

## [8] Test commands and diagnostics

### 1. Test command

#### (1) Introduction

The following can be done with test command.

- Used to operate any functional block independently to check its function.
- Used to adjust the machine.
- Used to set up functions.

#### (2) Purpose

It allows to help repairing and adjusting the machine using test command.

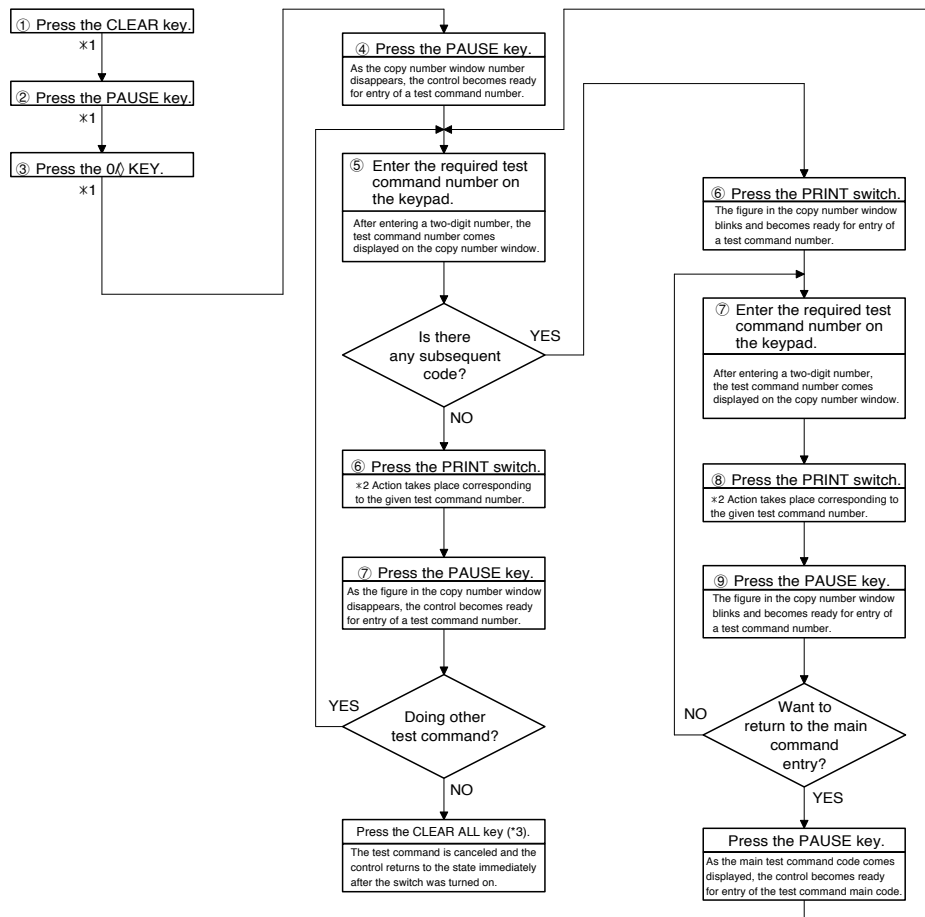
When the PAUSE key is pressed in a course of test command being executed, the test command is interrupted with the copy number window turned off and becomes ready to accept entry of a test command number.

- \*1: If the PAUSE key was pressed for more than five minutes, it may not go into the test command mode.
- \*2: Further operation may be needed depending on the kind of test command.

\*3: One of the next methods is required to cancel the test command as it varies according to the test command. The machine then starts from the state immediately after power on.

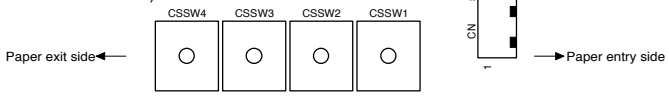
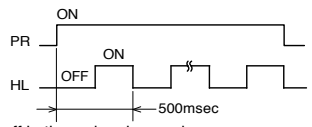
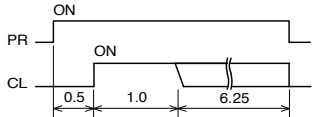
- Other than test command 7  
The test command is canceled when the CLEAR ALL key is pressed.
- Test command 7  
One of the following operation cancels the test command execution.
  1. Power switch off.
  2. Press the CLEAR → PAUSE → 0 → PAUSE → CLEAR ALL keys.
- Test command 14  
The test command 14 is used to clear the memory contents (H2, H3, H4) that has been stored in it. After the test command 14 has been executed, the diagnostic is automatically terminates.
- Special keys  
CLEAR ALL key: Test command mode → normal mode.  
PAUSE key: Execution of test command is interrupted. Returns to 5, if 9 when the subsequent is on display.  
CLEAR key: Clears the copy number window.
- The diagnostic is automatically terminates after the doorswitch operation "ON → OFF → ON", except "H", "U2" code.

