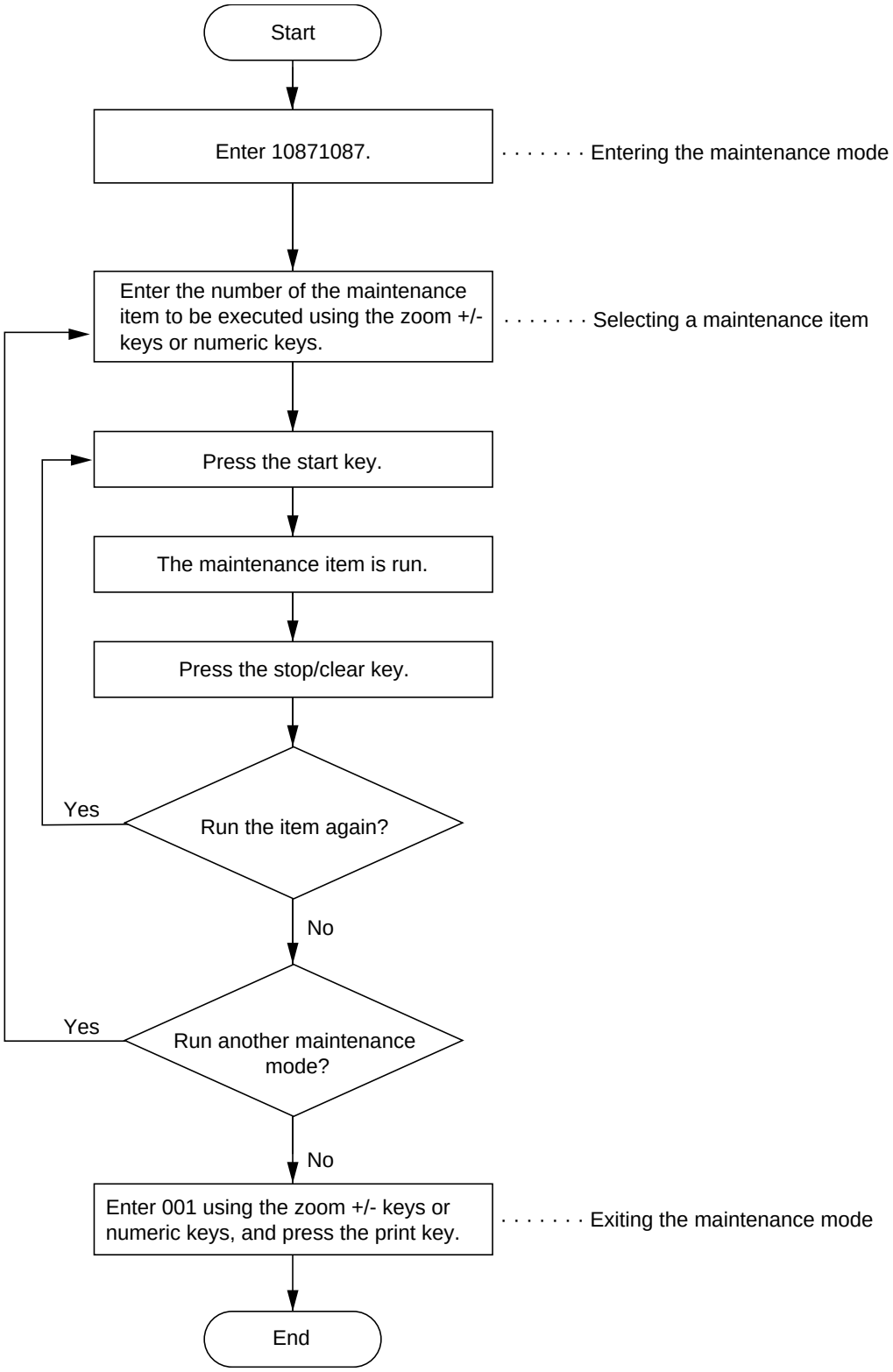
1-4-1 Maintenance mode

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

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	 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
	U073	Checking scanner operation	—
	U088	Setting the input filter (moiré reduction mode)	Off
	U089	Outputting a MIP-PG pattern	—
	U091	Checking shading	—
	U092	Adjusting the scanner automatically	—
	U093	Setting the exposure density gradient • Text/text and photo/photo mode	 0
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	—

