TOSHIBA

SERVICE MANUAL

MULTIFUNCTIONAL DIGITAL SYSTEMS

e-STUDIO167/207/237

File No. SME060037A0
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Trademarks

- The official name of Windows 95 is Microsoft Windows 95 Operating System.
- The official name of Windows 98 is Microsoft Windows 98 Operating System.
- The official name of Windows Me is Microsoft Windows Millennium Edition Operating System.
- The official name of Windows 2000 is Microsoft Windows 2000 Operating System.
- The official name of Windows XP is Microsoft Windows XP Operating System.
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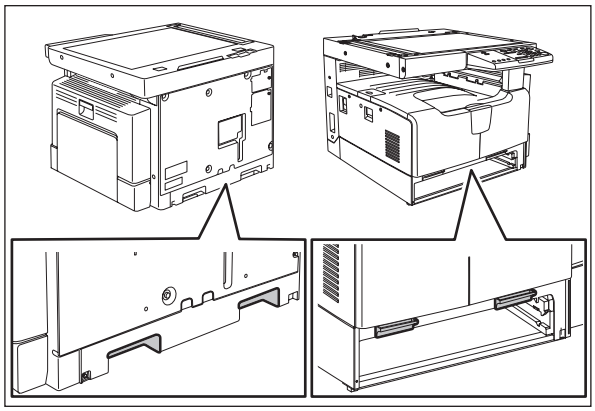
GENERAL PRECAUTIONS REGARDING THE SERVICE FOR e-STUDIO167/207/237

The installation and service should be done by a qualified service technician.

1) **Transportation/Installation**
   - When transporting/installing the equipment, remove the drawer, employ two persons and be sure to hold the positions as shown in the figure.
     The equipment is quite heavy and weighs approximately 32.5 kg (71.65 lb), therefore pay full attention when handling it.



   - Be sure not to hold the movable parts or units when transporting the equipment.
   - Be sure to use a dedicated outlet with AC 110 V / 13.2 A, 115 V or 127 V / 12 A, 220-240 V or 240 V / 8 A for its power source.
   - The equipment must be grounded for safety.
   - Select a suitable place for installation. Avoid excessive heat, high humidity, dust, vibration and direct sunlight.
   - Provide proper ventilation since the equipment emits a slight amount of ozone.
   - To insure adequate working space for the copying operation, keep a minimum clearance of 80 cm (32”) on the left, 80 cm (32”) on the right and 10 cm (4”) on the rear.
   - The equipment shall be installed near the socket outlet and shall be easily accessible.
   - Be sure to fix and plug in the power cable securely after the installation so that no one trips over it.

2) **General Precautions at Service**
   - Be sure to turn the power OFF and unplug the power cable during service (except for the service should be done with the power turned ON).
   - Unplug the power cable and clean the area around the prongs of the plug and socket outlet once a year or more. A fire may occur when dust lies on this area.
   - When the parts are disassembled, reassembly is the reverse of disassembly unless otherwise noted in this manual or other related documents. Be careful not to install small parts such as screws, washers, pins, E-rings, star washers in the wrong places.
   - Basically, the equipment should not be operated with any parts removed or disassembled.
   - The PC board must be stored in an anti-electrostatic bag and handled carefully using a wristband since the ICs on it may be damaged due to static electricity.
     Caution: Before using the wristband, unplug the power cable of the equipment and make sure that there are no charged objects which are not insulated in the vicinity.

- Avoid expose to laser beam during service. This equipment uses a laser diode. Be sure not to expose your eyes to the laser beam. Do not insert reflecting parts or tools such as a screwdriver on the laser beam path. Remove all reflecting metals such as watches, rings, etc. before starting service.
- Be sure not to touch high-temperature sections such as the exposure lamp, fuser unit, damp heater and areas around them.
- Be sure not to touch high-voltage sections such as the chargers, developer, high-voltage transformer and power supply unit. Especially, the board of these components should not be touched since the electric charge may remain in the capacitors, etc. on them even after the power is turned OFF.
- Make sure that the equipment will not operate before touching potentially dangerous places (e.g. rotating/operating sections such as gears, belts pulleys, fans and laser beam exit of the laser optical unit).
- Be careful when removing the covers since there might be the parts with very sharp edges underneath.
- When servicing the equipment with the power turned ON, be sure not to touch live sections and rotating/operating sections. Avoid exposing your eyes to laser beam.
- Use designated jigs and tools.
- Use recommended measuring instruments or equivalents.
- Return the equipment to the original state and check the operation when the service is finished.

3) **Important Service Parts for Safety**
   - The breaker, door switch, fuse, thermostat, thermofuse, thermistor, batteries, IC-RAMs including lithium batteries, etc. are particularly important for safety. Be sure to handle/install them properly. If these parts are short-circuited and their functions become ineffective, they may result in fatal accidents such as burnout. Do not allow a short-circuit or do not use the parts not recommended by Toshiba TEC Corporation.

4) **Cautionary Labels**
   - During servicing, be sure to check the rating plate and cautionary labels such as “Unplug the power cable during service”, “CAUTION. HOT”, “CAUTION. HIGH VOLTAGE”, “CAUTION. LASER BEAM”, etc. to see if there is any dirt on their surface and if they are properly stuck to the equipment.

5) **Disposal of the Equipment, Supplies, Packing Materials, Used Batteries and IC-RAMs**
   - Regarding the recovery and disposal of the equipment, supplies, packing materials, used batteries and IC-RAMs including lithium batteries, follow the relevant local regulations or rules.

Caution:
Dispose of used batteries and IC-RAMs including lithium batteries according to this manual.
Attention:
Se débarrasser de batteries et IC-RAMs usés y compris les batteries en lithium selon ce manuel.
Vorsicht:
Entsorgung der gebrauchten Batterien und IC-RAMs (inclusive der Lithium-Batterie) nach diesem Handbuch.

CONTENTS

1. SPECIFICATIONS / ACCESSORIES / OPTIONS / SUPPLIES

1.1 Specifications

- Copy process: Indirect electrophotographic process (dry)
- Type: Desktop type
- Original table: Fixed type (the left rear corner used as guide to place originals)
- Accepted originals: Sheet, book and 3-dimensional object. The automatic document feeder (ADF) and reversing automatic document feeder (RADF), only accepts paper which are not pasted or stapled. (Single-sided originals: 50 to 127 g/m^2/13 to 34 lb. Bond) Carbon paper are not acceptable either.
  Maximum size: A3/LD

- Copy speed (Copies/min.)

e-STUDIO167

Paper size	Drawer	Bypass feed		PFU	PFP	
		Size specified	Size not specified		Upper drawer	Lower drawer
A4, B5, LT	16	16	11	16	16	16
A5-R, ST-R	-	16	11	-	16	16
A4-R, B5-R, LT-R	15.5	15.5	11	15.5	15.5	15.5
B4, LG, FOLIO, COMPUTER	13	13	11	13	13	13
A3, LD	11	11	11	11	11	11

e-STUDIO207

Paper size	Drawer	Bypass feed		PFU	PFP	
		Size specified	Size not specified		Upper drawer	Lower drawer
A4, B5, LT	20	20	20	20	20	20
A5-R, ST-R	-	-	20	-	20	20
A4-R, B5-R, LT-R	15.5	15.5	15.5	15.5	15.5	15.5
B4, LG, FOLIO, COMPUTER	13	13	13	13	13	13
A3, LD	11	11	11	11	11	11

e-STUDIO237

Paper size	Drawer	Bypass feed		PFU	PFP	
		Size specified	Size not specified		Upper drawer	Lower drawer
A4, B5, LT	23	23	23	23	23	23
A5-R, ST-R	-	-	23	-	23	23
A4-R, B5-R, LT-R	17.5	17.5	17.5	17.5	17.5	17.5
B4, LG, FOLIO, COMPUTER	15	15	15	15	15	15
A3, LD	12.5	12.5	12.5	12.5	12.5	12.5

* "–" means "Not acceptable".

* The copy speed in the above table are available when originals are manually placed for single side, multiple copying.