### 3) Test command execution procedure

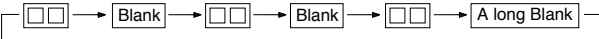




Main code	Sub code	Description	Ref. Page																												
3	02	<p>This is the test command used to test a sensor of the sorter. On/off state of sensor can be manually tested. The sensor to test can be selected using the keypad.</p> <table border="1"> <thead> <tr> <th rowspan="2">Position \ Keypad</th> <th>0</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>TPL (toner empty lamp)</td> <td>Sensing paper registration PES</td> <td>Sensing indexer upper limit IULS</td> <td>Sending sorter setup SJS</td> </tr> <tr> <td>TNFL (full waste toner lamp)</td> <td>Sensing paper release PWB-L/S</td> <td>Index lower limit sense (ILLS) or Jogger (SF-S52) home sense (JHPS) (ILLS)</td> <td>Sending top cover open/close UCSW</td> </tr> <tr> <td>DVPL (developer maintenance lamp)</td> <td>Sensing paper on tray (TPS)</td> <td>Sensing indexer at home position IHS</td> <td>Sensing blower cover open/close</td> </tr> <tr> <td>MENTEL (maintenance lamp)</td> <td>Sensing paper on stapler (SPS)</td> <td>Bin home position sense (BPSW)</td> <td>—</td> </tr> <tr> <td>JPL (misfeed lamp)</td> <td>—</td> <td>—</td> <td>Stapler home position sense (SHPS)</td> </tr> <tr> <td>PPL (paper empty lamp)</td> <td>Paper edge sense (PEGS)</td> <td>—</td> <td>Sending needle presence (NES)</td> </tr> </tbody> </table> <p>Lamp on: paper found/door opened/ON Lamp off: no paper found/door closed/OFF</p>	Position \ Keypad	0	1	2	TPL (toner empty lamp)	Sensing paper registration PES	Sensing indexer upper limit IULS	Sending sorter setup SJS	TNFL (full waste toner lamp)	Sensing paper release PWB-L/S	Index lower limit sense (ILLS) or Jogger (SF-S52) home sense (JHPS) (ILLS)	Sending top cover open/close UCSW	DVPL (developer maintenance lamp)	Sensing paper on tray (TPS)	Sensing indexer at home position IHS	Sensing blower cover open/close	MENTEL (maintenance lamp)	Sensing paper on stapler (SPS)	Bin home position sense (BPSW)	—	JPL (misfeed lamp)	—	—	Stapler home position sense (SHPS)	PPL (paper empty lamp)	Paper edge sense (PEGS)	—	Sending needle presence (NES)	
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		03 ~ 08	Used to test the action of the sorter (individual load check). Following action can be tested.																												
		03	Transport motor rotation																												
04	Indexer motor rotation (returns to the home position at first, then stops at each bin location Bin 1 to Bin 21, moving up and down).																														
05	Fan motor rotation in the case of (SF-S15), Jogger motor (in the case of SF-S52)																														
06	Gate solenoid in the case of (SF-S15), Paper hold solenoid (in the case of SF-S52)																														
07	Offset solenoid (in the case of SF-S52)																														
08	Stapler motor rotation (the paper is stapled when there is a paper in the stapler tray).																														
4	02	<p>This is the test command used to test sensor of the desk. On/off state of sensor can be manually tested. The sensor to be tested can be selected using the keypad.</p> <table border="1"> <thead> <tr> <th rowspan="2">Position \ Keypad</th> <th>0</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td>TPL (toner empty lamp)</td> <td>Sensing paper fed from the upper cassette DPOD</td> <td>Upper cassette lift upper limit sensor DLUD1</td> <td>Sensing paper presence on the upper cassette DPE1</td> </tr> <tr> <td>TNFL (full waste toner lamp)</td> <td>Sensing paper fed from the middle cassette DPOD2</td> <td>Middle cassette lift upper limit sensor DLUS2</td> <td>Sensing paper presence on the middle cassette DPE2</td> </tr> <tr> <td>DVPL (developer maintenance lamp)</td> <td>Sensing paper fed from the bottom cassette DPOD3</td> <td>Bottom cassette lift upper limit sensor DLUD3</td> <td>Sensing paper presence on the bottom cassette DPE3</td> </tr> <tr> <td>MENTEL (maintenance lamp)</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>JPL (misfeed lamp)</td> <td>—</td> <td>—</td> <td>—</td> </tr> <tr> <td>PPL (paper empty lamp)</td> <td>Sensing door close/open DPOP</td> <td>—</td> <td>—</td> </tr> </tbody> </table> <p>Lamp on: paper found/door opened/ON Lamp off: no paper found/door closed/OFF</p>	Position \ Keypad	0	1	2	TPL (toner empty lamp)	Sensing paper fed from the upper cassette DPOD	Upper cassette lift upper limit sensor DLUD1	Sensing paper presence on the upper cassette DPE1	TNFL (full waste toner lamp)	Sensing paper fed from the middle cassette DPOD2	Middle cassette lift upper limit sensor DLUS2	Sensing paper presence on the middle cassette DPE2	DVPL (developer maintenance lamp)	Sensing paper fed from the bottom cassette DPOD3	Bottom cassette lift upper limit sensor DLUD3	Sensing paper presence on the bottom cassette DPE3	MENTEL (maintenance lamp)	—	—	—	JPL (misfeed lamp)	—	—	—	PPL (paper empty lamp)	Sensing door close/open DPOP	—	—	
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		03	Used to test the on/off state of the first cassette size switch of the desk.																												
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PPL (paper empty lamp)	—																														

Main code	Sub code	Description	Ref. Page	
4	03	(Cassette size board) 		
	04	Used to test the on/off state of the second cassette size switch of the desk. Function is identical to the test command 04-03.		
	05	Used to test the on/off state of the third cassette size switch of the desk. Function is identical to the test command 04-03.		
	06	Transport motor rotation of the desk		
	07	Off when detected the upper limit of the first cassette lift up motor of the desk.		
	08	Off when detected the upper limit of the second cassette lift up motor of the desk.		
	09	Off when detected the upper limit of the third cassette lift up motor of the desk.		
	10	Activate transport clutch of the desk		
	11	Activate first cassette paper feed solenoid of the desk		
	12	Activate paper feed clutch of the first cassette of the desk		
	13	Activate second cassette paper feed solenoid of the desk		
	14	Activate paper feed clutch of the second cassette of the desk		
	15	Activate third cassette paper feed solenoid of the desk		
	16	Activate paper feed clutch of the third cassette of the desk		
	5	01	All LED's on the operation panel are turned on for five seconds.	
		02	This is the test command used to test the heater lamp. Heater lamp turned on and off five times.  The heater turns on and off in the order shown above.	
03		This is the test command used to test the copy lamp. Copy lamp turned on in the following order. When the test command starts, the copy lamp turns full power for one second with the manual exposure setting 3.0 shown, and the copy lamp intensity can be changed to the power set on the exposure setup key for a period of 6.25 seconds.  * Refrain from repeating this test command without waiting for lamp and glass to cool.		
04	This is the test command used to check activation of the discharge lamp (DL) and the blank lamps (BL). • The discharge lamp (DL) turns on for 30 seconds. • Each blank lamp starts to turn on from the front frame side to the rear frame side. Finally, all blank lamps turn on.			
6	02	Activation of the separation solenoid • Used to test the action of the drum separator pawl.		
7	01	◦ Aging test with alert for paper misfeed 1. Used to check the warmup time. 2. Executes the continuing aging test for the given number of copies. When the test command is executed, the machine performs its normal action and the warmup time starts to count from zero and increase count every 2 second. The count is displayed on the copy lamp window. When the RPL is turned on, the addition of the copy number is interrupted with the copy number remaining on display as it is. When the CLEAR key is pressed, the copy number must be entered on the keypad, and with depression of the PRINT switch, the given number of copies repeated to produce. In this case, the paper misfeed function comes alive.		
	02	◦ Aging test without alert for paper misfeed Aging test is done without feeding paper. This test command is similar to 7-1. But, it does not alert paper misfeed occurrence. The warmup time check is similar as the test command 21.		
	03	◦ Aging test without misfeed and fusing This test command is similar to 7-1. But, it does not count the warmup time and disregards the heater and paper feed troubles, without activating the heater lamp.		


