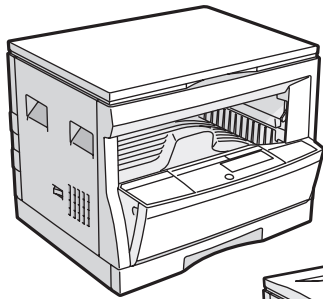
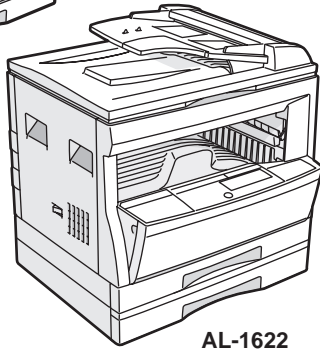


# SHARP SERVICE MANUAL

CODE : 00ZAL1622//A1E



AL-1611



AL-1622

## DIGITAL COPIER

# AL-1611 MODEL AL-1622

### CONTENTS

[ 1 ] GENERAL .....	1 - 1
[ 2 ] SPECIFICATIONS .....	2 - 1
[ 3 ] CONSUMABLE PARTS .....	3 - 1
[ 4 ] EXTERNAL VIEWS AND INTERNAL STRUCTURE .....	4 - 1
[ 5 ] UNPACKING AND INSTALLATION .....	5 - 1
[ 6 ] OPERATIONAL DESCRIPTIONS .....	6 - 1
[ 7 ] ADJUSTMENTS .....	7 - 1
[ 8 ] SIMULATIONS .....	8 - 1
[ 9 ] USER PROGRAM .....	9 - 1
[10] TROUBLE CODE LIST .....	10 - 1
[11] DISASSEMBLY AND ASSEMBLY .....	11 - 1
[12] FLASH ROM VERSION UP PROCEDURE .....	12 - 1
[13] ELECTRICAL SECTION .....	13 - 1
[14] CIRCUIT DIAGRAM .....	14 - 1
[15] ACTUAL WIRING DIAGRAM .....	15 - 1
[16] SPF PARTS ARRANGEMENT .....	16 - 1

Parts marked with "△" are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

## CAUTION

This product is a class 1 laser product that complies with 21CFR 1040.10 and 1040.11 of the CDRH standard and IEC825. This means that this machine does not produce hazardous laser radiation. The use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This laser radiation is not a danger to the skin, but when an exact focusing of the laser beam is achieved on the eye's retina, there is the danger of spot damage to the retina.

The following cautions must be observed to avoid exposure of the laser beam to your eyes at the time of servicing.

- 1) When a problem in the laser optical unit has occurred, the whole optical unit must be exchanged as a unit, not as individual parts.
- 2) Do not look into the machine with the main switch turned on after removing the developer unit, toner cartridge, and drum cartridge.
- 3) Do not look into the laser beam exposure slit of the laser optical unit with the connector connected when removing and installing the optical system.
- 4) The middle frame contains the safety interlock switch.  
Do not defeat the safety interlock by inserting wedges or other items into the switch slot.

## Warning!

This product is a class A product.

If it is operated in households, offices or similar surroundings, it can produce radio interferences at other appliances, so that the user has to take adequate countermeasures.

CLASS 1 LASER PRODUCT

LASER KLASSE 1

LUOKAN 1 LASERLAITE

KLASS 1 LASERAPPARAT

## VAROITUS!

LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

## VARNING

OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERATS, KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

## CAUTION

INVISIBLE LASER RADIATION,  
WHEN OPEN AND INTERLOCKS DEFEATED. AVOID  
EXPOSURE TO BEAM.

## VORSICHT

UNSICHTBARE LASERSTRAHLUNG,  
WENN ABDECKUNG GEÖFFNET UND  
SICHERHEITVERRIEGELUNG ÜBERBRÜCKT. NICHT  
DEM STRAHL AUSSETZEN.

## VARO !

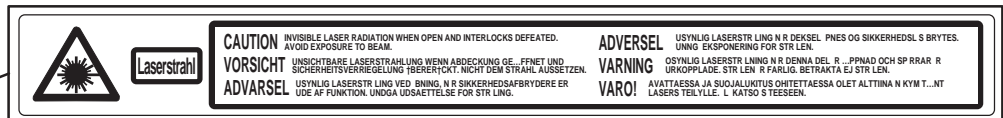
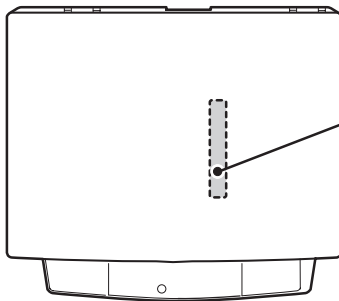
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET  
ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ  
KATSO SÄTEESEEN.

