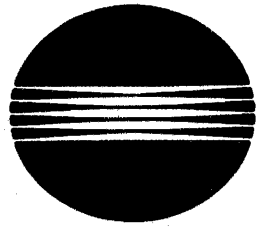
1159SBS000AA

EP1030/EP1030F
EP1031/EP1031F

SWITCHES ON PWBs/ TECH. REP. SETTINGS



MINOLTA

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1151SBS0100A

1 PRECAUTIONS FOR HANDLING THE PWBs

1151SBS0101A

1-1. Precautions for Transportation and Storage

a) Before transporting or storing the PWBs, put them in protective conductive cases or bags so that they are not subjected to high temperature (and they are not exposed to direct sunlight).

b) Protect the PWBs from any external force so that they are not bent or damaged.

c) Once the PWB has been removed from its conductive case or bag, never place it directly on an object that is easily charged with static electricity (such as a carpet or plastic bag).

d) Do not touch the parts and printed patterns on the PWBs with bare hands.

1151SBS0102A

1-2. Precautions for Replacement and Inspection

a) Whenever replacing the PWB, make sure that the power cord of the copier has been unplugged.

b) When the power is on, the connectors should never be plugged in or unplugged.

c) Use care not to strap the pins of an IC with a metal tool.

d) When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch the metal part to discharge static electricity before touching the PWB.

2 CONTROL PANEL KEYS AND INDICATORS

* For more details, see the "Operator's Manual" shipped with the copier.
  - (EP1031/EP1031F)

[1] Paper Source Key

- Selects the paper source.

[2] Clear/Stop Key

- Returns the copy setting to one (1). Returns the zoom ratio to 100% and stops the copying operation.

[3] Start Key

- Starts the copying operation.

[4] Copy Quantity and Zoom Keys

- Used to set the number of copies to be made and manual zoom settings. When used for setting the number of copies, the number in the display panel will increase by one each time the one (1) key is pressed and increase by ten each time the ten (10) key is pressed.
- When used to set the zoom ratio, the number in the display panel will increase or decrease by one each time the respective key ⩔ ⩓ is pressed. The zoom range is from 64% to 156%.

[5] Copy Quantity/Zoom Selection Key

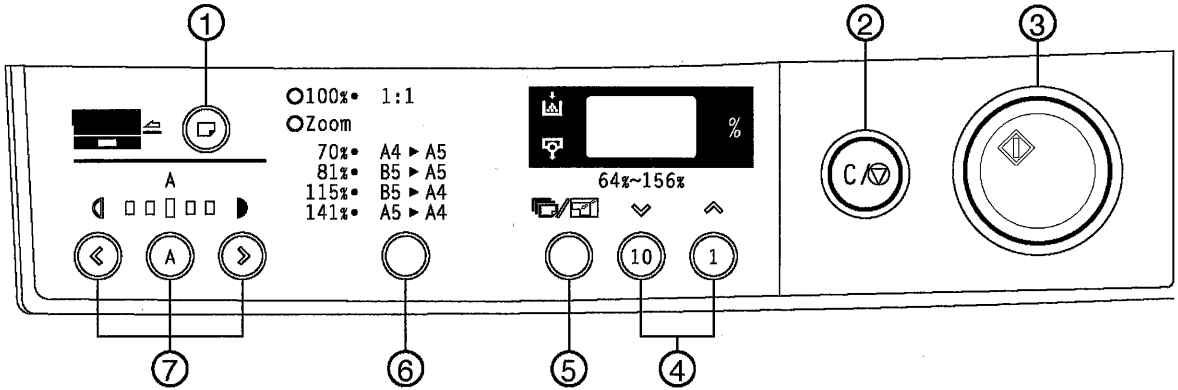
- Switches the operation of the 1 and 10 keys between copy quantity and zoom functions.

[6] Fixed Zoom Ratio Key

- Selects and displays a fixed zoom ratio setting.

[7] Exposure Control Keys

- ◁ ▷ : Controls the density of the copy image.
- Ⓐ : For selecting the Auto Exposure/Manual Exposure Mode.


1
2
3
100% 1:1
Zoom
70% A4 ▶ A5
81% B5 ▶ A5
115% B5 ▶ A4
141% A5 ▶ A4
A
%
64%~156%
C
A
10
1
7
6
5
4

1159S007DA

* For more details, see the "Operator's Manual" shipped with the copier.
- (EP1030/EP1030F)

[1] Clear/Stop Key

- Returns the copy setting to one (1). Stops the copying operation.

