PC800s/900s

SERVICE MANUAL

REVISION 0

PC860	F13-8491	TYA00001-
PC880	F13-8291	TZA00001-
PC890	F13-8242	UAA00001-
PC920	F13-8431	TVB00001-
	F13-8441	PUD00001-
		PUE00001-
	F13-8461	PUH00001-
PC921	F13-8432	TVC00001-
PC940	F13-8436	TVD00001-
PC941	F13-8437	TVE00001-
PC950	F13-8231	TVF00001-
	F13-8241	PUF00001-
		PUG00001-
PC960	F13-8434	TVG00001-
PC980	F13-8232	TVH00001-
PC981	F13-8233	TVJ00001-

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Prepared by

OFFICE IMAGING PRODUCTS TECHNICAL SUPPORT DIVISION

CANON INC.

5-1, Hakusan 7-chome, Toride-shi, Ibaraki 302-8501 Japan

INTRODUCTION

This service manual has been prepared for the PC800/900 Series machines, providing basic information used for servicing the machines in the field so as to ensure their quality and performance.

This service manual consists of the following chapters:

Chapter 1 *General Description* introduces the machine's features, specifications, names of parts, and how originals are reproduced.

Chapter 2 *Basic Operation* explains how copies are made on a step-by-step basis.

Chapter 3 *Exposure System* discusses the principles of operation used for the machine's exposure system. It also explains the timing at which exposure-related mechanisms are operated, and shows how they may be disassembled/assembled and adjusted.

Chapter 4 *Image Formation System* discusses the principles of operation used for the machine's image formation system. It also explains the timing at which image formation-related mechanisms are operated, and shows how they may be disassembled/assembled and adjusted.

Chapter 5 *Pick-Up/Feeding System* discusses the principles of operation used for the machine's pickup/feeding system. It also explains the timing at which pickup/feeding-related mechanisms are operated, and shows how they may be disassembled/assembled and adjusted.

Chapter 6 *Fixing System* discusses the principles of operation used for the machine's fixing system. It also explains the timing at which fixing-related mechanisms are operated, and shows how they may be disassembled/assembled and adjusted.

Chapter 7 *Externals/Auxiliary Mechanisms* discusses the principles of operation used for the machine's externals/auxiliary mechanisms. It also explains the timing at which auxiliary mechanism-related mechanisms are operated, and shows how they may be disassembled/assembled and adjusted.

Chapter 8 *ADF* explains the principles of operation of the ADF in view of electrical and mechanical functions and in relation to their timing of operation. It also shows how the unit may be disassembled/assembled and adjusted.

Chapter 9 *Installation* introduces requirements for the site of installation, and shows how the machine may be installed using step-by-step instructions.

Chapter 10 *Maintenance and Servicing* provides tables of periodically replaced parts and consumables/durables and scheduled servicing charts.

Chapter 11 *Troubleshooting* provides tables of maintenance/inspection, standards/adjustments, and problem identification (image fault/malfunction).

Appendix contains a general timing chart and general circuit diagrams.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.
   In the diagrams, ⊐■■■⊏ represents the path of mechanical drive—where a signal name accompanies the symbol ⟶▶, the arrow indicates the direction of the electric signal.
   The expression “turn on the power” means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
2. In the digital circuits, ‘1’ is used to indicate that the voltage level of a given signal is “High,” while ‘0’ is used to indicate “Low.” (The voltage value, however, differs from circuit to circuit.)
   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other reasons, and major changes will be communicated in the form of Service Information bulletins.

All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine.

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• This service manual covers the models shown in the following table. Be sure to have a good understanding of the difference from model to model before referring to this manual.

Model	Type code	Multi-feeder	Single feeder	Zoom	Default ratio	Density correction switch (SW101)	ADF as standard	Cassette	Copying speed (cpm) at Direct
PC860	TYA		√	√	2R2E	√		250 sheets	12
PC880	TZA	√		√	2R2E	√		250 sheets	12
PC890	UAA	√		√	2R2E	√	√	250 sheets	12
PC920	PUD		√	√	2R2E	√		Universal	10
PC920	PUE		√	√	2R2E	√		Universal	10
PC920	PUH		√	√	2R2E	√		Universal	10
PC920	TVB		√	√	3R1E			Universal	10
PC921	TVC		√		3R1E			Universal	10
PC940	TVD		√	√	3R1E			Universal	13
PC941	TVE		√		3R1E			Universal	13
PC950	PUF	√		√	2R2E	√		Universal	12
PC950	PUG	√		√	2R2E	√		Universal	12
PC950	TVF	√		√	3R1E			500 sheets	13
PC960	TVG	√		√	3R1E		√	Universal	10
PC980	TVH	√		√	3R1E		√	500 sheets	13
PC981	TVJ	√			3R1E		√	500 sheets	13

The notation "√" indicates that the item in question is available.