## ADVARSEL

USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR  
SIKKERHEDSBRYDERE ER UDE AF  
FUNKTION. UNGDÅ UDSÆTTELSE FOR  
STRÅLNING.

## VARNING !

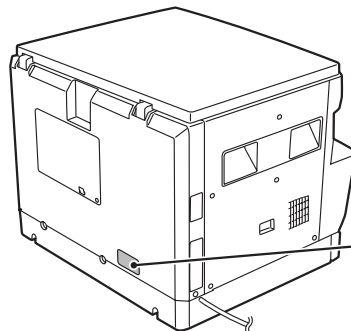
OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR  
ÖPPNAD OCH SPÅRREN ÄR URKOPPLAD. BETRakta EJ  
STRÅLEN. – STRÅLEN ÄR FARLIG.



Laserstrahl

CAUTION INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED.  
AVOID EXPOSURE TO BEAM.  
VORSICHT UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET UND  
SICHERHEITVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.  
ADVARSEL USYNLIG LASERSTRÅLNING VED ÅBNING, NÅR SIKKERHEDSBRYDERE ER  
UDE AF FUNKTION. UNGDÅ UDSÆTTELSE FOR STRÅLNING.

ADVARSEL USYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÅRREN ÄR  
URKOPPLAD. BETRakta EJ STRÅLEN.  
VARNING OSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÅRREN ÄR  
URKOPPLAD. BETRakta EJ STRÅLEN.  
VARO! AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE  
LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.



LASER WAVE – LENGTH : 785 ± 10 mm  
Pulse times : (8.141 ms ± 0.1 ms) / 7 mm  
Out put power : 0.22 mW ± 0.01 mW

Disconnect the AC cord before servicing the unit.