[2] Start Key

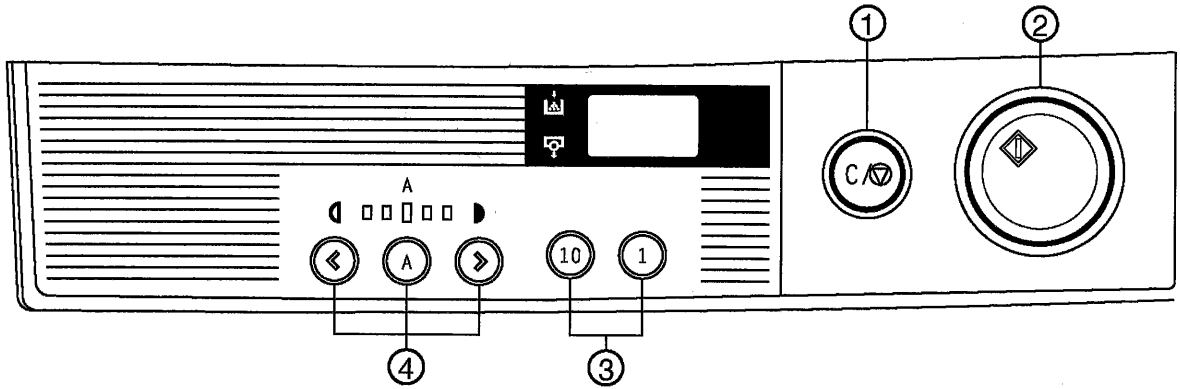
- Starts the copying operation.

[3] Copy Quantity Keys

- Used to set the number of copies to be made. The number in the display panel will increase by one each time the one (1) key is pressed and increase by ten each time the ten (10) key is pressed.

[4] Exposure Control Keys

- ◁ ▷ : Controls the density of the copy image.
- ∧ : For selecting the Auto Exposure/Manual Exposure Mode.



1159S005DA

1159SBS0400A

4 USER MODE

- This mode is used to make various setting to the User's needs.

1159SBS0401A

4-1. Functions Available from the User Mode

No.	Function
U1	Auto clear ON/OFF

1159SBS0402A

4-2. User Mode Setting Procedure

<Setting Procedure>

1. Holding down the Exposure Control Key (<), turn ON the Power Switch. ("U1" appears on the Display Panel.)
2. Press the Start Key to show the data set the selected function.
3. Using the Copy Quantity and Zoom Keys, change the set data.
4. Press the Clear/Stop Key to validate the new setting. (The function no. reappears.)

<Resetting Procedure>

- Press the Clear/Stop Key to quit the User Mode.

[User Mode]

1159SBS0403A

4-3. User Mode Setting Details

Function No.	Setting (The default is **Highlighted** .)
U1	<Auto clear ON/OFF> Select whether or not to activate the auto clear (panel reset) function after the lapse of a given period of time after a copy cycle has been completed or a key on the control panel has been operated.

Data	Description	Data	Description
0	Disabled	2	Enabled : 2 min.
0.5	Enabled : 30 sec.	3	Enabled : 3 min.
1	Enabled : 1 min.	4	Enabled : 4 min.

