Chapter 4 Adjustment

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4-1. Toner density

The toner density adjustment procedure is used to adjust the black matte section density or the toner consumption amount, etc.

1) Procedure

1. Call out the service mode.
   (Press the Enlarge key and Reduce key for 5 sec. in the Scale 1: 1 mode, and press the 0 key within 2 sec. after the local destination displayed)



Japan US Europe

2. Select 25 mode.
   (Input 25 with the numeric keypad, and then press the Start Print key.)



3. Select address 84 (toner density control setting).
   (Input 84 with the numeric keypad, and then press the Start Print key.)



4. Change the setting data to the required data (1 to 5).
   (Input the data with the numeric keypad, and then press the Start Print key.)



Data	Toner density
1	Lighter
2	↑
3	Default value
4	↓
5	Darker

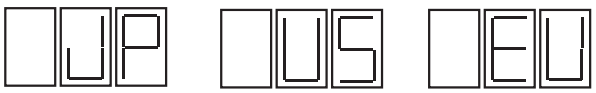
5. Press the Clear/Stop key until the normal mode appears (3 presses).
   (When the Clear key is pressed once, the state will return to the previous state.)
   Note: After changing this setting, the changed toner density will not be achieved immediately.

4-2. Fusing temperature

The fusing temperature adjustment is carried out to improve the fusing performance when copying onto thick paper, and to uncurl thin paper, etc.

1) Procedure

1. Call out the service mode.
   (Press the Enlarge key and Reduce key for 5 sec. in the Scale 1: 1 mode, and press the 0 key within 2 sec. after the local destination displayed)



Japan US Europe

2. Select 25 mode.
   (Input 25 with the numeric keypad, and then press the Start Print key.)



△1 3. Select address 80 (Fusing temperature control setting).
   (Input 80 with the numeric keypad, and then press the Start Print key.)



4. Change the setting data to the required data (1 to 5).
   (Input the data with the numeric keypad, and then press the Start Print key.)

Data	Fusing temperature	Remarks
1	182ºC	Lower
2	185ºC	↑
3	188ºC	Default value
4	190ºC	↓
5	193ºC	Higher

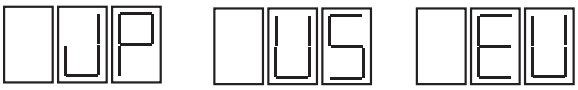
5. Press the Clear/Stop key until the normal mode appears (3 presses).
   (When the Clear key is pressed once, the state will return to the previous state.)

4-3. Exposure voltage

The exposure lamp voltage adjustment is carried out to change the adjustment width of the density control knob on the operation panel.

1) Procedure

1. Call out the service mode.
   (Press the Enlarge key and Reduce key for 5 sec. in the Scale 1: 1 mode, and press the 0 key within 2 sec. after the local destination displayed)



Japan US Europe

2. Select 36 mode.
   (Input 36 with the numeric keypad, and then press the Start Print key.)



3. Select the code to be changed (86 to 90: AVR adjustment 1 to 5).
   (Example: Input 88 with the numeric keypad, and then press the Start Print key.)



Adjustment data
(example: 32) blinks

4. Change the setting data to the required data (01 to 64).
   (Input the data with the numeric keypad, and then press the Start Print key.)



Changed data
(example: 42) blinks

Changed data is set

5. When the Start Print key is pressed again, a test copy of the settings after the changes can be made.
6. After copying, the status will return to step 4. Thus, if the density is not as required, repeat the procedure from step 4.
7. When completed with the adjustment, press the Clear/Stop key until the normal mode appears (3 presses).
   (When the Clear key is pressed once, the state will return to the previous state.)

4-4. Image position

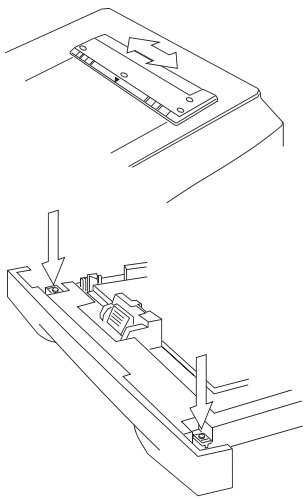
4-4-1. Center position

If the position of the copy is mis-centered, adjust the fixing position (four screws) of the document scale or the cassette fixing position (two screws).