* Initial setting for executing maintenance item U020

Section	Item No.	Maintenance item contents	Initial setting*
Developing	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	—
	U204	Setting the presence or absence of a total counter	—
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
	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
Image processing	U402	Adjusting margins of image printing	—
	U403	Adjusting margins for scanning an original on the contact glass	—
Others	U901	Checking/clearing copy counts by paper feed locations	—
	U903	Checking/clearing the paper jam counts	—
	U904	Checking/clearing the service call counts	—
	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	—
	U993	Outputting a VTC-PG pattern	—
	U998	Outputting the memory list	—

* Initial setting for executing maintenance item U020

(3) Contents of maintenance mode items

<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" × 8¹/₂" 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>

<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. A selection item appears.
2. Select the item to be operated using the copy exposure adjustment keys.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>P</td><td>Only the copier operates.</td></tr>
</table>
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.
</td></tr>
<tr><td>U020</td><td>
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.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>– – –
on</td><td>Canceling initialization
Executing initialization</td></tr>
</table>
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.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U021</td><td>
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.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>– – –
on</td><td>Canceling initialization
Executing initialization</td></tr>
</table>
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.
</td></tr>
<tr><td>U022</td><td>
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.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>– – –
on</td><td>Canceling initialization
Executing initialization</td></tr>
</table>
4. Press the start key. The data for the optical section (U060 to 093, U403 and U990) is initialized.
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></tr>
<tr><td>U030</td><td>
Checking motor operation
Description
Drives the drive motor.
Purpose
To check the operation of the drive 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.
<table>
<tr><th>Display</th><th>Motor</th></tr>
<tr><td>A</td><td>Drive motor (DM)</td></tr>
</table>
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.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U031</td><td>
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.
<table>
<tr><th>Original size indicator</th><th>Switch</th></tr>
<tr><td>A3/11" × 17"
A4/8$^{1}/_{2}$" × 11"</td><td>Eject switch (ESW)
Registration switch (RSW)</td></tr>
</table>
Completion
Press the stop/clear key. The indication for selecting a maintenance item No. appears.
</td></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. 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.
<table>
<tr><th>Display</th><th>Clutch</th></tr>
<tr><td>P1
Pb
2F</td><td>Paper feed clutch (PFCL)
Bypass paper feed clutch (BYPPFCL)
Registration clutch (RCL)</td></tr>
</table>
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>U033</td><td>
Checking solenoid operation
Description
Turns the solenoid on.
Purpose
To check the operation of the 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>A</td><td>Turning the main switch off</td></tr>
</table>
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 1-6-9 and 10.
</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 1-6-12.
</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

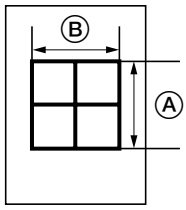


Figure 1-4-1

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 indication for selecting a maintenance item No. appears.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U060</td><td>
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.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Image scanning density</td><td>0 to 23</td><td>12</td></tr>
</table>
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
</td></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. “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.
</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.
2. Change the setting using the zoom +/– 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 indication for selecting a maintenance item No. appears.
</td></tr>
</table>