Main code	Sub code	Description	Ref. Page														
7	04	<ul style="list-style-type: none"> <li>Warmup disabled Machine action is checked disregarding the warmup time. When the test command is executed, the RPL immediately turns on. Although the machine action may be tested, it may show the trouble status H4 depending on the case if low heater temperature is found.</li> </ul>															
	06	<ul style="list-style-type: none"> <li>Intermittent aging test</li> </ul>															
	07	<ul style="list-style-type: none"> <li>Intermittent aging test without alert for paper misfeed</li> </ul>															
8	01	Developing bias voltage output This is the test command used to check the developing bias voltage. The developing bias voltage is turned on for 30 seconds. Standard developing bias setting is -215VDC.	[7]-1(3)														
	02	Main (charge) corona output Standard manual exposure mode main corona grid voltage is -730±15V. This is the test command used to check the main corona variance between the front and rear sides. The corona output continues for 30 seconds. <ul style="list-style-type: none"> <li>The main corona variance must be within 8µA between the front and the rear.</li> </ul>	[7]-4(3)														
	03	Main corona output Standard photographic mode main corona grid voltage is -450±15V.	[7]-2(3)														
	04	Main corona output Standard TSM main corona grid voltage is -610V±15V.	[7]-2(3)														
	06	Transfer corona output This is the test command used to check the transfer corona output (THV). The transfer corona output continues for 30 seconds. <div style="text-align: center;"> </div> Standard transfer corona output is -31±5µA with variance between the front and rear at 8µA, maximum.	[7]-2(3)														
07	Separation corona output This is the test command used to check the separation corona output (SHV). The separation corona output continues for 30 seconds. <div style="text-align: center;"> </div> Standard separation corona output is -10 to 10 Vdc (Japan).	[7]-2(3)															
9	02	ADU sensor check test command <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Position</th> <th>Sensor</th> </tr> </thead> <tbody> <tr> <td>TPL (toner empty lamp)</td> <td>DPPD1</td> </tr> <tr> <td>TNFL (full waste toner lamp)</td> <td>DPPD2</td> </tr> <tr> <td>DVPL (developer maintenance lamp)</td> <td>DTPID</td> </tr> <tr> <td>MENTEL (maintenance lamp)</td> <td>PFID</td> </tr> <tr> <td>JPL (misfeed lamp)</td> <td>APHPS1</td> </tr> <tr> <td>PPL (paper empty lamp)</td> <td>APHPS2</td> </tr> </tbody> </table>	Position	Sensor	TPL (toner empty lamp)	DPPD1	TNFL (full waste toner lamp)	DPPD2	DVPL (developer maintenance lamp)	DTPID	MENTEL (maintenance lamp)	PFID	JPL (misfeed lamp)	APHPS1	PPL (paper empty lamp)	APHPS2	
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TNFL (full waste toner lamp)	DPPD2																
DVPL (developer maintenance lamp)	DTPID																
MENTEL (maintenance lamp)	PFID																
JPL (misfeed lamp)	APHPS1																
PPL (paper empty lamp)	APHPS2																
03	ADU rear plate drive motor rotation <ul style="list-style-type: none"> <li>Used to check the rear end plate movement</li> </ul> (AB series) HP.A3 → B4 → A4R → B5R → A4 → B5 → A5 ↑ (Inch series) HP.11" x 17" → 11" x 14" → 8½" x 11"(R) → 8½" x 11" ↑																
04	ADU alignment plate drive motor rotation <ul style="list-style-type: none"> <li>Used check the alignment plate movement</li> </ul> (AB series) HP.A3 → B4 → A4R → B5R → A4 → B5 → A5 ↑ (Inch series) HP.11" x 17" → 11" x 14" → 8½" x 11"(R) → 8½" x 11" ↑																




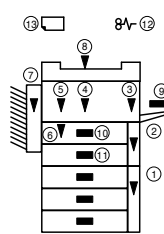
Main code	Sub code	Description	Ref. Page
9	05	Gate solenoid activation Used to check the gate solenoid movement	
10	—	Toner motor activation Used to check the toner motor activation.	
14	—	Trouble cancellation This is the test command used to cancel other than the "U2" trouble (H2, H3, H4). After the trouble has been removed, the test command terminates.	
16	—	U2 trouble cancellation This is the test command used to cancel the "U2" trouble. After the trouble has been removed, the test command terminates.	
20	—	Maintenance counter clear Used to reset the maintenance preset counter to zero after the maintenance is completed. It is mandatory to clear the counter after the maintenance is over.	
21	01	<ul style="list-style-type: none"> <li>◦ Maintenance cycle setting</li> <li>Used to set the maintenance cycle.</li> <li>Code            Maintenance cycle</li> <li>  0 ·········· 80,000 sheets</li> <li>  1 ··········  5,000 sheets</li> <li>  2 ·········· 10,000 sheets</li> <li>  3 ·········· 20,000 sheets</li> <li>  4 ·········· 40,000 sheets</li> <li>  5 ··········  None</li> <li>The default is 0.</li> </ul>	
	02	<ul style="list-style-type: none"> <li>◦ Maintenance setup (Japan only)</li> <li>• Mini-maintenance setup for the black copy kit</li> <li>The following procedure is required.</li> <li>As the PAUSE lamp comes active and the number already set (1 or 2) is displayed. In this occasion, enter the required mini-maintenance cycle on the keypad and press the PRINT switch.</li> <li>Code            Maintenance cycle</li> <li>  0 ·········· 80,000 sheets</li> <li>  1 ··········  5,000 sheets</li> <li>  2 ·········· 10,000 sheets</li> <li>Default is set to 5,000 sheets ("1") of the black copy.</li> </ul>	
	03	<ul style="list-style-type: none"> <li>◦ Mini-maintenance setup (Japan only)</li> <li>• Mini-maintenance setup for color copy kit</li> <li>The COPY and the COLOR TONER lamps come active with the presently set figure (1) displayed.</li> <li>Enter the required mini-maintenance cycle on the keypad and press the PRINT switch.</li> <li>Code            Mini-maintenance cycle</li> <li>  0 ·········· 10,000 sheets</li> <li>  1 ··········  5,000 sheets</li> <li>* The code "1" needs to be entered because the color copy kit is a 5,000 sheets kit.</li> <li>Default is set to 5,000 sheet ("1") of the color copy.</li> </ul>	
22	01	<ul style="list-style-type: none"> <li>◦ Maintenance counter display</li> <li>Copy number of the maintenance counter is displayed.</li> <li>The contents of the counter is displayed on the copy number window in three segments, each segment consisting of a two-digit number.</li> <li></li> </ul>	
	02	<ul style="list-style-type: none"> <li>◦ Maintenance preset counter display</li> <li>This test command is used to check the contents of the maintenance preset counter. It is displayed in the same way as the test command 22-1.</li> </ul>	
	03	<ul style="list-style-type: none"> <li>◦ Paper misfeed map display</li> </ul>	
	04	<ul style="list-style-type: none"> <li>◦ Total misfeed counter display</li> </ul>	
	05	<ul style="list-style-type: none"> <li>◦ Total counter display</li> <li>This counter is used to show the total copy number of the machine.</li> <li>• It is displayed in the same way as the test command 22-1.</li> </ul>	