⚠1

Code	Adjustment details	Adjustment range
86	Center density in enlargement. (Adjustment range: Approx. 43V to 67V)	01 to 64
87	Center density in reduction. (Adjustment range: Approx. 43V to 67V)	
88	Max. density in life size. (Adjustment range: Approx. 55V to 80V)	
89	Center density in life size. (Adjustment range: Approx. 43V to 67V)	
90	Min. density in life size. (Adjustment range: Approx. 30V to 55V)	

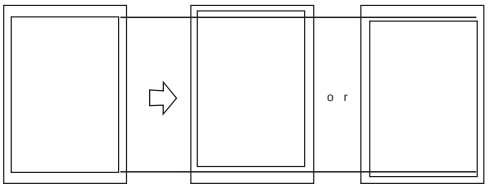
Document Copy Copy



Note: When adjusting the center position of a manual feed copy, since the manual feed guide is fixed, align the document scale to the manual feed side first, and then align the cassette's fixing position.

4-4-2. Leading edge position

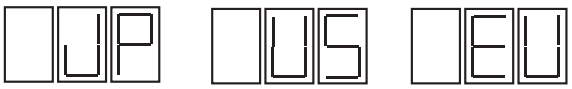
If the leading edge position of the copy is mis-centered, change the edge adjustment data.



Document Copy Copy

1) Procedure

1. Call out the service mode.
   (Press the Enlarge key and Reduce key for 5 sec. in the Scale 1: 1 mode, and press the 0 key within 2 sec. after the local destination displayed)



Japan US Europe

2. Select 36 mode.
   (Input 36 with the numeric keypad, and then press the Start Print key.)



3. Select address 91 (leading edge position setting).
   (Example: Input 91 with the numeric keypad, and then press the Start Print key.)



Adjustment data (example: 32) blinks

4. Change the setting data to the required data (01 to 64:adjustment width 5mm).
   (Input the data with the numeric keypad, and then press the Start Print key.)



Changed data (example: 42) blinks

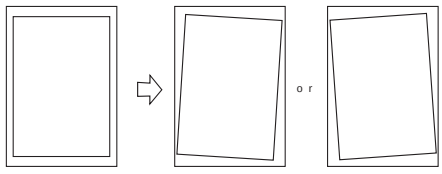
Changed data is set

5. When the Start Print key is pressed again, a test copy of the settings after the changes can be made.
6. After copying, the status will return to step 4. Thus, if the density is not as required, repeat the procedure from step 4.
7. When completed with the adjustment, press the Clear/Stop key until the normal mode appears (3 pushes).
   (When the Clear key is pressed once, the state will return to the previous state.)
8. To adjust the leading edge for an enlarged or reduced copy, press the Scale key and Arrow key before step 4, and select the fixed scale enlargement or reduction.

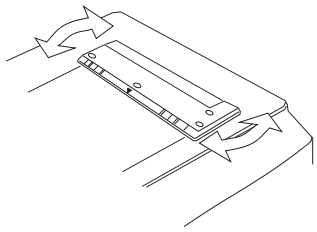
Note: Enlargement or reduction can be carried out in the zoom mode. However, as the scale 114% to 83% is a full size adjustment scale, set a scale that exceeds this range.

4-4-3. Image skew

The image skew caused by the document inclination when it is placed on the platen is adjusted by changing the position of the document scale's fixed position (four screws).



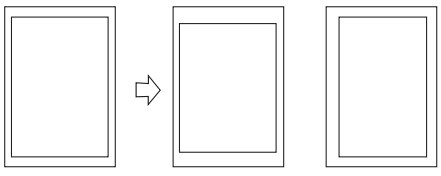
Document Copy Copy



4-5. Magnification adjustment

If the length of the copy is deviated from that of the original in the feeding direction or the crosswise direction, perform the magnification adjustment.