# CONTENTS

<b>[ 1 ] GENERAL</b> .....	1 - 1	<b>[ 8 ] SIMULATIONS</b> .....	8 - 1
1. GENERAL.....	1 - 1	1. ENTERING THE SIMULATION MODE .....	8 - 1
2. TARGET USER COPY VOLUME: MONTHLY AVERAGE .....	1 - 1	2. CANCELLING THE SIMULATION MODE .....	8 - 1
3. MAIN FEATURES.....	1 - 1	3. LIST OF SIMULATIONS.....	8 - 1
4. COPIER INSTALLATION .....	1 - 1	4. CONTENTS OF SIMULATIONS.....	8 - 2
<b>[ 2 ] SPECIFICATIONS</b> .....	2 - 1	<b>[ 9 ] USER PROGRAM</b> .....	9 - 1
1. COPY MODE .....	2 - 1	1. LIST OF USER PROGRAMS.....	9 - 1
<b>[ 3 ] CONSUMABLE PARTS</b> .....	3 - 1	2. SETTING THE USER PROGRAMS.....	9 - 2
1. SUPPLY SYSTEM TABLE .....	3 - 1	3. TONER CARTRIDGE LIFE .....	9 - 2
2. ENVIRONMENT CONDITIONS .....	3 - 1	<b>[10] TROUBLE CODE LIST</b> .....	10 - 1
3. PRODUCTION NUMBER IDENTIFICATION .....	3 - 2	1. TROUBLE CODE LIST.....	10 - 1
<b>[ 4 ] EXTERNAL VIEWS AND INTERNAL STRUCTURE</b> .....	4 - 1	2. DETAILS OF TROUBLE CODES.....	10 - 1
1. APPEARANCE .....	4 - 1	<b>[11] DISASSEMBLY AND ASSEMBLY</b> .....	11 - 1
2. INTERNAL .....	4 - 1	1. HIGH VOLTAGE SECTION/ DUPLEX TRANSPORT SECTION.....	11 - 1
3. OPERATION SECTION .....	4 - 2	2. OPTICAL SECTION.....	11 - 2
4. MOTOR, SOLENOID, CLUTCH .....	4 - 3	3. FUSING SECTION.....	11 - 3
5. SENSOR, SWITCH.....	4 - 4	4. PAPER EXIT SECTION.....	11 - 5
6. PWB UNIT.....	4 - 5	5. MCU.....	11 - 6
7. SPF UNIT <AL-1622 ONLY> .....	4 - 6	6. OPTICAL FRAME UNIT .....	11 - 7
8. PAPER FEED SECTION <AL-1622 ONLY>.....	4 - 6	7. LSU.....	11 - 7
9. CROSS SECTIONAL VIEW .....	4 - 7	8. TRAY PAPER FEED SECTION/ PAPER TRANSPORT SECTION .....	11 - 8
<b>[ 5 ] UNPACKING AND INSTALLATION</b> .....	5 - 1	9. MANUAL MULTI PAPER FEED SECTION .....	11 - 9
1. CHECKING PACKED COMPONENTS AND ACCESSORIES .....	5 - 1	10. POWER SECTION.....	11 - 11
2. UNPAKING PROCEDURE .....	5 - 1	11. SPF SECTION <AL-1622 ONLY> .....	11 - 12
3. INSTALLING PROCEDURE .....	5 - 1	<b>[12] FLASH ROM VERSION UP PROCEDURE</b> .....	12 - 1
4. CHANGING THE COPY PAPER SIZE IN THE TRAY .....	5 - 3	1. MCU/E-SORT.....	12 - 1
<b>[ 6 ] OPERATIONAL DESCRIPTIONS</b> .....	6 - 1	2. PRINTER CONTROL PWB FIRMWARE VERSION UP <WITH AN OPTION INSTALLED> .....	12 - 1
1. OUTLINE OF OPERATION .....	6 - 1	<b>[13] ELECTRICAL SECTION</b> .....	13 - 1
2. SCANNER SECTION .....	6 - 1	1. BLOCK DIAGRAM .....	13 - 1
3. PROCESS SECTION .....	6 - 2	2. SPF (AL-1622 ONLY) BLOCK DIAGRAM .....	13 - 2
4. LASER UNIT.....	6 - 5	<b>[14] CIRCUIT DIAGRAM</b> .....	14 - 1
5. PAPER FEED SECTION .....	6 - 6	1. INTERFACE PWB .....	14 - 1
6. FUSING SECTION .....	6 - 7	2. SENSOR PWB.....	14 - 2
7. SPF SECTION <AL-1622 ONLY>.....	6 - 8	<b>[15] ACTUAL WIRING DIAGRAM</b> .....	15 - 1
<b>[ 7 ] ADJUSTMENTS</b> .....	7 - 1	1. ACTUAL WIRING DIAGRAM 1/4 .....	15 - 1
1. ADJUSTMENT ITEM LIST .....	7 - 1	2. ACTUAL WIRING DIAGRAM 2/4 .....	15 - 2
2. COPIER ADJUSTMENT.....	7 - 1	3. ACTUAL WIRING DIAGRAM 3/4 .....	15 - 3
		4. ACTUAL WIRING DIAGRAM 4/4 .....	15 - 4
		<b>[16] SPF PARTS ARRANGEMENT</b> .....	16 - 1

# [ 1 ] GENERAL

## 1. GENERAL

This model is a digital personal copier produced with key words of "Comfort able copy, Clear copy, Easy copy" providing high copy performances and copy productivity.

## 2. TARGET USER COPY VOLUME: MONTHLY AVERAGE

2000~3000 sheets

## 3. MAIN FEATURES

### A. HIGH-SPEED LASER COPYING

- First-copy time is only 7.4 seconds (normal mode).
- Copying speed is 16 copies/min., which adapts to business use, allowing improvement of working efficiency.

### B. HIGH-QUALITY DIGITAL IMAGE

- High-quality copying at 600 dpi is performed.
- In addition to the automatic exposure mode, the manual exposure can be adjusted in five steps.
- The photo mode copying function allows clear copying of delicate halftone original images such as monochrome photos and color photos. Photo mode is adjustable in five steps.

### C. SUBSTANTIAL COPYING FEATURES

- Zoom copying from 50% to 200% in 1% increments can be performed.
- Continuous copying of maximum 99 sheets can also be performed.
- Toner save mode reduces toner consumption by approximately 10%.
- User programs allow setting/modification of functions for customer needs.

### D. SCAN ONCE/ PRINT MANY

- The copier is equipped with a 1-page memory buffer. This memory allows the copier to scan an original 1 time only and make up to 99 copies. This feature allows for improved workflow, reduced operating noise from the copier and reduced wear and tear on the scanning mechanism, which provides for a higher reliability.

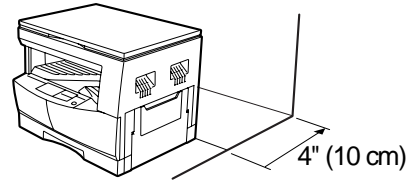
### E. ENVIRONMENTALLY FRIENDLY DESIGN

- Paper output tray is housed in the copier for space saving.
- Preheat mode and auto power shut-off mode are provided to reduce power consumption in standby mode.