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CHAPTER 2 BASIC OPERATION

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CHAPTER 4 IMAGE FORMATION SYSTEM

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CHAPTER 7 EXTERNALS/AUXILIARY MECHANISMS

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CHAPTER 9 INSTALLATION

CHAPTER 10 MAINTENANCE AND SERVICING

CHAPTER 11 TROUBLESHOOTING

APPENDIX

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CHAPTER 1

GENERAL DESCRIPTION

This chapter provides specifications of the machine, instructions on how to operate the machine, and an outline of copying process.

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I. FEATURES

1. Personal Copier with a Zoom Function and a Fixed Copyboard

- You can choose either a default enlargement/reduction ratio or any ratio between 70% and 141% in 1% increments.

2. Ecology-Conscious

- The use of a roller charging method has resulted in a considerable reduction of ozone: 0.01 ppm or less on the average, 0.02 ppm or less at maximum (1/100 to 1/1000 compared with existing Canon machines).

3. SURF Fixing Assembly

- The wait time is 0 sec (at 20°C room temperature), enabling speedy copying work immediately after power-on.

4. Various Paper Sizes

- The paper may be between A4 (LGL) and A5 (STMT) (*Using the universal cassette).
- In manual feed mode, paper may be as large as A4 (LGL) or as small as a business card.

5. All-in-One Cartridge for Simple Maintenance

- The photosensitive drum, toner case, charging roller, developing assembly, and cleaning assembly are constructed as a single entity (cartridge).
  The user may expect quality copy images at all times as long as he/she performs simple replacement/cleaning work.

6. Large Paper Source

- The source of paper may contain as many as 550 sheets of paper (500-sheet cassette + multifeeder; multifeeder type).

7. Separate top unit

- The machine's top unit may be opened to make jam removal easy.

8. ADF Type

- Continuous copying is possible with the use of the ADF.

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II. SPECIFICATIONS

A. Copier

1. Type

Item	Descriptions
Body	Desk top
Copyboard	Fixed
Source of light	Halogen lamp (80 V/110 W for 120V-model; 150 V/160 W for 220/240 V-model)
Lens	Fixed focal point lens
Photosensitive medium	OPC drum (24-mm dia.)

Table 1-201

2. Mechanisms

Item	Descriptions
Reproduction	Indirect static reproduction
Charging	Roller (direct charging)
Exposure	Slit (moving light source)
Copy density adjustment	Auto or manual
Development	Dry (toner projection)
Pickup	Cassette (1 pc.) Single-feeder (single-feeder type) Multifeeder (multifeeder type)
Separation	Curvature separation + static eliminator
Fixing	Flat heater
Cleaning	Blade
Original orientation	Center reference (copyboard)

Table 1-202

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3. Performance

Item	Descriptions
Original type	Sheet, book, 3-D object (2kg max.)
Maximum original size	A4 (297 × 210 mm)/LGL (216 × 356 mm)
Reproduction ratio	Inch/AB-configuration: 2R2E Inch-configuration: 3R1E
Zoom	70% to 141% (in 1% increments[*1])
Wait time	0 sec (at 20°C room temperature)
First copy time	10 sec or less (at 20°C room temperature; Direct, non-AE, from the cassette)
Continuous copying	100 (max.)
Copy size	A4/LGL (297 × 210 mm/216 × 356 mm max.) Business card (90 × 55 mm, min.)
Copy paper type	Cassette: Plain paper (64 to 80 g/m^2), tracing paper (SM-1, A4R/B5R), colored paper, recycled paper (64 to 80 g/m^2; A4R/B5R), eco paper (80 g/m^2; A4R) Manual Feeder: Plain paper (52 to 128 g/m^2), tracing paper (SM-1, GNT-80[*2]; A4R/B5R), transparency[*2,*4] (A4R/LTRR[*3]), colored paper, business card (200 g/m^2 or less), label sheet[*2] (A4R/LTRR), recycled paper (64 to 80 g/m^2; A4R/B5R), eco paper (80 g/m^2; A4R), postcard[*3] Double-Sided/Overlay Copying[*5]: Plain paper (64 to 128 g/m^2), colored paper, business card (200 g/m^2 or less), recycled paper (64 to 80 g/m^2; A4R/B5R), eco paper (80 g/m^2; A4R), postcard[*3]
Cassette	With claws Universal cassette (250 sheets of 80 g/m^2 paper; A4/LGL to A5/STMT) 250-sheet cassette (250 sheets of 80 g/m^2) 500-sheet cassette (500 sheets of 80 g/m^2)
Multifeeder tray	5 mm deep (approx.; 50 sheets of 80 g/m^2)
Copy tray	100 sheets (A4; 80 g/m^2)
Non-image width	Leading edge: 2.0 ±1.5 mm (Direct; 4.0 mm or less otherwise) Left/right: 0.0 +2.0, -0.0 mm (0 +4.0, -0.0 mm for LTR)
Auto power-off	Provided (5 min, approx.; fixed)[*6]