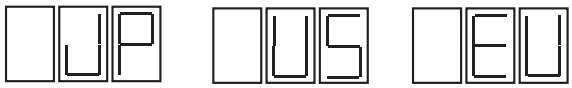
4-5-1. Feeding direction (Vertical magnification)



Document Copy Copy

1) Procedure

1. Call out the service mode.
   (Press the Enlarge key and Reduce key for 5 sec. in the Scale 1: 1 mode, and press the 0 key within 2 sec. after the local destination displayed)



Japan US Europe

2. Select 36 mode.
   (Input 36 with the numeric keypad, and then press the Start Print key.)



3. Select address 93 (Scanner speed adjustment).
   (Example: Input 93 with the numeric keypad, and then press the Start Print key.)



Adjustment data
(example: 32) blinks

4. Change the setting data to the required data (01 to 64:adjustment width 5mm).
   (Input the data with the numeric keypad, and then press the Start Print key.)



Changed data
(example: 42) blinks

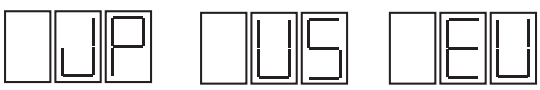
Changed data is set

5. When the Start Print key is pressed again, a test copy of the settings after the changes can be made.
6. When the copy is done, the status will return to step 4. Thus, if the density is not as required, repeat the procedure from step 4.
7. When completed with the adjustment, press the Clear/Stop key until the normal mode appears (3 presses).
   (When the Clear key is pressed once, the state will return to the previous state.)

4-5-2. Crosswise direction (Horizontal magnification)

1) Procedure

1. Call out the service mode.
   (Press the Enlarge key and Reduce key for 5 sec. in the Scale 1: 1 mode, and press the 0 key within 2 sec. after the local destination displayed)



Japan US Europe

2. Select 36 mode.
   (Input 36 with the numeric keypad, and then press the Start Print key.)



3. Select address 95 (lens home position adjustment).
   (Example: Input 95 with the numeric keypad, and then press the Start Print key.)



Adjustment data
(example: 32) blinks

4. Change the setting data to the required data (01 to 64:adjustment width 5mm).
   (Input the data with the numeric keypad, and then press the Start Print key.)



Changed data
(example: 42) blinks

Changed data is set

5. When the Start Print key is pressed again, a test copy of the settings after the changes can be made.
6. When the copy is done, the status will return to step 4. Thus, if the density is not as required, repeat the procedure from step 4.
7. When completed with the adjustment, press the Clear/Stop key until the normal mode appears (3 presses).
   (When the Clear key is pressed once, the state will return to the previous state.)

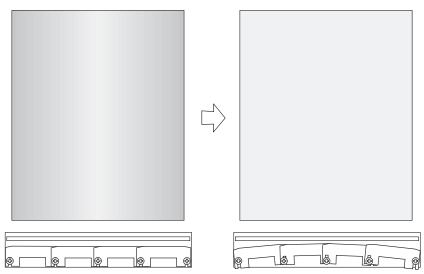
4-6. Optical section adjustment

Note 1: As advanced adjustment skills are required for adjusting the optical section, avoid adjusting this section unless absolutely necessary.

Note 2: Each of the adjustment places in the optical section are marked with lock paint on screws, so dissolve the lock paint using alcohol, etc., before starting the adjustment. (Some screws are resin.) Always apply screw lock after the adjustments.

4-6-1. Light distribution

If the light distribution of the exposure lamp is unbalanced, adjust the aperture plate, and even out the half tone density.

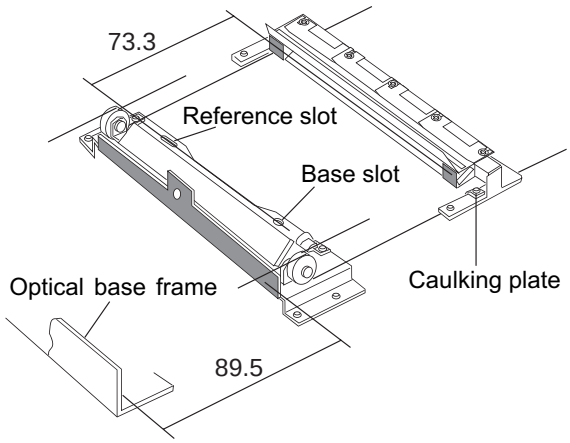


4-6-2. Scanner reference position

When the distance between the No. 2 scanner frame side and optical base frame's inner wall is 89.5mm, fix (one screw, two places) the wire rope's caulking plate so that the distance between the No. 2 scanner's reference slot and No. 1 scanner's reference surface is 73.5mm.