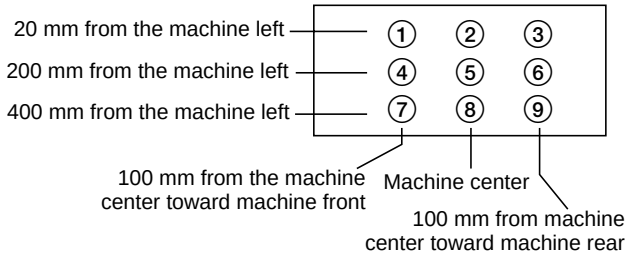
<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U065</td><td>Adjusting the scanner magnification
Adjustment
See pages 1-6-26 and 27.</td></tr>
<tr><td>U066</td><td>Adjusting the leading edge registration for scanning an original on the contact glass
Adjustment
See page 1-6-28.</td></tr>
<tr><td>U067</td><td>Adjusting the center line for scanning an original on the contact glass
Adjustment
See page 1-6-29.</td></tr>
<tr><td>U073</td><td>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.
<table>
<tr><th>Copy exposure indicator</th><th>Operating conditions</th><th>Setting range</th></tr>
<tr><td>Exp. 1
Exp. 2
Exp. 3</td><td>Magnification
Paper size
On and off of the exposure lamp</td><td>50 to 200%
See below.
on or off</td></tr>
</table>
Paper size for each setting
<table>
<tr><th>Setting</th><th>Paper size</th><th>Setting</th><th>Paper size</th></tr>
<tr><td>8
9
36
39</td><td>A4
B5
A3
B4</td><td>40
41
42
47</td><td>A4R
B5R
A5R
Folio</td></tr>
</table>
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.</td></tr>
</table>

<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>U089</td><td>
Outputting a MIP-PG pattern
Description
Selects and outputs a MIP-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 MIP-PG pattern.
Method
1. Press the start key.
2. Select the MIP-PG pattern to be output using the copy exposure adjustment keys.
<table>
<tr><th>Display</th><th>Setting</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>G-5
180
1-d</td><td>Gray scale
Mono level
1-dot level</td><td>-
0 to 255
-</td><td>-
180
-</td></tr>
</table>
3. Press the size select key. The machine enters the PG pattern output mode.
4. Press the start key. A MIP-PG pattern is output.
Completion
Press the stop/reset key. The indication for selecting a maintenance item No. appears.
</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. A selection item appears. 2. Select the item to be operated using the zoom +/– keys.

Display	Output list
on	Performs scanning before shading and displays the result.
oFF	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.
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 1-4-2.



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 1-4-2

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U091 (cont.)</td><td>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.</td></tr>
<tr><td>U092</td><td>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.
<table><tr><th>Copy exposure indicator</th><th>Setting value</th></tr><tr><td>Exp. 2
Exp. 3
Exp. 4</td><td>Scanner center line
Scanner leading edge registration
Scanner magnification in the auxiliary scanning direction</td></tr></table>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.</td></tr>
</table>

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.

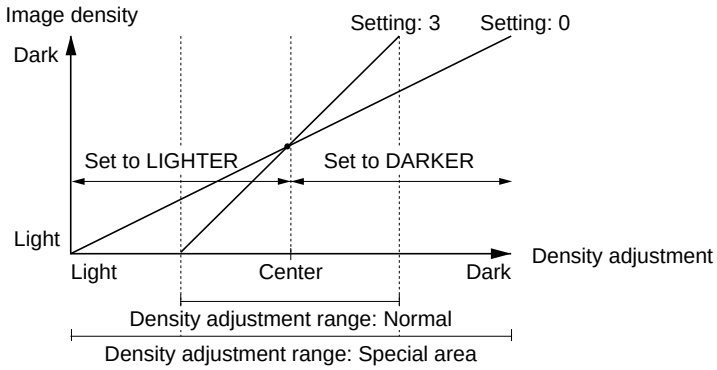


Figure 1-4-3 Exposure density gradient

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.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U100</td><td>
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.
<table>
<tr><th>Display (copy exposure indicator)</th><th>Description</th></tr>
<tr><td>——— (exp. 1)
on1 (exp. 2)
on2 (exp. 3)</td><td>Changing the grid control voltage
Turning the main charger on
Turning the main charger on and the laser scanner unit on and off</td></tr>
</table>
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.
<table>
<tr><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Grid control voltage</td><td>0 to 255</td><td>184</td></tr>
</table>
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.
</td></tr>
</table>