Table 1-203

*1. Applies only to models with a zoom function.
*2. Applies only to single pickup if the multifeeder is used.
*3. Applies only to vertical feeding.
*4. Upon delivery, be sure to remove each from the copy tray.
*5. Be sure to remove any curling before feeding for a second time.
*6. If stopped because paper ran out during copying operation, 1 hr.

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4. Others

Item	Descriptions
Operating condition Temperature Humidity Atmospheric pressure	 7.5°C to 32.5°C/44.5°F to 90.5°F 5% to 85% RH 607.95 to 1013.25 hPa (0.6 to 1 atm)
Power source	120 V 60 Hz 220/240 V 50 Hz, 60 Hz
Serial number	TVBxxxxx PUDxxxxx PUHxxxxx TVCxxxxx PUExxxxx TVDxxxxx PUFxxxxx TVExxxxx PUGxxxxx TVFxxxxx TYAxxxxx TVGxxxxx TZAxxxxx TVHxxxxx UAAxxxxx TVJxxxxx
Maximum power consumption	0.9 kW or less Standby: 1.2W (approx.; about 5min; reference only) Copying: 0.4kWh (approx.; reference only)
Noise	Standby: -(sound power level by ISO) Copying: (sound power level by ISO) • Single-feeder type: 68 dB or less • Multifeeder type: 66 dB or less
Ozone	0.01 ppm or less (average; 0.02 ppm or less, max.)
Dimensions (WxDxH)	Copyboard Type 484.9 × 448.2 × 297.5 mm[*1]/ 329.0 mm[*2] 19.1 in. × 17.6 in × 11.7 in[*1]/ 13.0 in[*2] ADF Type 484.9 × 448.2 × 358.3 mm[*1]/ 389.8 mm[*2] 19.1 in × 17.6 in × 14.1 in[*1]/ 15.3 in[*2]
Weight (including the cassette)	Copyboard Type Single-feeder type: 19.3 kg[*1]/ 42.5 lb[*1], 20.9 kg[*2]/ 46.0 lb[*2] Multifeeder type: 19.5 kg[*1]/ 42.9 lb[*1], 21.1 kg[*2]/ 46.4 lb[*2] ADF Type Single-feeder type: 23.8 kg[*1]/ 52.4 lb[*1], 25.2 kg[*2]/ 55.4 lb[*2] Multifeeder type: 24.0 kg[*1]/ 52.8 lb[*1], 25.4 kg[*2]/ 55.9 lb[*2]
Consumables	Copy paper: Keep wrapped, and protect against humidity. Toner: Avoid direct sunlight, and store at 40°C/104°F, 85% or less.

Table 1-204

*1. 250-sheet cassette type
*2. 500-sheet cassette type

5. Default Ratios

Item	2R2E (Inch/AB-configuration)	3R1E (Inch-configuration)
Direct	1:1.000	1:1.000
Reduce I	1:0.707	1:0.707
Reduce II		1:0.786
Reduce III	1:0816	
Reduce IV		1:0.860
Enlarge I	1:1.154	
Enlarge II	1:1.414	1:1.414