Reference: When replacing the wire ropes, it is easy to adjust precisely leaving one wire rope intact and keeping the No. 1 scanner and No. 2 scanner parallel.

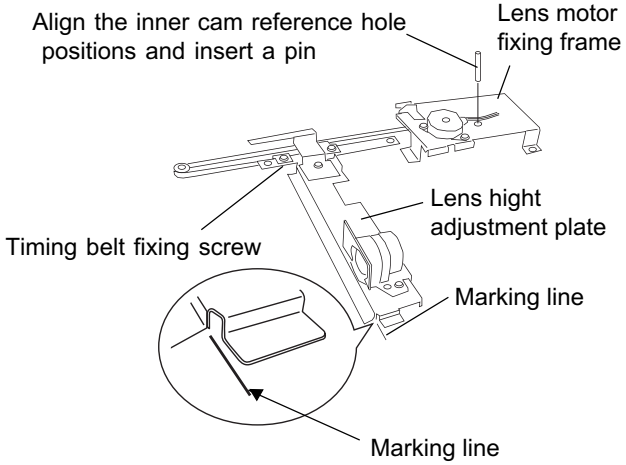
Note: If this position deviates, the diagonal distortion and focus adjustment will not be possible.



⚠1 4-6-3. Lens reference position

Fix the timing belt (one screw) in the following state: The lens height adjustment plate side being aligned to the optical base frame reference position (marking line), and No. 4 and No. 5 mirror drive cam's reference hole and lens motor fixing frame reference hole being in the same position (by inserting a fine pin).

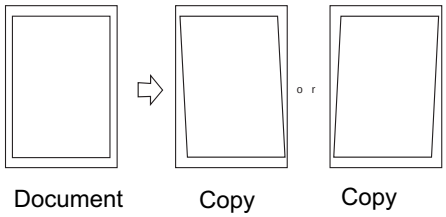
Note: If this position is deviated, the horizontal magnification (lens) and focus cannot be adjusted.

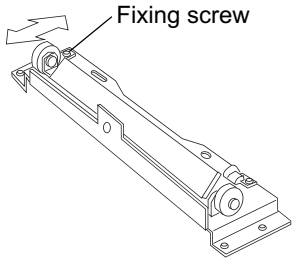


4-6-4. Diagonal distortion

The slant caused by the optical section is adjusted by the No. 2 scanner pulley's fixing position.

Note: Confirm that the diagonal distortion is not caused by the paper.

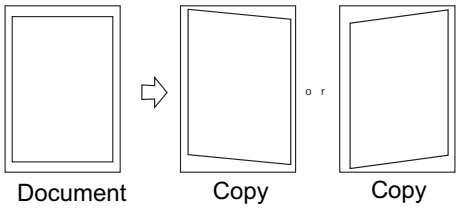




4-6-5. Image distortion

The image distortion caused by the optical section is adjusted by the No. 4 and No. 5 mirror height.

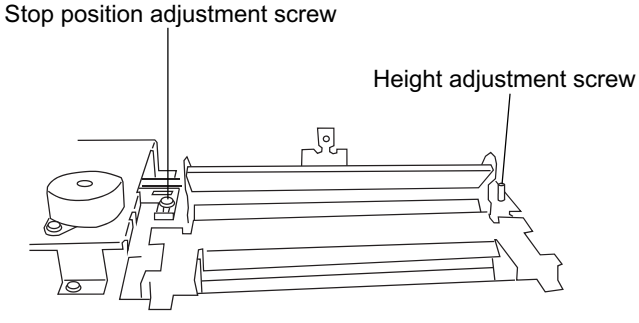
Note: Do not mistake this for that caused by placing the document at a slant.



4-6-6. Focus

Adjust the stop position of the No. 4 and No. 5 mirrors.