* When the ADF and RADF are used, the copy speed of 16/20/23 sheets per minute is only available under the following conditions:
  - Original/Mode: Single side original/A4/LT size. APS/automatic density are not selected.
  - Number of sheets: 16 or more. (e-STUDIO167)
    20 or more. (e-STUDIO207)
    23 or more. (e-STUDIO237)
  - Reproduction ratio: 100%

Copy speed for thick paper (Copies/min.)
e-STUDIO167/207/237

Thick 1 (81 g/m^2 to 105 g/m^2, 21.3 lb. Bond to 28 lb. Bond): Bypass feed on a sheet by sheet baisis only

Thick 2 (106 g/m^2 to 163 g/m^2, 28 lb. Bond to 90 lb. Index): Bypass feed on a sheet by sheet baisis only

- Copy paper

	Drawer	PFU	PFP	ADU	Bypass copy	Remarks
Size	A3, A4, A4-R, B4, B5, B5-R, A5-R(Only for PFP), LD, LG, LT, LT-R, ST-R(Only for PFP), FOLIO, COMPUTER, 13"LG, 8K, 16K, 16K-R				A3 to A5-R, LD to ST-R, FOLIO, COMPUTER, 13"LG, 8.5" x 8.5", 8K, 16K, 16K-R (Non-standard or user-specified sizes can be set.)	
Weight	64 to 80 g/m^2, 17 lb. Bond to 21.3 lb. Bond				50 to 163 g/m^2 (Single paper feeding) 64 to 80 g/m^2 (Continuous feeding)	
Special paper	–				Tracing paper, labels, OHP film (thickness: 80 µm or thicker),	These special papers recommended by Toshiba Tec

- First copy time ..... Approx. 7.6 sec.
  (A4, 100%, original placed manually, e-STUDIO167/207)
  Approx. 7.5 sec.
  (A4, 100%, original placed manually, e-STUDIO237)
  Approx. 7.7 sec.
  (LT, 100%, original placed manually, e-STUDIO167/207)
  Approx. 7.5 sec. |
  (LT, 100%, original placed manually, e-STUDIO237)
  Approx. 7.7 sec.
  (LT, 100%, original placed manually)

- Warming-up time..... Approx. 25 sec. (temperature: 20°C)

- Multiple copying ..... Up to 999 copies; Key in set numbers

- Reproduction ratio ..... Actual ratio: 100±0.5%
  Zooming: 25 to 200% in increments of 1%

- Resolution/Gradation ..... Scanning: 600 dpi x 600 dpi
  Printing: Equivalent to 2400 dpi x 600 dpi
  Gradation: 256 steps

- Eliminated portion ..... Leading edges: 3.0±2.0 mm, Side/trailing edges: 2.0±2.0 mm (copy)
  Leading / trailing edges: 5.0±2.0 mm, Side edges: 5.0±2.0 mm (print)

• Paper feeding ..... Standard drawer:
1 drawer (stack height 28 mm, equivalent to 250 sheets; 64 to 80 g/m^2 (17 to 22 lb. Bond))

Bypass feeding:
Stack height 11.8 mm: equivalent to 100 sheets; 64 to 80 g/m^2 (17 to 22 lb. Bond)

Paper Feed Unit (PFU):
Option (One drawer: stack height 28 mm, equivalent to 250 sheets; 64 to 80 g/m^2 (17 to 22 lb. Bond))

Paper Feed Pedestal (PFP):
Option (One drawer or two: stack height 60.5 mm, equivalent to 550 sheets; 64 to 80 g/m^2 (17 to 22 lb. Bond))

• Capacity of originals in the ADF/RADF (Option)
..... A3 to A5-R, LD to ST-R:
100 sheets / 80 g/m^2 (Stack height 16 mm or less)

• Automatic duplexing unit (ADU: Option)
..... Stackless, Switchback type

• Toner supply ..... Automatic toner density detection/supply
Toner cartridge replacing method (There is a recovered toner supply mechanism.)

• Density control ..... Automatic density mode and manual density mode selectable in 7 steps

• Weight..... Approximately 32.5 kg (71.65 lb.) (excluding the developer material and toner)

• Power requirements... AC 110 V / 13.2 A, 115 V or 127 V / 12 A
220-240 V or 240 V / 8 A (50/60 Hz)
* The acceptable value of each voltage is ±10%.

• Power consumption ... 1.5 kW or less (100 V series)
1.6 kW or less (200 V series)
* The electric power is supplied to the ADF/RADF, PFU, PFP and ADU through the equipment.

• Total counter ..... Electronical counter

- Dimensions of the equipment ..... W 600 x D 658.6 x H 462.5 (mm): See the figure below

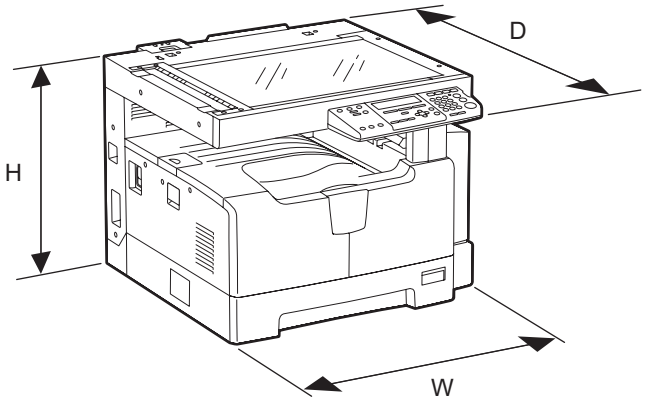


Fig. 1-1

1.2 Accessories

Unpacking/setup instruction	1 set
Operator's manual	1 pc.
Operator's manual pocket	1 pc. (for NAD)
Power cable	1 pc.
CD-ROM	2 pcs.
Rubber cap	6 pcs. (for MJD, ASD, ASU and SAD) 2 pcs. (for NAD, CND, AUD, TWD, KRD and ARD)
Transfer charger wire cleaner (installed inside of the transfer cover)	1 pc.
Drum (installed inside of the equipment)	1 pc.
Developer material	1 pc.
Nozzle	1 pc. (for NAD)
Toner cartridge	1 pc.
Warranty sheet	1 pc. (for NAD and CND)
Setup report	1 set (for NAD, MJD and CND)
Customer satisfaction card	1 pc. (for MJD)
Packing list	1 pc. (for CND)
Customer survey sheet	1 pc. (for CND)
Certificate of conformance	1 pc. (for CND)

* Machine version

NAD: North America
ASD: Hong Kong / Latin America
AUD: Australia
MJD: Europe
ASU: Asia / Saudi Arabia
SAD: Saudi Arabia
ARD: Latin America
CND: China
TWD: Taiwan
KRD: Korea
JPD: Japan

1.3 Options

Platen Cover	KA-1640PC/C
Automatic Document Feeder (ADF)	MR-2017/C
Reversing Automatic Document Feeder (RADF)	MR-3019/C
Paper Feed Unit (PFU)	MY-1027/C
Paper Feed Pedestal (PFP)	KD-1022/C
Paper Feed Controller (PFC)	GH-1060/C
Drawer Module	MY-1028/C
Automatic Duplexing Unit (ADU)	MD-0103/C
Fax Kit	GD-1220NA/EU/AU/TW/CN/KR
External Keyboard	GJ-1040/C/EU/KR/TW
Network Printer Kit	GA-1190/C/KR/TW
Scanner Upgrade Kit	GA-1200/C/KR/TW
Operator's manual pocket	KK-1660/C
Damp Heater	MF-1640U/E
Harness Kit	GQ-1130
Desk	MH-1640

Notes:

- When the paper feed pedestal (KD-1022) or automatic duplexing unit (MD-0103) is installed, the paper feed controller (GH-1060) is also required to be installed.
- The external keyboard (GJ-1040) is necessary for the installation of the fax kit (GD-1220) and the scanner upgrade kit (GA-1200).