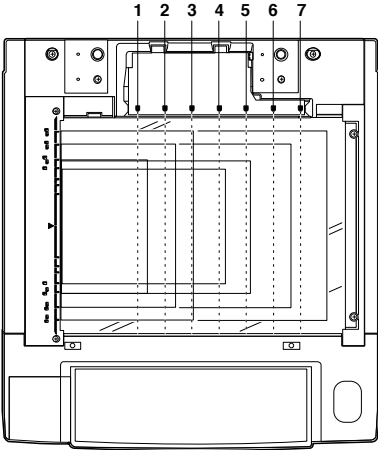
Main code	Sub code	Description	Ref. Page																
22	06	<ul style="list-style-type: none"> <li>Developer counter display</li> <li>The contents of the copy number counter of the installed developing unit is displayed.</li> <li>It is displayed in the same way as the test command 22-1.</li> <li>The color of the developing unit is displayed by a combination of the maintenance lamp (MENTEL), full waste toner lamp (TNFL), and the developer maintenance lamp (DVPL), while the developing unit is operating.</li> </ul> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Color</th> <th>TNFL</th> <th>DVPL</th> <th>MENTEL</th> </tr> </thead> <tbody> <tr> <td>Black</td> <td>F</td> <td>X</td> <td>X</td> </tr> <tr> <td>Red</td> <td>X</td> <td>F</td> <td>X</td> </tr> <tr> <td>Blue</td> <td>F</td> <td>F</td> <td>X</td> </tr> </tbody> </table> <p style="margin-left: 20px;">F ... ON X ... OFF</p>	Color	TNFL	DVPL	MENTEL	Black	F	X	X	Red	X	F	X	Blue	F	F	X	
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	Black	F	X	X															
	Red	X	F	X															
Blue	F	F	X																
07	<ul style="list-style-type: none"> <li>Developer preset counter display</li> <li>Number of developer replacements and the reset counter contents of the installed developing unit are displayed.</li> <li>It is displayed in the same way as the test command 22-1.</li> <li>Color of the installed developing unit is the same as the test command 22-6.</li> </ul>																		
08	<ul style="list-style-type: none"> <li>ADF/RADF counter display</li> <li>Used to check the number of originals fed through the ADF or RADF.</li> <li>It is displayed in the same way as the test command 22-1.</li> </ul>																		
09	<ul style="list-style-type: none"> <li>Duplex counter display</li> <li>Used to check the number of sheets fed through the duplex unit.</li> <li>It is displayed in the same way as the test command 22-1.</li> </ul>																		
24	01	<ul style="list-style-type: none"> <li>Misfeed map memory and total misfeed counter clear</li> </ul>																	
	03	<ul style="list-style-type: none"> <li>ADF/RADF counter clear</li> <li>The contents of the copy number counter is reset for the ADF/RADF.</li> <li>It is mandatory to clear the memory contents after the maintenance is over.</li> </ul>																	
	04	<ul style="list-style-type: none"> <li>Duplex counter clear</li> <li>The contents of the copy number counter is reset to the duplex unit.</li> <li>It is mandatory to clear the memory contents after the maintenance is over.</li> </ul>																	
25	01	<p>Main motor activation</p> <ul style="list-style-type: none"> <li>Used to check malfunction in the main motor drive train.</li> <li>Also, monitors the toner density sensor.</li> </ul> <p>(Procedure)</p> <p>Monitors the toner sensor of the black developing unit. (To check the sensor)</p> <p>[C] → [=↓] → [0] → [=↓] → [2] → [5] → [PSW] → [1] → [PSW]</p>																	
	02	<p>Automatic developer reference setting</p> <ul style="list-style-type: none"> <li>This is the test command used to monitor the toner sensor and to automatically adjust the developer.</li> <li>For the automatic developer adjustment, the developing tank is stirred and the toner sensor output is monitored. The sensor is monitored for 16 times in 2 minutes after the stirring started and their mean value is stored in the memory as the toner density adjust value. (See the area marked with an asterisk in the figure below.) ( Afterwards, reference changes as copies are made to maintain density.)</li> </ul> <p>(Procedure)</p> <p>[C] → [=↓] → [0] → [=↓] → [2] → [5] → [PSW] → [2] → [PSW]</p>																	