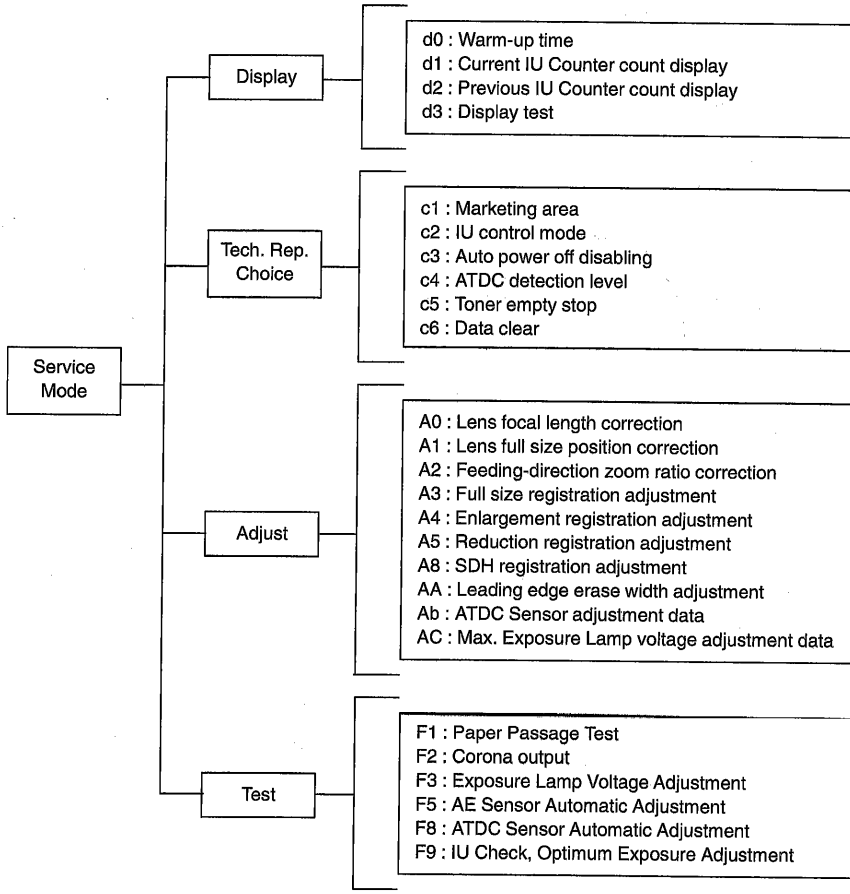
1159SBS0500A

5 SERVICE MODE

- This mode is used by the Tech. Rep. to set, check, adjust, and/or program various service functions.

1159SBS0501A

5-1. Service Mode Function Tree



1159SBS0502A

5-2. Entering the Service Mode

<Setting Procedure>

1. Perform the following steps to set the copier in to Service Mode.

   Clear Stop Key ON ➡ Exposure Control Key ⓒ ON ➡ Clear Stop Key ON ➡

   ➡ Exposure Control Key ⓒ ON

2. Select the Service Mode function using the Copy Quantity and Zoom Key ① and then press the Start Key. (The functions are shown in the order of d, c, A, and F.)

<Leaving Service Mode>

- Press the Clear/Stop Key twice to quit the Service Mode.

1159SBS0503A

5-3. Counter Display Procedure

<Display Procedure>

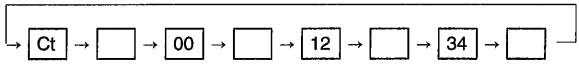
1. Hold down the Clear/Stop Key for 3 sec. → The Total Counter count appears.
2. Hold down the Clear/Stop Key for another 3 sec. → The IU Counter or CP Counter appears.

<Display Example>

The counter reading is shown on the Display Panel in the following order.

- Total Counter

(Example : 1234)



Note: The IU Counter count is displayed when "0" is set for "c2" and CP Counter counter is displayed when "1" is set for "c2".

1159SBS0504A
5-4. Setting in the Service Mode

1159SBS050401A
1. Display

- This function tests for display of the warming-up time, current IU Counter, previous IU Counter, and the control panel.

<Setting Procedure>

1. Select the Display mode. ("d0" appears on the Display Panel.)
2. Select the function to be checked or set using the Copy Quantity and Zoom Key ① and press the Start Key.
3. Press the Clear/Stop Key to stop the display sequence.

<Leaving the Function>

- Select the next Display subfunction using the Copy Quantity and Zoom Key ① or press the Clear/Stop Key to quit the Display function.

[Service Mode ▶ Display]

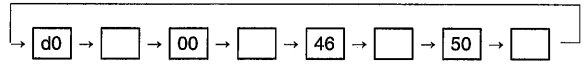
Display Function	Setting
d0	<Warm-up time> Displays the warm-up time on the Display Panel.
d1	<Current IU Counter count display> Displays the count of the current IU Counter on the Display Panel.
d2	<Previous IU Counter count display> Displays the count of the previous IU Counter on the Display Panel.
d3	<Display test> Blinks all LEDs on the control panel other than the ready indicator.

<Display Example>

The warm-up time and IU Counter count are shown on the Display Panel in the following order.

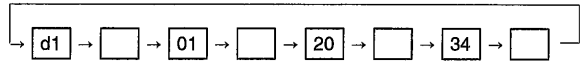
- Warm-up time display

(Example : 46.50 sec.)



- IU Counter count display

(Example : 12034)



1159SBS050402A

2. Tech. Rep. Choice

- This function allows the Tech. Rep. to make various settings and adjustments.

