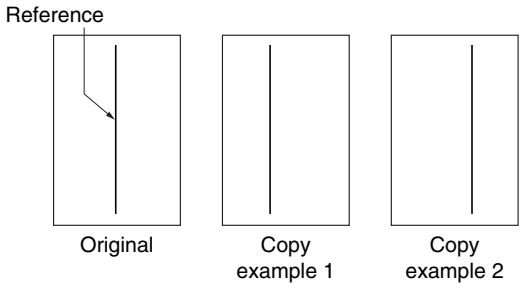
1-4

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U061</td><td>
Turning the exposure lamp on
Description
Turns the exposure lamp on.
Purpose
To check the exposure lamp.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key. The exposure lamp lights.
3. To turn the exposure lamp off, press the stop/clear key.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U063</td><td>
Adjusting the shading position
Description
Changes the shading position.
Purpose
Used when white lines continue to appear longitudinally on the image after the shading plate is cleaned. This is due to flaws or stains inside the shading plate. To prevent this problem, the shading position should be changed so that shading is possible without being affected by the flaws or stains.
Method
1. Press the start key. The screen for adjustment is displayed.
2. Change the setting using the cursor left/right keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>Shading position</td><td>–5 to +5</td><td>0</td><td>0.17 mm</td></tr>
</table>
Increasing the setting moves the shading position toward the machine right, and decreasing it moves the position toward the machine left.
3. Press the start key. The value is set.
Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key at the screen for adjustment. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U065</td><td>
Adjusting the scanner magnification
Adjustment
See pages 1-6-32 and 34.
</td></tr>
<tr><td>U066</td><td>
Adjusting the leading edge registration for scanning an original on the contact glass
Adjustment
See page 1-6-36.
</td></tr>
<tr><td>U067</td><td>
Adjusting the center line for scanning an original on the contact glass
Adjustment
See page 1-6-37.
</td></tr>
</table>

Maintenance item No.	Description
U070	**Adjusting the DF magnification** **Description** Adjusts the DF original scanning speed. **Purpose** To be executed if the correct magnification is not obtained in the auxiliary scanning direction when the optional DF is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U053 → U065 → U070 **Method** Press the start key. **Setting** 1. Change the setting using the cursor left/right keys. Display: CONVEY SPEED; Description: Original conveying motor speed; Setting range: –25 to +25; Initial setting: 0; Change in value per step: 0.1% Increasing the setting makes the image longer, and decreasing it makes the image shorter. 2. Press the start key. The value is set. **Interrupt copy mode** While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U071	**Adjusting the DF scanning timing** **Description** Adjusts the DF original scanning timing. **Purpose** To be executed if there is a regular error between the leading or trailing edges of the original and the copy image when the optional DF is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U034 → U066 → U071 **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys. Display: LEAD EDGE ADJ; Description: DF leading edge registration; Setting range: –32 to +32; Initial setting: 0; Change in value per step: 0.17 mm Display: TRAIL EDGE ADJ; Description: DF trailing edge registration; Setting range: –32 to +32; Initial setting: 0; Change in value per step: 0.17 mm Increasing the setting moves the copy image backward, and decreasing it moves the copy image forward. 3. Press the start key. The value is set. **Interrupt copy mode** While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Maintenance item No.	Description
U071	**Adjustment** 1. In interrupt copy mode, make a copy using the DF. 2. Check the copy image and adjust the registration as follows. For copy example 1, increase the setting of LEAD EDGE ADJ. For copy example 2, decrease the setting of LEAD EDGE ADJ.  Original Copy example 1 Copy example 2 **Figure 1-4-2** **Completion** Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
U072	**Adjusting the DF center line** **Description** Adjusts the scanning start position for the DF original. **Purpose** To be executed if there is a regular error between the centers of the original and the copy image when the optional DF is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U034 → U067 → U072 **Method** Press the start key. **Setting** 1. Change the setting using the cursor left/right keys. Increasing the setting moves the image to the right, and decreasing it moves the image to the left. 2. Press the start key. The value is set. **Interrupt copy mode** While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Description	Setting range	Initial setting	Change in value per step
DF center line	–39 to +39	0	0.17 mm

Maintenance item No.	Description
U072	**Adjustment** 1. In interrupt copy mode, make a copy using the DF. 2. Check the copy image and adjust the center line as follows. For copy example 1, increase the setting. For copy example 2, decrease the setting.  **Figure 1-4-3** **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U073	**Checking scanner operation** **Description** Simulates the scanner operation under arbitrary conditions. **Purpose** To check scanner operation. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be changed using the cursor up/down keys. The selected item is displayed in reverse. 3. Change the setting using the cursor left/right keys. **Display** / **Operating conditions** / **Setting range** ZOOM / Magnification / 50 to 200% SIZE / Paper size / See below. LAMP / On and off of the exposure lamp / 0 (off) or 1 (on) Paper sizes for each setting in SIZE **Setting** / **Paper size** / **Setting** / **Paper size** 8 / A4 / 42 / A5R 9 / B5 / 47 / Folio 24 / 11" × 8 1/2" / 52 / 11" × 17" 36 / A3 / 53 / 11" × 15" 39 / B4 / 55 / 8 1/2" × 14" 40 / A4R / 56 / 8 1/2" × 11" 41 / B5R / 58 / 5 1/2" × 8 1/2" 4. Press the start key. Scanning starts under the selected conditions. 5. To stop operation, press the stop/clear key. **Completion** Press the stop/clear key when scanning stops. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U074</td><td>
Adjusting the DF input light luminosity
Description
Adjusts the luminosity of the exposure lamp for scanning originals from the optional DF.
Purpose
Used if the exposure amount differs significantly between when scanning an original on the contact glass and when scanning an original from the DF.
Method
Press the start key.
Setting
1. Change the setting using the cursor left/right keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>DF input light luminosity</td><td>0 to 8</td><td>1</td></tr>
</table>
Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower.
2. Press the start key. The value is set.
Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U087</td><td>
Turning the DF scanning position adjust mode on/off
Description
Turns on or off the DF scanning position adjust mode, in which the DF original scanning position is adjusted automatically by determining the presence or absence of dust on the slit glass. Also changes the reference data for identifying dust.
Reference
In the DF original scanning position adjust mode, the presence or absence of dust is determined by comparing the scan data of the original trailing edge and that taken after the original is conveyed past the DF original scanning position. If dust is identified, the DF original scanning position is adjusted for the following originals.
Purpose
Used to prevent appearance of black lines due to dust adhering in the original scanning position on the slit glass when the DF is used.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be set using the cursor up/down keys. The screen for the selected item is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON/OFF
DATA</td><td>Setting the mode on/off
Setting the reference data for identifying dust</td></tr>
</table>
Setting the mode on/off
1. Select ON or OFF using the cursor up/down keys. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>DF scanning position adjust mode on
DF scanning position adjust mode off</td></tr>
</table>
Initial setting: ON
2. Press the start key. The setting is set. The screen for selecting an item is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U087</td><td>
Setting the reference data for identifying dust
Available only when the mode is turned on.
1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse.
2. Change the setting using the cursor left/right keys.
<table>
<tr><th>Display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>DENSITY</td><td>Minimum density to be regarded as dust</td><td>10 to 95</td><td>35</td></tr>
</table>
Example
DENSITY: The figure indicates the density in 256 levels of gray (0: white, 255: black). When the setting is 35, data of the level of 35 or higher is regarded as dust and data of lower level is regarded as the background (scan data taken when there is no original).
3. Press the start key. The value is set.
4. Press the stop/clear key. The screen for selecting an item is displayed.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U088</td><td>
Setting the input filter (moiré reduction mode)
Description
Turns moiré reduction mode on and off by switching the input filter on and off.
Purpose
Used to prevent regular density unevenness (moiré) on halftone image areas of the copy image in text mode and text and photo mode. Such moiré is more likely to appear when an enlargement or reduction copy is made in text mode from an original containing large halftone image areas.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select ON or OFF using the cursor up/down keys. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Moiré reduction mode
Normal copy mode</td></tr>
</table>
Initial setting: OFF
If moiré on the copy image is significant, change the setting to ON. Note that when the moiré reduction mode is turned on, the resolution may be slightly reduced.
2. Press the start key. The value is set. The screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U091	**Checking shading**

Description

Performs scanning under the same conditions as before and after shading is performed, displaying the original scanning values at nine points of the contact glass.

Purpose

To check the change in original scanning values before and after shading. The results may be used to decide the causes for fixing unevenness (uneven density) of the gray area of an image: either due to optical (shading or CCD) or other problems.

Also to check the causes for a white or black line appearing longitudinally.

Method

1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be operated using the cursor up/down keys. The selected item is displayed in reverse.

Display	Output list
SHD BEFORE	Performs scanning before shading and displays the result.
SHD AFTER	Performs scanning after shading and displays the result.

3. Press the start key. Scanning is performed under the selected conditions and the result is displayed.

   When scanning is performed before shading, the scan value at the machine center should be slightly different from those at the machine front and rear. When scanning is performed after shading, there should be no difference between respective values. Any differences between the values at machine front and rear indicates that scanner problem causes the fixing unevenness.

   If the displayed results indicate no shading problems, the fixing unevenness (uneven copy density) is caused by factors other than in the scanner section (shading or CCD).

   If a black line appears, the cause may assumed to be based on the results of the scanning operation before shading: if a white line appears, they may be assumed based on the results of the scanning operation after shading. Note that depending on the thickness and location of the black or white line, it may not be possible to use this method to determine the cause. This is because the displayed values obtained from scanning at the limit of nine points are insufficient to provide significant information.

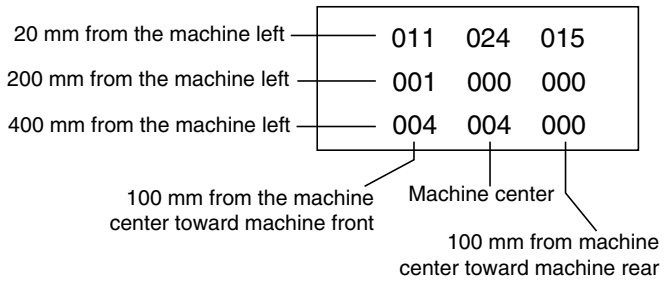


Figure 1-4-4

4. Press the stop/clear key. The screen for selecting an item is displayed.

Completion

Press the stop/clear key. The screen for entering a maintenance item is displayed.

Maintenance item No.	Description
U092	**Adjusting the scanner automatically** **Description** Makes auto scanner adjustments in the order below using the specified original. • Adjusting the scanner center line (U067) • Adjusting the scanner leading edge registration (U066) • Adjusting scanner magnification in the auxiliary direction (U065) When this maintenance item is performed, the settings in U065, U066 and U067 are also changed. **Purpose** Used to make respective auto adjustments for the scanner. **Method** 1. Place the specified original (P/N: 2AC68240) on the contact glass. 2. Press the start key. The screen for executing is displayed. 3. Press the start key. Auto adjustment starts. When adjustment is complete, each adjusted value is displayed.

Display	Description
SCAN CENTER	Scanner center line
SCAN TIMING	Scanner leading edge registration
SUB SCAN	Scanner magnification in the auxiliary scanning direction

If a problem occurs during auto adjustment, DATA: XX (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.

Completion

Press the stop/clear key after auto adjustment is complete. The screen for selecting a maintenance item No. is displayed.

If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.

Maintenance item No.	Description
U093	**Setting the exposure density gradient**

Description

Changes the exposure density gradient in manual density mode, depending on respective image modes (text, text and photo, photo).

Purpose

To set how the image density is altered by a change of one step in the manual density adjustment. Also used to make copy image darker or lighter.

Start

1. Press the start key. The screen for selecting an item is displayed.
2. Select the image mode to be adjusted using the cursor up/down keys.
3. Press the start key. The screen for the selected item is displayed.

Display	Description
TEXT	Density in text mode
MIXED	Density in text and photo mode
PHOTO	Density in photo mode

Setting

1. Select the item to be adjusted using the cursor up/down keys. The selected item is displayed in reverse.
2. Adjust the setting using the cursor left/right keys.

Display	Description	Setting range	Initial setting
DARKER	Change in density when manual density is set dark	0 to 3	0
LIGHTER	Change in density when manual density is set light	0 to 3	0

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

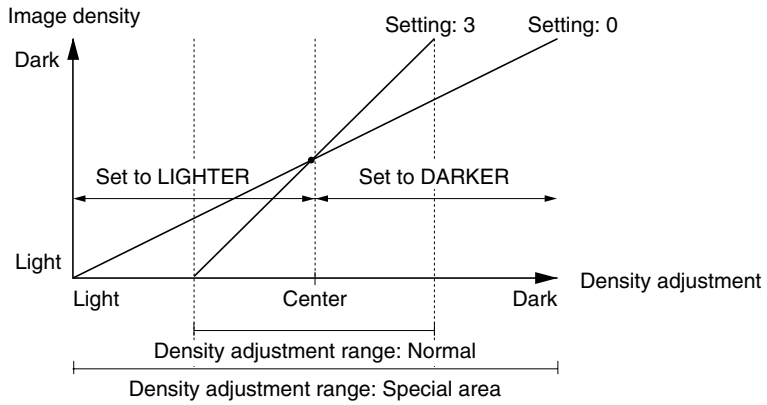


Figure 1-4-5 Exposure density gradient

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Interrupt copy mode

While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U099	**Checking the original size detection**

Description

Displays the original width detection data and sets the original width detection threshold.

Purpose

To check the original width detection. Also to change the original size detection threshold if the size of the original on the contact glass is detected incorrectly.

Start

1. Press the start key. The screen for selecting an item is displayed.
2. Select the item.
3. Press the start key. The screen for executing is displayed.

Display	Description
DATA	Checking the original width detection data
B/W LEVEL	Setting or checking the original width detection threshold

Method to display the original width detection data

1. Place an original on the contact glass and turn the original detection switch on. The exposure lamp turns on and the width of the original is detected. The scanner data taken at the nine points from (1) at the machine rear to (9) at the machine front is displayed on the message display as follows.

   The data is displayed within the range of 000 to 255, 000 indicating white (original present) and 255 indicating black (no original).

(1)	(2)	(3)
(4)	(5)	(6)
(7)	(8)	(9)

Figure 1-4-6

2. To return to the screen for selecting an item, press the stop/clear key.

Method to set or check the original size detection threshold

1. Place an original on the contact glass and turn the original detection switch on. The original size detection starts and detection data is displayed.

Display	Description	Data range	Remarks	Initial setting
LEVEL	Scanner data threshold	0 to 255	Adjustable	170
WAIT TIME	Time between original detection switch turning on and reading-in of scanner data	0 to 100 ms	Adjustable	50
ORIGINAL AREA	Detected original width	0 to 350 mm		
SIZE	Original size detected by scanner data and original size sensor detection data	0 to 63*		
B_DATA	Black (no original) data at the point on the boundary between original area and no original area	0 to 255		
W_DATA	White (original present) data at the point on the boundary between original area and no original area	0 to 255		

* See Paper size in U073 for the paper size for each setting.

2. To change the original size detection threshold, select LEVEL or WAIT TIME using the cursor up/down keys and change the setting using the cursor left/right keys.
3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U100	**Setting the surface potential** **Description** Changes the surface potential by changing the grid control voltage. Also performs main charging. **Purpose** To set the surface potential or check main charging. Also used when reentering data after replacing the backup RAM or initializing the set data. **Start** Press the start key. The screen for selecting an item is displayed.

Display	Description
MC DATA	Changing the grid control voltage
MC ON	Turning the main charger on
LASER ON/OFF	Turning the main charger on and the laser scanner unit on and off

Method for main charger output

1. Select either MC ON or LASER ON/OFF using the cursor up/down keys.
2. Press the start key. The selected operation starts.
3. To stop operation, press the stop/clear key.

Setting the grid control voltage

1. Select MC DATA using the cursor up/down keys.
2. Change the setting using the cursor left/right keys.

Description	Setting range	Initial setting
Grid control voltage	0 to 255	184

Increasing the setting makes the surface potential higher, and decreasing it makes the potential lower. Change in value per step: approximately 3.6 V

3. Press the start key. The value is set.

Interrupt copy mode

While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion

Press the stop/clear key at the screen for selecting an item when main charger output stops. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U101	**Setting high voltages**

Description

Changes the developing bias voltage and transfer voltage by changing the developing bias control voltage and transfer control voltage. Also checks the transfer output voltage.

Purpose

To check and change high voltages other than the main charger voltage.

Start

1. Press the start key. The screen for selecting an item is displayed.
2. Select the item to be set or checked using the cursor up/down keys.
3. Press the start key. The screen for the selected item is displayed.

Display	Description
DEV BIAS SET	Setting the developing bias
TC SET	Setting and checking the transfer voltage

Setting the developing bias

1. Select the item to be adjusted using the cursor up/down keys. The selected item is displayed in reverse.
2. Change the setting using the cursor left/right keys.

Display	Description	Setting range	Initial setting
DB DATA	Developing bias control voltage during image formation	25 to 255	193
DB DATA2	Developing bias control voltage during no image formation	25 to 255	38

   Increasing the setting makes the developing bias higher and the image darker; decreasing it makes the bias lower and the image lighter.

3. Press the start key. The value is set.
4. To return to the screen for selecting an item, press the stop/clear key.

Setting the transfer voltage

1. Select the item to be adjusted using the cursor up/down keys. The selected item is displayed in reverse.
2. Change the TC DATA setting using the cursor left/right keys.

Display	Description	Setting range	Initial setting
TC DATA	Transfer control voltage	0 to 255	115
TC TIMING	Transfer voltage output timing	–250 to +250	–176

   Increasing the TC DATA setting makes the transfer voltage higher, and decreasing it makes the voltage lower.

   Increasing the TC TIMING setting makes the transfer voltage output timing later and improves paper separation performance.

3. Press the start key. The value is set.
4. To check the transfer voltage output, select TC ON using the cursor up/down keys and press the start key. The currently set transfer voltage is output.
5. To stop the transfer voltage output, press the stop/clear key.
6. To return to the screen for selecting an item, press the stop/clear key after the transfer voltage output is stopped.