## 4. COPIER INSTALLATION

Do not install your copier in areas that are:

- damp, humid, or very dusty
- exposed to direct sunlight
- poorly ventilated
- subject to extreme temperature or humidity changes, e.g., near an air conditioner or heater.
- Be sure to allow the required space around the machine for servicing and proper ventilation.



# [ 2 ] SPECIFICATIONS

## 1. COPY MODE

### A. Type

Type	Desk-top
------	----------

### B. Machine composition

AR-1611	16-CPM standard model
AR-1622	16-CPM (with SPF)

### C. Copy speed

#### (1) Scan One Print many

	Not available
--	---------------

Condition: Copy speed in the normal copy from all the paper feed ports including the manual paper feed port.

#### (2) Continuous copy speed (Sheets/min)

Paper size		Normal	Enlargement (200%)	Reduction (50%)
AB system	A3	9	9	9
	B4	10	10	10
	A4	16	16	14
	A4R	12	12	12
	B5	16	16	16

### D. First copy time

#### (1) Basic speed

First copy time	7.2sec (A4, 1st tray/with OC)
-----------------	-------------------------------

### E. Document

Max. document size	A3		
Document reference position	Left side center		
Detection (Platen)	AR-1611	None	
	AR-1622	Available	
Detection size	A3, B4, A4, A4R, B5, B5R, A5		

#### (1) SPF (AL-1622 only)

Document load capacity	30 sheets (56 ~ 90g/m <sup>2</sup> equivalent)
Document size (Max. ~ Min.)	A3 ~ A5
Document replacement speed	16 sheets/min (A4 normal copy)
Document set /Paper feed direction	Face up, Center reference, Paper feed from the top
Document weight	56 ~ 90g/m <sup>2</sup>
Document size detection	On the document feed tray
Document mixture	Copy mode: Not Available

### F. Paper feed

Copy size (Max. ~ Min.)	A3 ~ A6	
Paper feed system	AR-1611	1 cassette + Multi manual paper feed
	AR-1622	2 cassette + Multi manual paper feed
Paper feed capacity	AR-1611	250 x 1(paper feed tray) + 100 (Multi bypass feed tray)
	AR-1622	250 x 2(Paper feed tray) + 100 (Multi bypass feed tray)
Remaining quantity detection	Cassette section	Empty detection available, size detection by key input
	Manual tray	Only empty detection available

#### (1) Paper feed section of the copier

Paper feed size	A3, B4, A4, A4R, B5, B5R, A5 (For A5 only No. 1 tray available.)
Side front	Front
Paper feed capacity	250 sheets (56 ~ 80g/m <sup>2</sup> equivalent)
Detection	Paper empty detection available, size detection (by key input)
Weight	56 ~ 80g/m <sup>2</sup>
Special paper	Recycled paper

#### (2) Manual paper feed section

Paper feed size	A3 ~ A6
Paper feed capacity	100 sheets
Detection	Size detection not available, paper empty detection available
Weight	56 ~ 128g/m <sup>2</sup>
Special paper	Recycled paper, OHP film, labels
Paper feed	Single except for recycled paper

### G. Job speed

S-S (1st step)	100% (document replacement rate)
----------------	----------------------------------

Condition: With SPF

### H. Multi copy

Max. number of multi copy	99 sheets
---------------------------	-----------

### I. Warmup time

Warmup time	Approx. 35 sec*
Pre-heat	Available

\*May vary depending on the surrounding temperature

## J. Copy magnification ratio

Fixed magnification ratio	50, 70, 81, 86, 100, 115, 122, 141, 200%
Zooming	50 ~ 200%
Independent zooming (vertical)	Available (50 ~ 200%)
Independent zooming (horizontal)	Available (50 ~ 200%)

## K. Print density

Density mode	Auto/Manual/Photo
No. of manual adjustment	5 steps (Manual/Photo)
Toner save mode	Set by the user program

## L. Void width

Void area	Lead edge 1 ~ 4mm, rear edge 4mm or less (Duplex 4mm or less), both sides 4mm or less
Image loss	Max. 4mm in total of lead edge and rear edge, max. 4mm in total of right and left edges (Normal copy)

## M. Paper exit/finishing

Paper exit section capacity	Face down 250 sheets
Job separator	None
Full detection	Available (Job separator upper step)
Offset function	None
Staple function	None