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
○  ○  ○  ● 	○ Auto Exposure ○ Text & Photo ○ Photo ● Text	Setting the developing bias
○  ○  ●  ● 	○ 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.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U109</td><td>
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.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>G
H
J</td><td>Type G
Type H
Type J</td></tr>
</table>
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.
</td></tr>
<tr><td>U110</td><td>
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.
<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 3 digits
Last 3 digits
Clearing the count</td><td>000 to 999
000 to 999
———</td><td>000
000
———</td></tr>
</table>
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.
</td></tr>
</table>

<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>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></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.
2. Press the start key. Sampling starts.
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 level (value corrected based on humidity and drive time)
Current toner sensor control voltage
Absolute humidity</td></tr>
</table>
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.
</td></tr>
<tr><td>U156</td><td>
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.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th></tr>
<tr><td>Exp. 1
Exp. 2</td><td>Toner feed start level
Difference between the toner feed start level and toner empty level</td></tr>
</table>
Setting for the toner feed start level
1. Change the setting using the zoom +/– keys.
<table>
<tr><th>Description</th><th>Setting range</th></tr>
<tr><td>Toner feed start level</td><td>0 to 255</td></tr>
</table>
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.
<table>
<tr><th>Description</th><th>Setting range</th></tr>
<tr><td>Difference between the toner feed start level and the toner empty level</td><td>0 to 255</td></tr>
</table>
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.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U157</td><td>
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.
<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 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.
</td></tr>
<tr><td>U158</td><td>
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.
<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 3 digits
Last 3 digits
Clearing the count</td><td>000 to 999
000 to 999
———</td><td>000
000
———</td></tr>
</table>
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.
</td></tr>
</table>

<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>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U204</td><td>
Setting the presence or absence of a total counter
Description
Sets the presence or absence of the optional total counter.
Purpose
Perform after installing the total counter.
Method
Press the start key.
Setting
1. Select the installation status of the total counter using the zoom +/- keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>oFF
on</td><td>None
The total 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>
</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 zoom +/– 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 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>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></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
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 3 digits
Last 3 digits
Clearing the count</td><td>000 to 999
000 to 999
———</td><td>000
000
———</td></tr>
</table>
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.
</td></tr>
<tr><td>U252</td><td>
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.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>JPn
Inc
EUP
ASA</td><td>Metric (Japan) specifications
Inch (North America) specifications
Metric (Europe) specifications
Metric (Asia Pacific) specifications</td></tr>
</table>
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.
</td></tr>
</table>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U253</td><td>
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.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>d-C
S-C</td><td>Double count for A3/11" × 17" paper only
Single count for all size paper</td></tr>
</table>
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.
</td></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.
Setting
1. Select either “on” or “oFF” using the zoom +/– keys.
<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 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>

<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</td><td>When secondary paper feed starts</td></tr>
<tr><td>EJE</td><td>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>
</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 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

○ : 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

○ : 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.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U344</td><td>
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.
<table>
<tr><th>Display</th><th>Control in preheat mode</th></tr>
<tr><td>InS (instant ready)</td><td>Without decreasing the fixing control temperature, the display on the operation panel is turned off.</td></tr>
<tr><td>ESr (energy star)</td><td>The fixing control temperature is set at 70°C/158°F. The copier is forcibly stabilized 30 s after exiting preheat/energy saver mode.</td></tr>
<tr><td>Prh (priority to recovery time)</td><td>The fixing control temperature is set at 130°C/266°F.</td></tr>
</table>
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.
</td></tr>
<tr><td>U345</td><td>
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.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>Exp. 1</td><td>First digit</td><td>0 to 9</td><td>0</td></tr>
<tr><td>Exp. 2</td><td>Last 3 digits</td><td>000 to 999</td><td>000</td></tr>
</table>
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.
</td></tr>
</table>