<Setting Procedure>

1. Select the Tech. Rep. Choice function. ("c1" appears on the Display Panel.)
2. Select the subfunction to be set or adjusted using the Copy Quantity and Zoom Key ① and press the Start Key.
3. Change the set data as necessary using the Copy Quantity and Zoom Keys.
4. Press the Clear/Stop Key to validate the setting.

<Leaving the Function>

- Select the next Tech. Rep. Choice subfunction using the Copy Quantity and Zoom Key ① or press the Clear/Stop Key to quit the Tech. Rep. Choice function.

[Service Mode ▶ Tech. Rep. Choice]

<table>
<tr><th>Choice No.</th><th>Setting (The default is Highlighted .)</th></tr>
<tr><td>c1</td><td><Marketing area>
The correct fixed zoom ratios and paper sizes are selected according to the marketing area setting selected.
<table>
<tr><td>Data</td><td>0</td><td>1</td><td>2</td></tr>
<tr><td>Description</td><td>Metric areas</td><td>Inch areas</td><td>Factory</td></tr>
</table>
Note: Do not select "2" for this subfunction.</td></tr>
<tr><td>c2</td><td><IU control mode>
Select whether to use the copier or Tech. Rep. to keep track of the replacement time of the IU.
<table>
<tr><td>Data</td><td>0</td><td>1</td></tr>
<tr><td>Description</td><td>IU control : Controlled by the IU life</td><td>PM control : Not controlled by the IU life</td></tr>
</table>
Note: IU control = IU Counter; PM control = CP Counter</td></tr>
<tr><td>c3</td><td><Auto Power OFF Disabling>
Select whether to enable or disable the Auto Power OFF that is to be activated after the lapse of a given period of time after a copy cycle has been completed or a key pressed.
<table>
<tr><td>Data</td><td>0 ..... 3 ..... 12</td></tr>
<tr><td>Description</td><td>0 min. ..... 30 min. ..... 120 min.</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Choice No.</th><th>Setting (The default is Highlighted .)</th></tr>
<tr><td>c4</td><td>
<ATDC Detection Level>
Select the ATDC control level (T/C ratio).
<table>
<tr><th>Data</th><th>Description</th><th>Data</th><th>Description</th></tr>
<tr><td>40
45
50
55</td><td>T/C ratio 4.0%
T/C ratio 4.5%
T/C ratio 5.0%
T/C ratio 5.5%</td><td>60
65
70</td><td>T/C ratio 6.0%
T/C ratio 6.5%
T/C ratio 7.0%</td></tr>
</table>
</td></tr>
<tr><td>c5</td><td>
<Toner Empty Stop>
Select whether or not inhibit copying when a toner-empty condition is detected.
<table>
<tr><th>Data</th><td>0</td><td>1</td></tr>
<tr><th>Description</th><td>Inhibits copying.</td><td>Permits copying.</td></tr>
</table>
</td></tr>
<tr><td>c6</td><td>
<Data clear mode>
Select the type of settings that are to be reset to the initial values when the power is next turned ON (except for resetting a misfeed).
Note that "machine setting" and "all counters" can be selected when the Auto Exposure (A) indicator is lit.
<table>
<tr><th>Data</th><th>Description</th><th>Data</th><th>Description</th></tr>
<tr><td>0
1
2</td><td>None
CP counter
CP-related counters</td><td>3
4
5</td><td>Choice
Machine setting
All counters</td></tr>
</table>
Note: Enabled when "1" is set for Tech. Rep. Choice "c2."
</td></tr>
</table>

<Details of Data Cleared>

	Item / Description	User Mode	Tech. Rep. Choice	Adjust	Counter
CP counter	CP counter				○
CP-related counters	IU counter				○
	CP counter				○
	PC rotation time counter				○
	Exposure age correction counter				○
Choice	Manual central exposure setting voltage	○			
	AE input level	○			
	Auto clear (U1)	○			
	Marketing area (c1)		○		
	IU control mode		○		
	Auto power off disabling (c3)		○		
	ATDC detection level (c4)		○		
	Toner empty stop (c5)		○		
Machine setting	Lens focal length correction (A0)			○	
	Lens full size position correction (A1)			○	
	Feeding-direction zoom ratio correction (A2)			○	
	Full size registration adjustment (A3)			○	
	Enlargement registration adjustment(A4)			○	
	Reduction registration adjustment (A5)			○	
	SDH registration adjustment (A8)			○	
	Leading edge erase width adjustment (AA)			○	
	ATDC Sensor adjustment (Ab)			○	
	Max. Exposure Lamp voltage adjustment (AC)			○	
All counters	Total counter				○
	CP counter				○
	PC rotation time counter				○
	Exposure age correction counter				○
	IU counter				○

○ : Cleared

Note: CP-related counters: Cleared only in PM control mode.