Table 1-205

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6. Copying Speed

Copying speed at Direct	Reproduction ratio	Copy size	Number of copies (Multifeeder*1) (Copies / min)
13	Direct	LTRR	13 (9)
		LGL	11 (8)
		STMTR	13 (9)
	Reduce I (70.7%)	MIN	13 (9)
	Reduce II (78.6%)	LGL → LTRR	13 (9)
	Reduce IV (86.0%)	MARJIN	13 (9)
	Enlarge II (141.4%)	MAX	10 (9)
12	Direct	A4R	12 (9)
		B5R	12 (9)
		A5R	12 (9)
	Reduce I (70.7%)	A4R → A5R	12 (9)
	Reduce III (81.6%)	B5R → A5R	12 (9)
	Enlarge I (115.4%)	B5R → A4R	12 (9)
	Enlarge II (141.4%)	A5R→ A4R	10 (9)
10	Direct	A4R	10 (9)
		B5R	10 (9)
		A5R	10 (9)
	Reduce I (70.7%)	A4R → A5R	10 (9)
	Reduce III (81.6%)	B5R → A5R	10 (9)
	Enlarge I (115.4%)	B5R → A4R	10 (9)
	Enlarge II (141.4%)	A5R → A4R	10 m(9)
10	Direct	LTRR	10 (9)
		LGL	9
		STMTR	10 (9)
	Reduce I (70.7%)	MIN	10 (9)
	Reduce II (78.6%)	LGL → LTRR	10 (9)
	Reduce III (86.0%)	MARJIN	10 (9)
	Enlarge II (141.4%)	MAX	9

Table 1-206

*1. The number of copies starting with the pickup operation that follows the delivery of the 19th copy in a continuous copying job. (See p.5-8)

The specifications are subject to change for product improvement.

B. ADF

Item	Descriptions
Original pickup	Auto pickup/delivery
Original orientation	Face-down
Original position	Center reference
Original separation	Top separation
Original type	Single-sided (50 to 128 g/m^2) A5 (STMT) to A4R (LTRR), LGL Length: 139.7 to 355.6 mm (feeding direction) Width: 139.7 to 215.9 mm
Stack	30 sheets (80 g/m^2 or less; about 3 mm in height)
Original processing mode	Single-sided original to single-sided copy
Original size detection	Yes (in feeding direction)
Mixed original sizes	No
Original detection	Yes
Original feeding speed	446 mm/sec
Communication with host	IPC
Dimensions	Width: 474 mm/ 18.7 in. (659 mm/ 25.9 in. with the tray open) Depth: 394 mm/ 15.5 in. Height: 74 mm/ 2.9 in. (216 mm/ 8.5 in. with the tray open)
Weight	5 kg/ 11 lb (approx.)
Power source	24 VDC and 5 VDC (from the host)
Maximum power consumption	40 W or less
Operating environment	Temperature: same as the host Humidity: same as the host

Table 1-207

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*1. The following may not be used as an original:
- Sheet with a staple, clip, or glue.
- Sheet with a cut, hole, or tear.
- Sheet with holes for binding.
- Sheet with a carbon back.
- Sheet with a cut-and-paste piece.
- Sheet with curling, bending, or wrinkling.

The specifications are subject to change for product improvement.

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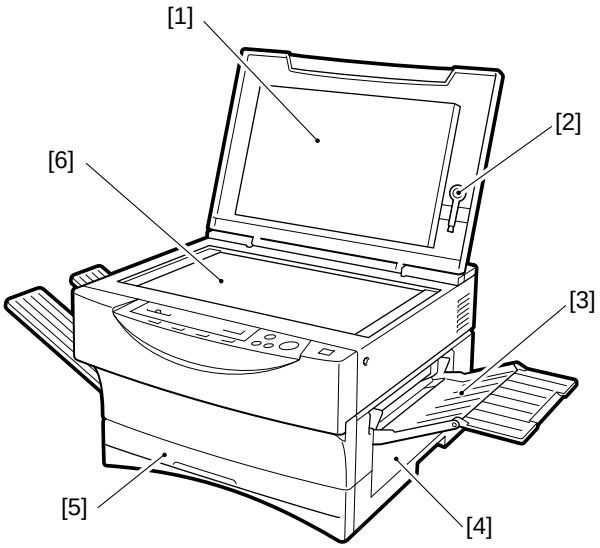
III. NAMES OF PARTS

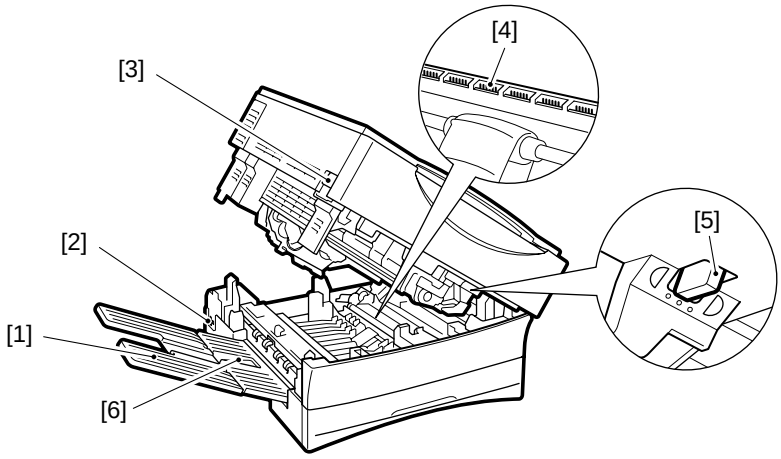
A. External View

1. Copyboard Type



[1] Copyboard cover
[2] Static eliminator cleaner
[3] Manual feed tray
[4] Right door
[5] Cassette
[6] Copyboard glass