Main code	Sub code	Description	Ref. Page																																									
26	01	<p>Option unit setup</p> <ul style="list-style-type: none"> <li>Used to set up option unit.</li> </ul> <ol style="list-style-type: none"> <li>When the test command is executed, the presently stored machine setup code is displayed with the READY lamp turned on.</li> <li>After the READY lamp has turned on, enter an appropriate setup code on the keypad and press the PRINT switch. Then, the date is stored in the memory and the READY lamp turns off.</li> </ol> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Option</th> <th>Code</th> <th></th> </tr> </thead> <tbody> <tr> <td>RADF/ADF</td> <td>1</td> <td></td> </tr> <tr> <td>ADU</td> <td>(2)</td> <td>(Automatic setup)</td> </tr> <tr> <td>Desk</td> <td>4</td> <td></td> </tr> <tr> <td>Sorter (three types)</td> <td>10</td> <td></td> </tr> </tbody> </table> <ul style="list-style-type: none"> <li>Used to set the code that corresponds to an option unit.</li> </ul> <p>(EX): To set the RADF together with ADU, enter "5" (1+4=5). "7" is on display.</p> <p>NOTES:</p> <ol style="list-style-type: none"> <li>Be sure to enter the code that corresponds to the installed option unit.</li> <li>If an option unit not corresponding may result in a trouble. See the trouble code chart.</li> </ol>	Option	Code		RADF/ADF	1		ADU	(2)	(Automatic setup)	Desk	4		Sorter (three types)	10																												
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	03	<p>Timer auto clear (yes/no) and counter mode setup</p> <ol style="list-style-type: none"> <li>When the test command is executed, the code of the presently stored mode is displayed with the READY lamp turned on.</li> <li>After the READY lamp has turned on, enter an appropriate setup code on the keypad and press the PRINT switch. Then, the code is stored in the memory and the READY lamp turns off.</li> </ol> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Setup code</th> <th>Timer auto clear</th> <th>Total counter (single/double count)</th> <th>Maintenance counter (single/double count)</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>F</td> <td>Double count</td> <td>Double count</td> </tr> <tr> <td>1</td> <td>F</td> <td>Single count</td> <td>Double count</td> </tr> <tr> <td>2</td> <td>F</td> <td>Double count</td> <td>Single count</td> </tr> <tr> <td>3</td> <td>F</td> <td>Single count</td> <td>Single count</td> </tr> <tr> <td>40</td> <td>X</td> <td>Double count</td> <td>Double count</td> </tr> <tr> <td>41</td> <td>X</td> <td>Single count</td> <td>Double count</td> </tr> <tr> <td>42</td> <td>X</td> <td>Double count</td> <td>Single count</td> </tr> <tr> <td>43</td> <td>X</td> <td>Single count</td> <td>Single count</td> </tr> </tbody> </table>	Setup code	Timer auto clear	Total counter (single/double count)	Maintenance counter (single/double count)	0	F	Double count	Double count	1	F	Single count	Double count	2	F	Double count	Single count	3	F	Single count	Single count	40	X	Double count	Double count	41	X	Single count	Double count	42	X	Double count	Single count	43	X	Single count	Single count						
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42	X	Double count	Single count																																									
43	X	Single count	Single count																																									
	06	<p>Destination setup</p> <p>Used to set the model number and destination.</p> <ol style="list-style-type: none"> <li>When the test command is executed, the presently stored model number and the destination code are displayed (see table below) and the READY lamp turns on.</li> <li>After the READY lamp has turned on, enter the model number and the destination code on the keypad and press the PRINT switch to store the setting in the memory. The READY lamp then turns off.</li> </ol> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Destination Model</th> <th>Japan</th> <th>U.K. (SUK)</th> <th>Export AB series machine except U.K.</th> <th>U.S.A. (SEC)</th> <th>Inch series machine except U.S.A.</th> </tr> </thead> <tbody> <tr> <td>SF-2027</td> <td>4</td> <td>1</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>SF-2022</td> <td>14</td> <td>11</td> <td>15</td> <td>16</td> <td>17</td> </tr> </tbody> </table> <p>If 20 is added to the destination code, loading of a developing unit other than black is disregarded and "CH" displayed.</p> <p>Automatic paper selection function setup</p> <p>Automatic paper selection/manual selection (only for the export version SF-2022 equipped with ADF/RADF)</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>Initial selection</th> <th>When in timeout CA</th> <th>When document presents in RADF/ADF</th> <th></th> </tr> </thead> <tbody> <tr> <td rowspan="2">SF-2022 (export version)</td> <td>Mode-1 (APS mode)</td> <td>MAN</td> <td>APS</td> <td>APS only when ADF/RADF used</td> </tr> <tr> <td>Mode-2 (Man mode)</td> <td>MAN</td> <td>MAN</td> <td></td> </tr> <tr> <td rowspan="2">SF-2022 (Japan) and SF-2027</td> <td>Mode- (APS mode)</td> <td>APS</td> <td>APS</td> <td></td> </tr> <tr> <td>Mode-2 (Man mode)</td> <td>MAN</td> <td>MAN</td> <td></td> </tr> </tbody> </table> <p>It can be switched to the mode-2 when 40 is added to the given destination code.</p>	Destination Model	Japan	U.K. (SUK)	Export AB series machine except U.K.	U.S.A. (SEC)	Inch series machine except U.S.A.	SF-2027	4	1	5	6	7	SF-2022	14	11	15	16	17		Initial selection	When in timeout CA	When document presents in RADF/ADF		SF-2022 (export version)	Mode-1 (APS mode)	MAN	APS	APS only when ADF/RADF used	Mode-2 (Man mode)	MAN	MAN		SF-2022 (Japan) and SF-2027	Mode- (APS mode)	APS	APS		Mode-2 (Man mode)	MAN	MAN		
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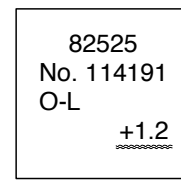
Main code	Sub code	Description	Ref. Page																																																
26	07	<p>Drum sensitivity setup</p> <ol style="list-style-type: none"> <li>When the test command is executed, the number stored in the memory is recalled and the READY lamp turns on.</li> <li>A number 1 to 3 may be entered on the keypad while the RPL is active.</li> <li>Press the PRINT switch after the number has been entered. With this, the READY lamp turns off and the test command number is displayed. Now, this is all needed for the setup. <ul style="list-style-type: none"> <li>Drum</li> </ul> </li> </ol> <table border="1"> <tr> <td>Keypad entry</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>Sensitivity</td> <td>1</td> <td>2</td> <td>3</td> </tr> </table> <p>Input of the zoom position shift correction value (26-08, 26-09)</p>	Keypad entry	1	2	3	Sensitivity	1	2	3																																									
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	08	<p>Lens characteristics entry (at a time of lens replacement)</p> <p>For each lens has a variance in its focal distance, the lens moving distance in any zoom mode must correspond with the focal distance of the lens. The zoom ratio varies proportionate to the variance of the lens focal distance.</p> <p>To avoid problem, the class of the lens focal distance refer to chart next) is stored in the memory using the test command. In a variable zoom mode, the lens moving distance that corresponds to the lens focal distance is obtained on the basis of the data so as to produce the accurate zoom copy.</p> <p>Setup method (26-08)</p> <ol style="list-style-type: none"> <li>When the test command is executed, the presently stored preset code is displayed and the READY lamp turns on.</li> <li>After the READY lamp turned on, enter the lens number shown on the lens upper area and press the PRINT switch to store the preset value in the memory. The READY lamp now turns off.</li> </ol> <p>C → [=] → 0/∞ → [=] → 2 → 6 → PSW → 8 → PSW → 1  → 4 → PSW (Setting)</p>	[7]-3-(6)																																																
	09	<p>4/5 mirror characteristics entry (at a time of lens replacement)</p> <p>(Setup method (26-09))</p> <ol style="list-style-type: none"> <li>Set the correction value for lens marked value based on "lens value vs. test command input." <p>Press C → [=] → 0/∞ → [=] → 2 → 6 → PSW → 9 → PSW keys to execute the test command 26-09.</p> <p>As the READY lamp turns on, the previously set value 1 to 21) is shown.</p> </li> <li>Enter the new value on the keypad. <p>EX: If the value shown on the lens is +1, 2, pick up "14."</p> <p>Press the 1 → 4 → PSW keys.</p> <p>A figure 0 to L is shown on the lens value label.</p> <div style="text-align: center;"> <p>(Label)</p> <table border="1"> <tr> <td>82525</td> </tr> <tr> <td>No. 114191</td> </tr> <tr> <td>O-L</td> </tr> <tr> <td>+1.2</td> </tr> </table> </div> </li> </ol> <table border="1"> <thead> <tr> <th>Value shown on the label</th> <th>Test command 48-01</th> <th>Test command 48-01 [=]</th> <th>Test command 26-09 Zoom correction (No.4/5 mirror)</th> <th>Test command 26-08 Zoom correction (lens)</th> </tr> </thead> <tbody> <tr> <td>+4.0</td> <td>10</td> <td>20</td> <td rowspan="3">21</td> <td rowspan="3">21</td> </tr> <tr> <td>3.9</td> <td>11</td> <td>21</td> </tr> <tr> <td>3.8</td> <td>12</td> <td>22</td> </tr> <tr> <td>3.7</td> <td>13</td> <td>22</td> <td rowspan="4">20</td> <td rowspan="4">20</td> </tr> <tr> <td>3.6</td> <td>14</td> <td>22</td> </tr> <tr> <td>3.5</td> <td>15</td> <td>23</td> </tr> <tr> <td>3.4</td> <td>16</td> <td>23</td> </tr> <tr> <td>3.3</td> <td>17</td> <td>24</td> <td rowspan="4">19</td> <td rowspan="4">19</td> </tr> <tr> <td>3.2</td> <td>18</td> <td>24</td> </tr> <tr> <td>3.1</td> <td>19</td> <td>25</td> </tr> <tr> <td>3.0</td> <td>20</td> <td>25</td> </tr> </tbody> </table>	82525	No. 114191	O-L	+1.2	Value shown on the label	Test command 48-01	Test command 48-01 [=]	Test command 26-09 Zoom correction (No.4/5 mirror)	Test command 26-08 Zoom correction (lens)	+4.0	10	20	21	21	3.9	11	21	3.8	12	22	3.7	13	22	20	20	3.6	14	22	3.5	15	23	3.4	16	23	3.3	17	24	19	19	3.2	18	24	3.1	19	25	3.0	20	25	[7]-3-(6)
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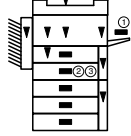
Main code	Sub code	Description				Ref. Page
26	09					
		Value shown on the label	Test command 48-01	Test command 48-01 	Test command 26-09 Zoom correction (No.4/5 mirror)	Test command 26-08 Zoom correction (lens)
		2.9	21	26	18	18
		2.8	22	26		
		2.7	23	27		
		2.6	24	27		
		2.5	25	28	17	17
		2.4	26	28		
		2.3	27	29		
		2.2	28	29		
		2.1	29	30	16	16
		2.0	30	30		
		1.9	31	31		
		1.8	32	31		
		1.7	33	32	15	15
		1.6	34	32		
		1.5	35	33		
		1.4	36	33		
		1.3	37	34	14	14
		1.2	38	34		
		1.1	39	35		
		1.0	40	35		
		0.9	41	36	13	13
		0.8	42	36		
		0.7	43	37		
		0.6	44	37		
		0.5	45	38	12	12
		0.4	46	38		
		0.3	47	39		
		0.2	48	39		
		+0.1	49	40	11	11
		0	50	40		
		-0.1	51	40		
		0.2	52	41		
		0.3	53	41	10	10
		0.4	54	42		
		0.5	55	42		
		0.6	56	43		
		0.7	57	43	9	9
		0.8	58	44		
		0.9	59	44		
		1.0	60	45		
		1.1	61	45	8	8
		1.2	62	46		
		1.3	63	46		
		1.4	64	47		
		1.5	65	47	7	7
		1.6	66	48		
		1.7	67	48		
		1.8	68	49		
		1.9	69	49	6	6
		2.0	70	50		
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41	01	<p>Document size photosensor check</p> <p>The length of the document is sensed by way of the sensor beam interrupt method. All document size lamps and automatic paper selection lamps turn on. When the beam from the sensor LED PWB is interrupted, the corresponding document size lamp turns off.</p> <p>* See the chart below for the location of photosensor.</p> <table border="1"> <thead> <tr> <th>Axis</th> <th>Japan AB series</th> <th>Export AB series</th> <th>Export inch series</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>—</td> <td>A5</td> <td>INV</td> </tr> <tr> <td>2</td> <td>B5</td> <td>A4</td> <td>LT</td> </tr> <tr> <td>3</td> <td>A4</td> <td>—</td> <td>—</td> </tr> <tr> <td>4</td> <td>B5R</td> <td>A4R</td> <td>11" x 8½" (R)</td> </tr> <tr> <td>5</td> <td>AR4</td> <td>—</td> <td>—</td> </tr> <tr> <td>6</td> <td>B4</td> <td>B4</td> <td>11" x 14"</td> </tr> <tr> <td>7</td> <td>A3</td> <td>A3</td> <td>11" x 17"</td> </tr> </tbody> </table>	Axis	Japan AB series	Export AB series	Export inch series	1	—	A5	INV	2	B5	A4	LT	3	A4	—	—	4	B5R	A4R	11" x 8½" (R)	5	AR4	—	—	6	B4	B4	11" x 14"	7	A3	A3	11" x 17"	[7]-4-(1)
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41	01	<ul style="list-style-type: none"> <li>The automatic paper selection lamp turns on when the original cover is open and turns off when the cover is closed.</li> <li>When closing of the original cover is sensed, all document size lamps turn off.</li> </ul> 	[7]-4-(1)																																
	02	Document size photosensor setup	[7]-4-(2)																																
	03	<ul style="list-style-type: none"> <li>Document sensor beam receiving level and setup level</li> </ul> <p>Used to check the document sensor level.</p> <p>1. Receiving level display mode</p> <ul style="list-style-type: none"> <li>The receiving level when the test command is in execution is displayed on the copy number window.</li> <li>As the number corresponding to a sensor is entered on the keypad after the execution of the test command, the respective document size lamp turns on to show the sensor beam receiving level.</li> <li>The automatic paper selection lamp is employed to check open/close of the original cover; ON when open, and OFF when closed.</li> </ul> <p>In the case of 1 above, the sensor level is fixed to the previous setting, when the original cover is closed.</p> <p>• Setup level display mode</p> <p style="text-align: center;"> <span style="border: 1px solid black; padding: 2px;">C</span> → <span style="border: 1px solid black; padding: 2px;">=</span> → <span style="border: 1px solid black; padding: 2px;">0</span> → <span style="border: 1px solid black; padding: 2px;">=</span> → <span style="border: 1px solid black; padding: 2px;">2</span> → <span style="border: 1px solid black; padding: 2px;">5</span> → <span style="border: 1px solid black; padding: 2px;">PSW</span> → <span style="border: 1px solid black; padding: 2px;">1</span> → <span style="border: 1px solid black; padding: 2px;">PSW</span> → <span style="border: 1px solid black; padding: 2px;">Auto image select key</span> </p> <p>With the above operation, the PAUSE lamp turns on.</p> <ul style="list-style-type: none"> <li>Level of each sensor set by way of the test command 41-2 is displayed on the copy number window.</li> <li>As a figure corresponding to a sensor is entered on the keypad after the test command has been executed, the respective document size lamp turns off to show the level set for the sensor.</li> </ul>	[7]-4-(2)																																
42	*	<ul style="list-style-type: none"> <li>Developer counter clear</li> </ul> <p>Reset the contents of the copy number counter of the installed developing unit.</p> <ul style="list-style-type: none"> <li>The counter contents displayed in the same manner as the test command 22-1.</li> <li>The color of the installed developing unit is similar as the test command 22-6.</li> </ul> <p>NOTE: It is effective for the developer color installed. If the developing unit has not been installed, the test command would not operate.</p>																																	