1159SBS050403A

3. Adjust

- This function allows the Tech. Rep. to set the correction values for making up for machine-to-machine variations.

<Setting Procedure>

1. Select the Adjust function. ("A0" appears on the Display Panel.)
2. Select the subfunction to be set or adjusted using the Copy Quantity and Zoom Key ① and press the Start Key.
3. Change the set data as necessary using the Copy Quantity and Zoom Keys.
4. Press the Clear/Stop Key to validate the setting.

<Leaving the Function>

- Select the next Adjust subfunction using the Copy Quantity and Zoom Key ① or press the Clear/Stop Key to quit the Adjust function.

[Service Mode ▶ Adjust Mode]

<table>
<tr><th>Adjust Mode</th><th>Setting (The default is Highlighted .)</th></tr>
<tr><td>A0</td><td><Lens focal length correction>
Corrects variations in the Lens focal length (according to the grouping of the Lenses).
<table><tr><td>Data</td><td>49</td><td>50</td><td>51</td></tr><tr><td>Description</td><td>Short focal length (–)</td><td>Standard (0)</td><td>Long focal length (+)</td></tr></table></td></tr>
<tr><td>A1</td><td><Lens full size position correction>
Corrects the zoom ratio in the crosswise direction by varying the Lens full size position.
<table><tr><td>Data</td><td>33 .... 50 .... 67</td></tr><tr><td>Description</td><td>0 steps .... 17 steps .... 38 steps
(Reduction direction) (Enlagement direction)</td></tr></table></td></tr>
<tr><td>A2</td><td><Feeding-direction zoom ratio correction>
Corrects the zoom ratio in the feeding direction by varying the scan speed.
<table><tr><td>Data</td><td>43 .... 50 .... 57</td></tr><tr><td>Description</td><td>–2.1% .... ±0% .... +2.1%
(Reduction direction) (Enlagement direction)</td></tr></table></td></tr>
</table>

<table>
<tr><th>Adjust Mode</th><th>Setting (The default is Highlighted.)</th></tr>
<tr><td>A3</td><td><Full size registration adjustment>
Corrects registration between the leading edge of the original and that of the image in the full size made by varying the Synchronizing Roller start timing.
<table>
<tr><td>Data</td><td>26 .... 50 .... 74</td></tr>
<tr><td>Description</td><td>–0.6 mm .... ±0 mm .... +6.0 mm
(Smaller deviation) (Greater deviation)</td></tr>
</table></td></tr>
<tr><td>A4</td><td><Enlargement registration adjustment>
Corrects registration between the leading edge of the original and that of the image in an enlargement made by varying the Synchronizing Roller start timing.
<table>
<tr><td>Data</td><td>42 .... 50 .... 58</td></tr>
<tr><td>Description</td><td>–2.0 mm .... ±0 mm .... +2.0 mm
(Smaller deviation) (Greater deviation)</td></tr>
</table></td></tr>
<tr><td>A5</td><td><Reduction registration adjustment>
Corrects registration between the leading edge of the original and that of the image in a reduction made by varying the Synchronizing Roller start timing.
<table>
<tr><td>Data</td><td>42 .... 50 .... 58</td></tr>
<tr><td>Description</td><td>–2.0 mm .... ±0 mm .... +2.0 mm
(Smaller deviation) (Greater deviation)</td></tr>
</table></td></tr>
<tr><td>A8</td><td><SDH registration adjustment>
Corrects registration between the leading edge of the original fed via the SDH and that of the image by varying the SDH Registration Roller start timing.
<table>
<tr><td>Data</td><td>10 .... 50 .... 90</td></tr>
<tr><td>Description</td><td>–10 mm .... ±0 mm .... +10 mm
(Smaller deviation) (Greater deviation)</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Adjust Mode</th><th>Setting (The default is Highlighted .)</th></tr>
<tr><td>AA</td><td><Leading edge erase width adjustment>
Corrects the leading edge erase width by varying the Imag Erae Lamp ON timing.
<table><tr><td>Data</td><td>38 .... 60 .... 62</td></tr><tr><td>Description</td><td>−11.0 mm .... (Smaller width) ±0 mm .... +4.0 mm (Greater width)</td></tr></table></td></tr>
<tr><td>Ab</td><td><ATDC Sensor adjustment data>
Manually enter the setting value previously recorded when the starter has been changed or the setting value data automatically set by an F8 operation is cleared.
NOTE
For details, see DIS/REASSEMBLY, ADJUSTMENT.</td></tr>
<tr><td>AC</td><td><Max. Exposure Lamp voltage adjustment data>
Manually enter the setting value previously recorded if the max. Exposure Lamp voltage adjustment data set by an F3 operation is cleared with Data Clear of Tech. Rep. Choice.
NOTE
For details, see DIS/REASSEMBLY, ADJUSTMENT.</td></tr>
</table>