Figure 1-301

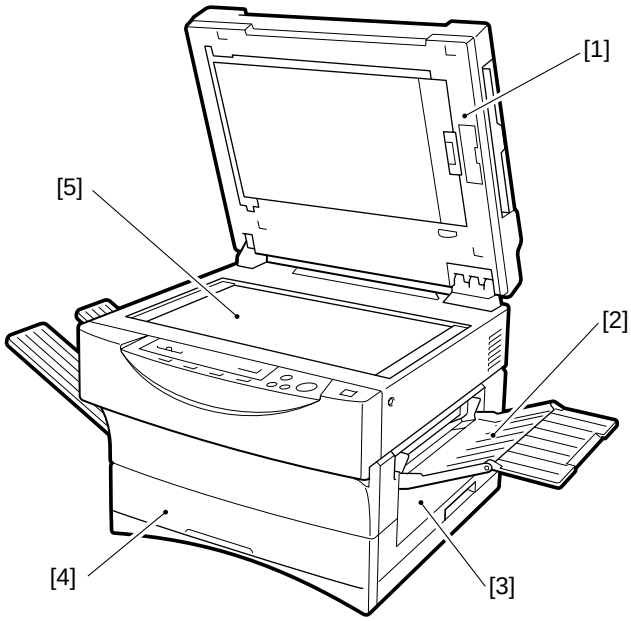


[1] Copy tray
[2] Power cord connector
[3] Open/close lever
[4] Static eliminator
[5] Copy density correction switch
[6] Delivery guide plate

Figure 1-302

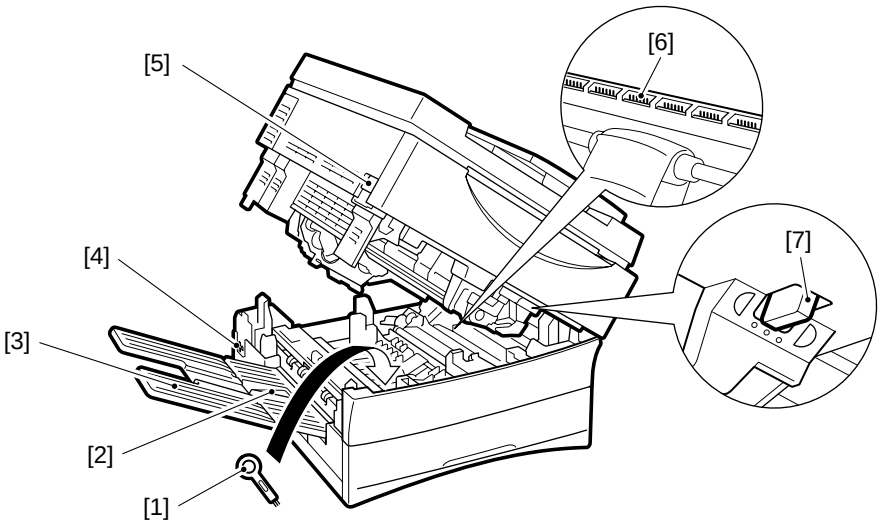
CANON PC800s/900s REV.0 AUG. 1999 PRINTED IN JAPAN (IMPRIME AU JAPON)