1.4 Supplies

Drum	OD-1600 (except for China) OD-2320 (for China)
Toner cartridge	PS-ZT1640 (4) (for North America) PS-ZT1640D (4) (for Asia, Central and South America) PS-ZT1640D5K (4) (for Asia, Central and South America) PS-ZT1640C (4) (for China) PS-ZT1640C5K (4) (for China) PS-ZT1640T (4) (for Taiwan) PS-ZT1640T5 (4) (for Taiwan) PS-ZT1640E (1) (for Europe) PS-ZT1640E5K (1) (for Europe)
Developer material	D-2320 (except for China) D-2320C (for China)

1.5 System List

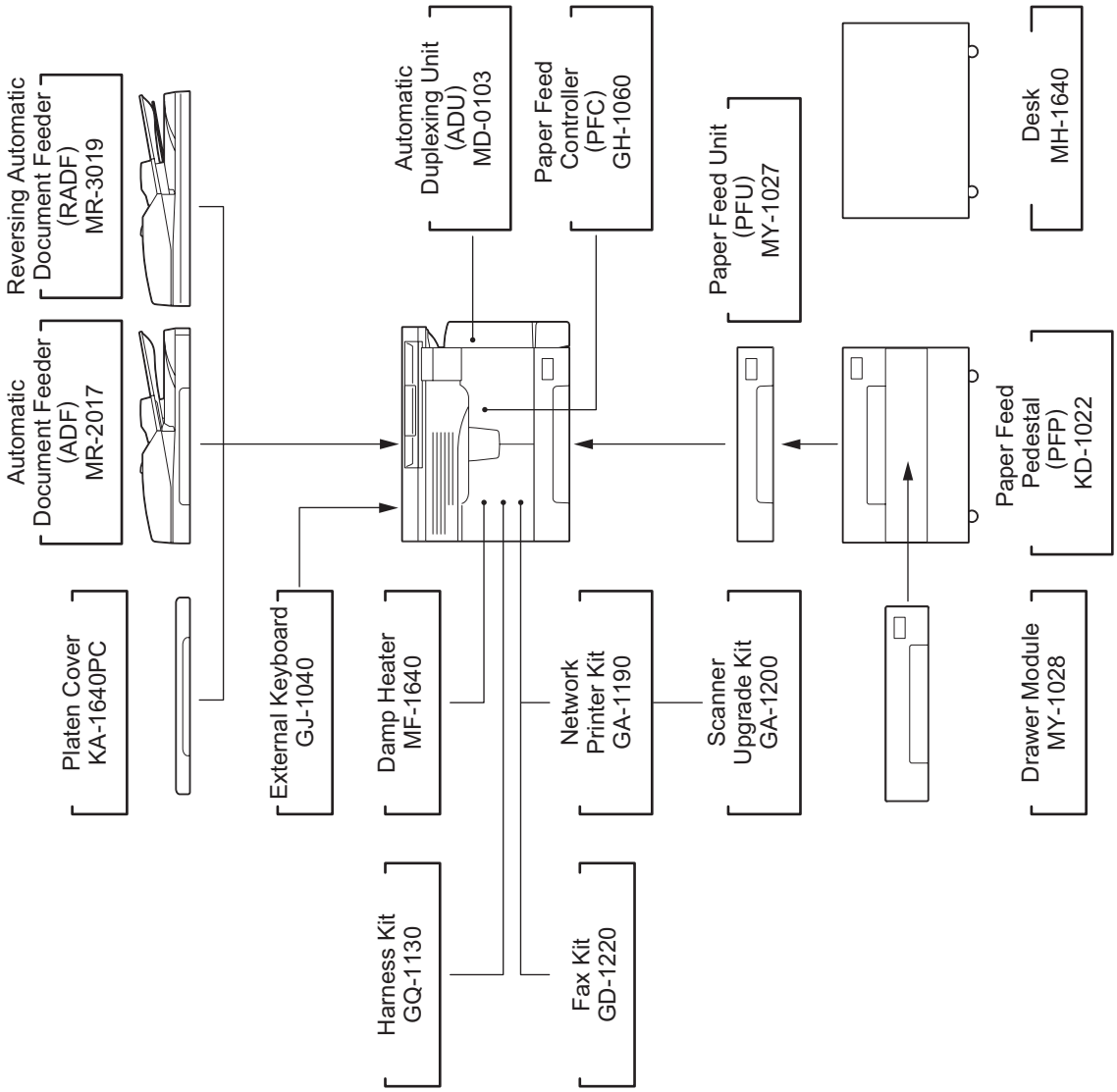


Fig. 1-2

2. OUTLINE OF THE MACHINE

2.1 Sectional View

1) Front side

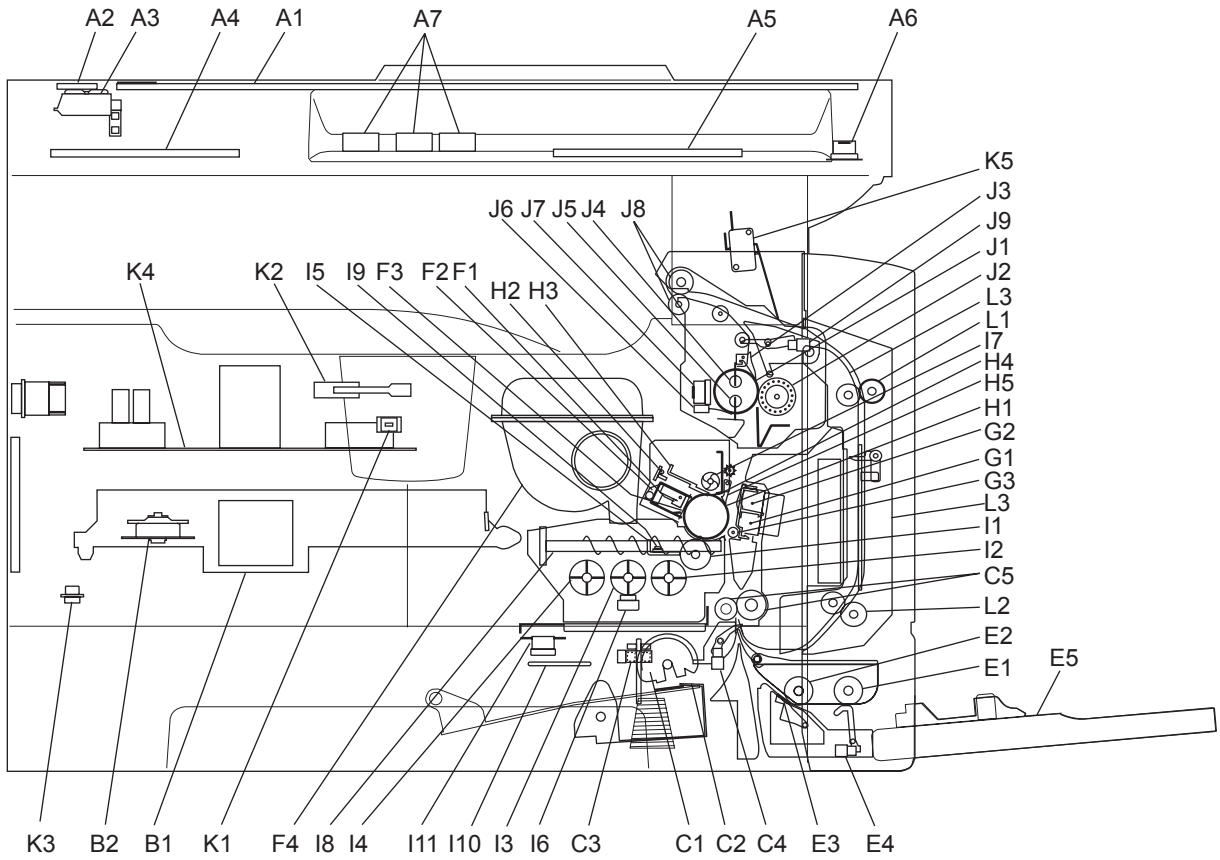


Fig. 2-1

A1	Original glass	
A2	ADF original glass	
A3	Contact image sensor unit (CIS)	
A4	Scanner damp heater (Left side)	DH1
A5	Scanner damp heater (Right side)	DH2
A6	Scanner damp heater thermostat	THMO2
A7	Automatic original detection sensor	S9-S13
B1	Laser optical unit	
B2	Polygonal motor	M4
C1	Pickup roller	
C2	Separation claw	
C3	Paper empty sensor	S7
C4	Registration sensor	S4
C5	Registration roller	
E1	Bypass pickup roller	