<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.
Setting
1. Select the density range using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SPC (special area)
nrL (normal)</td><td>11/15 steps (enlargement mode)
5/9 steps</td></tr>
</table>
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.
</td></tr>
<tr><td>U402</td><td>
Adjusting margins of image printing
Adjustment
See page 1-6-11.
</td></tr>
<tr><td>U403</td><td>
Adjusting margins for scanning an original on the contact glass
Adjustment
See page 1-6-30.
</td></tr>
</table>

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 drawer copy count Last 3 digits of drawer copy count Clearing the count (CLE)
3	○ ● + ● ●	○ Auto Exposure ● Text & Photo ● Photo ● Text	Exp. 1	Clearing all counts (CLE)

○ : Off, ● : On

Clearing copy counts by paper feed locations

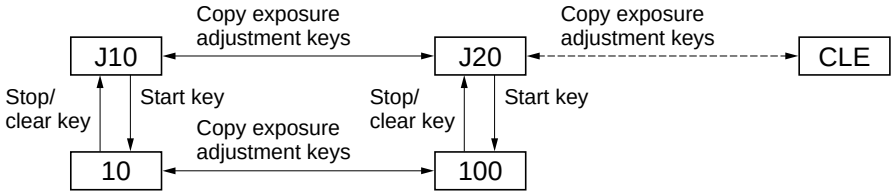
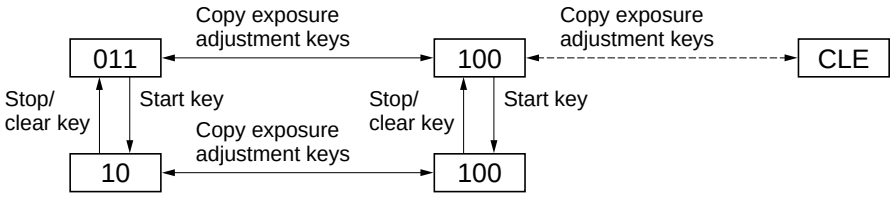
1. Select the paper feed location to clear the count.
2. Light exp. 3 using the copy exposure adjustment key.
3. Press the start key. The count is cleared.

Clearing copy counts for all paper feed locations

1. Select group 3.
2. Press the start key. The counts are cleared.

Completion

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

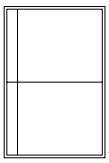
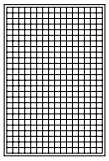
Maintenance item No.	Description
U903	**Checking/clearing the paper jam counts** **Description** Displays or clears the jam counts by jam locations. **Purpose** To check the paper jam status. Also to clear the jam counts after replacing consumable parts. **Method** 1. Press the start key. 2. Display 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 1-4-4** **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 1-4-5** **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.

<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 “on” using the zoom +/– keys.
<table>
<tr><th>Display</th><th>Operation</th></tr>
<tr><td>– – –
on</td><td>Canceling the resetting
Executing the resetting</td></tr>
</table>
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>
</table>

<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" × 8¹/₂" 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>

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U990</td><td>
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.
<table>
<tr><th>Copy exposure indicator</th><th>Copy quantity display</th></tr>
<tr><td>Exp. 1
Exp. 2
Exp. 3</td><td>First 3 digits of the lamp-on time (minutes)
Last 3 digits of the lamp-on time (minutes)
Clearing the lamp-on time (CLE)</td></tr>
</table>
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.
</td></tr>
</table>

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.

<table>
<tr><th>Maintenance item No.</th><th>Description</th></tr>
<tr><td>U998</td><td>
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.
<table>
<tr><th>Copy exposure indicator</th><th>Description</th><th>Setting range</th></tr>
<tr><td>Exp. 1
Exp. 2
Exp. 3</td><td>Bit 16 to bit 23 of the address
Bit 8 to bit 15 of the address
Bit 0 to bit 7 of the address</td><td>00 to FF
00 to FF
00 to FF</td></tr>
</table>
2. Enter the address in hexadecimal using the numeric keys or the zoom +/– keys.
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.
</td></tr>
</table>