Interrupt copy mode

While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion

Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U109	**Setting the drum type** **Description** Sets or checks the drum type. **Purpose** To prevent variations in halftones due to differences in drum sensitivity. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the drum type to set or check using the cursor up/down keys. The selected item is displayed in reverse. 3. Press the start key. The type is set. **Completion** Press the stop/clear key at the screen for selectiong an item. The screen for selectiong a maintenance item No. is displayed.
U110	**Checking/clearing the drum count** **Description** Displays the drum counts for checking, clearing or changing the figure, which is used as a reference when correcting the main charger potential output. **Purpose** To check the drum status. Also used to clear the count after replacing the drum during regular maintenance. Since the count was cleared before shipping, do not clear it when installing. **Method** Press the start key. The drum counter count is displayed. **Clearing** 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. **Setting** 1. Enter a six-digit count using the numeric keys. 2. Press the start key. The count is set, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit the maintenance mode without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U111	**Checking/clearing the drum drive time** **Description** Displays the drum drive time for checking, clearing or changing a figure, which is used as a reference when correcting the high voltage based on time. **Purpose** To check the drum status. Also used to clear the drive time after replacing the drum. **Method** Press the start key. The drum drive time is displayed in minutes. **Clearing** 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The time is cleared, and the screen for selecting a maintenance item No. is displayed. **Setting** 1. Enter a five-digit drive time (in minutes) using the numeric keys. 2. Press the start key. The time is set, and the screen for selecting a maintenance No. is displayed. **Completion** To exit this maintenance item without changing the time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U130	**Initial setting for the developer** **Description** Automatically sets the toner sensor control voltage and toner feed start level for the installed developer. **Purpose** To set the initial settings for the developer when installing the machine or replacing the developer. **Caution** Before performing the initial setting for the developer, remove the transfer roller (see page 1-6-45). **Method** 1. Press the start key. The screen for executing is displayed. 2. Press the start key. The initial settings for the developer is set, and the result is displayed. **Supplement** The following data is also renewed or cleared by performing this maintenance item: • Renewing the toner sensor control voltage (U131) • Renewing the toner feed start level (U156) • Clearing the developing drive time (U157) • Clearing the developing count (U158) • Resetting the toner feed start level and toner empty detection **Completion** After initial setting is complete, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U131	**Setting the toner sensor control voltage** **Description** Displays or changes the toner sensor control voltage automatically set in maintenance item U130. **Purpose** To check the automatically set toner sensor control voltage. Also to change the toner density if an image is too dark or light. **Method** Press the start key. The current setting for the toner sensor control voltage is displayed. **Setting** 1. Change the setting using the cursor left/right keys. Increasing the setting makes the density higher, and decreasing it makes the density lower. Increasing the setting too high may result in toner scattering. 2. Press the start key. The value is set. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Display	Description
INPUT	Toner sensor output value
CONTROL	Toner sensor control voltage
TARGET	Toner feed start level
HUMID	Absolute humidity

Description	Setting range	Initial setting
Toner sensor control voltage	0 to 255	155

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U132</td><td>
Replenishing toner forcibly
Description
Replenishes toner forcibly until the toner sensor output value reaches the toner feed start level.
Purpose
Used when the toner empty is detected frequently.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key. Operation starts, and the current data is displayed.
Toner is replenished until the toner sensor output value reaches the toner feed start level.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>INPUT
TARGET
CONTROL
HUMID</td><td>Toner sensor output value after start key is pressed
Current toner feed start level
Current toner sensor control voltage
Absolute humidity</td></tr>
</table>
3. To stop operation, press the stop/clear key.
Completion
Press the stop/clear key when toner replenishment stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U135</td><td>
Checking toner feed motor operation
Description
Drives the toner feed motor.
Purpose
To check the operation of the toner feed motor.
Caution
Note that driving the motor unnecessarily long may cause a toner jam, resulting in machine lockup. Be sure to drive the motor for only a few seconds.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key. The toner feed motor turns on.
3. To stop operation, press the stop/clear key.
Completion
Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U155</td><td>
Displaying the toner sensor output
Description
Displays the toner sensor output value, and related data.
Purpose
To check the toner sensor output value.
Method
1. Press the start key. The screen for executing is displayed.
2. Press the start key. The current data is displayed.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>INPUT
TARGET

CONTROL
HUMID</td><td>Toner sensor output value after start key is pressed
Current toner feed level
(value corrected based on humidity and drive time)
Current toner sensor control voltage
Absolute humidity</td></tr>
</table>
3. Press the stop/clear key. The sampling operation stops.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U156	**Changing the toner control level** **Description** Changes the toner feed start level set in maintenance item U130 or the toner empty level to be determined by the difference from the toner feed start level. **Purpose** To check the toner feed start level and toner empty level. **Method** Press the start key. The screen for selecting an item is displayed. Display: TARGET — Description: Toner feed start level Display: EMPTY — Description: Difference between the toner feed start level and toner empty level **Setting for the toner feed start level** 1. Select TARGET using the cursor up/down keys. 2. Change the setting using the cursor left/right key. Description: Toner feed start level — Setting range: 0 to 255 — Initial setting: 100 Increasing the setting makes the toner density lower. 3. Press the start key. The value is set. **Setting for the toner empty level** 1. Select EMPTY using the cursor up/down keys. 2. Change the setting using the cursor left/right key. Description: Difference between the toner feed start level and the toner empty level — Setting range: 0 to 255 — Initial setting: 44 Increasing the setting makes the toner empty level higher: the toner density is lower when the toner empty is detected. 3. Press the start key. The value is set. **Completion** Press the stop/clear key. The screen for selecting maintenance item No. is displayed.
U157	**Checking/clearing the developing drive time** **Description** Displays the developing drive time for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed. **Purpose** To check the developing drive time after replacing the developer. **Method** Press the start key. The developing drive time is displayed in minutes. **Clearing** 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The time is cleared, and the screen for selecting a maintenance item No. is displayed. **Setting** 1. Enter a five-digit drive time (in minutes) using the numeric keys. 2. Press the start key. The time is set, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without changing the time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U158	**Checking/clearing the developing count** **Description** Displays the developing count for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed. **Purpose** To check the developing count after replacing the developer. **Method** Press the start key. The developing count is displayed. **Clearing** 1. Select CLEAR using the cursor up/down keys. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. **Setting** 1. Enter a six-digit count using the numeric keys. 2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U161	**Setting the fixing control temperature** **Description** Changes the fixing control temperature. **Purpose** Normally no change is necessary. However, can be used to prevent curling or creasing of paper, or solve a fixing problem on thick paper. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse. 2. Change the setting using the cursor left/right keys.

Display	Description	Setting range	Initial setting
1ST TEMP	Primary stabilization fixing temperature	115 to 145 (°C)	135
2ND TEMP	Secondary stabilization fixing temperature	135 to 190 (°C)	160
COPY TEMP	Control temperature during copying	145 to 220 (°C)	180
A4R TEMP	Temperature to be deducted from the control temperature when copying onto paper with a width of 220 mm or smaller.	0 to 50 (°C)	0

The respective temperatures are to be set such that 2ND TEMP ≥ 1ST TEMP.

3. Press the start key. The value is set.

Completion

Press the stop/clear key. The screen for selecting maintenance item No. is displayed.

Maintenance item No.	Description
U162	**Stabilizing fixing forcibly** **Description** Stops the stabilization fixing drive forcibly, regardless of fixing temperature. **Purpose** To forcibly stabilize the machine before the fixing section reaches stabilization temperature. **Method** 1. Press the start key. The screen for executing is displayed. 2. Press the start key. The forced stabilization mode is entered, and stabilization operation stops regardless of fixing temperature. The screen for selecting a maintenance item No. is displayed. To exit the forced stabilization mode, turn the power off and on. **Completion** To exit this maintenance item without executing forced fixing stabilization, press the stop/clear key.
U163	**Resetting the fixing problem data** **Description** Resets the detection of a service call code indicating a problem in the fixing section. **Purpose** To prevent accidents due to an abnormally high fixing temperature. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select EXECUTE using the cursor up/down keys. 3. Press the start key. The fixing problem data is initialized. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U196	**Turning the fixing heater on** **Description** Turns the fixing heater on. **Purpose** To check fixing heater. **Method** 1. Press the start key. The screen for executing is displayed. 2. Press the start key. The heater turns on for 3 s and then turns off. **Completion** Press the stop/clear key when fixing heater is off. The screen for selecting the maintenance item No. is displayed.
U199	**Checking the fixing temperature** **Description** Displays the fixing temperature and the ambient temperature. **Purpose** To check the fixing temperature and the ambient temperature. **Method** Press the start key. The fixing temperature and ambient temperature are displayed in centigrade (°C). **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U200	**Turning all LEDs on** **Description** Turns all the LEDs on the operation panel on. **Purpose** To check if all the LEDs on the operation panel light. **Method** Press the start key. All the LEDs on the operation panel light. Press the stop/clear key or wait for 10 s. The LEDs turns off, and the screen for selecting a maintenance item No. is displayed.
U203	**Operating DF separately** **Description** Simulates the original conveying operation separately in the optional SRDF. **Purpose** To check the SRDF. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Place an original in the SRDF if running this simulation with paper. 3. Select the item to be operated using the cursor up/down keys. The selected item is displayed in reverse. Display: ADF / RADF / ADF (NON-P) / RADF (NON-P) Operation: With paper, single-sided original / With paper, double-sided original / Without paper, single-sided original (continuous operation) / Without paper, double-sided original (continuous operation) 4. Press the start key. The operation starts. 5. To stop continuous operation, press the stop/clear key. **Completion** Press the stop/clear key when the operation stops. The screen for selecting a maintenance item No. is displayed.
U204	**Setting the presence or absence of a key card or key counter** **Description** Sets the presence or absence of the optional key card or key counter. **Purpose** It is not necessary to run this maintenance item if a key card is installed on a 120 V specification machine. A key card is not available for 220 – 240 V specifications. **Method** Press the start key. **Setting** 1. Select the optional counter to be installed using the cursor up/down keys. The selected counter is displayed in reverse. Display: KEY CARD / KEY COUNTER Description: The key card is installed / The key counter is installed 2. Press the start key. The setting is set and the screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U207</td><td>
Checking the operation panel keys
Description
Checks operation of the operation panel keys.
Purpose
To check operation of all the keys and LEDs on the operation panel.
Method
1. Press the start key. The screen for executing is displayed.
2. "1" appears on the copy quantity display and the leftmost LED on the operation panel lights.
3. As the keys lined up in the same line as the lit indicator are pressed in the order from the top to the bottom, the figure shown on the copy quantity display increases in increments of 1. When all the keys in that line are pressed and if there are any LEDs corresponding to the keys in the line on the immediate right, the top LED in that line will light.
4. When all the keys on the operation panel have been pressed, all the LEDs light for up to 10 seconds.
5. When the LEDs go off, press the start key. All the LEDs light for 10 seconds again.
• If an optional fax unit is installed, proceed with checking the fax keys. Opening the rear panel cover after pressing the last key will light all the LEDs.
Completion
Press the stop/clear key at the screen for executing. The screen for selecting a maintenance item No. is displayed.
• After checking numeric key 1, the operation cannot be canceled until all the keys are checked.
</td></tr>
<tr><td>U210</td><td>
Reversing the LCD
Description
Sets whether to reverse the message display (LCD) in the operation panel.
Purpose
To reverse the message display.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select ON or OFF using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Reverse
Normal</td></tr>
</table>
Initial setting: OFF
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U211</td><td>
Setting DF type
Descrioption
Sets the optional DF type (STDF or SRDF).
Purpose
To set DF type when installing.
Method
1. Press the start key. The screen for selecting an item is displaued.
2. Select DF type using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SADF
SRADF</td><td>Single-sided (STDF)
Double-sided (SRDF)</td></tr>
</table>
3. Press the start key.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U211</td><td>Completion
Press the stop/clear key at the screen for selectiong an item. The screen for selectiong a maintenance item No. is displayed.</td></tr>
<tr><td>U240</td><td>Checking the operation of finisher motors and solenoids
Description
Turns the motors and solenoids in the optional finisher on.
Purpose
To check the operation of the finisher motors and solenoids.
Method
1. Press the start key. The screen for selecting an item is displaued.
2. Select the item to be operated using the cursor up/down keys.
The selected item is displayed in reverse.
<table><tr><th>Display</th><th>Motors and solenoids</th></tr><tr><td>INITIAL</td><td>Initial operation</td></tr><tr><td>FJM</td><td>Front side registration motor (FSRM)</td></tr><tr><td>RJM</td><td>Rear side registration motor (RSRM)</td></tr><tr><td>RETM</td><td>Trailing edge registration motor (TERM)</td></tr><tr><td>STAPLER</td><td>Stapler motor (STM)</td></tr><tr><td>PUSOL</td><td>Pick up solenoid (PUSOL)</td></tr></table>3. Press the start key. The operation starts.
Completion
Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</td></tr>
<tr><td>U241</td><td>Checking the finisher switches
Description
Displayes the status of respective switches and sensors in the optional finisher.
Purpose
To check if respective switches and sensors in the optional finisher.
Method
1. Press the start key. The screen for selecting an item is displaued.
2. Select the item to be operated using the cursor up/down keys.
<table><tr><th>Display</th><th>Switches and sensors</th></tr><tr><td>MSFSW</td><td>Tray open/close switch (TOCSW)</td></tr><tr><td>LSFSW</td><td>Left cover switch (LCSW)</td></tr><tr><td>FTPS</td><td>Internal tray sensor (ITS)</td></tr><tr><td>FJHS</td><td>Side registration front home position sensor (SRFHPS)</td></tr><tr><td>RJHS</td><td>Side registration rear home position sensor (SRRHPS)</td></tr><tr><td>REHS</td><td>Trailing edge registration home position sensor (TERHPS)</td></tr><tr><td>STP</td><td>Stapler empty sensor (STES)</td></tr></table>3. Press the start key.
Completion
Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.</td></tr>
</table>

Maintenance item No.	Description
U243	**Checking the operation of the DF motors, solenoids and clutch** **Description** Turns the motors, solenoids or clutch in the optional SRDF on (when SRDF is installed). Turns the motors in the optional STDF on (when STDF is installed). **Purpose** To check the operation of the SRDF motors, solenoids and clutch (when SRDF is installed). To check the operation of the STDF motors (when STDF is installed). **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the item to be operated using the cursor up/down keys. 3. Press the start key. The operation starts.

Display	Motors, solenoids and clutch	Operation
F MOT	Original feed motor (OFM)	In operation
C MOT	Original paper conveying motor (OCM)	In operation
FD CL	Original feed clutch (OFCL)	On for 0.5 s
EJ SL	Eject feedshift solenoid (EFSSOL)	On for 0.5 s
RJ SL	Switchback feedshift solenoid (SBFSSOL)	On for 0.5 s
FD SL	Original feed solenoid (OFSOL)	On and off
RP SL	Switchback pressure solenoid (SBPSOL)	On and off

4. To turn each motor off, press the stop/clear key.

Completion

Press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.

U244	**Checking the DF switches (when installing the optional SRDF)** **Description** Displays the status of the respective switches in the optional SRDF. **Purpose** To check if respective switches in the optional SRDF operate correctly. **Start** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the type of switches (SW or VR) to be checked using the cursor up/down keys. 3. Press the start key. The screen for executing is displayed.

Display	Type of switches
SW	On/off switches
VR	Volume switch

Method for the on/off switches

1. Turn the respective switches on and off manually to check the status.
   If the on-status of a switch is detected, the corresponding switch is displayed in reverse.

Display	Switches
SET SW	Original set switch (OSSW)
FEED SW	Original feed switch (OFSW)
REV SW	Original switchback switch (OSBSW)
TMG SW	DF timing switch (DFTSW)
SZ A SW	Original size length switch (OSLSW)

2. To return to the screen for selecting an item, press the stop/clear key.

Method for the volume switch

1. Move the original insertion guides to check the detection status of the original size width switch.
   The detected original width is displayed as a numerical value with the decimals omitted.

Maintenance item No.	Description
U244	

Numerical value	Original width to be detected	
000 ⋮ 49.664	A5R	$5^1/_2" \times 8^1/_2"$
⋮ 50.176 ⋮ 61.440		
⋮ 61.952 ⋮ 103.936	B5R	$8^1/_2" \times 14"$/ $8^1/_2" \times 11"$
⋮ 104.448 ⋮ 139.264	Folio/A4R	
⋮ 139.776 ⋮ 146.432	B4/B5	
⋮ 146.994 ⋮ 197.120		
⋮ 197.632 ⋮ 197.720	CF (11" × 15")	11" × 17"/ 11" × 15"/ $11" \times 8^1/_2"$
⋮ 223.232 ⋮ 256	A3/A4	

For example, if any value between 105 and 139 is displayed when the original insertion guides are adjusted for A4R paper, it indicates that the original width is detected correctly.

2. To return to the screen for selecting an item, press the stop/clear key.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U244</td><td>
Checking the DF switches (when installing the optional STDF)
Description
Displays the status of the respective switches in the optional STDF.
Purpose
To check if respective switches in the optional STDF operate correctly.
Start
1. Press the start key. The screen for selecting an item is displayed.
2. Press the start key. The screen for executing is displayed.
Method for the on/off switches
1. Turn the respective switches on and off manually to check the status.
If the on-status of a switch is detected, the corresponding switch is displayed in reverse.
<table>
<tr><th>Display</th><th>Switches</th></tr>
<tr><td>SET SW</td><td>Original set switch (PI5)</td></tr>
<tr><td>SZ B SW</td><td>Original size width switch B (PI4)</td></tr>
<tr><td>SZ C SW</td><td>Original size width switch C (PI3)</td></tr>
<tr><td>SZ D SW</td><td>Original size width switch D (PI2)</td></tr>
<tr><td>SZ E SW</td><td>Original size width switch E (PI1)</td></tr>
<tr><td>TMG SW</td><td>DF timing switch (DFTSW)</td></tr>
<tr><td>SZ A SW</td><td>Original size length switch (OSLSW)</td></tr>
<tr><td>SF SW</td><td>DF safty switch 2 (DFSSW2)</td></tr>
<tr><td>COV SW</td><td>DF safty switch 1 (DFSSW1)</td></tr>
</table>
2. To return to the screen for selecting an item, press the stop/clear key.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U245</td><td>
Checking messages
Description
Displays a list of messages and graphics to be displayed.
Purpose
To check the messages and graphics to be displayed.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select either messages or graphics using the cursor up/down keys.
3. Press the start key. The message display screen or graphic display screen is displayed.
4. Enter the message number or graphic number to be checked using the numeric keys and press the start key. The selected message or graphic is displayed.
5. To check the messages in the listing order, use the cursor up/down keys.
6. To return to the screen for selecting an item, press the stop/clear key.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U250</td><td>
Setting the maintenance cycle
Description
Displays and changes the maintenance cycle.
Purpose
To check and change the maintenance cycle.
Method
Press the start key. The current setting is displayed as follows:
Maintenance cycle (number of copies) = setting × 1000
Setting
1. Change the setting using the cursor left/right keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th><th>Change in value per step</th></tr>
<tr><td>Maintenance cycle</td><td>0 to 600</td><td>100</td><td>1000 (copies)</td></tr>
</table>
For example, when set to 120, the maintenance cycle is set to 120000.
2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U251</td><td>
Checking/clearing the maintenance count
Description
Displays, clears and changes the maintenance count.
Purpose
To check the maintenance count. Also to clear the count during maintenance service.
Method
Press the start key. The maintenance count is displayed.
Clearing
1. Select CLEAR using the cursor up/down keys.
2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed.
Setting
1. Enter a six-digit count using the numeric keys.
2. Press the start key. The count is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U252	**Setting the destination** **Description** Switches the operations and screens of the machine according to the destination. **Purpose** To be executed after replacing the backup RAM on the main PCB or initializing the backup RAM by running maintenance item U020, in order to return the setting to the value before replacement or initialization. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the destination using the cursor up/down keys. The selected item is displayed in reverse.

Display	Description
JAPAN METRIC	Metric (Japan) specifications
INCH	Inch (North America) specifications
EUROPE METRIC	Metric (Europe) specifications
ASIA PACIFIC	Metric (Asia Pacific) specifications

2. Press the start key. The setting is set, and the machine automatically returns to the same status as when the power is turned on.

Completion

To exit this maintenance item without changing the current count, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Supplement

The specified initial settings are provided according to the destinations in the maintenance items below. To change the initial settings in those items, be sure to run maintenance item U021 after changing the destination.

• Initial setting according to the destinations

Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific
253	Switching between double and single counts	Single	Double	Double
255	Setting auto clear time	120 s	90 s	90 s
348	Setting the copy density adjustment range	Normal	Special area	Special area

U253 **Switching between double and single counts**

Description

Switches the count system for the total counter and other counters.

Purpose

According to user (copy service provider) request, select if A3/11" × 17" paper is to be counted as one sheet (single count) or two sheets (double count).

Method

Press the start key. The screen for selecting an item is displayed.

Setting

1. Select double or single count using the cursor up/down keys.

Display	Description
DOUBLE COUNT	Double count for A3/11" × 17" paper only
SINGLE COUNT	Single count for all size paper

Initial setting: DOUBLE COUNT

2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.

Completion

To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U254</td><td>
Turning auto start function on/off
Description
Selects if the auto start function is turned on.
Purpose
Normally no change is necessary. If incorrect operation occurs, turn the function off: this may solve the problem.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select either ON or OFF using the cursor up/down keys. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Auto start function on
Auto start function off</td></tr>
</table>
Initial setting: ON
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U255</td><td>
Setting auto clear time
Description
Sets the time to return to initial settings after copying is complete.
Purpose
To be set according to frequency of use. Set to a comparatively long time for continuous copying at the same settings, and a comparatively short time for frequent copying at various settings.
Method
Press the start key. The current setting is displayed.
Setting
1. Change the setting using the cursor left/right keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Auto clear time</td><td>0 to 270</td><td>90</td></tr>
</table>
The setting can be changed by 30 s per step.
When set to 0, the auto clear function is cancelled.
2. Press the start key. The value is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U256	**Turning auto preheat/energy saver function on/off** **Description** Selects if the auto preheat/energy saver function is turned on. When set to ON, the time to enter preheat/energy saver mode can be changed in copy management mode. **Purpose** According to user request, to set the preheat time to save energy, or enable copying promptly without the recovery time from preheat mode. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select ON or OFF using the cursor up/down keys. The selected item is displayed in reverse. Display: ON / OFF Description: Auto preheat/energy saver function on / Auto preheat/energy saver function off Initial setting: ON 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. When the setting is changed from OFF to ON, the auto preheat time is set to the initial setting of 15 minutes. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U258	**Switching copy operation at toner empty detection** **Description** Selects if continuous copying is enabled after toner empty is detected, and sets the number of copies that can be made after the detection. **Method** Press the start key. The current setting is displayed. **Setting** 1. Select single or continuous copying using the cursor up/down keys. The selected item is displayed in reverse. Display: SINGLE MODE / CONTINUE MODE Description: Enables only single copying. / Enables single and continuous copying. Initial setting: SINGLE MODE 2. Set the number of copies that can be made using the cursor left/right keys. Description: Number of copies after toner empty detection Setting range: 0 to 200 (copies) Initial setting: 70 The setting can be changed by 5 copies per step. When set to 0, the number of copies is not limited regardless of the setting for single or continuous copying. 3. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U260	**Changing the copy count timing** **Description** Changes the copy count timing for the total counter and other counters. **Purpose** To be set according to user (copy service provider) request. If a paper jam occurs frequently in the finisher when the number of copies is counted at the time of paper ejection, copies are provided without copy counts. The copy service provider cannot charge for such copying. To prevent this, the copy timing should be made earlier. If a paper jam occurs frequently in the paper conveying or fixing sections when the number of copies is counted before the paper reaches those sections, copying is charged without a copy being made. To prevent this, the copy timing should be made later. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the copy count timing using the cursor up/down keys. Display: COUNT: FEED — Description: When secondary paper feed starts Display: COUNT: EJECT — Description: When the paper is ejected Initial setting: EJECT 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U265	**Setting the destination specifications** **Description** Sets whether or not to print the product name on the reports that users print. **Purpose** To be set according to user request. **Method** 1. Press the start key. The screen for executing is displayed. 2. Enter “0” or “2” using the numeric or cursor right/left keys. Setting: 0 — Description: Product name printed Setting: 2 — Description: Product name not printed 3. Press the start key. The setting is set. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

Maintenance item No.	Description
U330	**Setting the number of sheets to enter stacking mode during sort operation** **Description** When sort copying is set to perform automatically in the output form setting of the user simulation, sets the number of sheets at which the eject location is switched to the optional finisher (only when the finisher is installed). **Purpose** To be set as required according to the number of copies the user makes. **Method** 1. Press the start key. The screen for executing is displayed. 2. Set the number of sheets (o to 100) using the numeric keys or cursor right/left keys. 3. Press the start key. The setting is set. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U332	**Setting the size conversion factor** **Description** Sets the factor for converting each paper size into A4/11" × 8 1/2". The black ratio is converted for the A4/11" × 8 1/2" size using the factor set in this maintenance item. Values set are displayed in the user simulation. **Purpose** To set the factor to convert the black ratio of each paper size for A4/11" × 8 1/2" size. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the paper size. 3. Change the setting using the cursor up/down keys. The size conversion factor can be set separately for the copier mode (COPY), the printer mode (PRI) and the fax mode (FAX) at the screen for setting the size conversion factor.