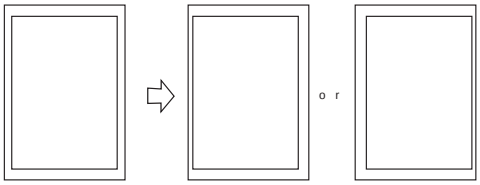
Note: If the focus adjustment is deviated, the magnification will also be deviated. Thus, carry out this adjustment before the magnification adjustment.



4-6-7. Image center position

Adjust the lens fixing position.

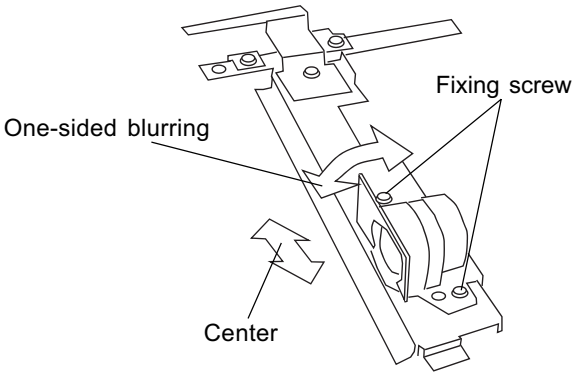
Note: This adjustment is carried out only when the corresponding section is disassembled. Normally, the adjustment is done with the document scale.



⚠1 4-6-8. Focus (Horizontal blurring)

Adjust the lens installation direction.

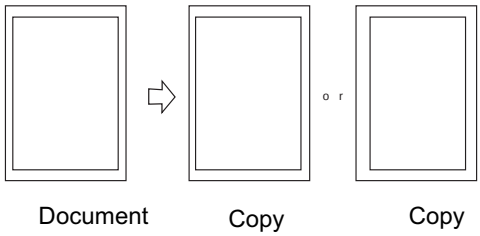
Note: This adjustment is carried out only when the corresponding section is disassembled.

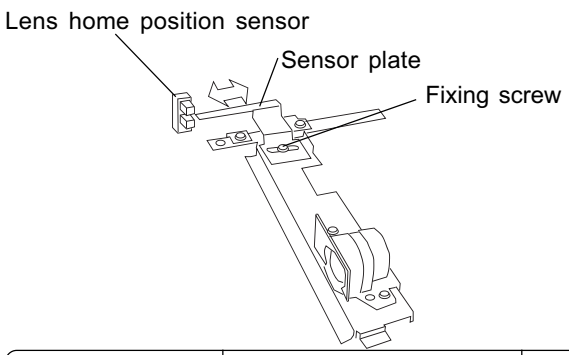


4-6-9. Horizontal magnification

Adjust the fixing position of the sensor plate, and change the lens home position.

Note: This adjustment is carried out only when the corresponding section is disassembled. Normally, the adjustment is done with the software (36-95).





4-7. Leading and trailing edges erase width

Adjust the leading and trailing edges erase width.

1) Procedure

1. Call out the service mode.
   (Press the Enlarge key and Reduce key for 5 sec. in the Scale 1: 1 mode, and press the 0 key within 2 sec. after the local destination displayed)



Japan US Europe

2. Select 36 mode.
   (Input 36 with the numeric keypad, and then press the Start Print key.)



3. Select address (92:leading edge, 98:trailing edge).
   (Example: Input 92 with the numeric keypad, and then press the Start Print key.)



Adjustment data (example: 32) blinks

⚠1

Code	Adjustment details	Adjustment range
92	Adjustment width: ±3mm	01 to 64
98	Adjustment range: ±5mm	

4. Change the setting data to the required data (01 to 64:adjustment width 5mm).
   (Input the data with the numeric keypad, and then press the Start Print key.)



Changed data (example: 42) blinks

Changed data is set

5. When the Start Print key is pressed again, a test copy of the settings after the changes can be made.
6. After copying, the status will return to step 4. Thus, if the density is not as required, repeat the rocedure from step 4.

7. When completed with the adjustment, press the Clear/Stop key until the normal mode appears (3 pushes).
   (When the Clear key is pressed once, the state will return to the previous state.)

Note: Refer to the Chapter 8 about other adjustment items by using the service function.