## N. Additional functions

APS*	<input type="radio"/> Available for only AL-1622
	<input checked="" type="radio"/> (AL-1611)
AMS*	<input type="radio"/> (AMS not available by flowing in during use of SPF)
Duplex	<input checked="" type="radio"/>
Document count	<input checked="" type="radio"/>
Sorter	<input checked="" type="radio"/>
Independent zooming	<input type="radio"/> Vertical/Horizontal: 50 ~ 200%
1 set 2 copy	<input type="radio"/> Enlargement inhibited, inhibited during the use of SPF
Binding margin	<input checked="" type="radio"/>
Edge erase	<input checked="" type="radio"/>
Black-white reversion	<input type="radio"/> Whole surface only
2 in 1, 4 in 1	<input checked="" type="radio"/>
Rotation copy	<input checked="" type="radio"/>
Memory copy	<input type="radio"/>
Pre-heat function	<input type="radio"/> Conditions set by the user program
Auto power shut off function	<input checked="" type="radio"/> Conditions set by the user program
Auto tray switching	<input type="radio"/> Available for only AL-1622
	<input checked="" type="radio"/> (AL-1611)
Message display	<input checked="" type="radio"/>
User program	<input type="radio"/>
Total counter	<input type="radio"/>

○ : Available

× : Not available

\* : By the document size set key

## O. Other specifications

Photoconductor type	OPC (Organic Photo Conductor)
Photoconductor drum dia.	30mm
Copy lamp	Xenon lamp
Developing system	Dry 2-component magnetic brush development system
Charging system	Saw teeth charging
Transfer system	(+) DC corotron
Separation system	(-) DC corotron
Fusing system	Heat roller
Cleaning system	Contact blade

## P. Package form

Body	Body/Accessories
------	------------------

## Q. External view

External dimensions (W × D × H)	590 × 531 × 470mm (AL-1611) 590 × 531 × 650mm (AL-1622)
Occupying area (W × D)	590 × 531mm (When the manual tray is installed.)
Weight	About 32kg (AL-1611) About 40kg (AL-1622)

## R. Power source

Voltage	AC120V, 220V, 230V, 240V ±15%
Frequency	50/60Hz common

## S. Power consumption

Max. power consumption	About 1.3KWh
------------------------	--------------

\*EnergyStar standard (The 2nd level conformity)

Pre-heat	About 60Wh
Auto power shut off	0wh.

## T. Digital performance

Resolution	Reading	400 dpi
	Writing	600 dpi
Gradation	Reading	256 gradations
	Writing	Binary

# [ 3 ] CONSUMABLE PARTS

## 1. SUPPLY SYSTEM TABLE

### A. Europe

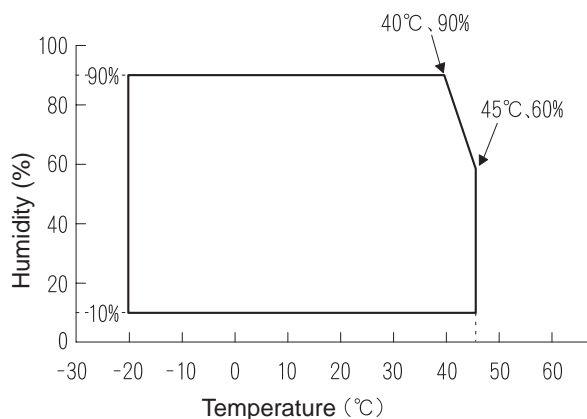
No.	Name	Content	Life	Product name	Package	Remark
1	Developer cartridge (Black)	Toner/developer cartridge ×1 Toner: Net weight 300g Developer: Net weight 395g Vinyl bag ×1	9K	AL-161TD	4	Life setting by A4 5% documents
2	Drum cartridge	Drum cartridge	30K	AL-160DR	4	

Note: Maintenance parts other than mentioned above must be ordered through the parts department using the proper part number.