E2	Bypass feed roller	
E3	Bypass separation pad	
E4	Bypass paper sensor	S8
E5	Bypass tray	
F1	Needle electrode	
F2	Main charger	
F3	Main charger grid	
F4	Toner cartridge	
G1	Transfer charger wire	
G2	Separation charger wire	
G3	Transfer guide roller	
H1	Drum	
H2	Discharge LED	
H3	Drum cleaning blade	
H4	Recovery blade	
H5	Drum separation finger	
I1	Developer sleeve (Magnetic roller)	
I2	Mixer-1	
I3	Mixer-2	
I4	Mixer-3	
I5	Doctor blade	
I6	Auto-toner sensor	S6
I7	Toner recovery auger	
I8	Toner recycle auger	
I9	Drum thermistor	THMS4
I10	Drum damp heater	DH3
I11	Drum damp heater thermostat	THMO3
J1	Fuser roller	
J2	Pressure roller	
J3	Fuser roller separation finger	
J4	Center heater lamp	LAMP1
J5	Side heater lamp	LAMP2
J6	Center/Side/Edge thermistor	THMS1/2/3
J7	Fuser thermostat	THMO1
J8	Exit roller	
J9	Exit sensor	S5
K1	Front cover opening/closing switch	SW4
K2	Front cover opening/closing interlock switch	SW3
K3	Temperature/humidity sensor	S3
K4	Switching regulator	
K5	ADU cover opening/closing interlock switch	SW2
L1	ADU upper transport roller	
L2	ADU lower transport roller	
L3	ADU paper guide	

2) Rear side

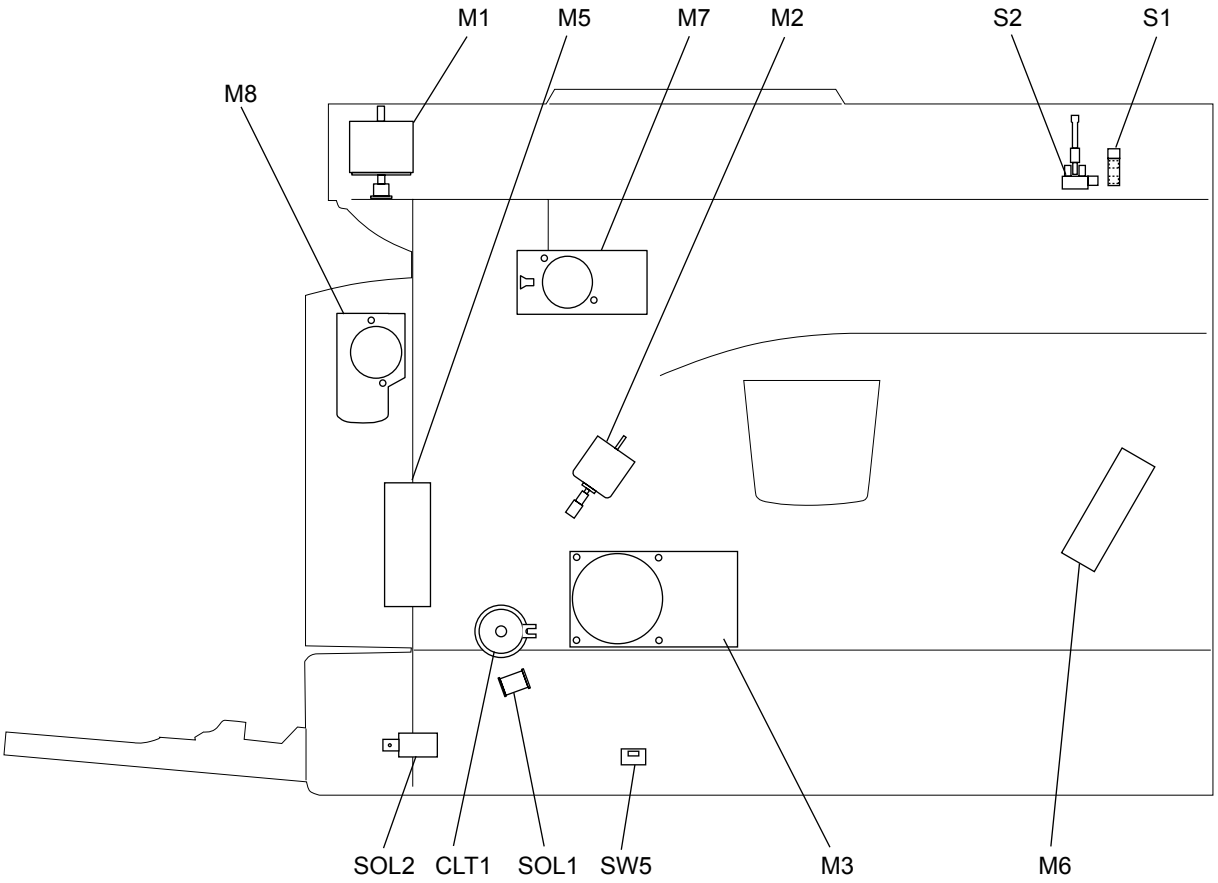


Fig. 2-2

M1	Scan motor
M2	Toner motor
M3	Main motor
M5	Exhaust fan
M6	Switching regulator cooling fan
M7	Exit motor (Option)
M8	ADU motor (Option)
S1	CIS home position sensor
S2	Platen sensor
SW5	Drawer detection switch
CLT1	Registration clutch
SOL1	Pickup solenoid
SOL2	Bypass pickup solenoid