2. ADF Type



[1] ADF
[2] Manual feed tray
[3] Right door
[4] Cassette
[5] Copyboard glass

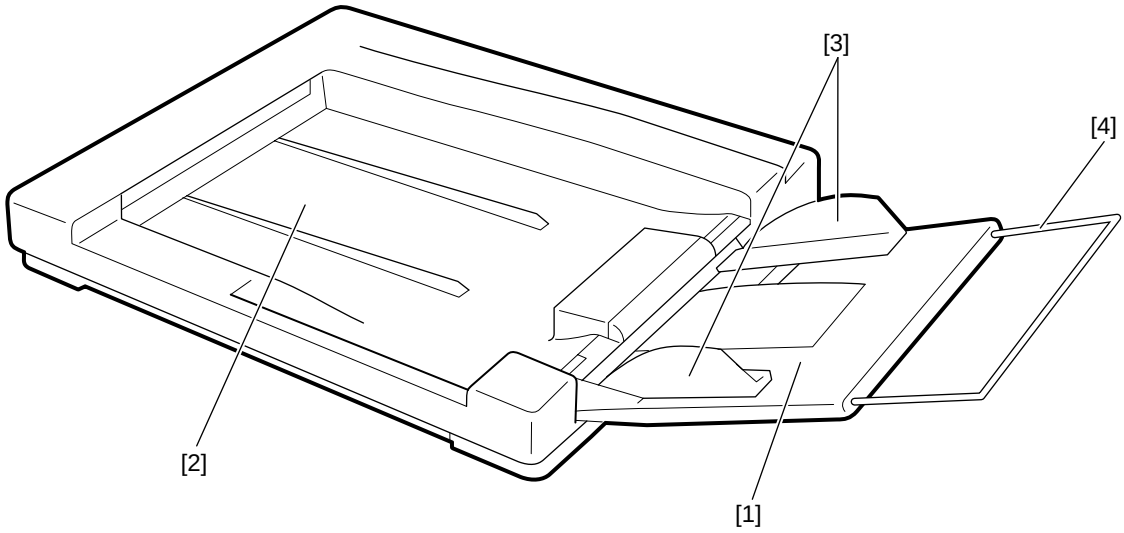
Figure 1-303



[1] Static eliminator cleaner
[2] Delivery guide plate
[3] Copy tray
[4] Power cord connector
[5] Open/close lever
[6] Static eliminator
[7] Copy density correction switch

Figure 1-304

3. ADF



[1] Original tray
[2] Original delivery tray
[3] Slide guide
[4] Auxiliary tray

Figure 1-305

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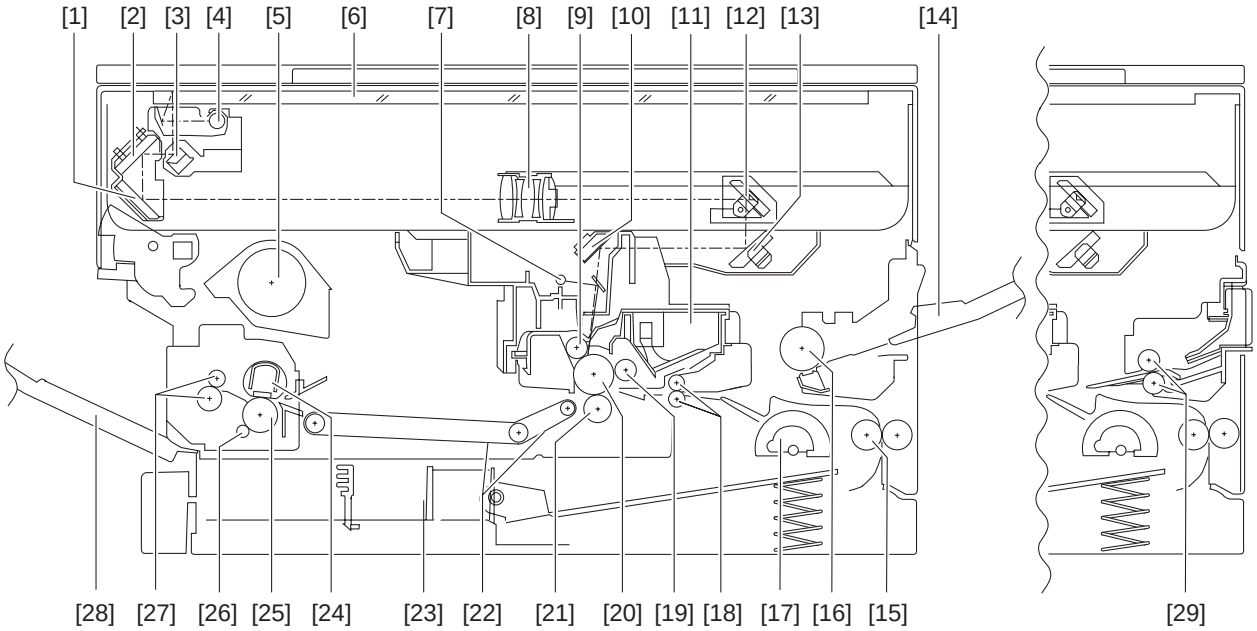
B. Cross Section