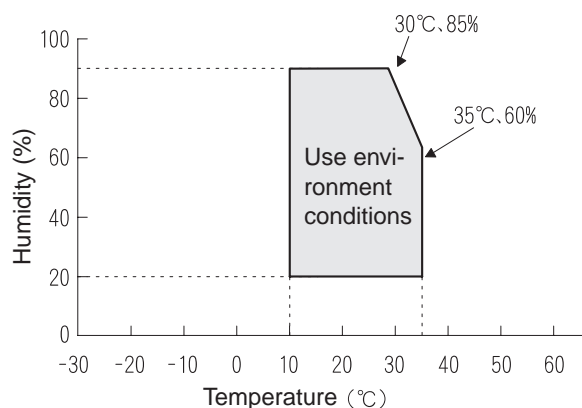
## 2. ENVIRONMENT CONDITIONS

### A. Transport condition

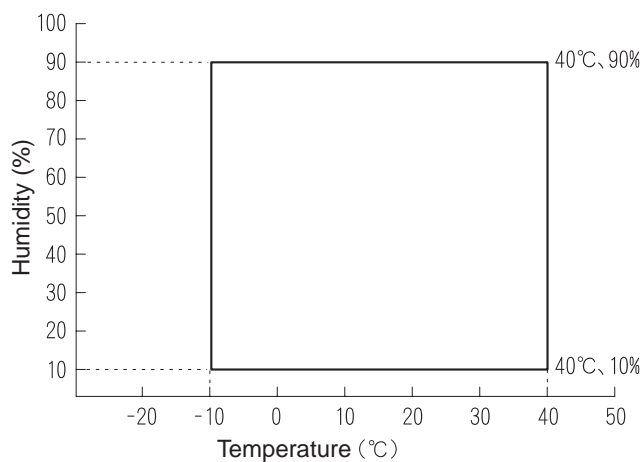
#### (1) Transport conditions



### B. Use conditions



#### (2) Storage conditions (packed conditions)



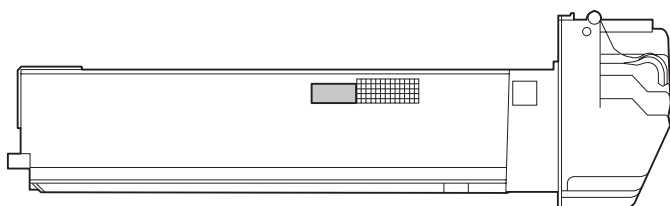
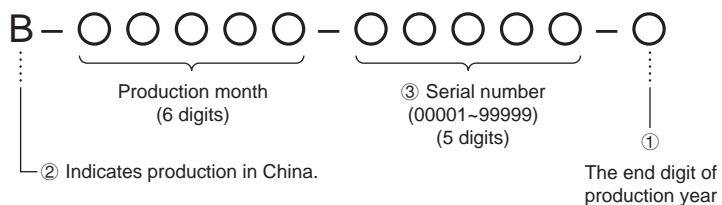
### C. Life (packed conditions)

Photoconductor drum (36 months from the production month)  
Developer, toner (24 months from the production month)

### 3. PRODUCTION NUMBER IDENTIFICATION

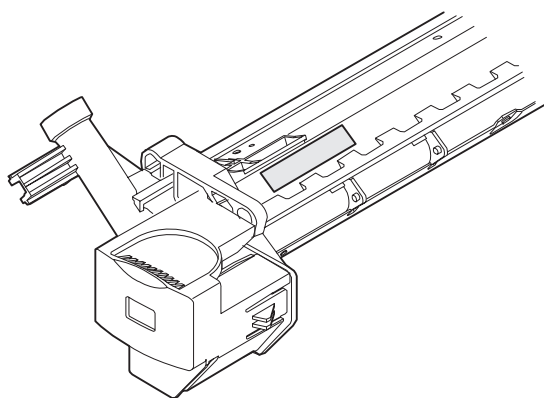
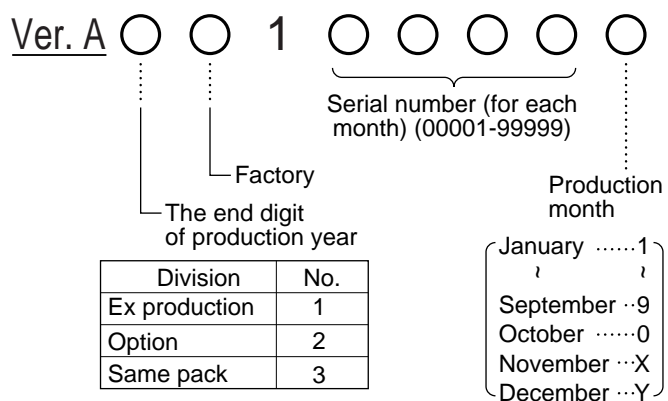
#### <Developing cartridge>

The label on the drum cartridge shows the date of production.