2.2 Electric Parts Layout

[A] Scanner, control panel

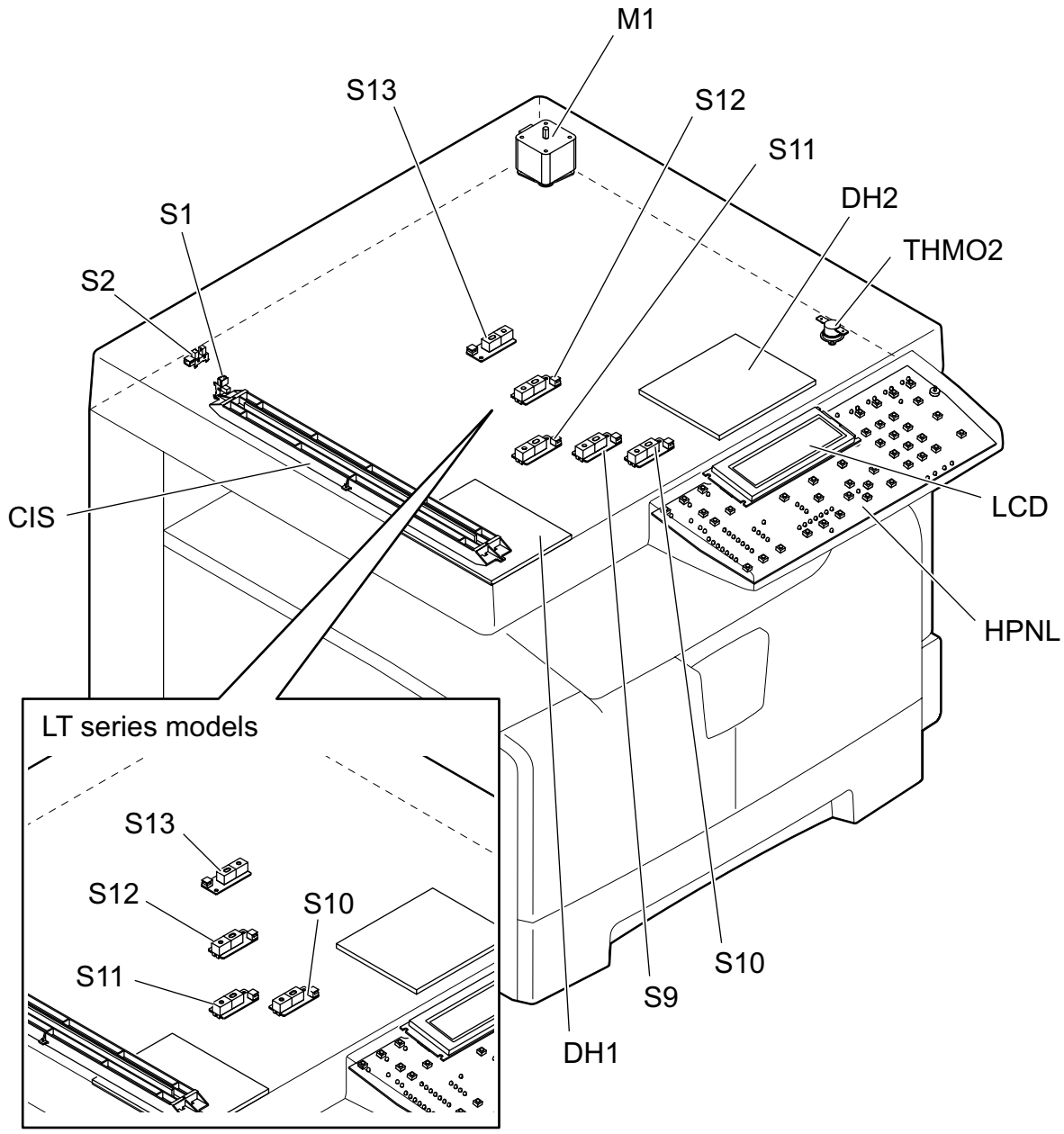


Fig. 2-3

[B] Power supply section, switches

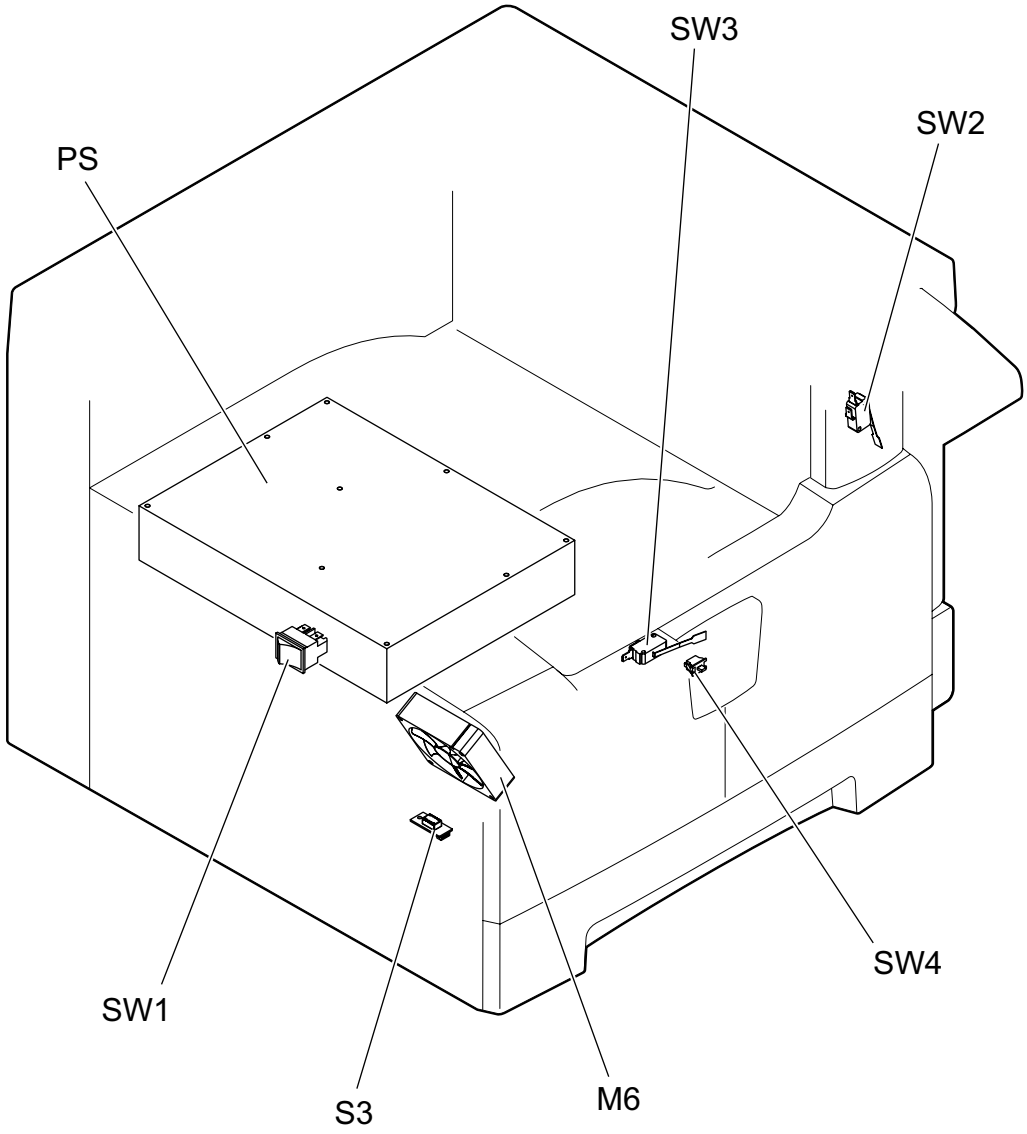


Fig. 2-4

[C] Laser optical unit, fuser unit, toner cartridge section