Metric models

Display	Description	Setting range	Initial setting		
			COPY	PRI	FAX
A3	Size conversion factor for A3	0.0 to 3.0	2.0	2.0	2.0
B4	Size conversion factor for B4	0.0 to 3.0	1.5	1.5	1.5
A4	Size conversion factor for A4	0.0 to 3.0	1.0	1.0	1.0
B5	Size conversion factor for B5	0.0 to 3.0	0.7	0.7	0.7
A5	Size conversion factor for A5	0.0 to 3.0	0.5	0.5	0.5
B6	Size conversion factor for B6	0.0 to 3.0	0.5	0.5	0.5
A6	Size conversion factor for A6	0.0 to 3.0	0.5	0.5	0.5
POST	Size conversion factor for postcard	0.0 to 3.0	0.5	0.5	0.5
FOL	Size conversion factor for folio	0.0 to 3.0	1.5	1.5	1.5
ECT	Size conversion factor for non-standard sizes	0.0 to 3.0	1.0	1.0	1.0

Inch models

Display	Description	Setting range	Initial setting		
			COPY	PRI	FAX
11 × 17	Size conversion factor for 11" × 17"	0.0 to 3.0	2.0	2.0	2.0
8.5 × 14	Size conversion factor for 8.5" × 14"	0.0 to 3.0	1.5	1.5	1.5
8.5 × 11	Size conversion factor for 8.5" × 11"	0.0 to 3.0	1.0	1.0	1.0
8.5 × 5.5	Size conversion factor for 8.5" × 5.5"	0.0 to 3.0	0.5	0.5	0.5
ECT	Size conversion factor for non-standard sizes	0.0 to 3.0	1.0	1.0	1.0

4. Press the start key. The setting is set.

Completion

To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U342</td><td>
Setting the ejection restriction
Description
Sets or cancels the restriction on the number of sheets to be ejected continuously when the internal eject tray is selected as the eject location.
Purpose
According to user request, sets or cancels restriction on the number of sheets.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select ON or OFF using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Sets restriction on the number of sheets
Cancels restriction on the number of sheets</td></tr>
</table>
Details of restriction (number of sheets to be ejected continuously after the start key is pressed)
<table>
<tr><th>Condition</th><th>Number of sheets</th></tr>
<tr><td>When no optional ejection device is installed</td><td>250</td></tr>
<tr><td>When the job separator or duplex unit is installed</td><td>150</td></tr>
<tr><td>When the finisher is installed</td><td>100</td></tr>
</table>
3. Press the start key.
Completion
Press the stop/clear key at the screen for selectiong an item. The screen for selectiong a maintenance item No. is displayed.
</td></tr>
<tr><td>U343</td><td>
Switching between duplex/simplex copy mode
Description
Switches the initial setting between duplex and simplex copy.
Purpose
To be set according to frequency of use: set to the more frequently used mode.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select ON or OFF using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>ON
OFF</td><td>Duplex copy
Simplex copy</td></tr>
</table>
Initial setting: OFF
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U344	**Setting preheat/energy saver mode** **Description** Changes the control for preheat/energy saver mode. **Purpose** According to user request, selects which has priority, the recovery time from preheat or energy saver. **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select control mode using the cursor up/down keys. **Display** / **Control in preheat mode** INSTANT READY: Without decreasing the fixing control temperature, the display on the operation panel is turned off. ENERGY STAR: The fixing control temperature is set at 70°C/158°F. The copier is forcibly stabilized 30 s after exiting preheat/energy saver mode. TIME SERVE: The fixing control temperature is set at 130°C/266°F. Initial setting: ENERGY STAR 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U345	**Setting the value for maintenance due indication** **Description** Sets when to display a message notifying that the time for maintenance is about to be reached, by setting the number of copies that can be made before the current maintenance cycle ends. When the difference between the number of copies of the maintenance cycle and that of the maintenance count reaches the set value, the message is displayed. **Purpose** To change the time to display the maintenance due indication. **Method** Press the start key. The current setting is displayed. **Setting** 1. Change the setting using the numeric or cursor left/right keys. **Description** / **Setting range** Display period for the next maintenance (remaining count before the end of the maintenance cycle): 0 to 9999 Initial setting: 0 2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U348</td><td>
Setting the copy density adjustment range
Description
Selects the adjustment range for copy density from NORMAL and SPECIAL AREA (for wider range).
Purpose
To change the setting according to user request.
When especially dark or light density is requested, set to SPECIAL AREA.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the density range using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SPECIAL AREA
NORMAL</td><td>11/15 steps (enlargement mode)
5/9 steps</td></tr>
</table>
Initial setting: SPECIAL AREA
2. Press the start key. The setting is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U402</td><td>
Adjusting margins of image printing
Adjustment
See page 1-6-15.
</td></tr>
<tr><td>U403</td><td>
Adjusting margins for scanning an original on the contact glass
Adjustment
See page 1-6-38.
</td></tr>
</table>

Maintenance item No.	Description
U404	**Adjusting margins for scanning an original from the DF**

Description

Adjusts margins for scanning the original from the DF.

Purpose

Used if margins are not correct when the optional DF is used.

Caution

Before making this adjustment, ensure that the following adjustments have been made in maintenance mode.

U402 → U403 → U404

Method

Press the start key. The screen for selecting an item is displayed.

Setting

1. Select the item to be set using the cursor up/down keys. The selected item is displayed in reverse.
2. Change the setting using the cursor left/right keys.

Display	Description	Setting range	Initial setting	Change in value per step
A MGN	Left margin	0 to 10	2	0.5 mm
B MGN	Leading edge margin	0 to 10	3	0.5 mm
C MGN	Right margin	0 to 10	2	0.5 mm
D MGN	Trailing edge margin	0 to 10	2	0.5 mm

Increasing the setting makes the margin wider, and decreasing it makes the margin narrower.

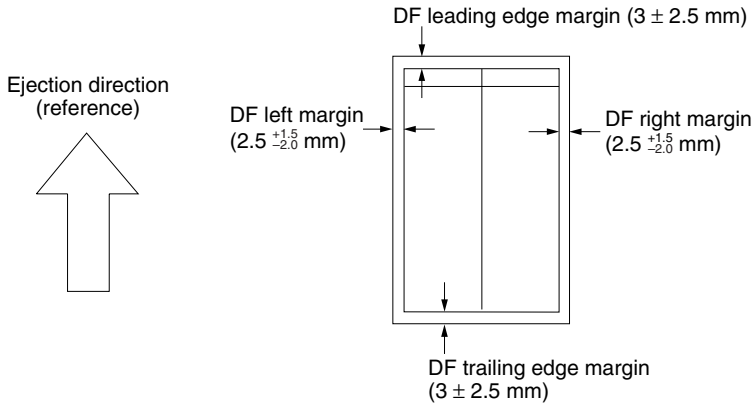


Figure 1-4-7 Correct margin amount

3. Press the start key. The value is set.

Interrupt copy mode

While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion

Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

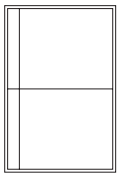
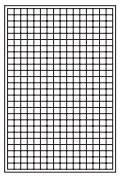
<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U407</td><td>
Adjusting the leading edge registration for memory image printing
Adjustment
See page 1-6-12.
</td></tr>
<tr><td>U901</td><td>
Checking/clearing copy counts by paper feed locations
Description
Displays or clears copy counts by paper feed locations.
Purpose
To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts.
Method
1. Press the start key. The counts by paper feed locations are displayed.
2. Change the screen using the cursor left/right keys.

<table>
<tr><th>Display</th><th>Paper feed locations</th></tr>
<tr><td>BYPASS</td><td>Bypass tray</td></tr>
<tr><td>FIRST</td><td>Upper drawer</td></tr>
<tr><td>SECOND</td><td>Lower drawer</td></tr>
<tr><td>THIRD</td><td>Optional drawer 1*</td></tr>
<tr><td>FORTH</td><td>Optional drawer 2*</td></tr>
<tr><td>DUPLEX</td><td>Duplex unit*</td></tr>
</table>
*Optional.
When an optional paper feed device is not installed, the corresponding count is not displayed.
Clearing
1. Select the count to be cleared using the cursor up/down keys. The selected item is displayed in reverse. To clear the counts for all paper feed locations, select ALL using the cursor up/down keys.
2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U903</td><td>
Checking/clearing the paper jam counts
Description
Displays or clears the jam counts by jam locations.
Purpose
To check the paper jam status. Also to clear the jam counts after replacing consumable parts.
Method
1. Press the start key. The jam count is displayed by jam codes.
2. Change the screen using the cursor left/right keys.
Clearing
1. Select ALL using the cursor up/down keys. Jam counts cannot be cleared individually.
2. Press the start key. The count is cleared, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U904	**Checking/clearing the service call counts** **Description** Displays or clears the service call code counts by types. **Purpose** To check the service call code status by types. Also to clear the service call code counts after replacing consumable parts. **Method** 1. Press the start key. The service call count is displayed by service call codes. 2. Change the screen using the cursor left/right keys. **Clearing** 1. Select the count to be cleared using the cursor up/down keys. The selected count is displayed in reverse. To clear all counts, select ALL using the cursor up/down keys. 2. Press the start key. The count is cleared. When all counts are cleared, the screen for selecting a maintenance item No. is displayed. **Completion** Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
U905	**Checking/clearing counts by optional devices** **Description** Displays or clears the counts of the optional SRDF/STDF or finisher. **Purpose** To check the use of the SRDF/STDF and finisher. Also to clear the counts after replacing consumable parts. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Select the device, the count of which is to be checked using the cursor up/down keys. The count of the selected device is displayed. • SRDF/STDF (DF) **Display** / **Description** CHANGE — Original replacement count ADF — No. of single-sided originals that has passed through the DF in ADF mode RADF — No. of double-sided originals that has passed through the DF in RADF mode • Finisher (SORTER) **Display** / **Description** CP CNT — No. of copies that has passed STAPLE — Frequency the stapler has been activated **Clearing** 1. Select the item to be cleared using the cursor up/down keys. The selected item is displayed in reverse. 2. Press the start key. The count is cleared. 3. To return to the screen for selecting an item, press the stop/clear key. **Completion** Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U906</td><td>
Resetting partial operation control
Description
Resets the service call code for partial operation control.
Purpose
To be reset after partial operation is performed due to problems in the drawers or other sections, and the related parts are serviced.
Method
1. Press the start key.
2. Select EXECUTE using the cursor up/down keys.
3. Press the start key to reset partial operation control. The maintenance mode is exited, and the machine returns to the same status as when the main switch is turned on.
</td></tr>
<tr><td>U908</td><td>
Changing the total counter value
Description
Displays, clears and changes the total counter value.
Purpose
To check the total counter value.
Method
1. Press the start key. The total counter value is displayed.
Clear
1. Select CANCEL using the cursor up/down keys.
2. Press the start key. The value is cleared.
Setting
1. Enter a six-digit value using the numeric keys.
2. Press the start key. The value is set.
Completion
To exit this maintenance item without changing the current total counter value, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U910</td><td>
Clearing the black ratio data
Description
Clears the accumulated black ratio data for A4 sheets.
Purpose
To clear data as required at times such as during maintenance service.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select EXECUTE using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>CANCEL
EXECUTE</td><td>Do not clear the black ratio data
Clears the black ratio data</td></tr>
</table>
3. Press the start key. The accumulated black ratio data is cleared, and the screen for selecting a maintenance item is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U914</td><td>
Switching between fax and copier modes
Description
Selects whether the fax or copier mode is given priority when the optional facsimile kit is installed to use the copier as a fax.
Purpose
To select the mode that is used more frequently by the user.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the priority mode (fax mode or copier mode) using the cursor up/down keys.
2. Press the start key. The screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U917</td><td>
Setting the reading/writing of backup data
Description
Selects whether to read out the backup data on the main PCB to the NVRAM on the memory tool PCB or to write backup data on the NVRAM on the memory tool PCB to the main PCB.
When the memory is initialized (maintenance items U020, U021, U022 and U252), this is set to read out the backup data from the main PCB to the NVRAM on the memory tool PCB. To write the backup data to the main PCB from the NVRAM on the memory tool PCB, change the setting before starting writing.
Purpose
Used when replacing the main PCB.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select READ or WRITE using the cursor up/down keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>READ
WRITE</td><td>Reading out the backup data
Writing backup data</td></tr>
</table>
3. Press the start key.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key when operation stops. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U990</td><td>
Checking/clearing the time for the exposure lamp to light
Description
Displays, clears or changes the accumulated time for the exposure lamp to light.
Purpose
To check duration of use of the exposure lamp. Also to clear the accumulated time for the lamp after replacement.
Method
Press the start key. The accumulated time of illumination for the exposure lamp is displayed in minutes.
Clearing
1. Select CLEAR using the cursor up/down keys.
2. Press the start key. The accumulated time is cleared, and the screen for selecting a maintenance item No. is displayed.
Setting
1. Enter a six-digit accumulated time using the numeric keys.
2. Press the start key. The time is set, and the screen for selecting a maintenance item No. is displayed.
Completion
To exit this maintenance item without changing the accumulated time, press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U992</td><td>
Checking or clearing the printer/fax count
Description
Displays, clears or changes the print count of the printer or fax when the optional printer board or fax unit is installed.
Purpose
To check the frequency of use of the printer or fax.
Method
Press the start key. The print count of the printer and fax are displayed.
Setting
1. Select the count to be cleared using the cursor up/down keys.
2. Enter a six-digit count using the numeric keys.
To clear the counts for both printer and fax, press the reset key.
3. Press the start key.
Completion
Press the stop/clear key. The screen for selecting a maintenance item No. is displayed.
</td></tr>
<tr><td>U993</td><td>
Outputting a VTC-PG pattern
Description
Selects and outputs a VTC-PG pattern created in the copier.
Purpose
When performing respective image printing adjustments, used to check the machine status apart from that of the scanner with a non-scanned output VTC-PG pattern.
Method
1. Press the start key. The screen for selecting an item is displayed.
2. Select the VTC-PG pattern to be output using the cursor up/down keys.
<table>
<tr><th>Display</th><th>PG pattern to be output</th><th>Purpose</th></tr>
<tr><td>VTC-PG1</td><td></td><td>• Center line adjustment</td></tr>
<tr><td>VTC-PG2</td><td></td><td>• Lateral squareness adjustment
• Magnification adjustment</td></tr>
<tr><td>VTC-PG3</td><td></td><td>———————</td></tr>
</table>
3. Press the interrupt key. The copy mode screen is displayed.
4. Press the start key. A VTC-PG pattern is output.
Completion
Press the stop/clear key at the screen for selecting an item. The screen for selecting a maintenance item No. is displayed.
</td></tr>
</table>

Maintenance item No.	Description
U998	**Outptting the memory list** **Description** Outputs the list of memory. **Purpose** To output the list as required. **Method** 1. Press the start key. The screen for selecting an item is displayed. 2. Enter the six digits of address using the numeric keys. To enter alphabets, press the keys shown below as required. 3. Press the interrupt key to output the list. **Completion** Press the stop/clear key. The screen for selectiong a maintenance item No. is displayed.

Key	Symbol
*/Language key	A
Scanner key	B
On-line/Printer key	C
Margin/Border Erase/Book Erase key	D
Duplex/Split Page key	E
Layout key	F

(4) Maintenance mode item list (for 15 cpm copier)

Section	Item No.	Maintenance item contents	Initial setting*
General	U000	Outputting an own-status report	—
	U001	Exiting the maintenance mode	—
	U004	Setting the machine number	—
	U005	Copying without paper	—
Initialization	U020	Initializing all data	—
	U021	Initializing memories	—
	U022	Initializing backup data	—
Drive, paper feed, paper conveying and cooling system	U030	Checking motor operation	—
	U031	Checking switches for paper conveying	—
	U032	Checking clutch operation	—
	U033	Checking solenoid operation	—
	U034	Adjusting the print start timing • Adjusting the leading edge registration • Adjusting the center line	 0 0
	U035	Setting folio size • Length • Width	 330 210
	U051	Adjusting the amount of slack in the paper • Regist data • Feed data	 0 0
	U053	Performing fine adjustment of the motor speed • Drive motor • Polygon motor	 0 0
Optical	U060	Adjusting the scanner input properties	12
	U061	Turning the exposure lamp on	—
	U063	Adjusting the shading position	0
	U065	Adjusting the scanner magnification • Main scanning direction/auxiliary scanning direction	 0
	U066	Adjusting the leading edge registration for scanning an original on the contact glass	0
	U067	Adjusting the center line for scanning an original on the contact glass	0
	U070	Adjusting the DF magnification	0
	U071	Adjusting the DF scanning timing	0
	U072	Adjusting the DF center line	0
	U073	Checking scanner operation	—
	U074	Adjusting the DF input light luminosity	1
	U075	Setting the original size detection	On
	U087	Turning the DF scanning position adjust mode on/off	On
	U088	Setting the input filter (moiré reduction mode)	Off
	U091	Checking shading	—
	U092	Adjusting the scanner automatically	—
	U093	Setting the exposure density gradient • Text/text and photo/photo mode	 0
	U099	Checking the original size detection	—

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
High voltage	U100	Setting the surface potential	184
	U101	Setting high voltages • Developing bias • Transfer voltage • Transfer voltage output timing	 193/38 115 –176
	U109	Setting the drum type	H
	U110	Checking/clearing the drum count	—
	U111	Checking/clearing the drum drive time	—
Developing	U130	Initial setting for the developer	—
	U131	Setting the toner sensor control voltage	155
	U132	Replenishing toner forcibly	—
	U135	Checking toner feed motor operation	—
	U155	Displaying the toner sensor output	—
	U156	Changing the toner control level • Toner feed start level • Toner empty level	 100 44
	U157	Checking/clearing the developing drive time	—
	U158	Checking/clearing the developing count	—
Fixing and cleaning	U161	Setting the fixing control temperature • Primary stabilization fixing temperature • Secondary stabilization fixing temperature • Regular stabilization control temperature • Temperature to be deducted from the regular control temperature when copying onto small-sized paper	 135 160 180 0
	U162	Stabilizing fixing forcibly	—
	U163	Resetting the fixing problem data	—
	U196	Turning the fixing heater on	—
	U199	Checking the fixing temperature	—
Operation panel and support equipment	U200	Turning all LEDs on	—
	U203	Operating DF separately	—
	U204	Setting the presence or absence of a key card or key counter	—
	U207	Checking the operation panel keys	—
	U243	Checking the operation of the DF motors	—
	U244	Checking the DF switches	—
Mode setting	U250	Setting the maintenance cycle	100
	U251	Checking/clearing the maintenance count	—
	U252	Setting the destination	Japan
	U253	Switching between double and single counts	Double count
	U254	Turning auto start function on/off	On
	U255	Setting auto clear time	120
	U256	Turning auto preheat/energy saver function on/off	On
	U258	Switching copy operation at toner empty detection	Single mode, 70
	U260	Changing the copy count timing	After ejection
	U265	Setting the destination specifications	0
	U332	Setting the size conversion factor	—
	U342	Setting the ejection restriction	On
	U344	Setting preheat/energy saver mode	Energy star
	U345	Setting the value for maintenance due indication	0
	U348	Setting the copy density adjustment range	Normal

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Image processing	U402	Adjusting margins of image printing	—
	U403	Adjusting margins for scanning an original on the contact glass	—
	U404	Adjusting margins for scanning an original from the DF	—
	U407	Adjusting the leading edge registration for memory image printing	—
Others	U901	Checking/clearing copy counts by paper feed locations	—
	U903	Checking/clearing the paper jam counts	—
	U904	Checking/clearing the service call counts	—
	U905	Checking/clearing counts by optional devices	—
	U906	Resetting partial operation control	—
	U910	Clearing the black ratio data	—
	U917	Setting the reading/writing of backup data	Read
	U990	Checking/clearing the time for the exposure lamp to light	—
	U992	Checking or clearing the printer count	—
	U993	Outputting a VTC-PG pattern	—
	U998	Outputting the memory list	—

* Initial setting for executing maintenance item U020

(5) Contents of maintenance mode items (for 15 cpm copier)