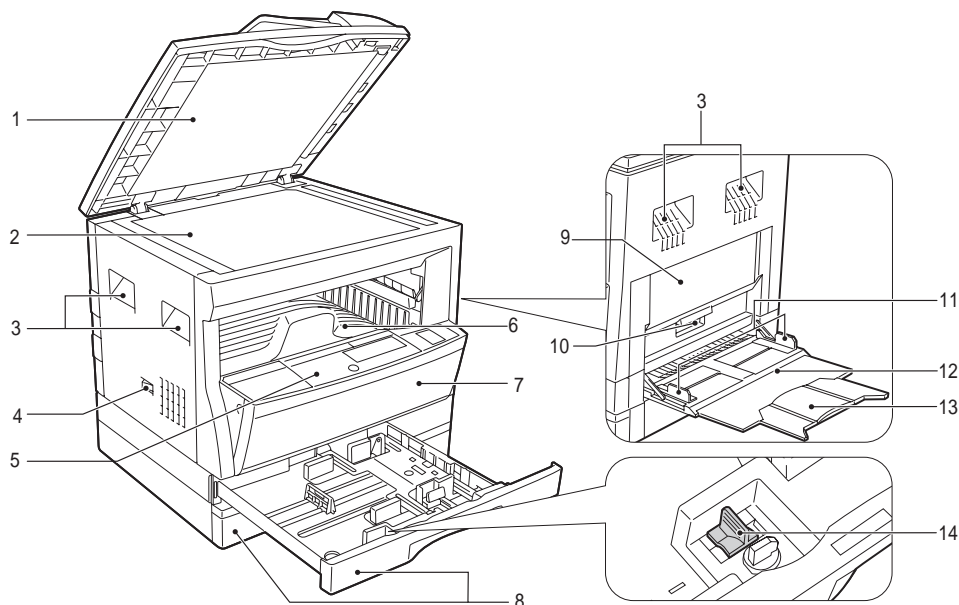
#### <Drum cartridge>

The label on the drum cartridge shows the date of production.



# [ 4 ] EXTERNAL VIEWS AND INTERNAL STRUCTURE

## 1. APPEARANCE

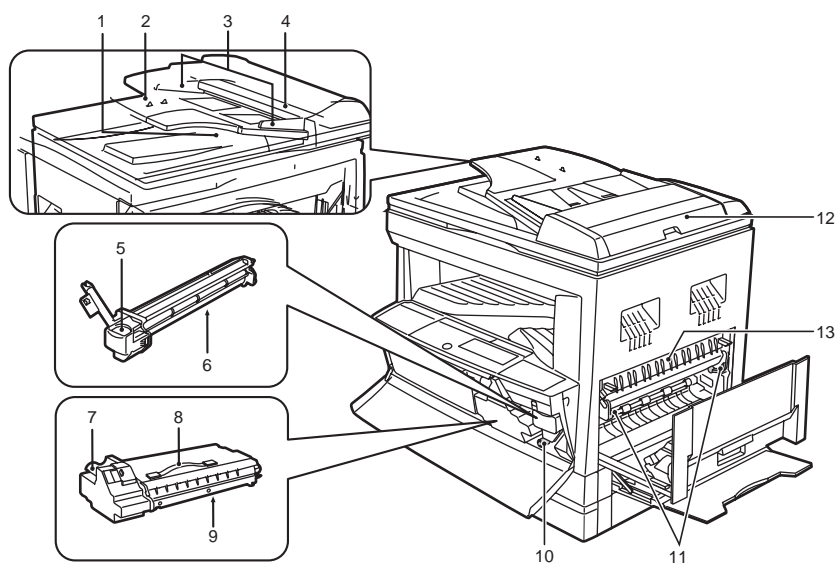


[The figure above is an example of the AL-1622.]

1	Document feeder cover (AL-1622) Platen cover (AL-1611)	2	Original table	3	Handles
4	Power switch	5	Operation panel	6	Paper output tray
7	Front cover	8	Paper trays	9	Side cover
10	Side cover handle	11	Bypass tray guides	12	Bypass tray
13	Bypass tray extension	14	Charger cleaner		

\*The AR-162/163 are equipped with one paper tray.