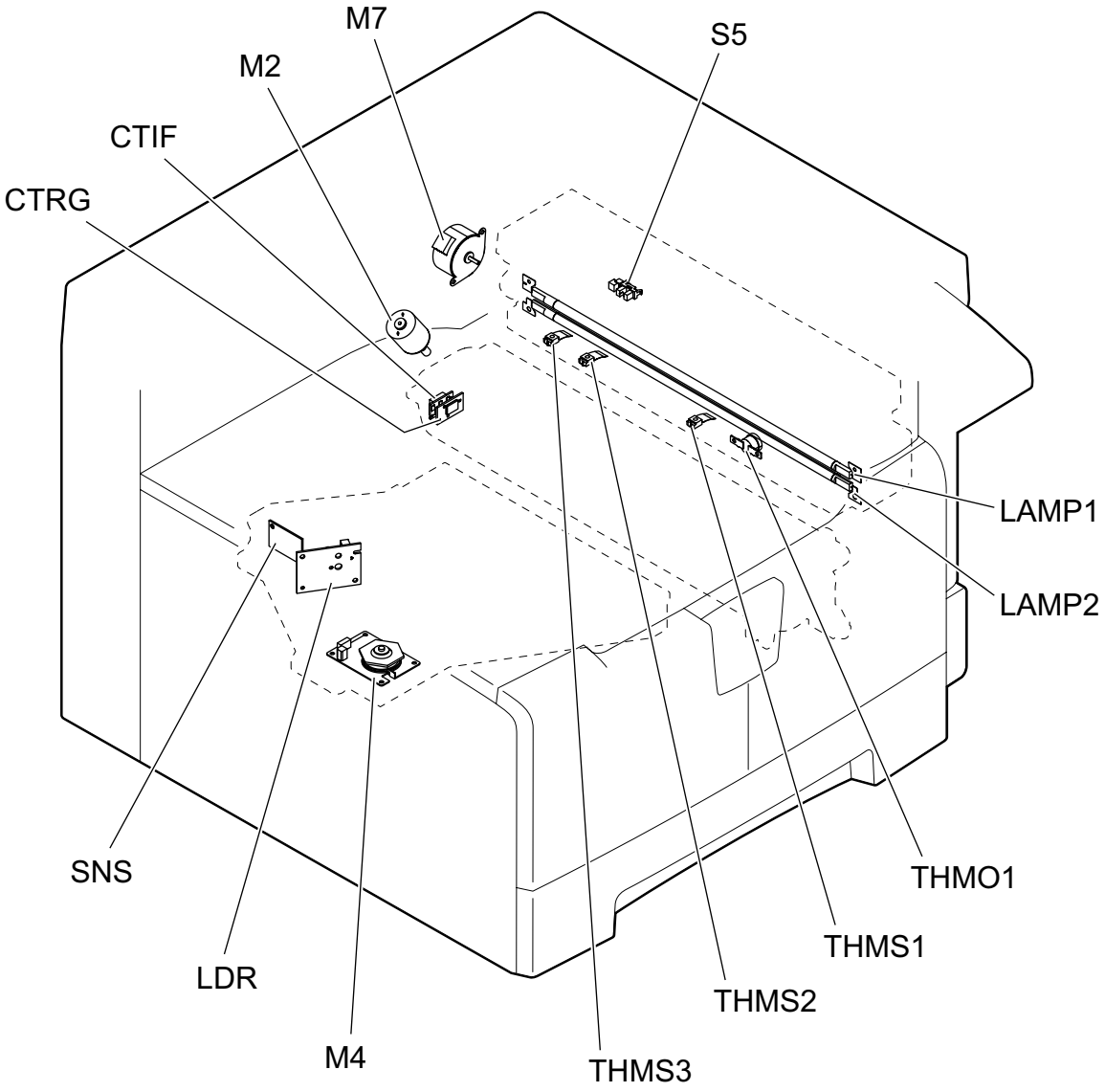


Fig. 2-5

[D] Developer unit section

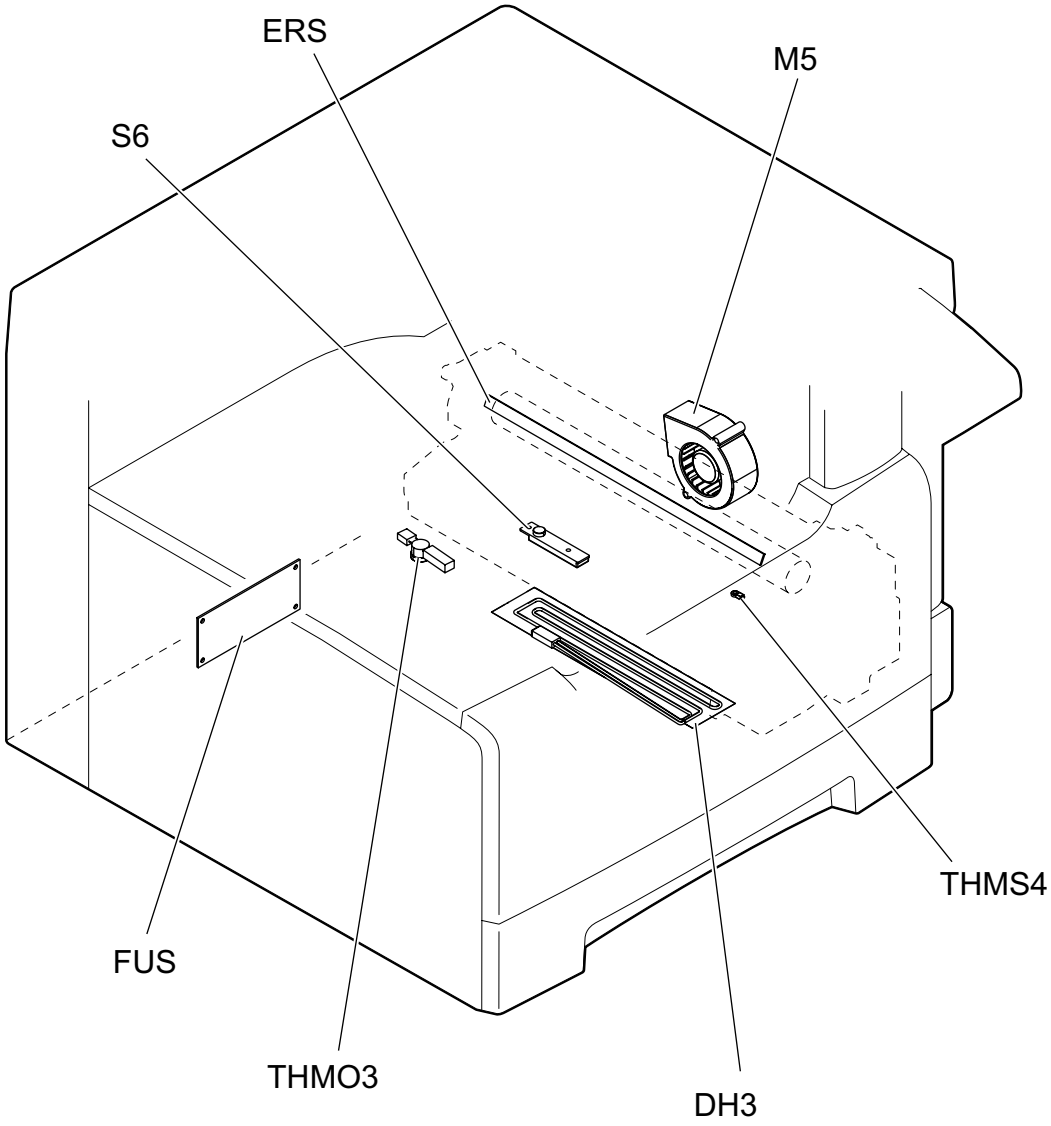


Fig. 2-6

[E] Driving section

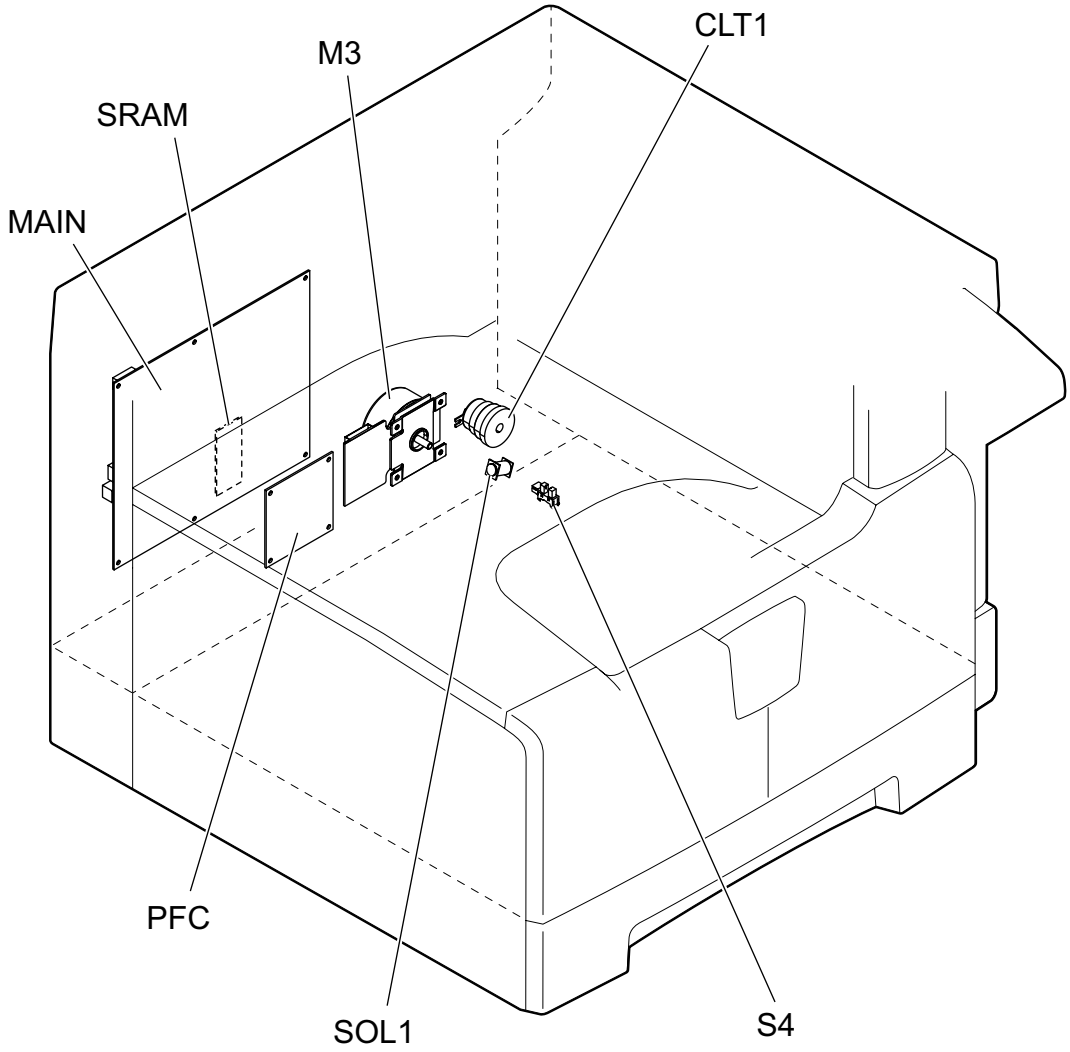


Fig. 2-7

[F] Drawer section