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U000</td><td>
Outputting an own-status report
Description
Outputs lists of the current settings of the maintenance items, and paper jam and service call occurrences.
Purpose
To check the current setting of the maintenance items, or paper jam or service call occurrences.
Before initializing the backup RAM, output a list of the current settings of the maintenance items to reenter the settings after initialization or replacement.
Method
1. Press the start key. A selection item appears.
2. Select the item to be output using the copy exposure adjustment keys.
<table>
<tr><th>Display</th><th>Output list</th></tr>
<tr><td>d-L
J-L
C-L</td><td>List of the current settings of the maintenance modes
List of the paper jam occurrences
List of the service call occurrences</td></tr>
</table>
3. Press the start key. The interrupt copy mode is entered and a list is output.
When A4/11" × 8 1/2" paper is available, a report of this size is output. If not, specify the paper feed location.
When output is complete, the selected item appears.
Completion
Press the stop/clear key while a selection item is displayed. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U001</td><td>
Exiting the maintenance mode
Description
Exits the maintenance mode and returns to the normal copy mode.
Purpose
To exit the maintenance mode.
Method
Press the start key. The normal copy mode is entered.
</td></tr>
<tr><td>U004</td><td>
Setting the machine number
Description
Displays and changes the machine number.
Purpose
To check or set the machine number.
Method
Press the start key. The currently set machine number is displayed.
Setting
1. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys.
2. Enter the last six digits of the machine number using the numeric or zoom +/– keys.
Do not enter the first two digits, 3 and 7.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1
Exp. 2</td><td>First 3 digits
Last 3 digits</td><td>000 to 999
000 to 999</td><td>000
000</td></tr>
</table>
3. Press the start key. The machine number is set. The indication for selecting a maintenance item No. appears.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

Maintenance item No.	Description
U005	**Copying without paper** **Description** Simulates the copy operation without paper feed. **Purpose** To check the overall operation of the machine. **Method** 1. Press the start key. A selection item appears. 2. Select the item to be operated using the copy exposure adjustment keys. **Display** / **Operation** P — Only the copier operates. P-d — Both the copier and DF operate (continuous operation). 3. Press the interrupt key. 4. Set the operation conditions required. Changes in the following settings can be made. • Paper feed locations • Magnifications • Number of copies: continuous copying is performed when set to 250. • Copy density • Keys on the operation panel other than the energy saver (preheat) key 5. To control the paper feed pulley, remove all the paper in the drawers, or the drawers. With the paper present, the paper feed pulley does not operate. 6. Press the start key. The operation starts. Copy operation is simulated without paper under the set conditions. When operation is complete, the selected item appears. 7. To stop continuous operation, press the stop/clear key. **Completion** Press the stop/clear key at the screen for selecting an item. The indication for selecting a maintenance item No. appears.
U020	**Initializing all data** **Description** Initializes all the backup RAM on the main PCB to return to the original settings. **Purpose** Used when replacing the main PCB. **Method** 1. Press the start key. 2. Select “on” using the zoom +/– keys. **Display** / **Operation** ––– — Canceling initialization on — Executing initialization 3. Press the start key. All data in the backup RAM is initialized, and the original settings for Japan specifications are set. When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on. **Completion** To exit this maintenance item without executing initialization, press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U021	**Initializing memories** **Description** Initializes the setting data other than that for adjustments due to variations between respective machines, i.e., settings for counters, service call history and mode settings. As a result, initializes the backup RAM according to the specifications depending on the destination selected in U252. **Purpose** Used to return the machine settings to the factory settings. **Method** 1. Press the start key. 2. Select "on" using the zoom +/– keys. Display: ––– / on — Operation: Canceling initialization / Executing initialization 3. Press the start key. All data other than that for adjustments due to variations between machines is initialized based on the destination setting. When initialization is complete, the machine automatically returns to the same status as when the main switch is turned on. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.
U022	**Initializing backup data** **Description** Initializes only the data set for the optical section. **Purpose** To be executed after replacing the scanner unit. **Method** 1. Press the start key. "A" appears. 2. Press the start key. 3. Select "on" using the zoom +/– keys. Display: ––– / on — Operation: Canceling initialization / Executing initialization 4. Press the start key. The data for the optical section (U060 to 099, U403, U404 and U990) is initialized. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.
U030	**Checking motor operation** **Description** Drives each motor. **Purpose** To check the operation of each motor. **Method** 1. Press the start key. A selection item appears. 2. Select the motor to be operated using the copy exposure adjustment keys. 3. Press the start key. The selected motor operates. Display: A — Motor: Drive motor (DM) Display: F1 — Motor: Drawer drive motor (DDM)* Display: F2 — Motor: Drawer drive motor (ST) 1 (DDM(ST)1)* Display: F3 — Motor: Drawer drive motor (ST) 2 (DDM(ST)2)* * Optional 4. To stop operation, press the stop/clear key. **Completion** Press the stop key after operation stops. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U031	**Checking switches for paper conveying** **Description** Displays the on-off status of each paper detection switch on the paper path. **Purpose** To check if the switches for paper conveying operate correctly. **Method** 1. Press the start key. 2. Turn each switch on and off manually to check the status. When the on-status of a switch is detected, the corresponding original size indicator lights. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.
U032	**Checking clutch operation** **Description** Turns each clutch on. **Purpose** To check the operation of each clutch. **Method** 1. Press the start key. A selection item appears. 2. Select the clutch to be operated using the copy exposure adjustment keys. 3. Press the start key. The selected clutch turns on for 1 s. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.

Original size indicator	Switch
A3/11" × 17"	Eject switch (ESW)
A4R/8 1/2" × 14"	Job separator eject switch (JBESW)*
A4/8 1/2" × 11"	Registration switch (RSW)
B4/LED below 8 1/2" × 11"	Drawer feed switch (DFSW)*
B5R/5 1/2" × 8 1/2"	Drawer feed switch (ST) (DFSW(ST))*

* Optional.

Display	Clutch
P1	Upper paper feed clutch (PFCL-U)
Pb	Bypass paper feed clutch (BYPPFCL)
F1	Lower paper feed clutch (PFCL-L)*
F2	Paper feed clutch (ST) 1 (PFCL(ST)1)*
F3	Paper feed clutch (ST) 2 (PFCL(ST)2)*
2F	Registration clutch (RCL)

* Optional.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U033</td><td>
Checking solenoid operation
Description
Turns each solenoid on.
Purpose
To check the operation of each solenoid.
Method
1. Press the start key. A selection item appears.
2. Select the desired operation using the copy exposure adjustment keys.
3. Press the start key. The selected operation starts.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>b1
b2
A</td><td>Turning the feedshift solenoid (FSSOL)* on
Turning the feedshift solenoid (FSSOL)* off
Turning the main switch off</td></tr>
</table>
* Optional.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U034</td><td>
Adjusting the print start timing
Adjustment
See pages 1-6-10 and 13.
</td></tr>
<tr><td>U035</td><td>
Setting folio size
Description
Changes the image area for copying onto folio size paper.
Purpose
To prevent the image at the trailing edge, or right or left side of the paper from not being copied by setting the actual size of the folio paper used.
Method
Press the start key.
Setting
1. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys.
2. Change the setting using the zoom +/– keys.
<table>
<tr><th>Copy exposure indicator</th><th>Setting</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1
Exp. 2</td><td>Length
Width</td><td>330 to 356 mm
200 to 220 mm</td><td>330
210</td></tr>
</table>
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U051</td><td>
Adjusting the amount of slack in the paper
Adjustment
See page 1-6-17.
</td></tr>
</table>

Maintenance item No.	Description
U053	**Performing fine adjustment of the motor speed**

Description
Performs fine adjustment of the speeds of the motors.

Purpose
Used to adjust the speed of the respective motors when the magnification is not correct.

Method
Press the start key.

Setting
1. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys.
2. Change the setting using the zoom +/– keys.

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	Drive motor speed adjustment	–5.0 to +5.0	0
Exp. 2	Polygon motor speed adjustment	–5.0 to +5.0	0

Drive motor speed adjustment (unit: %)
Increasing the setting makes the image longer in the auxiliary scanning direction, and decreasing it makes the image shorter in the auxiliary scanning direction.
Polygon motor speed adjustment (unit: %)
Increasing the setting makes the image longer in the main scanning direction and shorter in the auxiliary scanning direction; decreasing the setting makes the image shorter in the main scanning direction and longer in the auxiliary scanning direction.

3. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, a VTC pattern shown below is output in interrupt copy mode. Correct values for an A3/11" × 17" output are:
Ⓐ = 300 ± 0.75 mm
Ⓑ = 260 ± 1.3 mm

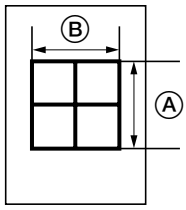


Figure 1-4-8

Adjustment
1. Output an A3/11" × 17" VTC pattern in interrupt mode.
2. Measure Ⓐ and Ⓑ on the VTC pattern (Figure 1-4-8), and perform the following adjustments if they are different from the correct sizes:
   Ⓐ: Drive motor speed adjustment
   Ⓑ: Polygon motor speed adjustment

Completion
Press the stop/clear key at the screen for selecting an item. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U060	**Adjusting the scanner input properties** **Description** Adjusts the image scanning density. **Purpose** Used when the entire image appears too dark or light. **Method** Press the start key. **Setting** 1. Change the setting using the zoom +/– keys. Increasing the setting makes the density lower, and decreasing it makes the density higher. 2. Press the start key. The value is set. **Interrupt copy mode** While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. **Completion** Press the stop/clear key at the screen for selecting an item. The indication for selecting a maintenance item No. appears. **Caution** The following settings are also reset to the initial values by performing this maintenance item: • Exposure density gradient set in maintenance mode (U093) • Exposure set in the copy default item of the copier management mode
U061	**Turning the exposure lamp on** **Description** Turns the exposure lamp on. **Purpose** To check the exposure lamp. **Method** 1. Press the start key. “on” appears. 2. Press the start key. The exposure lamp lights. 3. To turn the exposure lamp off, press the stop/clear key. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.
U063	**Adjusting the shading position** **Description** Changes the shading position. **Purpose** Used when white lines continue to appear longitudinally on the image after the shading plate is cleaned. This is due to flaws or stains inside the shading plate. To prevent this problem, the shading position should be changed so that shading is possible without being affected by the flaws or stains. **Method** 1. Press the start key. 2. Change the setting using the zoom +/– keys. Increasing the setting moves the shading position toward the machine right, and decreasing it moves the position toward the machine left. 3. Press the start key. The value is set. **Interrupt copy mode** While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. **Completion** Press the stop/clear key at the screen for adjustment. The indication for selecting a maintenance item No. appears.

Description	Setting range	Initial setting
Image scanning density	0 to 23	12

Description	Setting range	Initial setting	Change in value per step
Shading position	–5 to +5	0	0.17 mm

Maintenance item No.	Description
U065	**Adjusting the scanner magnification** **Adjustment** See pages 1-6-32 and 34.
U066	**Adjusting the leading edge registration for scanning an original on the contact glass** **Adjustment** See page 1-6-36.
U067	**Adjusting the center line for scanning an original on the contact glass** **Adjustment** See page 1-6-37.
U070	**Adjusting the DF magnification** **Description** Adjusts the DF original scanning speed. **Purpose** To be executed if the correct magnification is not obtained in the auxiliary scanning direction when the optional SRDF is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U053 → U065 → U070 **Method** Press the start key. **Setting** 1. Change the setting using the zoom +/– keys.

Description	Setting range	Initial setting	Change in value per step
Original conveying motor speed	–25 to +25	0	0.1%

Increasing the setting makes the image longer, and decreasing it makes the image shorter.

2. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U071	**Adjusting the DF scanning timing**

Description
Adjusts the DF original scanning timing.

Purpose
To be executed if there is a regular error between the leading or trailing edges of the original and the copy image when the optional DF is used.

Caution
Before making this adjustment, ensure that the following adjustments have been made in maintenance mode.

U034 → U066 → U071

Method
Press the start key.

Setting
1. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys.
2. Change the setting using the zoom +/– keys.

Copy exposure indicator	Description	Setting range	Initial setting	Change in value per step
Exp. 1	DF leading edge registration	–32 to +32	0	0.19 mm
Exp. 2	DF trailing edge registration	–32 to +32	0	0.19 mm

Increasing the setting moves the copy image backward, and decreasing it moves the copy image forward.

3. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Adjustment
1. In interrupt copy mode, make a copy using the DF.
2. Check the copy image and adjust the registration as follows.
   For copy example 1, increase the setting of exp. 1.
   For copy example 2, decrease the setting of exp. 1.



Figure 1-4-9

Completion
Press the stop/clear key while a selection item is displayed. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U072	**Adjusting the DF center line** **Description** Adjusts the scanning start position for the DF original. **Purpose** To be executed if there is a regular error between the centers of the original and the copy image when the optional DF is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U034 → U067 → U072 **Method** Press the start key. **Setting** 1. Change the setting using the zoom +/– keys.

Description	Setting range	Initial setting	Change in value per step
DF center line	–39 to +39	0	0.17 mm

Increasing the setting moves the image to the right, and decreasing it moves the image to the left.

2. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Adjustment
1. In interrupt copy mode, make a copy using the DF.
2. Check the copy image and adjust the center line as follows.
   For copy example 1, increase the setting.
   For copy example 2, decrease the setting.

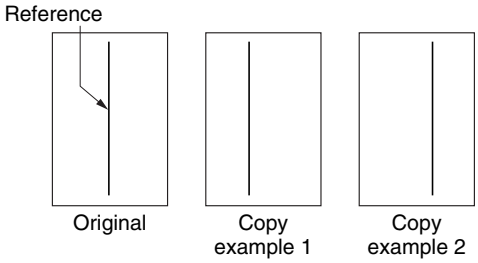


Figure 1-4-10

Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U073	**Checking scanner operation** **Description** Simulates the scanner operation under arbitrary conditions. **Purpose** To check scanner operation. **Method** 1. Press the start key. 2. Select the item to be changed by lighting a copy exposure indicator using the copy exposure adjustment keys. 3. Change the setting using the zoom +/– keys.

Copy exposure indicator	Operating conditions	Setting range
Exp. 1 Exp. 2 Exp. 3	Magnification Paper size On and off of the exposure lamp	50 to 200% See below. on or off

Paper size for each setting

Setting	Paper size	Setting	Paper size
8	A4	42	A5R
9	B5	47	Folio
24	11" × 8 1/2"	52	11" × 17"
36	A3	53	11" × 15"
39	B4	55	8 1/2" × 14"
40	A4R	56	8 1/2" × 11"
41	B5R	58	5 1/2" × 8 1/2"

4. Press the start key. Scanning starts under the selected conditions.
5. To stop operation, press the stop/clear key.

Completion
Press the stop/clear key when scanning stops. The indication for selecting a maintenance item No. appears.

U074	**Adjusting the DF input light luminosity** **Description** Adjusts the luminosity of the exposure lamp for scanning originals from the optional DF. **Purpose** Used if the exposure amount differs significantly between when scanning an original on the contact glass and when scanning an original from the DF. **Method** Press the start key. **Setting** 1. Change the setting using the zoom +/– keys.

Description	Setting range	Initial setting
DF input light luminosity	0 to 8	1

Increasing the setting makes the luminosity higher, and decreasing it makes the luminosity lower.

2. Press the start key. The value is set.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U075</td><td>
Setting the original size detection
Description
Sets whether or not to detect the original size automatically using the original size detection sensor (OSDS).
Purpose
On the metric specifications of the European models, set to “on” when an optional original size detection sensor is installed.
Method
Press the start key.
Setting
1. Select “on” or “oFF” using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>on
oFF</td><td>Original size detected
Original size not detected</td></tr>
</table>
Initial setting: on
2. Press the start key. The setting is set. The indication for selecting a maintenance item No. appears.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

Maintenance item No.	Description
U087	**Turning the DF scanning position adjust mode on/off** **Description** Turns on or off the DF scanning position adjust mode, in which the DF original scanning position is adjusted automatically by determining the presence or absence of dust on the slit glass. Also changes the reference data for identifying dust. **Reference** In the DF original scanning position adjust mode, the presence or absence of dust is determined by comparing the scan data of the original trailing edge and that taken after the original is conveyed past the DF original scanning position. If dust is identified, the DF original scanning position is adjusted for the following originals. **Purpose** Used to prevent appearance of black lines due to dust adhering in the original scanning position on the slit glass when the DF is used. **Method** 1. Press the start key. 2. Select the item to be set by lighting a copy exposure indicator using the copy exposure adjustment keys.

Copy exposure indicator	Description
Exp. 1 Exp. 2	Setting the mode on/off Setting the reference data for identifying dust

Setting the mode on/off

1. Select “on” or “oFF” using the zoom +/– keys.

Display	Description
on oFF	DF scanning position adjust mode on DF scanning position adjust mode off

Initial setting: on

2. Press the start key. The setting is set.

Setting the reference data for identifying dust

Available only when the mode is turned on.

1. Change the setting using the zoom +/– keys.

Description	Setting range	Initial setting
Minimum density to be regarded as dust	10 to 95	35

Example

The figure indicates the density in 256 levels of gray (0: white, 255: black). When the setting is 35, data of the level of 35 or higher is regarded as dust and data of lower level is regarded as the background (scan data taken when there is no original).

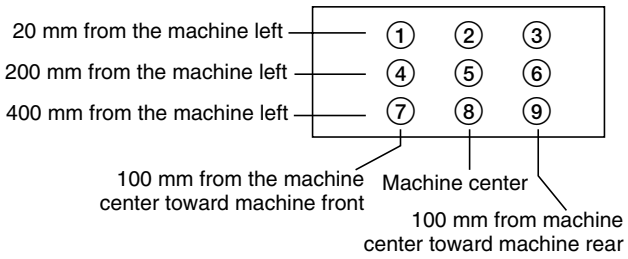
2. Press the start key. The value is set.

Completion

Press the stop/clear key. The indication for selecting a maintenance item No. appears.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U088</td><td>
Setting the input filter (moiré reduction mode)
Description
Turns moiré reduction mode on and off by switching the input filter on and off.
Purpose
Used to prevent regular density unevenness (moiré) on halftone image areas of the copy image in text mode and text and photo mode. Such moiré is more likely to appear when an enlargement or reduction copy is made in text mode from an original containing large halftone image areas.
Method
Press the start key.
Setting
1. Select “on” or “oFF” using the zoom +/– keys. The selected item is displayed in reverse.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>on
oFF</td><td>Moiré reduction mode
Normal copy mode</td></tr>
</table>
Initial setting: oFF
If moiré on the copy image is significant, change the setting to “on”. Note that when the moiré reduction mode is turned on, the resolution may be slightly reduced.
2. Press the start key. The value is set. The indication for selecting a maintenance item No. appears.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U091</td><td>
Checking shading
Description
Performs scanning under the same conditions as before and after shading is performed, displaying the original scanning values at nine points of the contact glass.
Purpose
To check the change in original scanning values before and after shading. The results may be used to decide the causes for fixing unevenness (uneven density) of the gray area of an image: either due to optical (shading or CCD) or other problems.
Also to check the causes for a white or black line appearing longitudinally.
Method
1. Press the start key. A selection item appears.
2. Select the item to be operated using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Output list</th></tr>
<tr><td>on
oFF</td><td>Performs scanning before shading and displays the result.
Performs scanning after shading and displays the result.</td></tr>
</table>
</td></tr>
</table>

Maintenance item No.	Description
U091 (cont.)	3. Press the start key. Scanning is performed under the selected conditions and the result is displayed. 4. Change the measurement point by lighting a copy exposure indicator or making one flash using the copy exposure adjustment keys. For the correspondence between the measurement points and the copy exposure indicators, see Figure 1-4-11.



Point	Copy exposure indicator
①	Exp. 1 lights.
②	Exp. 2 lights.
③	Exp. 3 lights.
④	Exp. 4 lights.
⑤	Exp. 5 lights.
⑥	Exp. 1 flashes.
⑦	Exp. 2 flashes.
⑧	Exp. 3 flashes.
⑨	Exp. 4 flashes.

Figure 1-4-11

When scanning is performed before shading, the scan value at the machine center should be slightly different from those at the machine front and rear. When scanning is performed after shading, there should be no difference between respective values. Any differences between the values at machine front and rear indicates that scanner problem causes the fixing unevenness.
If the displayed results indicate no shading problems, the fixing unevenness (uneven copy density) is caused by factors other than in the scanner section (shading or CCD).
If a black line appears, the cause may be assumed based on the results of the scanning operation before shading: if a white line appears, they may be assumed based on the results of the scanning operation after shading. Note that depending on the thickness and location of the black or white line, it may not be possible to use this method to determine the cause. This is because the displayed values obtained from scanning at the limit of nine points are insufficient to provide significant information.

5. Press the stop/clear key. The selected item appears.

Completion
Press the stop/clear key while a selection item is displayed. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U092	**Adjusting the scanner automatically** **Description** Makes auto scanner adjustments in the order below using the specified original. • Adjusting the scanner center line (U067) • Adjusting the scanner leading edge registration (U066) • Adjusting scanner magnification in the auxiliary direction (U065) When this maintenance item is performed, the settings in U065, U066 and U067 are also changed. **Purpose** Used to make respective auto adjustments for the scanner. **Method** 1. Place the specified original (P/N: 2AC68240) on the contact glass. 2. Press the start key. “on” appears. 3. Press the start key. Auto adjustment starts. When adjustment is complete, “Gd” appears. 4. Display each setting value after adjustment by lighting a copy exposure indicator using the copy exposure adjustment keys.