Main code	Sub code	Description	Ref. Page
43	*	<p>° Fuser temperature setup Used to set the fuser temperature. When the test command is executed, the low two digits of the currently programmed fuser temperature is shown (ex: 75=175C). When the zoom select key is pressed here, the fuser temperature setting can be changed in increments of 5C. Press the PRINT switch to set.</p> <p>(Japan) 80 → 60 → 65 → 70 → 75 → 85 → 90 (Except SEC) 90 → 85 → 95 → 00 → 05</p> <p>(SEC) 90 → 75 → 80 → 85 → 95 → 00 → 05</p>	
46	01	<p>° Exposure level adjustment Used to adjust the copy density and the copy density select level.</p>	[7]-5-(5)
47	*	<p>° AE sensor characteristics measurement AE sensor output characteristics memory (1) AE sensor output characteristics input</p> <p>Press the [C] → [=] → [0] → [=] → [4] → [7] → [PSW] keys. The mirror base is initialized, scans about 10cm, then stops. The READY lamp turns on now and becomes ready to measure. Press the PRINT switch. The copy lamp driving voltage changes in increments of 5V (10V) each from 80V (160V) to 55V (110V), and the AE sensor output characteristics is stored in the memory against copy intensity variation for the original. NOTE: Shown in parenthesis is for the 200V series machine.</p>	[7]-5-(2)
48	01	<p>Front/rear direction zoom ratio adjustment (refer to the test command 26-9 for the lens type value. Used to set the No.4/5 mirror home position (focal adjustment) and to adjust the zoom ratio of the copy in the vertical direction (from front to rear). There are two kinds of test command 48 of which procedure are described as follows.</p> <p>1-1. Vertical copy zoom ratio standard value input method (at a time the lens or main PWB replacement)</p> <p>Press the [C] → [=] → [0] → [=] → [4] → [8] → [PSW] → [=] keys. The already set value or "40" is displayed on the copy number window. Substitute the value of "O.L." shown on the label attached to the lens with the next formula to obtain the value. <math>40 - [(value\ of\ O.L. \times 5) = standard\ value\ of\ correction]</math> Ex: <math>40 - (+1.2 \times 5) = 34</math></p> <p>1-2. Use this test command to adjust the horizontal zoom ratio. Change the value entered in "1-1" to change.</p> <p>2-1. No.4/4 mirror home position standard value input (at a time of lens or main PWB replacement).</p> <p>Press the [C] → [=] → [0] → [=] → [4] → [8] → [PSW] [1] → [PSW] keys. The already stored value or "50" is displayed. Substitute the value of "O.L." shown on the label attached to the lens with the next formula to obtain the value. <math>50 - [(O.L.\ value) \times 10] = standard\ value\ of\ correction</math> Ex: <math>50 - (+1.2 \times 10) = 38</math></p> <p>2-2. To adjust the resolution, change the value entered at "2-1" using this test command.</p>	[7]-3-(1) -(3)
	02	<p>° Paper moving direction zoom adjustment Used to adjust the zoom ratio in the landscape mode. Varying the mirror base moving speed adjusts the zoom factor in the landscape direction of the copy (paper moving direction). Adjusting method</p> <p>1 Place a scale over the original table in the direction the paper moves. Make a copy in the 100% zoom mode and obtain the copy zoom ratio correction factor. <math>Copy\ zoom\ correction\ factor = (original\ size) - \frac{(copy\ image\ size)}{(original\ size)} \times 100\%</math></p> <p>2 Do the test command 49. As the READY lamp turns on, the previously set figure between 5 and 35 is displayed. Change it with the copy zoom factor correction factor obtained in 1. (Input value) = (previously stored value) + copy zoom ratio correction factor [%] × 10 Press the PRINT switch after entering the input value. With this, the input value is stored in the memory and the READY lamp turns off.</p>	[7]-3-(5)