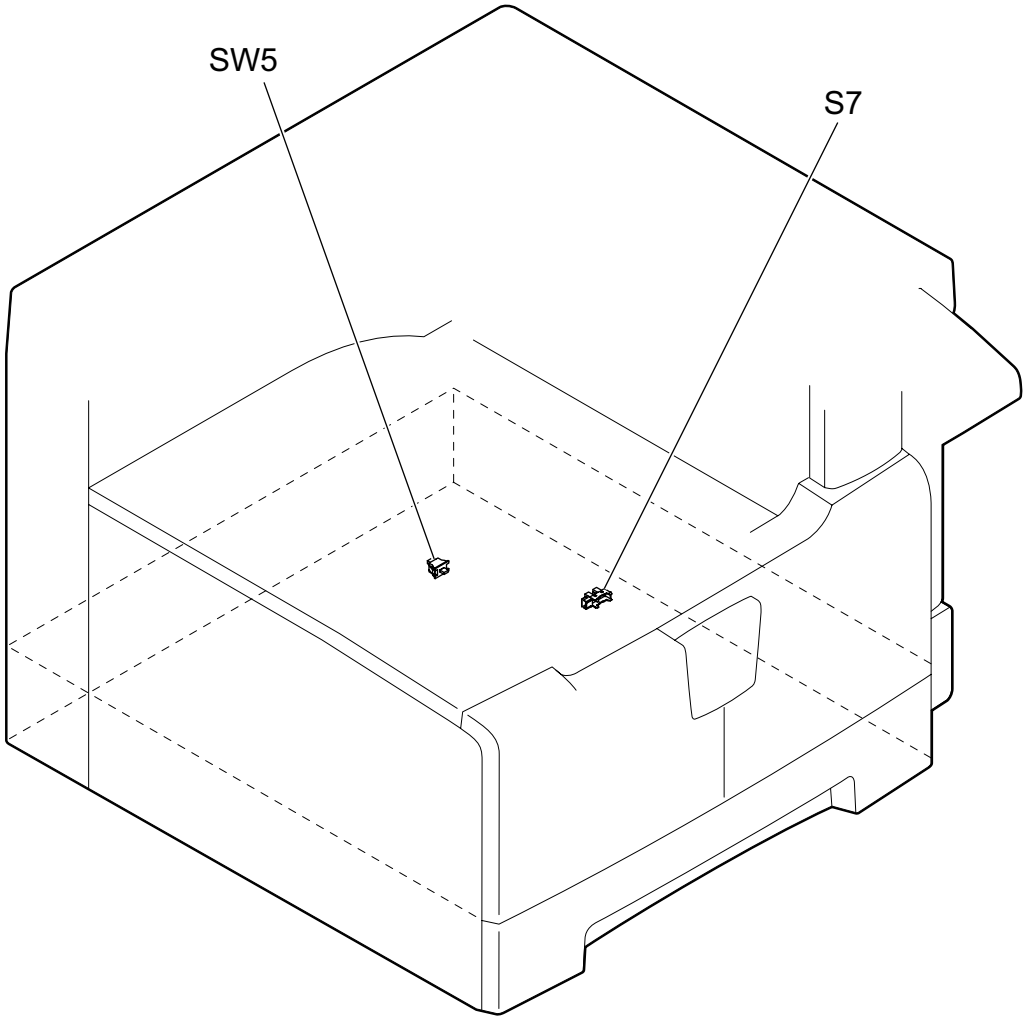


Fig. 2-8

[G] Bypass unit, automatic duplexing unit

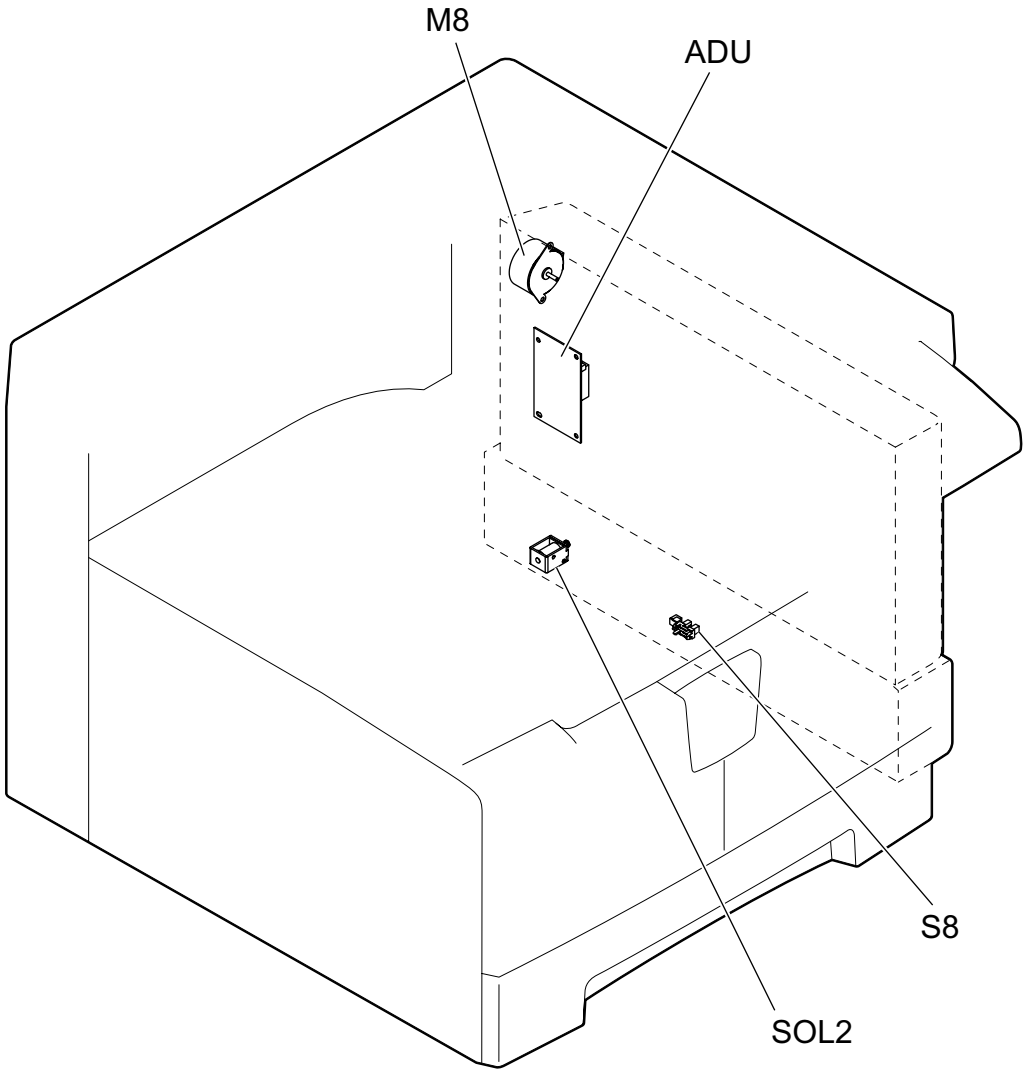


Fig. 2-9

2.3 Symbols and Functions of Various Components

The column "P-I" shows the page and item number in the parts list.