Copy exposure indicator	Setting value
Exp. 2	Scanner center line
Exp. 3	Scanner leading edge registration
Exp. 4	Scanner magnification in the auxiliary scanning direction

If a problem occurs during auto adjustment, “nG” is displayed and operation stops. Lighting the copy exposure indicator exp. 2 and then exp. 3 using the copy exposure adjustment keys will display the error code. Determine the details of the problem and either repeat the procedure from the beginning, or adjust the remaining items manually by running the corresponding maintenance items.

Completion

Press the stop/clear key after auto adjustment is complete. The indication for selecting a maintenance item No. appears.

If the stop/clear key is pressed during auto adjustment, adjustment stops and no settings are changed.

Maintenance item No.	Description
U093	**Setting the exposure density gradient** **Description** Changes the exposure density gradient in manual density mode, depending on respective image modes (text, text and photo, photo). **Purpose** To set how the image density is altered by a change of one step in the manual density adjustment. Also used to make copy image darker or lighter. **Start** 1. Press the start key. A selection item appears. 2. Select the image mode to be adjusted by lighting image mode LEDs using the image mode selection key. 3. Press the start key. The machine enters the setting mode.

Image mode LEDs		Description
○ ○ + ○ ●	○ Auto Exposure ○ Text & Photo ○ Photo ● Text	Density in text mode
○ ○ + ● ●	○ Auto Exposure ○ Text & Photo ● Photo ● Text	Density in text and photo mode
○ ● + ● ●	○ Auto Exposure ● Text & Photo ● Photo ● Text	Density in photo mode

○ : Off, ● : On

Maintenance item No.	Description
U093 (cont.)	**Setting** 1. Select the item to be adjusted by lighting a copy exposure indicator using the copy exposure adjustment keys. 2. Adjust the setting using the zoom +/– keys.

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	Change in density when manual density is set dark	0 to 3	0
Exp. 2	Change in density when manual density is set light	0 to 3	0

Increasing the setting makes the change in density larger, and decreasing it makes the change smaller.

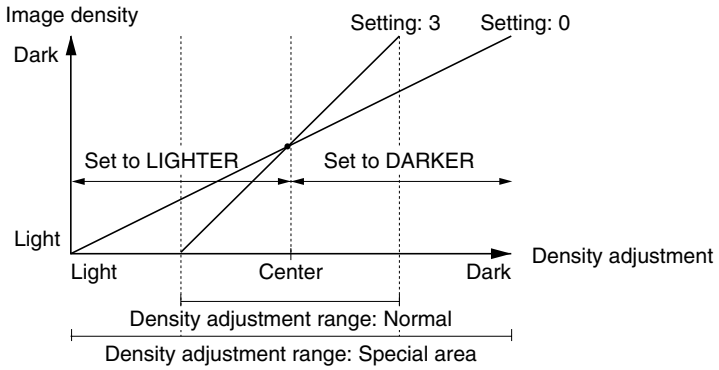


Figure 1-4-12 Exposure density gradient

3. Press the start key. The value is set.
4. Press the stop/clear key. The selected item appears.

Interrupt copy mode
While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

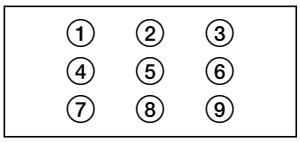
Completion
Press the stop/clear key while a selection item is displayed. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U099	**Checking the original size detection** **Description** Displays the original width detection data and sets the original width detection threshold. **Purpose** To check the original width detection. Also to change the original size detection threshold if the size of the original on the contact glass is detected incorrectly. **Start** 1. Press the start key. A selection item appears. 2. Select the item using the image mode selection key. 3. Press the start key. The machine enters the execution mode.

Display	Description
dA	Checking the original width detection data
LE	Setting or checking the original width detection threshold

Method to display the original width detection data

1. Place an original on the contact glass and turn the original detection switch on. The exposure lamp turns on and the width of the original is detected. The scanner data taken at the nine points from (1) at the machine rear to (9) at the machine front is displayed.
   The data is displayed within the range of 000 to 255, 000 indicating white (original present) and 255 indicating black (no original).
2. Change the point to display the detection data by lighting a copy exposure indicator or making one flash using the copy exposure adjustment keys. For the correspondence between the detection point and the copy exposure indicators, see Figure 1-4-13.



Point	Copy exposure indicator
①	Exp. 1 lights.
②	Exp. 2 lights.
③	Exp. 3 lights.
④	Exp. 4 lights.
⑤	Exp. 5 lights.
⑥	Exp. 1 flashes.
⑦	Exp. 2 flashes.
⑧	Exp. 3 flashes.
⑨	Exp. 4 flashes.

Figure 1-4-13

3. Press the stop/clear key. The selected item appears.

Maintenance item No.	Description
U099 (cont.)	**Method to set or check the original size detection threshold** 1. Place an original on the contact glass and turn the original detection switch on. The original size detection starts and detection data is displayed. 2. Change the detection item by lighting a copy exposure indicator using the copy exposure adjustment keys.

Copy exposure indicator	Description	Data range	Remarks	Initial setting
Exp. 1	Scanner data threshold	0 to 255	Adjustable	170
Exp. 2	Time between original detection switch turning on and reading-in of scanner data	0 to 100 ms	Adjustable	50
Exp. 3	Detected original width	0 to 350 mm		———
Exp. 4	Original size detected by scanner data and original size sensor detection data	0 to 63*		———

* See Paper size in U073 for the paper size for each setting.

3. To change the original size detection threshold, light exp. 1 or 2 and change the setting using the zoom +/– keys.
4. Press the start key. The value is set.
5. Press the stop/clear key. The selected item appears.

Completion

Press the stop/clear key while a selection item is displayed. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U100	**Setting the surface potential** **Description** Changes the surface potential by changing the grid control voltage. Also performs main charging. **Purpose** To set the surface potential or check main charging. Also used when reentering data after initializing the set data. **Start** 1. Press the start key. A selection item appears. 2. Select the item using the copy exposure adjustment keys.

Display (copy exposure indicator)	Description
——— (exp. 1) on1 (exp. 2) on2 (exp. 3)	Changing the grid control voltage Turning the main charger on Turning the main charger on and the laser scanner unit on and off

Method for main charger output

1. Press the start key. The selected operation starts.
2. To stop operation, press the stop/clear key.

Setting the grid control voltage

1. Change the setting using the zoom +/– keys.

Description	Setting range	Initial setting
Grid control voltage	0 to 255	184

Increasing the setting makes the surface potential higher, and decreasing it makes the potential lower.
Change in value per step: approximately 3.6 V

2. Press the start key. The value is set.

Interrupt copy mode

While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion

Press the stop/clear key when main charger output stops while a selection item is displayed. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U101	**Setting high voltages**

Description

Changes the developing bias voltage and transfer voltage by changing the developing bias control voltage and transfer control voltage. Also checks the transfer output voltage.

Purpose

To check and change high voltages other than the main charger voltage.

Start

1. Press the start key. A selection item appears.
2. Select the item to be set or checked by lighting image mode LEDs using the image mode selection key.

Image mode LEDs		Description
○ ○ +T ○ ● T	○ Auto Exposure ○ Text & Photo ○ Photo ● Text	Setting the developing bias
○ ○ +T ● ● T	○ Auto Exposure ○ Text & Photo ● Photo ● Text	Setting and checking the transfer voltage

○ : Off, ● : On

Setting the developing bias

1. Select the item to be adjusted by lighting a copy exposure indicator using the copy exposure adjustment keys.
2. Change the setting using the zoom +/– keys.

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	Developing bias control voltage during image formation	25 to 255	193
Exp. 2	Developing bias control voltage during no image formation	25 to 255	38

Increasing the setting makes the developing bias higher and the image darker; decreasing it makes the bias lower and the image lighter.

3.Press the start key. The value is set.

Setting the transfer voltage

1. Select the item to be adjusted by lighting a copy exposure indicator using the copy exposure adjustment keys.
2. Change the setting using the zoom +/– keys.

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	Transfer control voltage	0 to 255	115
Exp. 2	Transfer voltage output timing	–250 to +250	–176

Increasing the exp. 1 setting makes the transfer voltage higher, and decreasing it makes the voltage lower. Increasing the exp. 2 setting makes the transfer voltage output timing later and improves paper separation performance.

3. Press the start key. The value is set.
4. To check the transfer voltage output, light the copy exposure indicator exp. 3 using the copy exposure adjustment keys and press the start key. The currently set transfer voltage is output.
5. To stop the transfer voltage output, press the stop/clear key.

Interrupt copy mode

While this maintenance item is being performed, copying from an original can be made in interrupt copy mode.

Completion

Press the stop/clear key while a selection item is displayed. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U109	**Setting the drum type** **Description** Sets the type of the drum installed in the copier. **Purpose** To prevent variations in halftone due to differences in drum sensitivity. **Method** Press the start key. **Setting** 1. Select the drum type using the zoom +/– keys. Display / Description: G – Type G; H – Type H; J – Type J Initial setting: H 2. Press the start key. The setting is set. The indication for selecting a maintenance item No. appears. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
U110	**Checking/clearing the drum count** **Description** Displays the drum counts for checking, clearing or changing the figure, which is used as a reference when correcting the main charger potential output. **Purpose** To check the drum status. Also used to clear the count after replacing the drum during regular maintenance. Since the count was cleared before shipping, do not clear it when installing. **Method** 1. Press the start key. 2. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys. Copy exposure indicator / Description / Setting range / Initial setting: Exp. 1 – First 3 digits – 000 to 999 – 000; Exp. 2 – Last 3 digits – 000 to 999 – 000; Exp. 3 – Clearing the count – ——— – ——— **Clearing** 1. Light exp. 3. 2. Press the start key. The count is cleared, and the indication for selecting a maintenance item No. appears. **Setting** 1. Change the count using the numeric or zoom +/– keys. 2. Press the start key. The count is set, and the indication for selecting a maintenance item No. appears. **Completion** To exit the maintenance mode without changing the count, press the stop/clear key. The indication for selecting a maintenance item No. appears.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U111</td><td>
Checking/clearing the drum drive time
Description
Displays the drum drive time for checking, clearing or changing a figure, which is used as a reference when correcting the high voltage based on time.
Purpose
To check the drum status. Also used to clear the drive time after replacing the drum.
Method
1. Press the start key.
2. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1
Exp. 2
Exp. 3</td><td>First 2 digits
Last 3 digits
Clearing the drive time</td><td>00 to 59 (min)
000 to 999 (min)
———</td><td>00
000
———</td></tr>
</table>
Clearing
1. Light exp. 3.
2. Press the start key. The time is cleared, and the indication for selecting a maintenance item No. appears.
Setting
1. Change the drive time (in minutes) using the numeric or zoom +/– keys.
2. Press the start key. The time is set, and the indication for selecting a maintenance No. appears.
Completion
To exit this maintenance item without changing the time, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U130</td><td>
Initial setting for the developer
Description
Automatically sets the toner sensor control voltage and toner feed start level for the installed developer.
Purpose
To set the initial settings for the developer when installing the machine or replacing the developer.
Method
1. Press the start key.
2. Press the start key. The initial settings for the developer is set, and the result is displayed.
3. Display the setting value for each item by lighting the respective copy exposure indicator using the copy exposure adjustment keys.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th></tr>
<tr><td>Exp. 1
Exp. 2
Exp. 3
Exp. 4</td><td>Toner sensor output value
Toner sensor control voltage
Toner feed start level
Absolute humidity</td></tr>
</table>
Supplement
The following data is also renewed or cleared by performing this maintenance item:
• Renewing the toner sensor control voltage (U131)
• Renewing the toner feed start level (U156)
• Clearing the developing drive time (U157)
• Clearing the developing count (U158)
• Resetting the toner feed start level and toner empty detection
Completion
After initial setting is complete, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U131</td><td>
Setting the toner sensor control voltage
Description
Displays or changes the toner sensor control voltage automatically set in maintenance item U130.
Purpose
To check the automatically set toner sensor control voltage. Also to change the toner density if an image is too dark or light.
Method
Press the start key. The current setting for the toner sensor control voltage is displayed.
Setting
1. Change the setting using the zoom +/– keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Toner sensor control voltage</td><td>0 to 255</td><td>155</td></tr>
</table>
Increasing the setting makes the density higher, and decreasing it makes the density lower.
Increasing the setting too high may result in toner scattering.
2. Press the start key. The value is set.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U132</td><td>
Replenishing toner forcibly
Description
Replenishes toner forcibly until the toner sensor output value reaches the toner feed start level.
Purpose
Used when the toner empty is detected frequently.
Method
1. Press the start key.
2. Press the start key. Operation starts, and the current data is displayed.
Toner is replenished until the toner sensor output value reaches the toner feed start level.
3. Display each data by lighting the respective copy exposure indicator using the copy exposure adjustment keys.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th></tr>
<tr><td>Exp. 1
Exp. 2
Exp. 3
Exp. 4</td><td>Toner sensor output value after start key is pressed
Current toner feed start level
Current toner sensor control voltage
Absolute humidity</td></tr>
</table>
4. To stop operation, press the stop/clear key.
Completion
Press the stop/clear key when toner replenishment stops. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U135</td><td>
Checking toner feed motor operation
Description
Drives the toner feed motor.
Purpose
To check the operation of the toner feed motor.
Caution
Note that driving the motor unnecessarily long may cause a toner jam, resulting in machine lockup. Be sure to drive the motor for only a few seconds.
Method
1. Press the start key. “on” appears.
2. Press the start key. The toner feed motor turns on.
3. To stop operation, press the stop/clear key.
Completion
Press the stop/clear key when operation stops. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

Maintenance item No.	Description
U155	**Displaying the toner sensor output** **Description** Displays the toner sensor output value, and related data. **Purpose** To check the toner sensor output value. **Method** 1. Press the start key. 2. Press the start key. Sampling starts. 3. Display each data by lighting the respective copy exposure indicator using the copy exposure adjustment keys. **Copy exposure indicator** / **Description** Exp. 1: Toner sensor output value after start key is pressed Exp. 2: Current toner feed level (value corrected based on humidity and drive time) Exp. 3: Current toner sensor control voltage Exp. 4: Absolute humidity 4. Press the stop/clear key. The sampling operation stops. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.
U156	**Changing the toner control level** **Description** Changes the toner feed start level set in maintenance item U130 or the toner empty level to be determined by the difference from the toner feed start level. **Purpose** To check the toner feed start level and toner empty level. **Method** 1. Press the start key. 2. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys. **Copy exposure indicator** / **Description** Exp. 1: Toner feed start level Exp. 2: Difference between the toner feed start level and toner empty level **Setting for the toner feed start level** 1. Change the setting using the zoom +/– keys. **Description** / **Setting range** Toner feed start level / 0 to 255 Increasing the setting makes the toner density lower. 2. Press the start key. The value is set. **Setting for the toner empty level** 1. Change the setting using the zoom +/– keys. **Description** / **Setting range** Difference between the toner feed start level and the toner empty level / 0 to 255 Increasing the setting makes the toner empty level higher: the toner density is lower when the toner empty is detected. 2. Press the start key. The value is set. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U157	**Checking/clearing the developing drive time** **Description** Displays the developing drive time for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed. **Purpose** To check the developing drive time after replacing the developer. **Method** 1. Press the start key. 2. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys.

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	First 2 digits	00 to 59 (min)	00
Exp. 2	Last 3 digits	000 to 999 (min)	000
Exp. 3	Clearing the drive time	———	———

Clearing
1. Light exp. 3.
2. Press the start key. The time is cleared, and the indication for selecting a maintenance item No. appears.

Setting
1. Change the drive time (in minutes) using the numeric or zoom +/– keys.
2. Press the start key. The time is set, and the indication for selecting a maintenance item No. appears.

Completion
To exit this maintenance item without changing the time, press the stop/clear key. The indication for selecting a maintenance item No. appears.

U158 **Checking/clearing the developing count**

Description
Displays the developing count for checking, clearing or changing a figure, which is used as a reference when correcting the toner control. It is automatically cleared when U130 is executed.

Purpose
To check the developing count after replacing the developer.

Method
1. Press the start key.
2. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys.

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	First 3 digits	000 to 999	000
Exp. 2	Last 3 digits	000 to 999	000
Exp. 3	Clearing the count	———	———

Clearing
1. Light exp. 3.
2. Press the start key. The count is cleared, and the indication for selecting a maintenance item No. appears.

Setting
1. Change the count using the numeric or zoom +/– keys.
2. Press the start key. The count is cleared, and the indication for selecting a maintenance item No. appears.

Completion
To exit this maintenance item without changing the count, press the stop/clear key. The indication for selecting a maintenance item No. appears.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U161</td><td>
Setting the fixing control temperature
Description
Changes the fixing control temperature.
Purpose
Normally no change is necessary. However, can be used to prevent curling or creasing of paper, or solve a fixing problem on thick paper.
Method
Press the start key. The screen for selecting an item is displayed.
Setting
1. Select the item to be set by lighting a copy exposure indicator using the copy exposure adjustment keys.
2. Change the setting using the zoom +/– keys.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1
Exp. 2
Exp. 3
Exp. 4</td><td>Primary stabilization fixing temperature
Secondary stabilization fixing temperature
Regular stabilization control temperature
Temperature to be deducted from the regular control temperature when copying onto small-sized paper.</td><td>115 to 145 (°C)
135 to 190 (°C)
145 to 220 (°C)
0 to 50 (°C)</td><td>135
160
180
0</td></tr>
</table>
The temperatures are to be set such that exp. 2 ≥ exp. 1.
3. Press the start key. The value is set.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U162</td><td>
Stabilizing fixing forcibly
Description
Stops the stabilization fixing drive forcibly, regardless of fixing temperature.
Purpose
To forcibly stabilize the machine before the fixing section reaches stabilization temperature.
Method
1. Press the start key. “on” appears.
2. Press the start key. The forced stabilization mode is entered, and stabilization operation stops regardless of fixing temperature. The indication for selecting a maintenance item No. appears.
To exit the forced stabilization mode, turn the power off and on.
Completion
To exit this maintenance item without executing forced fixing stabilization, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U163</td><td>
Resetting the fixing problem data
Description
Resets the detection of a service call code indicating a problem in the fixing section.
Purpose
To prevent accidents due to an abnormally high fixing temperature.
Method
1. Press the start key. “CLE” appears.
2. Press the start key. The fixing problem data is initialized.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U196</td><td>
Turning the fixing heater on
Description
Turns the fixing heater on.
Purpose
To check fixing heater.
Method
1. Press the start key. “on” appears.
2. Press the start key. The fixing heater turns on for 1 s and then turns off.
Completion
Press the stop/clear key when fixing heater is off. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U199</td><td>
Checking the fixing temperature
Description
Displays the fixing temperature and the ambient temperature.
Purpose
To check the fixing temperature and the ambient temperature.
Method
1. Press the start key.
2. Display each temperature by lighting the respective copy exposure indicator using the copy exposure adjustment keys.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th></tr>
<tr><td>Exp. 1
Exp. 2</td><td>Fixing temperature (°C)
Ambient temperature (°C)</td></tr>
</table>
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U200</td><td>
Turning all LEDs on
Description
Turns all the LEDs on the operation panel on.
Purpose
To check if all the LEDs on the operation panel light.
Method
Press the start key. All the LEDs on the operation panel light.
Press the stop/clear key or wait for 10 s. The LEDs turns off, and the indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U203</td><td>
Operating DF separately
Description
Simulates the original conveying operation separately in the optional DF.
Purpose
To check the DF.
Method
1. Press the start key.
2. Place an original in the DF if running this simulation with paper.
3. Select the item to be operated using the copy exposure adjustment keys.
<table>
<tr><th>Display (copy exposure indicator)</th><th>Operation</th></tr>
<tr><td>d-P (exp. 1)
d-n (exp. 2)</td><td>With paper, single-sided original
Without paper, single-sided original (continuous operation)</td></tr>
</table>
4. Press the start key. The operation starts.
5. To stop continuous operation, press the stop/clear key.
Completion
Press the stop/clear key when the operation stops. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U204</td><td>
Setting the presence or absence of a key card or key counter
Description
Sets the presence or absence of the optional key card or key counter.
Purpose
It is not necessary to run this maintenance item if a key card is installed on a 120 V specification machine. A key card is not available for 220 – 240 V specifications.
Method
Press the start key.
Setting
1. Select the optional counter to be installed using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>–––
C-1
C-2</td><td>None
The key card is installed
The key counter is installed</td></tr>
</table>
2. Press the start key. The setting is set and the indication for selecting a maintenance item No. appears.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U207</td><td>
Checking the operation panel keys
Description
Checks operation of the operation panel keys.
Purpose
To check operation of all the keys and LEDs on the operation panel.
Method
1. Press the start key.
2. “1” appears on the copy quantity display and the leftmost LED on the operation panel lights.
3. As the keys lined up in the same line as the lit indicator are pressed in the order from the top to the bottom, the figure shown on the copy quantity display increases in increments of 1. When all the keys in that line are pressed and if there are any LEDs corresponding to the keys in the line on the immediate right, the top LED in that line will light.
4. When all the keys on the operation panel have been pressed, all the LEDs light for up to 10 seconds.
5. When the LEDs go off, press the start key. All the LEDs light for 10 seconds again.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
• After checking numeric key 1, the operation cannot be canceled until all the keys are checked.
</td></tr>
<tr><td>U243</td><td>
Checking the operation of the DF motors
Description
Turns the motors in the optional DF on.
Purpose
To check the operation of the DF motors.
Method
1. Press the start key.
2. Select the motor to be operated using the copy exposure adjustment keys.
3. Press the start key. The operation starts.
<table>
<tr><th>Display (copy exposure indicator)</th><th>Motor</th></tr>
<tr><td>F-0 (exp. 1)
C-0 (exp. 2)</td><td>Original feed motor (OFM)
Original paper conveying motor (OCM)</td></tr>
</table>
4. To turn each motor off, press the stop/clear key.
Completion
Press the stop/clear key when operation stops. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

Maintenance item No.	Description
U244	**Checking the DF switches** **Description** Displays the status of the switches in the optional DF. **Purpose** To check if switches in the optional DF operate correctly. **Method** 1. Press the start key. 2. Manually turn on and off each switch to check the status. When the on-status of a switch is detected, the original size indicator or other LED corresponding to the operated switch on the operation panel lights.