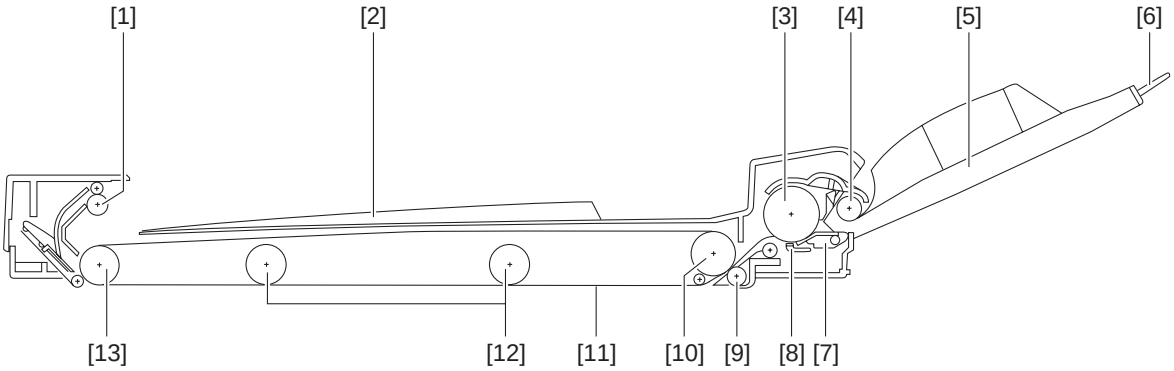
1. Body



[1] No. 3 mirror
[2] No. 2 mirror
[3] No. 1 mirror
[4] Scanning lamp
[5] Heat exhaust fan
[6] Copyboard glass
[7] Side blanking lamp
[8] Lens
[9] Primary charging roller
[10] No. 6 mirror
[11] Cartridge
[12] No. 4 mirror
[13] No. 5 mirror
[14] Multifeeder tray
[15] Vertical path roller
[16] Multifeeder pickup roller
[17] Cassette pickup roller
[18] Registration roller
[19] Developing cylinder
[20] Photosensitive drum
[21] Transfer roller
[22] Feed belt
[23] Cassette
[24] Fixing upper unit
[25] Fixing lower roller
[26] Cleaning roller
[27] Delivery roller
[28] Copy tray
[29] Single-feeder pickup roller

Figure 1-306

2. ADF



[1] Delivery roller
[2] Copy tray
[3] Pickup roller 2
[4] Pickup roller 1
[5] Copyboard tray
[6] Auxiliary tray
[7] Guide plate
[8] Separation pad
[9] Registration roller
[10] Feed belt drive roller
[11] Feed belt
[12] Feed belt roller
[13] Feed belt link slave roller

Figure 1-307

IV. USING THE MACHINE

A. Control Panel

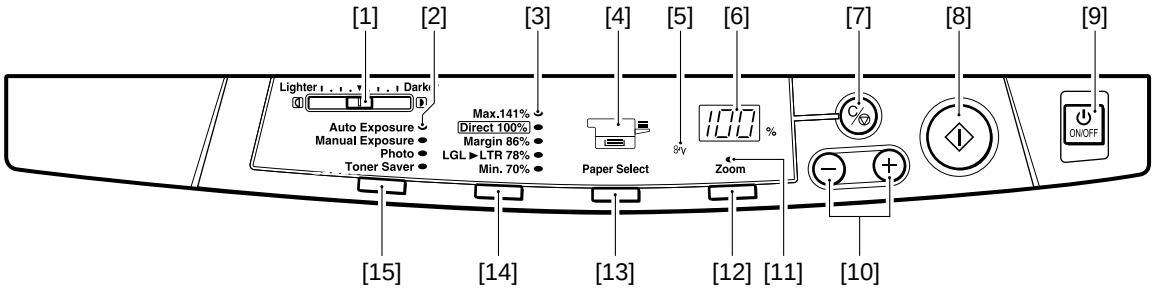


Figure 1-401

No.	Name	Description	Remarks
1	Copy density adjusting lever	Adjusts the density of copies manually.	
2	Copy density mode indicator	Indicates the selected copy density mode.	
3	Default ratio indicator	Indicates the selected default ratio.	
4	Paper selection indicator*1	Indicates the selected cassette/ manual feed tray.If there is no paper loaded, it flashes.	
5	Jam indicator	Flashes in response to a jam.	
6	Count/ratio indicator	• Indicates the number of copies or reproduction ratio. • The symbol "%" turns on when indicating a ratio.	100 (max.; continuous copying)
7	Clear/stop key	Stops copying or returns copying mode to standard mode.	Standard Mode Ratio: 100% Count: 1 Paper source: cassette Copy density: auto mode
8	Copy start key	Starts copying.	
9	Power switch	Turns on and off the power.	