1) Motors

Symbol	Name	Function	Remarks	P-I
M1	SCAN-MOT Scan motor	Driving the CIS	Fig. 2-3	10-1
M2	TNR-MOT Toner motor	Supplying the toner	Fig. 2-5	12-15
M3	MAIN-MOT Main motor	Driving the drum, developer unit, registration roller, Pickup roller, feed roller, cleaner unit	Fig. 2-7	12-2
M4	M/DC-POL Polygonal motor	Driving the polygonal mirror	Fig. 2-5	5-13
M5	EXT-FAN-MOT Exhaust fan	Exhausting ozone and cooling down the equipment inside	Fig. 2-6	11-23
M6	PS-FAN-MOT Switching regulator cooling fan	Cooling down the switching regulator	Fig. 2-4	5-11
M7	EXIT-MOT Exit motor	Driving the fuser unit and exit roller * Option	Fig. 2-5	MD-0103 2-2
M8	ADU-MOT ADU motor	Driving the automatic duplexing unit * Option	Fig. 2-9	MD-0103 1-23

2) Sensors and switches

Symbol	Name	Function	Remarks	P-I
S1	HOME-SNR CIS home position sensor	Detecting CIS home position	Fig. 2-3	10-106
S2	PLTN-SNR Platen sensor	Detecting the opening/closing of platen cover or RADF	Fig. 2-3	9-101
S3	TEMP/HUMI-SNR Temperature/humidity sensor	Detecting the temperature and humidity inside the equipment	Fig. 2-4	5-16
S4	RGST-SNR Registration sensor	Detecting the transporting paper at the registration roller section	Fig. 2-7	15-107
S5	EXIT-SNR Exit sensor	Detecting the transporting paper at the exit section	Fig. 2-5	24-8
S6	ATTNR-SNR Auto-toner sensor	Detecting the density of toner in the developer unit	Fig. 2-6	21-46
S7	EMP-SNR Paper empty sensor	Detecting presence/absence of paper in the drawer	Fig. 2-8	15-107
S8	SFB-SNR Bypass paper sensor	Detecting presence/absence of paper on the bypass tray	Fig. 2-9	13-101
S9-13	APS 1-3, APS-C, APS-R Automatic original detection sensor	Detecting original size * S9: only for A4 series models	Fig. 2-3	9-9, 9-19
SW1	MAIN-SW Main switch	Turning ON/OFF of the equipment	Fig. 2-4	5-4
SW2	ADU-COV-INTLCK-SW ADU cover opening/closing interlock switch	Controlling cutoff and supply of the 24V voltage by opening/closing of the ADU cover	Fig. 2-4	6-8
SW3	FRNT-COV-INTLCK-SW Front cover opening/closing interlock switch	Controlling cutoff and supply of the 24V voltage by opening/closing of the front cover	Fig. 2-4	1-5
SW4	FRNT-COV-SW Front cover opening/closing switch	Detecting the opening/closing of the front cover	Fig. 2-4	1-101
SW5	CST-SW Drawer detection switch	Detecting presence/absence of the drawer	Fig. 2-8	16-110

3) Electromagnetic clutch

Symbol	Name	Function	Remarks	P-I
CLT1	RGST-CLT Registration clutch	Driving the registration roller	Fig. 2-7	16-21

4) Solenoids

Symbol	Name	Function	Remarks	P-I
SOL1	CST-SOL Pickup solenoid	Controlling the power transmission of the feed roller	Fig. 2-7	16-9
SOL2	SFB-SOL Bypass pickup solenoid	Controlling the power transmission of the bypass pickup roller	Fig. 2-9	14-15

5) PC boards

Symbol	Name	Function	Remarks	P-I
MAIN	PWA-F-MAIN Main PC board (MAIN board)	Controlling the whole system and image processing	Fig. 2-7	7-1
SRAM	PWA-F-SRAM SRAM PC board (SRAM board)	Storing the setting information of the equipment	Fig. 2-7	7-33
LDR	PWA-F-LDR Laser driving PC board (LDR board)	Driving the laser diode	Fig. 2-5	5-13
SNS	PWA-F-SNS H-sync signal detection PC board (SNS board)	Detecting the laser beam position	Fig. 2-5	5-13
HPNL	PWA-F-HPNL Control panel PC board (HPNL board)	Detecting the button entry and controlling LED and LCD on the control panel	Fig. 2-3	4-20
CTIF	PWA-F-CTIF Toner cartridge interface PC board (CTIF board)	Interface for detecting the toner cartridge (Detecting the CTRG board)	Fig. 2-5	7-30
CTRG	PWA-F-CTRG Toner cartridge PC board (CTRG board)	Storing the status of the toner cartridge	Fig. 2-5	103-3
FUS	PWA-F-FUS Fuse PC board (FUS board)	Supplying power to each damp heater * Optional for NAD/MJD/CND model, standard for other models	Fig. 2-6	7-12
PFC	PWA-F-PFC Paper feed controller PC board (PFC board)	Controlling the automatic duplexing unit and paper feed pedestal * Option	Fig. 2-7	7-35
ADU	PWA-F-ADU ADU driving PC board (ADU board)	Controlling the automatic duplexing unit * Option	Fig. 2-9	MD-0103 1-13

6) Lamps and heaters

Symbol	Name	Function	Remarks	P-I
LAMP1	CNTR-LAMP Center heater lamp	Heating the center section of the fuser roller	Fig. 2-5	23-12
LAMP2	SIDE-LAMP Side heater lamp	Heating the section of both sides of the fuser roller	Fig. 2-5	23-13
ERS	LP-ERS Discharge LED	Removing the residual charge from the drum surface	Fig. 2-6	20-13
DH1	SCN-DH-L Scanner damp heater (Left)	Preventing condensation in the scanner unit * Optional for NAD/MJD/CND model, standard for other models	Fig. 2-3	9-17
DH2	SCN-DH-R Scanner damp heater (Right)	Preventing condensation in the scanner unit * Optional for NAD/MJD/CND model, standard for other models	Fig. 2-3	9-18
DH3	DRM-DH Drum damp heater	Preventing condensation of the drum * Optional for NAD/MJD/CND model, standard for other models	Fig. 2-6	8-6

7) Thermistors and thermostats

Symbol	Name	Function	Remarks	P-I
THMS1	THMS-C-HTR Center thermistor	Detecting the surface temperature at the center of the fuser roller (for controlling the center heater lamp)	Fig. 2-5	23-6
THMS2	THMS-S-HTR Side thermistor	Detecting the surface temperature at the rear side of the fuser roller (for controlling the side heater lamp)	Fig. 2-5	23-6
THMS3	THMS-EDG-HTR Edge thermistor	Detecting the surface temperature at the edge of the rear side of the fuser roller (for preventing overheating)	Fig. 2-5	23-6
THMS4	THMS-DRM Drum thermistor	Detecting the temperature on the drum surface	Fig. 2-6	21-49
THMO1	THERMO-FSR Fuser thermostat	Preventing overheating in the fuser unit	Fig. 2-5	23-5
THMO2	THERMO-SCN-DH Scanner damp heater thermostat	Preventing overheating in the scanner damp heater * Optional for NAD/MJD/CND model, standard for other models	Fig. 2-3	9-20
THMO3	THERMO-DRM-DH Drum damp heater thermostat	Preventing overheating in the drum damp heater * Optional for NAD/MJD/CND model, standard for other models	Fig. 2-6	8-7

8) Others

Symbol	Name	Function	Remarks	P-I
CIS	CIS Contact image sensor unit	Reading originals	Fig. 2-3	9-8
PS	PS-ACC Switching regulator	• Generating DC voltage and supplying it to each section of the equipment • Generating high voltage and supplying it to the main charger, developer, transfer and separation units • Supplying AC power to the heater lamp	Fig. 2-4	5-2
LCD	LCD LCD panel	Displaying each information	Fig. 2-3	4-19