LED	Switch
A3/11" × 17"	Original set switch (PI5)
A4R/8$^1/_2$" × 14"	Original size width switch B (PI4)
A4/8$^1/_2$" × 11"	Original size width switch C (PI3)
B4/LED below 8$^1/_2$" × 11"	Original size width switch D (PI2)
B5R/5$^1/_2$" × 8$^1/_2$"	Original size width switch E (PI1)
B5/11" × 8$^1/_2$"	DF timing switch (DFTSW)
Folio/11" × 15"	Original size length switch (OSLSW)
Maintenance indicator	DF safety switch 2 (DFSSW2)
Memory overflow indicator	DF safety switch 1 (DFSSW1)

Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.

U250 — **Setting the maintenance cycle**

Description
Displays and changes the maintenance cycle.

Purpose
To check and change the maintenance cycle.

Method
Press the start key. The current setting is displayed as follows:
Maintenance cycle (number of copies) = setting × 1000

Setting
1. Change the setting using the zoom +/– keys.

Description	Setting range	Initial setting	Change in value per step
Maintenance cycle	0 to 600	100	1000 (copies)

For example, when set to 120, the maintenance cycle is set to 120000.
2. Press the start key. The value is set, and the indication for selecting a maintenance item No. appears.

Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U251	**Checking/clearing the maintenance count** **Description** Displays, clears and changes the maintenance count. **Purpose** To check the maintenance count. Also to clear the count during maintenance service. **Method** 1. Press the start key. 2. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys. **Clearing** 1. Light exp. 3. 2. Press the start key. The count is cleared, and the indication for selecting a maintenance item No. appears. **Setting** 1. Change the count using the numeric or zoom +/– keys. 2. Press the start key. The count is set, and the indication for selecting a maintenance item No. appears. **Completion** To exit this maintenance item without changing the count, press the stop/clear key. The indication for selecting a maintenance item No. appears.
U252	**Setting the destination** **Description** Switches the operations and screens of the machine according to the destination. **Purpose** To be executed after replacing the backup RAM on the main PCB or initializing the backup RAM by running maintenance item U020, in order to return the setting to the value before replacement or initialization. **Method** Press the start key. **Setting** 1. Select the destination using the zoom +/– keys. 2. Press the start key. The setting is set, and the machine automatically returns to the same status as when the power is turned on. **Completion** To exit this maintenance item without changing the current count, press the stop/clear key. The indication for selecting a maintenance item No. appears. **Supplement** The specified initial settings are provided according to the destinations in the maintenance items below. To change the initial settings in those items, be sure to run maintenance item U021 after changing the destination. • Initial setting according to the destinations

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	First 3 digits	000 to 999	000
Exp. 2	Last 3 digits	000 to 999	000
Exp. 3	Clearing the count	———	———

Display	Description
JPn	Metric (Japan) specifications
Inc	Inch (North America) specifications
EUP	Metric (Europe) specifications
ASA	Metric (Asia Pacific) specifications

Maintenance item No.	Title	Japan	Inch	Europe Metric, Asia Pacific
253	Switching between double and single counts	Single	Double	Double
255	Setting auto clear time	120 s	90 s	90 s
348	Setting the copy density adjustment range	Normal	Special area	Special area

Maintenance item No.	Description
U253	**Switching between double and single counts** **Description** Switches the count system for the total counter and other counters. **Purpose** According to user (copy service provider) request, select if A3/11" × 17" paper is to be counted as one sheet (single count) or two sheets (double count). **Method** Press the start key. **Setting** 1. Select double or single count using the zoom +/– keys. Display: d-C — Description: Double count for A3/11" × 17" paper only Display: S-C — Description: Single count for all size paper Initial setting: Double count 2. Press the start key. The setting is set, and the indication for selecting a maintenance item No. appears. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
U254	**Turning auto start function on/off** **Description** Selects if the auto start function is turned on. **Purpose** Normally no change is necessary. If incorrect operation occurs, turn the function off: this may solve the problem. **Method** Press the start key. **Setting** 1. Select either “on” or “oFF” using the zoom +/– keys. Display: on — Description: Auto start function on Display: oFF — Description: Auto start function off Initial setting: on 2. Press the start key. The setting is set, and the indication for selecting a maintenance item No. appears. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U255</td><td>
Setting auto clear time
Description
Sets the time to return to initial settings after copying is complete.
Purpose
To be set according to frequency of use. Set to a comparatively long time for continuous copying at the same settings, and a comparatively short time for frequent copying at various settings.
Method
Press the start key. The current setting is displayed.
Setting
1. Change the setting using the zoom +/– keys.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Auto clear time</td><td>0 to 270</td><td>90</td></tr>
</table>
The setting can be changed by 30 s per step.
When set to 0, the auto clear function is cancelled.
2. Press the start key. The value is set, and the indication for selecting a maintenance item No. appears.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U256</td><td>
Turning auto preheat/energy saver function on/off
Description
Selects if the auto preheat/energy saver function is turned on. When set to ON, the time to enter preheat/energy saver mode can be changed in copy management mode.
Purpose
According to user request, to set the preheat time to save energy, or enable copying promptly without the recovery time from preheat mode.
Method
Press the start key.
Setting
1. Select “on” or “oFF” using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>on
oFF</td><td>Auto preheat/energy saver function on
Auto preheat/energy saver function off</td></tr>
</table>
Initial setting: on
2. Press the start key. The setting is set, and the indication for selecting a maintenance item No. appears. When the setting is changed from “oFF” to “on”, the auto preheat time is set to the initial setting of 15 minutes.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

Maintenance item No.	Description
U258	**Switching copy operation at toner empty detection** **Description** Selects if continuous copying is enabled after toner empty is detected, and sets the number of copies that can be made after the detection. **Method** Press the start key. The current setting is displayed. **Start** 1. Press the start key. A selection item appears. 2. Select the item by lighting image mode LEDs using the image mode selection key.

Image mode LEDs		Description
○ ○ ○ ●	○ Auto Exposure ○ Text & Photo ○ Photo ● Text	Switching copy operation at toner empty detection between single or continuous copying
○ ○ ● ●	○ Auto Exposure ○ Text & Photo ● Photo ● Text	Setting the number of copies after toner empty detection

○ : Off, ● : On

Setting copy operation at toner empty detection between single and continuous copying

1. Select single or continuous copying using the zoom +/– keys.

Display	Description
Sin	Enables only single copying.
Con	Enables single and continuous copying.

Initial setting: Sin

2. Press the start key. The setting is set.

Setting the number of copies after toner empty detection

1. Set the number of copies that can be made using the zoom +/– keys.

Description	Setting range	Initial setting
Number of copies after toner empty detection	0 to 200 (copies)	70

The setting can be changed by 5 copies per step.
When set to 0, the number of copies is not limited regardless of the setting for single or continuous copying.

2. Press the start key.

Completion

Press the stop/clear key while a selection item is displayed. The indication for selecting a maintenance item No. appears.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U260</td><td>
Changing the copy count timing
Description
Changes the copy count timing for the total counter and other counters.
Purpose
To be set according to user (copy service provider) request.
If a paper jam occurs frequently in the eject section when the number of copies is counted at the time of paper ejection, copies are provided without copy counts. The copy service provider cannot charge for such copying. To prevent this, the copy timing should be made earlier.
If a paper jam occurs frequently in the paper conveying or fixing sections when the number of copies is counted before the paper reaches those sections, copying is charged without a copy being made. To prevent this, the copy timing should be made later.
Method
Press the start key.
Setting
1. Select the copy count timing using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FEd
EJE</td><td>When secondary paper feed starts
When the paper is ejected</td></tr>
</table>
Initial setting: EJE
2. Press the start key. The setting is set, and the indication for selecting a maintenance item No. appears.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U265</td><td>
Setting the destination specifications
Description
Sets whether or not to print the product name on the reports that users print.
Purpose
To be set according to user request.
Method
Press the start key. The current setting appears.
Setting
1. Enter “0” or “2” using the numeric or zoom +/– keys.
<table>
<tr><th>Setting</th><th>Description</th></tr>
<tr><td>0
2</td><td>Product name printed
Product name not printed</td></tr>
</table>
Initial setting: 0
2. Press the start key. The setting is set.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

Maintenance item No.	Description
U332	**Setting the size conversion factor**

Description

Sets the factor for converting each paper size into A4/11" × 8 1/2". The black ratio is converted for the A4/11" × 8 1/2" size using the factor set in this maintenance item. Values set are displayed in the user simulation.

Purpose

To set the factor to convert the black ratio of each paper size for A4/11" × 8 1/2" size.

Method

1. Press the start key.
2. Select copier or printer mode by lighting image mode LEDs using the image mode selection key.
3. Select the paper size to be set by lighting a copy exposure indicator or making one flash using the copy exposure adjustment keys.

Metric specifications

Image mode LEDs	Copy exposure indicator	Paper size	Setting range	Initial setting
Setting for the copier mode ○  ○ ○ ●	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit) Exp. 5 (lit) Exp. 1 (flashing) Exp. 2 (flashing) Exp. 3 (flashing) Exp. 4 (flashing) Exp. 5 (flashing)	A3 B4 A4 B5 A5 B6 A6 Postcard Folio Non-standard	0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0	2.0 1.5 1.0 0.7 0.5 0.5 0.5 0.5 1.5 1.0
Setting for the printer mode ○ ○ ● ●	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit) Exp. 5 (lit) Exp. 1 (flashing) Exp. 2 (flashing) Exp. 3 (flashing) Exp. 4 (flashing) Exp. 5 (flashing)	A3 B4 A4 B5 A5 B6 A6 Postcard Folio Non-standard	0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0	2.0 1.5 1.0 0.7 0.5 0.5 0.5 0.5 1.5 1.0

○ : Off, ● : On

Inch specifications

Image mode LEDs	Copy exposure indicator	Paper size	Setting range	Initial setting
Setting for the copier mode ○ Auto Exposure ○ Text & Photo ○ Photo ● Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit) Exp. 5 (lit)	11" × 17" 8 1/2" × 14" 8 1/2" × 11" 5 1/2" × 8 1/2" Non-standard	0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0	2.0 1.5 1.0 0.5 1.0
Setting for the printer mode ○ Auto Exposure ○ Text & Photo ● Photo ● Text	Exp. 1 (lit) Exp. 2 (lit) Exp. 3 (lit) Exp. 4 (lit) Exp. 5 (lit)	11" × 17" 8 1/2" × 14" 8 1/2" × 11" 5 1/2" × 8 1/2" Non-standard	0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0 0.0 to 3.0	2.0 1.5 1.0 0.5 1.0

○ : Off, ● : On

4. Change the setting using the zoom +/– keys.
5. Press the start key. The value is set.

Completion

To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U342	**Setting the ejection restriction** **Description** Sets or cancels the restriction on the number of sheets to be ejected continuously when the internal eject tray is selected as the eject location. When the restriction is set, the number of sheets that can be ejected continuously to the internal eject tray will be limited as shown below.

	No. of sheets to be ejected to the internal eject tray
When the job separator is not installed	250
When the job separator is installed	150

Purpose
According to user request, sets or cancels restriction on the number of sheets.

Method
Press the start key.

Setting
1. Select “on” or “oFF” using the zoom +/– keys.

Display	Description
on	The number of sheets restricted.
oFF	The number of sheets not restricted.

Initial setting: on
2. Press the start key. The setting is set. The indication for selecting a maintenance item No. appears.

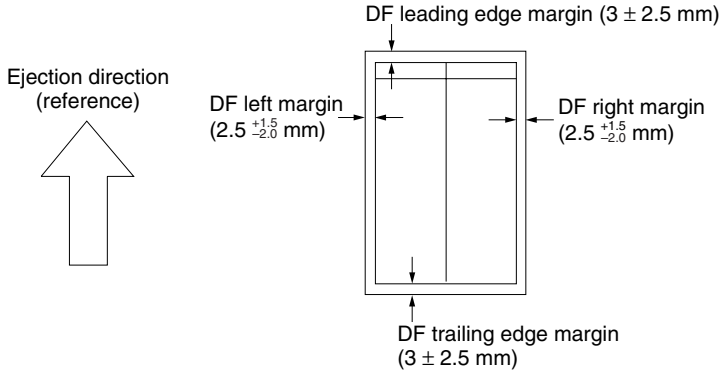
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U344	**Setting preheat/energy saver mode** **Description** Changes the control for preheat/energy saver mode. **Purpose** According to user request, selects which has priority, the recovery time from preheat or energy saver. **Method** Press the start key. **Setting** 1. Select control mode using the zoom +/– keys. Initial setting: Energy star 2. Press the start key. The setting is set, and the indication for selecting a maintenance item No. appears. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
U345	**Setting the value for maintenance due indication** **Description** Sets when to indicate that the time for maintenance is about to be reached, by setting the number of copies that can be made before the current maintenance cycle ends. When the difference between the number of copies of the maintenance cycle and that of the maintenance count reaches the set value, the maintenance indicator flashes. **Purpose** To change the time to display the maintenance due indication. **Method** Press the start key. The current setting is displayed. **Setting** 1. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys. 2. Change the setting value using the numeric or zoom +/– keys. 3. Press the start key. The setting is set, and the indication for selecting a maintenance item No. appears. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.

Display	Control in preheat mode
InS (instant ready)	Without decreasing the fixing control temperature, the display on the operation panel is turned off.
ESr (energy star)	The fixing control temperature is set at 70°C/158°F. The copier is forcibly stabilized 30 s after exiting preheat/energy saver mode.
Prh (priority to recovery time)	The fixing control temperature is set at 130°C/266°F.

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	First digit	0 to 9	0
Exp. 2	Last 3 digits	000 to 999	000

Maintenance item No.	Description
U348	**Setting the copy density adjustment range** **Description** Selects the adjustment range for copy density from NORMAL and SPECIAL AREA (for wider range). **Purpose** To change the setting according to user request. When especially dark or light density is requested, set to SPECIAL AREA. **Method** Press the start key. **Setting** 1. Select the density range using the zoom +/– keys. Display: SPC (special area) / nrL (normal) — Description: 11/15 steps (enlargement mode) / 5/9 steps Initial setting: Normal 2. Press the start key. The setting is set, and the indication for selecting a maintenance item No. appears. **Completion** To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
U402	**Adjusting margins of image printing** **Adjustment** See page 1-6-15.
U403	**Adjusting margins for scanning an original on the contact glass** **Adjustment** See page 1-6-38.
U404	**Adjusting margins for scanning an original from the DF** **Description** Adjusts margins for scanning the original from the DF. **Purpose** Used if margins are not correct when the optional DF is used. **Caution** Before making this adjustment, ensure that the following adjustments have been made in maintenance mode. U402 → U403 → U404 **Method** Press the start key. The screen for selecting an item is displayed. **Setting** 1. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys. 2. Change the setting using the zoom +/– keys. Copy exposure indicator / Description / Setting range / Initial setting / Change in value per step: Exp. 1 / Left margin / 0.0 to +10.0 / 2 / 0.5 mm Exp. 2 / Leading edge margin / 0.0 to +10.0 / 3 / 0.5 mm Exp. 3 / Right margin / 0.0 to +10.0 / 2 / 0.5 mm Exp. 4 / Trailing edge margin / 0.0 to +10.0 / 2 / 0.5 mm Increasing the setting makes the margin wider, and decreasing it makes the margin narrower.

Maintenance item No.	Description
U404 (cont.)	 **Figure 1-4-14 Correct margin amount** 3. Press the start key. The value is set. **Interrupt copy mode** While this maintenance item is being performed, copying from an original can be made in interrupt copy mode. **Completion** Press the stop/clear key while a selection item is displayed. The indication for selecting a maintenance item No. appears.
U407	**Adjusting the leading edge registration for memory image printing** **Adjustment** See page 1-6-12.

Maintenance item No.	Description
U901	**Checking/clearing copy counts by paper feed locations**

Description
Displays or clears copy counts by paper feed locations.

Purpose
To check the time to replace consumable parts. Also to clear the counts after replacing the consumable parts.

Method
1. Press the start key.
2. Select the paper feed location (group No.) for which the count is to be checked or cleared by lighting image mode LEDs using the image mode selection key.
3. Change the indication of the copy quantity display by lighting a copy exposure indicator using the copy exposure adjustment keys.

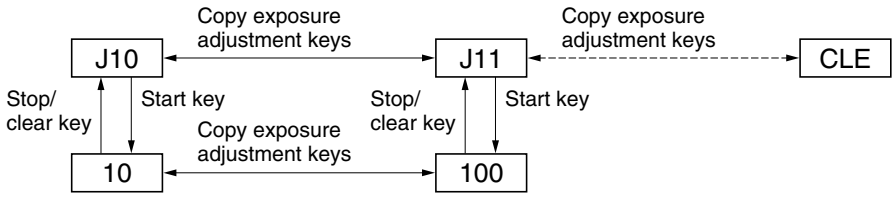
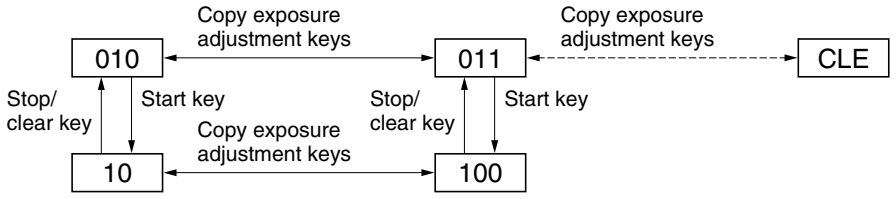
Image mode LED (group No.)			Copy exposure indicator	Copy quantity display (count value)
1	○ Auto Exposure ○ Text & Photo ○ Photo ● Text		Exp. 1 Exp. 2 Exp. 3	First 3 digits of bypass copy count Last 3 digits of bypass copy count Clearing the count (CLE)
2	○ Auto Exposure ○ Text & Photo ● Photo ● Text		Exp. 1 Exp. 2 Exp. 3	First 3 digits of paper source 1 copy count Last 3 digits of paper source 1 copy count Clearing the count (CLE)
3	○ Auto Exposure ● Text & Photo ● Photo ● Text		Exp. 1 Exp. 2 Exp. 3	First 3 digits of paper source 2* copy count Last 3 digits of paper source 2* copy count Clearing the count (CLE)
4	● Auto Exposure ● Text & Photo ● Photo ● Text		Exp. 1 Exp. 2 Exp. 3	First 3 digits of paper source 3* copy count Last 3 digits of paper source 3* copy count Clearing the count (CLE)
5	● Auto Exposure ● Text & Photo ● Photo ☼ Text		Exp. 1 Exp. 2 Exp. 3	First 3 digits of paper source 4* copy count Last 3 digits of paper source 4* copy count Clearing the count (CLE)
6	● Auto Exposure ● Text & Photo ☼ Photo ☼ Text		Exp. 1	Clearing all counts (CLE)

○ : Off, ● : On, ☼: Flashing
* Optional
Note: When no optional paper feed device is installed, the counts corresponding to optional paper feed devices will not appear.

Clearing copy counts by paper feed locations
1. Select the paper feed location to clear the count.
2. Light exp. 3 using the copy exposure adjustment key.
3. Press the start key. The count is cleared.

Clearing copy counts for all paper feed locations
1. Select group 6.
2. Press the start key. The counts are cleared.

Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U903	**Checking/clearing the paper jam counts** **Description** Displays or clears the jam counts by jam locations. **Purpose** To check the paper jam status. Also to clear the jam counts after replacing consumable parts. **Method** 1. Press the start key. 2. Display the jam code to check the count using the copy exposure adjustment keys. 3. Press the start key. The jam count appears. If the jam count is a 4-digit value, the first digit and the last 3 digits are displayed alternately. 4. Press the stop/clear key. The jam code appears again.  **Figure 1-4-15** **Clearing all jam counts** 1. Display “CLE” using the copy exposure adjustment keys. Jam counts cannot be cleared individually. 2. Press the start key. The counts are cleared. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.
U904	**Checking/clearing the service call counts** **Description** Displays or clears the service call code counts by types. **Purpose** To check the service call code status by types. Also to clear the service call code counts after replacing consumable parts. **Method** 1. Press the start key. 2. Display the service call code to check the count using the copy exposure adjustment keys. 3. Press the start key. The service call count appears. If the service call count is a 4-digit value, the first digit and the last 3 digits are displayed alternately. 4. Press the stop/clear key. The service call code appears again.  **Figure 1-4-16** **Clearing counts by service call codes** 1. Display the service call code to clear the count. 2. Press the reset key. The count is cleared. **Clearing all service call counts** 1. Display “CLE” using the copy exposure adjustment keys. 2. Press the start key. The counts are cleared. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U905	**Checking/clearing counts by optional devices** **Description** Displays or clears the counts of the optional DF. **Purpose** To check the use of the DF. Also to clear the counts after replacing consumable parts. **Method** 1. Press the start key. 2. Select the count (group No.) to be checked or cleared by lighting image mode LEDs using the image mode selection key. 3. Change the indication of the copy quantity display by lighting a copy exposure indicator using the copy exposure adjustment keys.

Image mode LED (group No.)			Copy exposure indicator	Copy quantity display (count value)
1	○ Auto Exposure ○ Text & Photo ○ Photo ● Text		Exp. 1 Exp. 2 Exp. 3	First 3 digits of the number of original replacement Last 3 digits of the number of original replacement Clearing the count (CLE)
2	○ Auto Exposure ○ Text & Photo ● Photo ● Text		Exp. 1 Exp. 2 Exp. 3	First 3 digits of the single-sided original feed count Last 3 digits of the single-sided original feed count Clearing the count (CLE)

○ : Off, ● : On

Clearing
1. Select the count to be cleared.
2. Light exp. 3 using the copy exposure adjustment keys.
3. Press the start key. The count is cleared.

Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.

U906	**Resetting partial operation control** **Description** Resets the service call code for partial operation control. **Purpose** To be reset after partial operation is performed due to problems in the drawers or other sections, and the related parts are serviced. **Method** 1. Press the start key. 2. Select “on” using the zoom +/– keys.

Display	Operation
–––	Canceling the resetting
on	Executing the resetting

3. Press the start key to reset partial operation control. The maintenance mode is exited, and the machine returns to the same status as when the main switch is turned on.

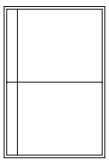
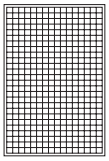
<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U910</td><td>
Clearing the black ratio data
Description
Clears the accumulated black ratio data for A4/11" × 8 1/2" sheets.
Purpose
To clear data as required at times such as during maintenance service.
Method
1. Press the start key.
2. Select “on” using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>– – –
on</td><td>Canceling the clearing
Executing the clearing</td></tr>
</table>
3. Press the start key. The accumulated black ratio data is cleared.
Completion
To exit this maintenance item without clearing the data, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U917</td><td>
Setting the reading/writing of backup data
Description
Selects whether to read out the backup data on the main PCB to the NVRAM on the memory tool PCB or to write backup data on the NVRAM on the memory tool PCB to the main PCB.
When the memory is initialized (maintenance items U020, U021, U022 and U252), this is set to read out the backup data from the main PCB to the NVRAM on the memory tool PCB. To write the backup data to the main PCB from the NVRAM on the memory tool PCB, change the setting before starting writing.
Purpose
Used when replacing the main PCB.
Method
1. Press the start key.
2. Select “rd” or “rE” using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>rd
rE</td><td>Reading out the backup data
Writing the backup data</td></tr>
</table>
3. Press the start key.
Completion
To exit this maintenance item without changing the current setting, press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
</table>

Maintenance item No.	Description
U990	**Checking/clearing the time for the exposure lamp to light** **Description** Displays or clears the accumulated time for the exposure lamp to light. **Purpose** To check duration of use of the exposure lamp. Also to clear the accumulated time for the lamp after replacement. **Method** 1. Press the start key. 2. Change the indication of the copy quantity display by lighting a copy exposure indicator using the copy exposure adjustment keys. **Clearing** 1. Light exp. 3. 2. Press the start key. The accumulated time is cleared, and the indication for selecting a maintenance item No. appears. **Completion** To exit this maintenance item without changing the accumulated time, press the stop/clear key. The indication for selecting a maintenance item No. appears.
U992	**Checking or clearing the printer count** **Description** Displays, clears or changes the print count of the printer function when the optional printer board is installed. **Purpose** To check the use of the printer function. **Method** 1. Press the start key. 2. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys. **Clearing** 1. Light exp. 3. 2. Press the start key. The value is cleared and the indication for selecting a maintenance item No. appears. **Setting** 1. Change the count using the numeric or zoom +/– keys. 2. Press the start key. The value is set and the indication for selecting a maintenance item No. appears. **Completion** Press the stop/clear key. The indication for selecting a maintenance item No. appears.

Copy exposure indicator	Copy quantity display
Exp. 1	First 3 digits of the lamp-on time (minutes)
Exp. 2	Last 3 digits of the lamp-on time (minutes)
Exp. 3	Clearing the lamp-on time (CLE)

Copy exposure indicator	Description	Setting range	Initial setting
Exp. 1	First 3 digits	000 to 999	000
Exp. 2	Last 3 digits	000 to 999	000
Exp. 3	Clearing the count	———	———

Maintenance item No.	Description
U993	**Outputting a VTC-PG pattern** **Description** Selects and outputs a VTC-PG pattern created in the copier. **Purpose** When performing respective image printing adjustments, used to check the machine status apart from that of the scanner with a non-scanned output VTC-PG pattern. **Method** 1. Press the start key. 2. Select the VTC-PG pattern to be output using the copy exposure adjustment keys.

Display	PG pattern to be output	Purpose
0		• Center line adjustment
1		• Lateral squareness adjustment • Magnification adjustment
2		• Checking the fixing performance (fixing pressure)

3. Press the interrupt key. The machine enters the PG pattern output mode.
4. Press the start key. A VTC-PG pattern is output.

Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.

Maintenance item No.	Description
U998	**Outputting the memory list** **Description** Outputs the list of memory. **Purpose** To output the list as required. **Method** Press the start key. **Entering the address** 1. Select the item by lighting a copy exposure indicator using the copy exposure adjustment keys.

Copy exposure indicator	Description	Setting range
Exp. 1	Bit 16 to bit 23 of the address	00 to FF
Exp. 2	Bit 8 to bit 15 of the address	00 to FF
Exp. 3	Bit 0 to bit 7 of the address	00 to FF

2. Enter the address in hexadecimal using the keys listed below.

Key	Character
Numeric keys	0 to 9
Printer key	A
Transparency key	B
Margin key	C
Book erase key	D
Border erase key	E
Layout key	F

3. Press the start key. The address is set.

Printing the list

1. Press the interrupt key. The machine enters the list output mode.
2. Press the start key. The list is printed.

Completion

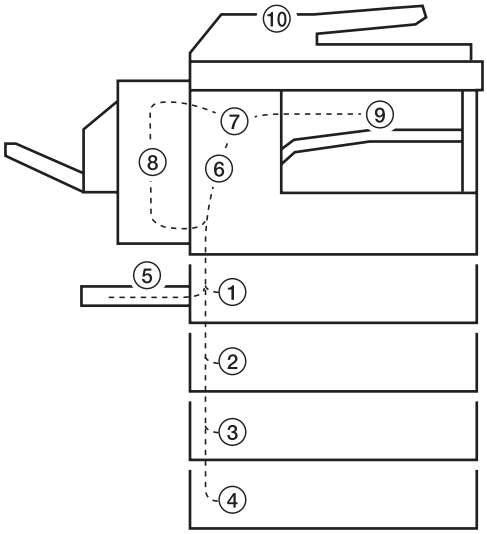
Press the stop/clear key. The indication for selecting a maintenance item No. appears.

1-5-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper misfeed occurs, the copier immediately stops copying and displays the jam location on the operation panel.
Paper misfeed counts sorted by the detection condition can be checked in maintenance item U903.
To remove paper jammed in the copier, open the front cover, paper conveying unit or drawer.
Paper misfeed detection can be reset by opening and closing the respective covers to turn safety switch 1, 2 or 3* off and on.
*Standard for 20 cpm copier/optional for 15 cpm copier.

• 20 cpm copier

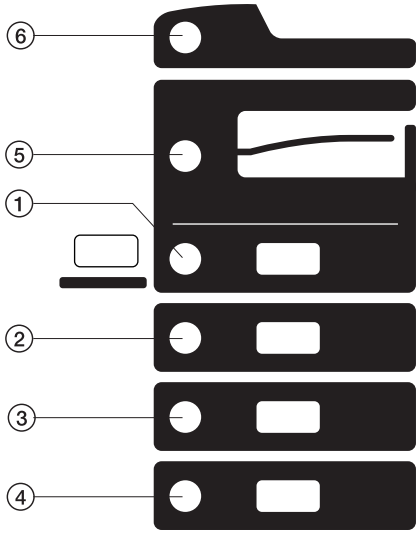


① Upper drawer
② Lower drawer
③ Optional drawer 1*
④ Optional drawer 2*
⑤ Bypass tray
⑥ Paper conveying section
⑦ Feedshift section
⑧ Duplex unit*
⑨ Inner tray
⑩ STDF*/SRDF*

*Optional.

Figure 1-5-1

• 15 cpm copier



① Upper drawer
② Lower drawer*
③ Optional drawer 1*
④ Optional drawer 2*
⑤ Paper conveying section
⑥ STDF*

*Optional.

Figure 1-5-2

Jam code	Contents	See pape
10	No paper feed from copier upper drawer	P.1-5-4
11	No paper feed from copier lower drawer	P.1-5-4
12	No paper feed from first optional drawer	P.1-5-4
13	No paper feed from second optional drawer	P.1-5-4
14	No paper feed from bypass	P.1-5-4
15	Misfeed in copier vertical paper conveying section	P.1-5-5
16	Misfeed in drawer vertical paper conveying section	P.1-5-5
20	Multiple sheets in copier paper feed section	P.1-5-5
21	Multiple sheets in copier vertical paper conveying section	P.1-5-6
22	Multiple sheets in bypass tray	P.1-5-6
30	Misfeed in registration/transfer section	P.1-5-6
40	Misfeed in fixing section	P.1-5-6
50	Misfeed in eject section	P.1-5-7
51	Jam in job separator eject section (job separator)	——
51	Jam in feedshift section (duplex unit/finisher)	——
60	Jam in duplex paper conveying section 1 (duplex unit/finisher)	——
61	Jam in duplex paper conveying section 2 (duplex unit/finisher)	——
70	No original feed (STDF/SRDF)	——
71	An original jam in the original feed and conveying section 1 (SRDF)	——
72	An original jam in the original feed and conveying section 2 (SRDF)	——
73	An original jam in the original feed and conveying section (STDF)	——
73	An original jam in the original conveying section (SRDF)	——
74	An original jam remaining after retries (SRDF)	——
75	An original jam in the switchback section 1 (SRDF)	——
76	An original jam in the switchback section 2 (SRDF)	——
80	Jam between the finisher and copier (finisher)	——
81	Jam during batch ejection stanby (finisher)	——
82	Jam during paper conveying for batch ejection 1 (finisher)	——
83	Jam during paper conveying for batch ejection 2 (finisher)	——

(2) Paper misfeed detection conditions

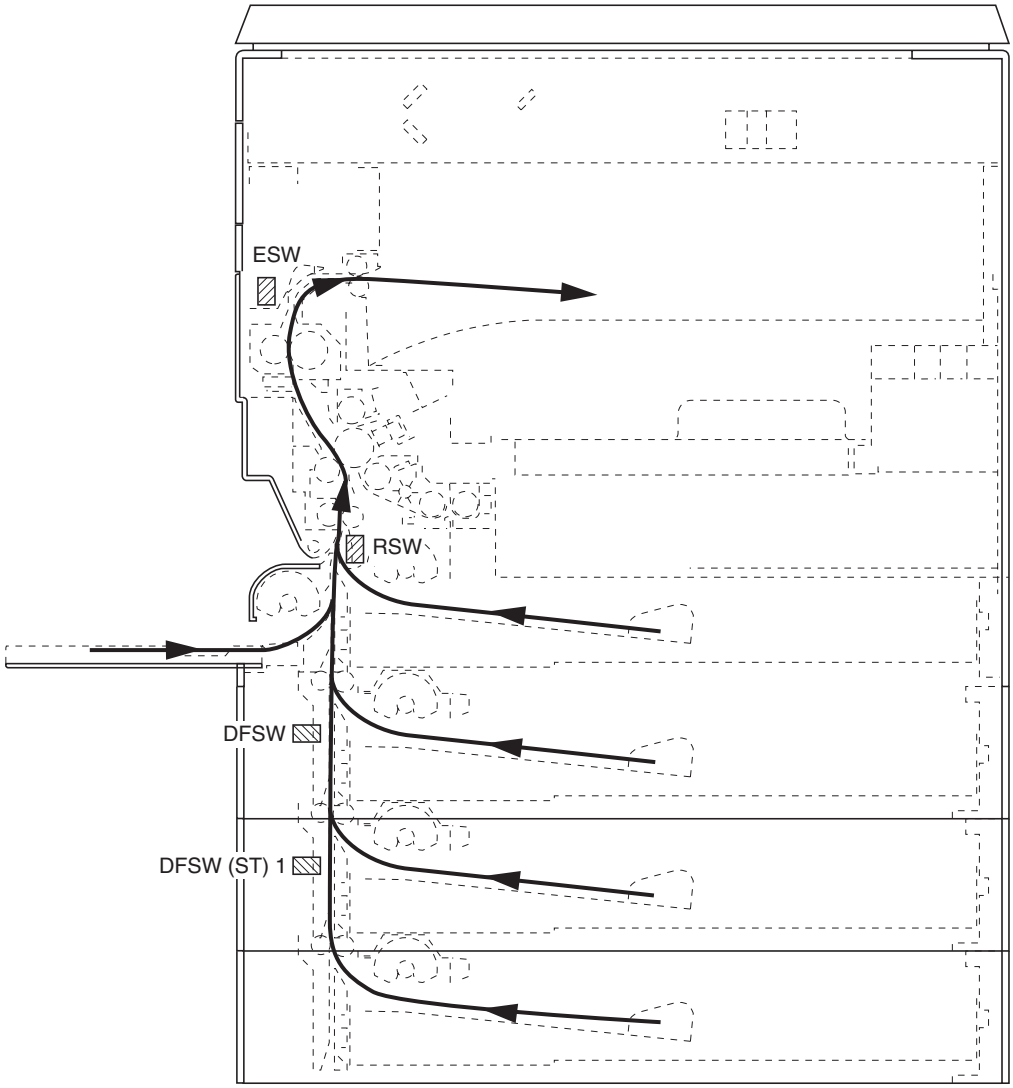


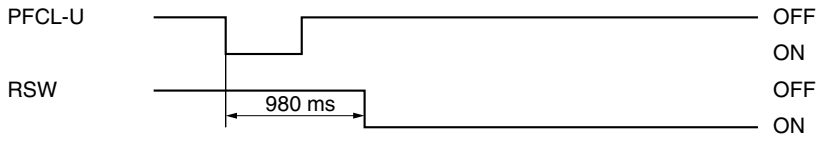
Figure 1-5-3

1. Jam at power-on

• One or more of the switches in the paper feed conveying system is on when the main switch is turned on (jam code 00).

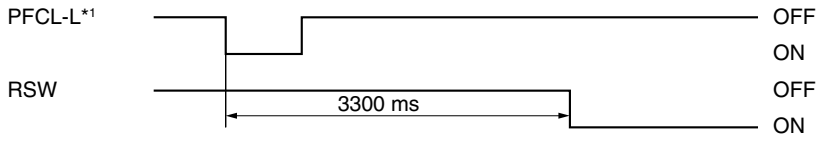
2. Paper feed section

• No paper feed from copier upper drawer (jam code 10)
The registration switch (RSW) does not turn on within 980 ms of the upper paper feed clutch (PFCL-U) turning on.



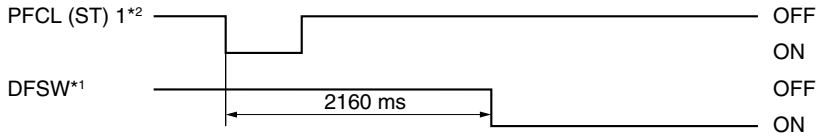
Timing chart 1-5-1

• No paper feed from copier lower drawer*1 (jam code 11)
The registration switch (RSW) does not turn on within 3300 ms of the lower paper feed clutch*1 (PFCL-L) turning on.



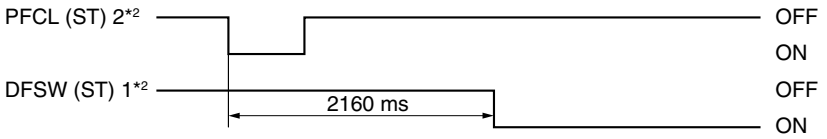
Timing chart 1-5-2

• No paper feed from first optional drawer (jam code 12)
Drawer feed switch*1 (DFSW) does not turn on within 2160 ms of paper feed clutch (ST) 1*2 (PFCL (ST) 1) turning on.



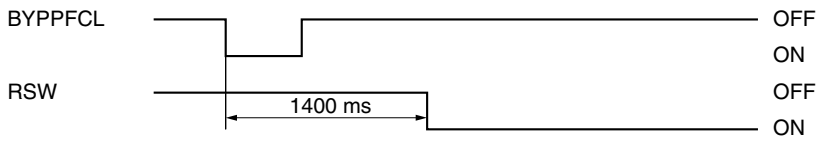
Timing chart 1-5-3

• No paper feed from second optional drawer (jam code 13)
Drawer feed switch (ST) 1*2 (DFSW (ST) 1) does not turn on within 2160 ms of paper feed clutch (ST) 2*2 (PFCL (ST) 2) turning on.



Timing chart 1-5-4

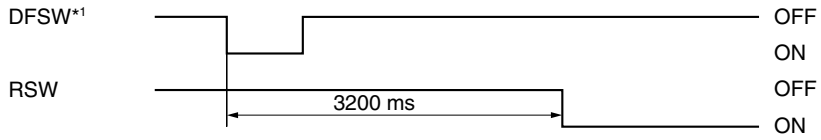
• No paper feed from bypass (jam code 14)
The registration switch (RSW) does not turn on within 1400 ms of the bypass paper feed clutch (BYPPFCL) turning on.



Timing chart 1-5-5

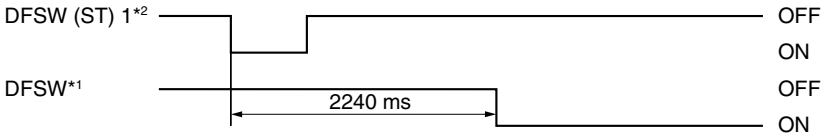
*1: Standard for 20 cpm copier/optional for 15 cpm copier. *2: Optional for both 20 cpm and 15 cpm copiers.

• Misfeed in copier vertical paper conveying section (jam code 15)
The registration switch (RSW) does not turn on within 3200 ms of the drawer feed switch*1 (DFSW) turning on (when paper is fed from optional drawer 1).



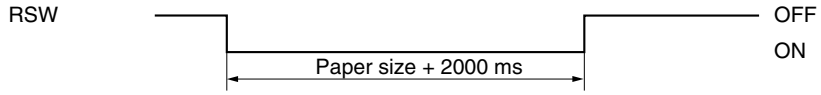
Timing chart 1-5-6

• Misfeed in drawer vertical paper conveying section (jam code 16)
Drawer feed switch*1 (DFSW) does not turn on within 2240 ms of drawer feed switch (ST) 1*2 (DFSW (ST) 1) turning on (when paper is fed from optional drawer 2).



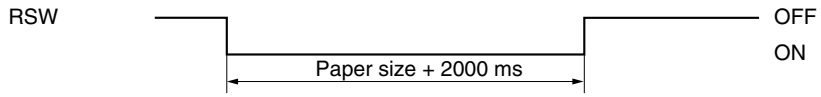
Timing chart 1-5-7

• Multiple sheets in copier paper feed section (jam code 20)
The registration switch (RSW) does not turn off within the time required to convey the length of the used paper size plus 2000 ms of turning on (when paper is fed from the upper drawer).



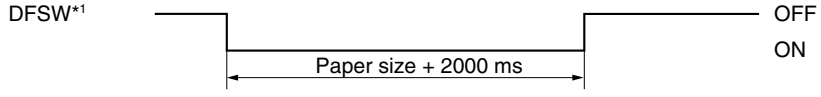
Timing chart 1-5-8

The registration switch (RSW) does not turn off within the time required to convey the length of the used paper size plus 2000 ms of turning on (when paper is fed from the lower drawer*1).



Timing chart 1-5-9

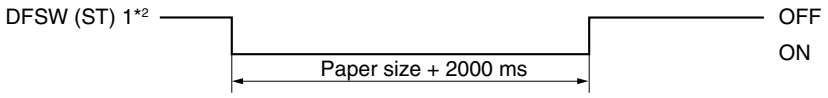
Drawer feed switch*1 (DFSW) does not turn off within the time required to convey the length of the used paper size plus 2000 ms of turning on (when paper is fed from optional drawer 1).