No.	Name	Description	Remarks
10	Count/zoom set key	Sets the number of copies or a zoom ratio.	
11	Zoom indicator*2	Turns on when zoom mode is selected.	
12	Zoom key*2	Selects/deselects zoom mode.	May be between 70% and 141% in 1% increments.
13	Paper selection key*1	Selects the cassette/ manual feed tray.	
14	Default ratio key	Selects a default reproduction ratio.	
15	Copy density mode selection key	Selects copying density mode.	

Table 1-401

*1. Applies only to a multifeeder model.
*2. Applies only to a model equipped with a zoom function.

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V. ROUTINE MAINTENANCE BY THE USER

Instruct the user to clean the following if images tend to be soiled or copy paper tends to jam often.

1. Soiled Images

a. Copyboard Glass/Copyboard Cover
Clean the cover with a moist cloth (with water or mild detergent solution); then, dry wipe it.

b. Feeding Belt (ADF type)

b.1 Cleaning in Feeder Cleaning Mode

1) Turn on the machine, and hold down the Copy Density Mode Selection key for 4 sec or more.
   - The count/ratio indicator will indicate ‘U6’.

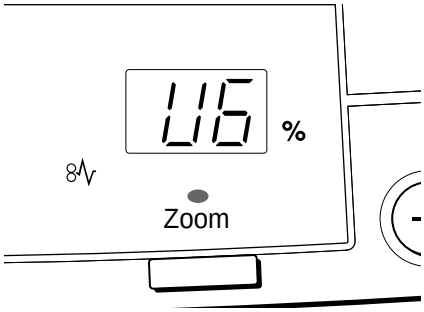

Figure 1-501

2) Place about 10 sheets of blank copy paper (A4/LTR) on the original tray of the ADF.
3) Press the Copy Start key.
   - Copy paper will be fed from the original tray.
   - The indicator flashes ‘U6’ while the feeder is being cleaned.
4) Press the Copy Density Mode Selection key to end the mode.

Caution:

- You cannot start feeder cleaning mode while the machine is making copies or if an error exists.
- The auto power-off mechanism does not operate while feeder cleaning mode is being executed.

b.2 Cleaning by Hand

1) Wipe the feed belt with a moist cloth (water or mild detergent solution) in the direction of the arrow in the figure; then, dry wipe it.

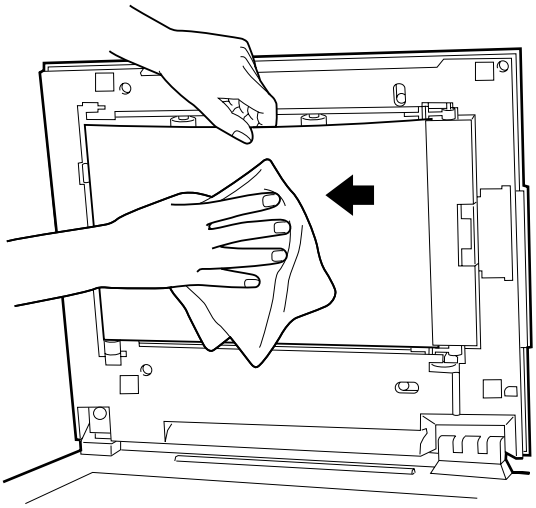

Figure 1-502

2. If Jams Occur Frequently

a. Static Eliminator

1) Remove the static eliminator cleaner from the machine.

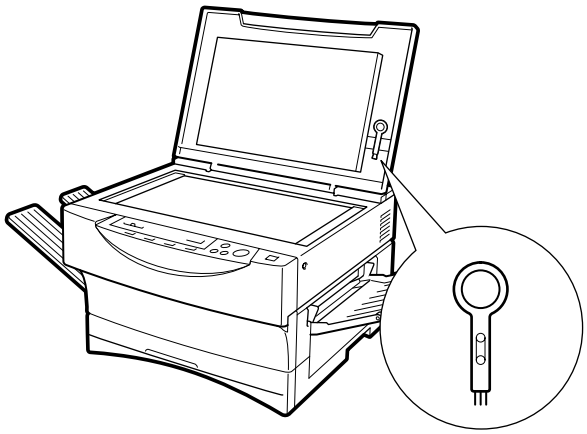

Figure 1-503 (Copyboard type)