Main code	Sub code	Description	Ref. Page
50	1	Used to adjust the copy lead edge image loss and void areas. For more information, refer to the optical system copy lead edge adjustment procedure.	[7]-3-(11)
	2	The function of this test command is similar to the test command 50-01. The test command 50-02 allows easier lead edge adjustment using the values of L1 and L2. For more information, refer to the optical system copy lead edge adjustment procedure.	[7]-3-(11)
51	02	<ul style="list-style-type: none"> <li>◦ Resist roller adjustments</li> </ul> <p>Used to set the on timing of the paper feed roller (rate of buckle in the paper caused by the resist roller). When the test command is executed, the manual feed mode is automatically established. Change the manual feed mode resisting rate, cassette paper feed resist rate, and ADU paper feed resist rate.</p>  <p>Press the [C] → [=] → [0/∅] → [=] → [5] → [1] → [PSW] → [2] → [PSW] → keys. The manual feed lamp turns on → 1 Enter number → press the cassette key (main unit bottom cassette and pause lamp turn on) → 2 enter number → press the cassette key (main unit bottom cassette lamp turns on) → 3 enter number → press the cassette key.</p> <p>1 : Manual feed paper resist rate adjustment 2 : Cassette paper resist rate adjustment 3 : ADU paper resist rate adjustment</p>	[7]-2-(2)
	05	<ul style="list-style-type: none"> <li>◦ Frame delete rate adjustment (copy moving direction only)</li> </ul> <p>Used to set the frame delete rate.</p> <ul style="list-style-type: none"> <li>• When the test command is executed, the READY lamp turns on, and the figure previously stored is displayed on the copy number window.</li> </ul> <p>Now, it becomes ready to accept a number between 1 and 19 on the keypad. When the PRINT switch is pressed after the entry, the number is stored in the memory and the READY lamp turns off. A single rate deletes the frame of about 1.0mm. The standard value has been set to "6."</p>	[7]-2-(2)
52	01	<ul style="list-style-type: none"> <li>◦ ADU alignment plate adjust value setup</li> </ul> <p>Used to adjust the home position of the ADU alignment plate. When the test command is executed, the READY lamp turns on. Enter a new value as the previously set value came displayed, and press the PRINT switch to stored it in the memory. It can be adjustable from 0 to 15. The default is 7. Setting a smaller value increases the width of the alignment plate and vice versa.</p>	
	02	<ul style="list-style-type: none"> <li>◦ ADU rear plate adjust value setup</li> </ul> <p>Used to adjust the home position of the ADU rear plate. When the test command is executed, the READY lamp turns on. Enter a new value as the previously set value came displayed, and press the PRINT switch to stored it in the memory. It can be adjustable from 0 to 99. Setting a smaller value increases the width of the rear plate and vice versa.</p>	
	03	<ul style="list-style-type: none"> <li>◦ ADU drive clutch off time setup</li> </ul> <p>Can be set to any number between 0 and 10 in increments of 10ms each (default: 4). 0 = 30ms 1 = 0ms ..... 4 = 30ms ..... 10 = 90ms Setting a smaller value shortens the ADU clutch off timings and decreases the enforced curling rate of paper.</p>	
53	01	<ul style="list-style-type: none"> <li>◦ RADF and ADF stop position adjustment value setup (plain paper copied on one side)</li> </ul> <p>Used to adjust the RADF stop position for the single side copy of plain paper. When the test command is executed, the READY lamp turns on. Enter a new value as the previously set value came displayed, and press the PRINT switch to stored it in the memory. It can be adjustable from 0 to 15.</p>	
	02	<ul style="list-style-type: none"> <li>◦ RADF stop position adjustment setup (for double side copy on plain paper)</li> </ul> <p>Used to adjust the RADF stop position in the double side copy of plain paper. When the test command is executed, the READY lamp turns on. Enter a new value as the previously set value came displayed, and press the PRINT switch to stored it in the memory. It can be adjustable from 0 to 15.</p>	
	03	<ul style="list-style-type: none"> <li>◦ RADF and ADF stop position adjustment setup (light paper)</li> </ul> <p>Used to adjust the RADF stop position for light paper. When the test command is executed, the READY lamp turns on. Enter a new value as the previously set value came displayed, and press the PRINT switch to stored it in the memory. It can be adjustable from 0 to 15.</p>	
	04	<ul style="list-style-type: none"> <li>◦ RADF and ADF resist sensor adjustment</li> </ul> <p>Used to adjust the RADF resist sensor. (For ADF, adjust the lens sensor and the passing width sensor.) When the test command is executed, the RADF resist sensor is adjusted and its value is displayed.</p>	
	05	<ul style="list-style-type: none"> <li>◦ RADF and ADF eject sensor adjustment</li> </ul> <p>Used to adjust the RADF eject sensor. When the test command is executed, the RADF eject sensor is adjusted and its value is displayed.</p>	