Timing chart 1-5-10

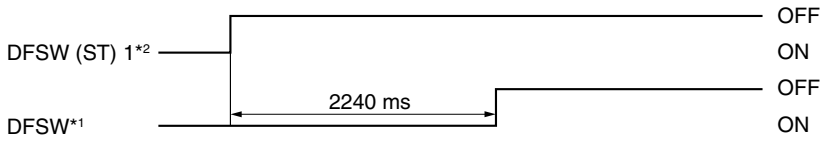
*1: Standard for 20 cpm copier/optional for 15 cpm copier. *2: Optional for both 20 cpm and 15 cpm copiers.

Drawer feed switch (ST) 1*2 (DFSW (ST) 1) does not turn off within the time required to convey the length of the used paper size plus 2000 ms of turning on (when paper is fed from optional drawer 2).



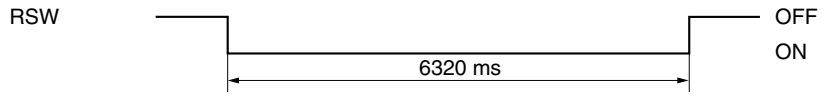
Timing chart 1-5-11

• Multiple sheets in copier vertical paper conveying section (jam code 21)
Drawer feed switch*1 (DFSW) does not turn off within 2240 ms of drawer feed switch (ST) 1*2 (DFSW (ST) 1) turning off (when paper is fed from optional drawer 2).



Timing chart 1-5-12

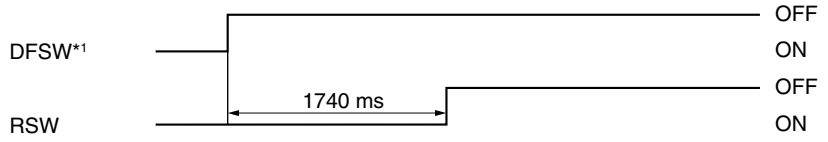
• Multiple sheets in bypass tray (jam code 22)
The registration switch (RSW) does not turn off within 6320 ms of turning on (when paper is fed from the bypass tray).



Timing chart 1-5-13

3. Paper conveying section

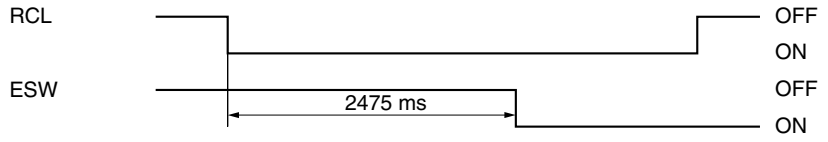
• Misfeed in registration/transfer section (jam code 30)
The registration switch (RSW) does not turn off within 1740 ms of drawer feed switch*1 (DFSW) turning off (when paper is fed from optional drawer 1 or 2).



Timing chart 1-5-14

4. Fixing section

• Misfeed in fixing section
The eject switch (ESW) does not turn off within 2475 ms of the registration clutch (RCL) turning on.



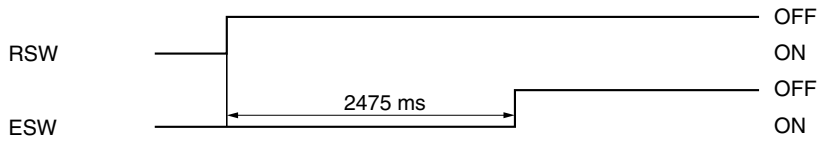
Timing chart 1-5-15

*1: Standard for 20 cpm copier/optional for 15 cpm copier. *2: Optional for both 20 cpm and 15 cpm copiers.

5. Eject section

• Misfeed in eject section

The eject switch (ESW) does not turn off within 2475 ms of the registration switch (RSW) turning off.



Timing chart 1-5-16

(3) Paper misfeeds

Problem	Causes/check procedures	Corrective measures
(1) A paper jam in the paper feed, conveying, fixing or eject section is indicated as soon as the main switch is turned on.	A piece of paper torn from copy paper is caught around the registration switch, the drawer feed switch*1, drawer feed switch (ST) 1*2 or the eject switch.	Check visually and remove any found.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
	Defective drawer feed switch*1.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-23 on the main PCB remains low when the drawer feed switch*1 is turned on and off. If it does, replace the drawer feed switch*1.
	Defective drawer feed switch (ST) 1*2.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-24 on the main PCB remains low when drawer feed switch (ST) 1*2 is turned on and off. If it does, replace drawer feed switch (ST) 1*2.
	Defective eject switch.	With 5 V DC present at CN12-7 on the main PCB, check if CN12-6 on the main PCB remains low when the eject switch is turned on and off. If it does, replace the eject switch.
(2) A paper jam in the paper feed section is indicated during copying (no paper feed from copier upper drawer).	Paper in the upper drawer is extremely curled.	Change the paper.
	Check if the upper paper feed pulleys are deformed.	Check visually and replace the pulleys if deformed. (see page 1-6-3).
	Broken registration switch actuator.	Check visually and replace the registration switch if its actuator is broken.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
	Check if the upper paper feed clutch malfunctions.	Check and remedy if necessary.
	Electrical problem with the upper paper feed clutch.	Check (see page 1-5-26).
(3) A paper jam in the paper feed section is indicated during copying (no paper feed from copier lower drawer*1).	Paper in the lower drawer*1 is extremely curled.	Change the paper.
	Check if the lower paper feed pulleys*1 are deformed.	Check visually and replace the pulleys if deformed (see page 1-6-5).
	Broken registration switch actuator.	Check visually and replace the registration switch if its actuator is broken.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
	Check if the lower paper feed clutch*1 malfunctions.	Check and remedy if necessary.
	Electrical problem with the lower paper feed clutch*1.	Check (see page 1-5-26).

*1: Standard for 20 cpm copier/optional for 15 cpm copier. *2: Optional for both 20 cpm and 15 cpm copiers.

Problem	Causes/check procedures	Corrective measures
(4) A paper jam in the paper feed section is indicated during copying (no paper feed from optional drawer 1*2).	Paper in optional drawer 1*2 is extremely curled.	Change the paper.
	Check if the paper feed pulleys of optional drawer 1*2 are deformed.	Check visually and replace the pulleys if deformed.
	Broken drawer feed switch*1 actuator.	Check visually and replace the drawer feed switch*1 if its actuator is broken.
	Defective drawer feed switch*1.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-23 on the main PCB remains low when the drawer feed switch*1 is turned on and off. If it does, replace the drawer feed switch*1.
	Check if paper feed clutch (ST) 1*2 malfunctions.	Check and remedy if necessary.
	Electrical problem with paper feed clutch (ST) 1*2.	Check (see page 1-5-26).
(5) A paper jam in the paper feed section is indicated during copying (no paper feed from optional drawer 2*2).	Paper in optional drawer 2*2 is extremely curled.	Change the paper.
	Check if the paper feed pulleys of optional drawer 2*2 are deformed.	Check visually and replace the pulleys if deformed.
	Broken drawer feed switch (ST) 1*2 actuator.	Check visually and replace drawer feed switch (ST) 1*2 if its actuator is broken.
	Defective drawer feed switch (ST) 1*2.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-24 on the main PCB remains low when drawer feed switch (ST) 1*2 is turned on and off. If it does, replace drawer feed switch (ST) 1*2.
	Check if paper feed clutch (ST) 2*2 malfunctions.	Check and remedy if necessary.
	Electrical problem with paper feed clutch (ST) 2*2.	Check (see page 1-5-26).
(6) A paper jam in the paper feed section is indicated during copying (no paper feed from bypass).	Paper in the bypass tray is extremely curled.	Change the paper.
	Check if the bypass paper feed pulleys are deformed.	Check visually and replace the pulleys if deformed (see page 1-6-6).
	Broken registration switch actuator.	Check visually and replace the registration switch if its actuator is broken.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If not, replace the registration switch.
	Check if the bypass paper feed clutch malfunctions.	Check and remedy if necessary.
	Electrical problem with the bypass paper feed clutch.	Check (see page 1-5-26).

*1: Standard for 20 cpm copier/optional for 15 cpm copier. *2: Optional for both 20 cpm and 15 cpm copiers.

Problem	Causes/check procedures	Corrective measures
(7) A paper jam in the paper feed section is indicated during copying (jam in copier vertical paper conveying section).	Broken drawer feed switch*1 actuator.	Check visually and replace the drawer feed switch*1 if its actuator is broken.
	Defective drawer feed switch*1.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-23 on the main PCB remains low when the drawer feed switch*1 is turned on and off. If it does, replace the drawer feed switch*1.
	Broken registration switch actuator.	Check visually and replace the registration switch if its actuator is broken.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
(8) A paper jam in the paper feed section is indicated during copying (jam in drawer vertical paper conveying section).	Broken drawer feed switch (ST) 1*2 actuator.	Check visually and replace drawer feed switch (ST) 1*2 if its actuator is broken.
	Defective drawer feed switch (ST) 1*2.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-24 on the main PCB remains low when drawer feed switch (ST) 1*2 is turned on and off. If it does, replace drawer feed switch (ST) 1*2.
	Broken drawer feed switch*1 actuator.	Check visually and replace the drawer feed switch*1 if its actuator is broken.
	Defective drawer feed switch*1.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-23 on the main PCB remains low when the drawer feed switch*1 is turned on and off. If it does, replace the drawer feed switch*1.
(9) A paper jam in the paper feed section is indicated during copying (multiple sheets in paper feed section).	Broken registration switch actuator.	Check visually and replace the registration switch if its actuator is broken.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
	Check if the right and left registration rollers contact each other.	Check visually and remedy if necessary.
	Broken drawer feed switch*1 actuator.	Check visually and replace the drawer feed switch*1 if its actuator is broken.
	Defective drawer feed switch*1.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-23 on the main PCB remains low when the drawer feed switch*1 is turned on and off. If it does, replace the drawer feed switch*1.
	Broken drawer feed switch (ST) 1*2 actuator.	Check visually and replace drawer feed switch (ST) 1*2 if its actuator is broken.
	Defective drawer feed switch (ST) 1*2.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-24 on the main PCB remains low when drawer feed switch (ST) 1*2 is turned on and off. If it does, replace drawer feed switch (ST) 1*2.
(10) A paper jam in the paper feed section is indicated during copying (multiple sheets in vertical paper conveying section).	Broken drawer feed switch (ST) 1*2 actuator.	Check visually and replace drawer feed switch (ST) 1*2 if its actuator is broken.
	Defective drawer feed switch (ST) 1*2.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-24 on the main PCB remains low when drawer feed switch (ST) 1*2 is turned on and off. If it does, replace drawer feed switch (ST) 1*2.

*1: Standard for 20 cpm copier/optional for 15 cpm copier. *2: Optional for both 20 cpm and 15 cpm copiers.

Problem	Causes/check procedures	Corrective measures
(10) A paper jam in the paper feed section is indicated during copying (multiple sheets in vertical paper conveying section).	Broken drawer feed switch*1 actuator.	Check visually and replace the drawer feed switch*1 if its actuator is broken.
	Defective drawer feed switch*1.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-23 on the main PCB remains low when the drawer feed switch*1 is turned on and off. If it does, replace the drawer feed switch*1.
(11) A paper jam in the paper feed section is indicated during copying (multiple sheets in bypass).	Broken registration switch actuator.	Check visually and replace the registration switch if its actuator is broken.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
	Check if the right and left registration rollers contact each other.	Check visually and remedy if necessary.
(12) A paper jam in the paper conveying section is indicated during copying (jam in registration/ transfer section).	Broken drawer feed switch*1 actuator.	Check visually and replace the drawer feed switch*1 if its actuator is broken.
	Defective drawer feed switch*1.	With 5 V DC present at CN8-21 on the main PCB, check if CN8-23 on the main PCB remains low when the drawer feed switch*1 is turned on and off. If it does, replace the drawer feed switch*1.
	Broken registration switch actuator.	Check visually and replace the registration switch if its actuator is broken.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
(13) A paper jam in the fixing section is indicated during copying (jam in fixing section).	Check if the registration clutch malfunctions.	Check and remedy if necessary.
	Electrical problem with the registration clutch.	Check (see page 1-5-26).
	Broken eject switch actuator.	Check visually and replace the eject switch if its actuator is broken.
	Defective eject switch.	With 5 V DC present at CN12-7 on the main PCB, check if CN12-6 on the main PCB remains low when the eject switch is turned on and off. If it does, replace the eject switch.
(14) A paper jam in the eject section is indicated during copying (jam in eject section).	Broken registration switch actuator.	Check visually and replace the registration switch if its actuator is broken.
	Defective registration switch.	With 5 V DC present at CN3-6 on the main PCB, check if CN3-7 on the main PCB remains low when the registration switch is turned on and off. If it does, replace the registration switch.
	Broken eject switch actuator.	Check visually and replace the eject switch if its actuator is broken.
	Defective eject switch.	With 5 V DC present at CN12-7 on the main PCB, check if CN12-6 on the main PCB remains low when the eject switch is turned on and off. If it does, replace the eject switch.

*1: Standard for 20 cpm copier/optional for 15 cpm copier. *2: Optional for both 20 cpm and 15 cpm copiers.

1-5-2 Self-diagnosis

(1) Self-diagnostic function

This unit is equipped with a self-diagnostic function. When a problem is detected, copying is disabled. On the 20 cpm copier, the problem is displayed as a code consisting of "C" followed by a number between 011 and 821, indicating the nature of the problem. A message is also displayed requesting the user to call for service.
On the 15 cpm copier, "C" and a number between 011 and 821 altenates, indicating the nature of the problem.
After removing the problem, the self-diagnostic function can be reset by turning safety switch 1, 2 or 3* off and back on.
*Optional for the 15 cpm copier.

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C011	**Backup memory data problem** • Data in the specified area of the backup memory does not match the specified values.	Defective main PCB.	Replace the main PCB and check for correct operation.
C021	**Operation unit PCB communication problem (20 cpm copier only)** • There is no reply after 20 retries at communication.	Defective main PCB.	Replace the main PCB and check for correct operation.
C034	**Finisher* communication problem** • Communication errors from the communication microcomputer on the main PCB: No communication: there is no reply after 3 retries. Abnormal communication: a communication error (parity or checksum error) is detected five times in succession.	Poor contact of the connector terminals.	Check the connection of connectors CN17 and CN18 on the main PCB and the finisher main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective copier main PCB.	Replace the main PCB and check for correct operation.
		Defective finisher main PCB.	Replace the finisher main PCB and check for correct operation.
C040	**DIMM* problem** • Information on DIMM cannot be read out correctly at power-on.	Poor contact of the memory board**.	Check the insertion of the memory board**.
C041	**Bitmap problem** • There is a problem with the data or address bus of the bitmap DRAM.	Poor contact of the DIMM.	Check the insertion of the DIMM into connector CN2 on the memory board (for the 15 cpm copier).
			Check the insertion of the DIMM into connector CN34 on the main PCB (for the 20 cpm copier).
C043	**DMA problem** • DMA transmission of compressed, decompressed, rotated, relocated or blanked-out image data does not complete within the specified period of time.	Defective main PCB.	Replace the main PCB and check for correct operation.

*: Optional **: Optional for the 15 cpm copier only.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C100	**Exposure lamp problem** • Check the CCD input value for the lighting status of the exposure lamp 100 ms after the exposure lamp is lit and the carriage is moved to the shading position. If the exposure lamp does not light, turn off the lamp. After 500 ms, light the lamp again and, a further 500 ms later, check the CCD input. The exposure lamp does not light after 5 retries.	Poor contact of the connector terminals.	Check the connection of connectors CN24, CN23, CN22 and CN3 on the main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective exposure lamp.	Replace the exposure lamp or inverter PCB.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Incorrect shading position.	Adjust the position of the contact glass (shading plate). If the problem still occurs, replace the scanner home position switch.
		CCD PCB output problem.	Replace the ISU.
C104	**Optical system problem** • After AGC, correct input is not obtained at CCD.	Poor contact of the connector terminals.	Check the connection of connectors CN23, CN22 and CN3 on the main PCB, and the continuity across the connector terminals. Repair or replace if necessary.
		CCD PCB output problem.	Replace the ISU.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C200	**Drive motor problem** • LOCK ALM signal remains high for 1 s, 1 s after the drive motor has turned on.	Poor contact of the drive motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective drive motor rotation control circuit.	Replace the drive motor.
		Defective drive transmission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushings and gears. Check for broken gears and replace if any.
C310	**Scanner carriage problem** • The home position is not correct when the power is turned on or at the start of copying using the contact glass.	Poor contact of the connector terminals.	Check the connection of connectors CN28 and CN25 on the main PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Defective scanner home position switch.	Replace the scanner home position switch.
		Defective main PCB.	Replace the main PCB and check for correct operation.
		Defective scanner motor.	Replace the scanner motor.
C400	**Polygon motor synchronization problem** • The polygon motor does not reach a stable speed within 19 s of the polygon motor remote signal turning on.	Poor contact of the polygon motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C401	**Polygon motor steady-state problem** • The polygon motor rotation is not stable for 400 ms after the polygon motor rotation has been stabilized.	Poor contact of the polygon motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective power source PCB.	Check if 24 V DC is present at CN3-1 and CN3-2 on the power source PCB. If not, replace the power source PCB.
C420	**BD steady-state problem** • The VTC detects a BD error for 800 ms after the polygon motor rotation has been stabilizad.	Poor contact of the laser scanner unit connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective LSU.	Replace the LSU.
		Defective main PCB.	Replace the main PCB and check for correct operation.
C510	**Main charger problem** • MC ALM signal is detected continuously for 800 ms when MC REM signal is turned on.	Poor contact of the high-voltage transformer PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective high-voltage transformer PCB.	Replace the high-voltage transformer PCB.
		Leakage during main charging.	Check and clean the main charger assembly.
		Deformed high-voltage transformer PCB terminal spring.	Replace the spring.
C610	**Broken fixing heater wire** • Warm-up does not end within 90 s. • The secondary stabilization fixing temperature drops to 100°C/212°F or below. • The fixing temperature remains below 40˚C/104˚F for 7 s or longer after the fixing heaters have been turned on.	Fixing heater installed incorrectly.	Check and reinstall if necessary.
		Broken fixing heater wire.	Check for continuity. If none, replace fixing heater.
		Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector CN12 on the main PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Broken fixing unit thermistor wire.	Measure the resistance. If it is $\infty\ \Omega$, replace the fixing unit thermistor.
		Fixing unit thermistor installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat. Check the operation of the cooling fan and repair if necessary.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C620	**Abnormally low fixing unit thermistor temperature** • The fixing temperature remains below 100˚C/212˚F for 10 s during copying.	Fixing heater installed incorrectly.	Check and reinstall if necessary.
		Broken fixing heater wire.	Check for continuity. If none, replace fixing heater.
		Poor contact in the fixing unit thermistor connector terminals.	Check the connection of connector CN12 on the main PCB and the continuity across the connector terminals. Remedy or replace if necessary.
		Broken fixing unit thermistor wire.	Measure the resistance. If it is ∞ Ω, replace the fixing unit thermistor.
		Fixing unit thermistor installed incorrectly.	Check and reinstall if necessary.
		Fixing unit thermostat triggered.	Check for continuity. If none, replace the fixing unit thermostat. Check the operation of the cooling fan and repair if necessary.
C630	**Abnormally high fixing unit thermistor temperature** • The fixing temperature exceeds 240˚C/464˚F for 10 s.	Shorted fixing unit thermistor.	Measure the resistance. If it is 0 Ω, replace the fixing unit thermistor.
		Broken fixing heater control circuit on the power source PCB.	Replace the power source PCB.
C710	**Toner sensor problem** • The sensor output voltage is outside the range of 0.5 to 4.5 V during toner control. • The toner sensor control voltage cannot be set within the setting range when maintenance item U130 is run.	Defective toner sensor.	Replace the toner sensor.
		Poor contact of the toner sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Developer problem.	Replace the developer.
C730	**Broken external temperature thermistor wire** • The input voltage is above 4.5 V.	Poor contact of the humidity sensor PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective external temperature thermistor.	Replace the humidity sensor PCB.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
C731	**Short-circuited external temperature thermistor** • The input voltage is below 0.5 V.	Poor contact of the humidity sensor PCB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, repair or replace the cable.
		Defective external temperature thermistor.	Replace the humidity sensor PCB.
C740	**Image formation unit connector insertion problem** • Absence of the image formation unit is detected continuously for 1500 ms while there is no error on the copier.	Image formation unit connector inserted incorrectly.	Reinsert the image formation unit connector if necessary.
		Defective image formation unit connector.	Replace the image formation unit.
C817	**Finisher* front side registration motor problem**	A problem is detected with the front side registration motor.	See the finisher service manual.
C818	**Finisher* rear side registration motor problem**	A problem is detected with the rear side registration motor.	See the finisher service manual.
C819	**Finisher* trailing edge registration motor problem**	A problem is detected with the trailing edge registration motor.	See the finisher service manual.
C821	**Finisher* stapler motor problem**	A problem is detected with the stapler motor.	See the finisher service manual.

*: Optional **: Optional for the 15 cpm copier only.