1159SBS050404A

4. Test

- This function allows the Tech. Rep. to perform various functional test and adjustment.

<Setting Procedure>

1. Select the Test function. ("F1" appears on the Display Panel.)
2. Select the subfunction to be adjusted or checked using the Copy Quantity and Zoom Key ① and press the Start Key.

<Leaving the Function>

- Select the next Test subfunction using the Copy Quantity and Zoom Key ① or press the Clear/Stop Key to quit the Test function.

[Service Mode ▶ Test]

Test No.	Description
F1	<Paper Passage Test> This test moves the paper through the copier for correct passage. <Procedure> 1. Press the Start Key to start the sequence. 2. Press the Clear/Stop Key to stop the sequence.
F2	<Corona output> Do not use this test as it is only for factory adjustment.
F3	<Exposure Lamp Voltage Adjustment> This test allows the Tech. Rep. to adjust the maximum Exposure Lamp voltage and the optimum exposure setting in the Manual Exposure mode. (It runs for 30 sec.) ***NOTE*** *For details, see DIS/REASSEMBLY, ADJUSTMENT.*
F5	<AE Sensor Automatic Adjustment> This test automatically adjusts the AE sensor. (It runs for 5 sec.) ***NOTE*** *For details, see DIS/REASSEMBLY, ADJUSTMENT.*
F8	<ATDC Sensor Automatic Adjustment> This test automatically adjusts the ATDC sensor. ***NOTE*** *For details, see DIS/REASSEMBLY, ADJUSTMENT.*
F9	<IU Check, Optimum Exposure Adjustment> Do not use this test as it is only factory adjustment.

[Service Mode ▶ Test]
– Components Energized in the Test –

Test Operation / Component	F1	F2	F3	F5	F8	F9
Main Drive Motor	○	○	○	○	○	○
PC Drum Charge	○	○	○	○	○	○
Grid	–	○	–	–	–	○
Bias	○	○	○	○	○	○
Exposure Lamp	○	–	○	○	–	○
Edge Erase Lamp	–	–	–	–	–	–

○ : Energized – : Remain deenergized

6 FUNCTION SETTING REQUIREMENTS AT REPLACEMENT OF PART

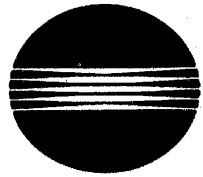
- If a part is replaced as part of troubleshooting and other service jobs, some parts require that a Test operation be run and data values reentered and/or cleared.

Function \ Replacement Part	PC Drum	IU	Starter (*3)	Exposure Lamp (*4)	AE Sensor	Power Unit	PWB-A (*5)
F3 (MAX)				○1		○1	(*6)
F3 (Manual)	○2	○1		○2		○2	
F5 (Auto)	○3	○2			○		○
F8 (ATDC)		○(*2)	○				(*7)
Cleaning of CP-related Counter (*1)	○1	○(*2)					○

○ : Required

○ Make the adjustments in numerical order.

*1: Clear the CP-related counter, select "2: CP-related counter" in the Data Clear mode (c6) of Tech. Rep. Choice mode, then switch the power off/on.
*2: When replacing the IU, F8 and CP-related counter are automatically cleared.
*3: Including the replacement of the ATDC Sensor.
*4: Including the Cleaning of Lamp Regulator and optical system.
*5: When replacing PWB-A, if the EEPROM (IC3A) from the old PWB-A is installed on the new PWB-A, these adjustments are not necessary.
*6: Input the F3 setting on the factory label inside the front door.
*7: Input the Ab setting on the factory label inside the front door.



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1159-7997-11 97074370
Printed in Japan