Trouble status display

Trouble status code	Subordinate code	Description
U3	20	Mirror motor lock detection
	21	Mirror motor MHPS error detection
L4	01	Main lock detection
L5	03	No.4/5 mirror motor error detection
	04	No.4/5 mirror motor MHPS error detection
	05	Lens motor error detection
	06	Lens motor LHPS error detection
L8	01	Power supply line frequency error detection
H2		Open thermistor
H3		Heat roller high temperature detection
H4		Heat roller low temperature detection
U2		Counter sumcheck error detection
U4	02	ADU alignment plate malfunction detected
	04	ADU rear plate malfunction detected
U5	00	ADF communication trouble detected
	01	A motor malfunction detected
	02	B motor malfunction detected
	03	Resist sensor malfunction detected
	04	Eject sensor malfunction detected
EE	EL	Auto developer adjustment (overtuned)
	EU	Auto developer adjustment (undertuned)
F3	12	Main unit upper cassette liftup motor trouble detected
	22	Main unit bottom cassette liftup motor trouble detected
U6	00	Desk communication trouble detected
	01	Desk-1 cassette liftup motor trouble detected
	02	Desk-2 cassette liftup motor trouble detected
	03	Desk-3 cassette liftup motor trouble detected
	08	Desk 24V line error detected
	09	LCC motor overcurrent detected
	10	Desk transport motor trouble detected
F1	00	Sorter communication trouble detected
	01	Paper jog malfunction detected
	02	Transport motor malfunction detected
	04	Indexer lower limit detected
	05	Indexer upper limit detected
	06	Shift motor malfunction detected
F2	02	Toner motor malfunction detected