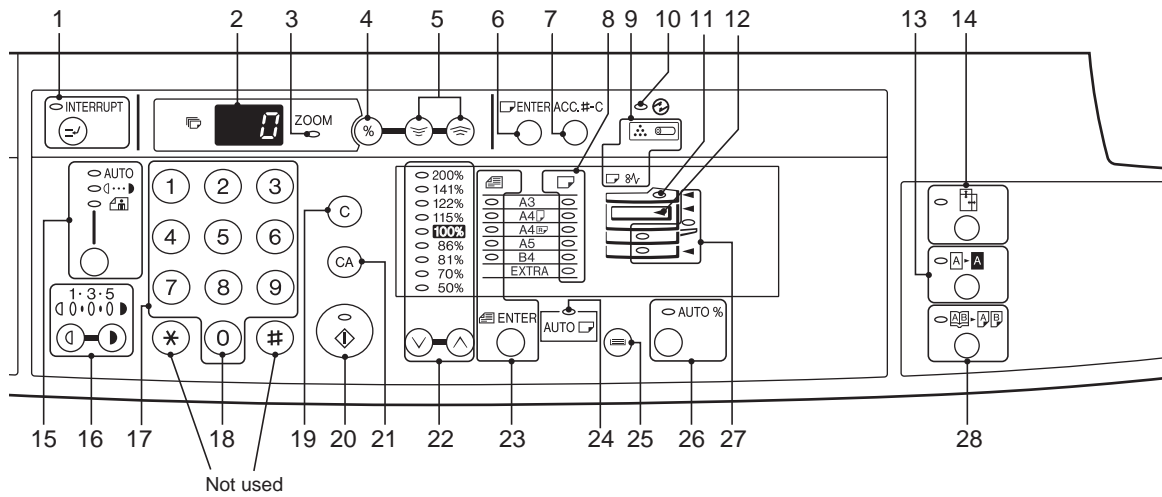
## 2. INTERNAL



[The figure above is an example of the AL-1622.]

1	SPF area (AL-1622 only)	2	Document feeder tray (AL-1622 only)	3	Original guides (AL-1622 only)
4	Feeding roller cover (AL-1622 only)	5	Drum cartridge handle	6	Drum cartridge
7	TD cartridge lock release lever	8	TD cartridge strap	9	TD cartridge
10	Roller rotating knob	11	Fusing unit release levers	12	Right side cover (AL-1622 only)
13	Paper guide				

### 3. OPERATION SECTION



1	Interrupt (⊖) key and indicator	2	Copy quantity display	3	Zoom indicator
4	Copy ratio display(%) key	5	Zoom keys	6	Paper size enter (ENTER) key
7	Audit clear (ACC.#C)key	8	Paper size indicators	9	Alarm indicators *1
10	Power save (⊖) indicator	11	SPF indicator (AL-1622 only)	12	Output tray full indicator
13	B/W reverse (A-A) key and indicator	14	XY-Zoom (XY-Z) key and indicator	15	AUTO/MANUAL/PHOTO ( AUTO/ (1...)/ (A) ) key and indicators
16	Light (⊕) and dark (⊖) keys and indicators	17	Numeric keys	18	Zero key
19	Clear (C) key	20	Start (⊕) key and indicator	21	Clear all (CA) key
22	Preset Ratio selector keys and indicators	23	Original size enter (ENTER) key and indicators	24	Auto paper select ( AUTO ) indicator (AL-1622 only)
25	Tray select (≡) key	26	Auto image ( AUTO % ) key and indicator	27	paper feed location/misfeed location indicators
28	Dual page copy (A-A) key and indicator				

\*1:

**TD cartridge replacement required indicator**

The TD cartridge replacement required indicator will light up when toner is needed. If copying is continued while the indicator is lit, copies will gradually become lighter until the copier stops and the indicator begins blinking. Replace the old TD cartridge by following the procedure given below.

After the copier stops, it may be possible to make a few more copies by taking the TD cartridge out of the copier, shaking it horizontally, then reinstalling it. If copying is not possible after this operation, replace the TD cartridge. During long copy run of a dark original, the START key indicator may blink, the indicator light up, and the copier stop, even though toner is left. The copier will feed toner for up to 2 minutes and then the START key indicator will light up. Press the START key to restart copying.

For best copying results, be sure to use only SHARP Genuine Supplies which are designed, engineered and tested to maximize the life and performance of SHARP copiers. Look for the Genuine Supplies label on the toner package.

In case of low coverage, the developer life lamp lights up at 14,500 sheets, and flashes at 15,000 sheets and the machine stops.

**Drum replacement required indicator** The useful life of the drum cartridge is approximately 30,000 copies. When the internal counter reaches approximately 29,000 copies, the drum replacement required indicator will light up indicating that replacement of the drum cartridge will be needed soon. When the indicator begins to blink, replace the drum cartridge by following the procedure given below.

**Paper required indicator**

**Misfeed indicator**

<NOTE>

**ON:** Indicates that the machine is in the energy saving (pre-heat) mode.

**Blink:** Indicates that the machine is in the process of resetting from the energy saving mode or just after supplying the power.

**OFF:** Indicates that resetting from the energy saving mode is completed and that the fusing temperature is in ready state.

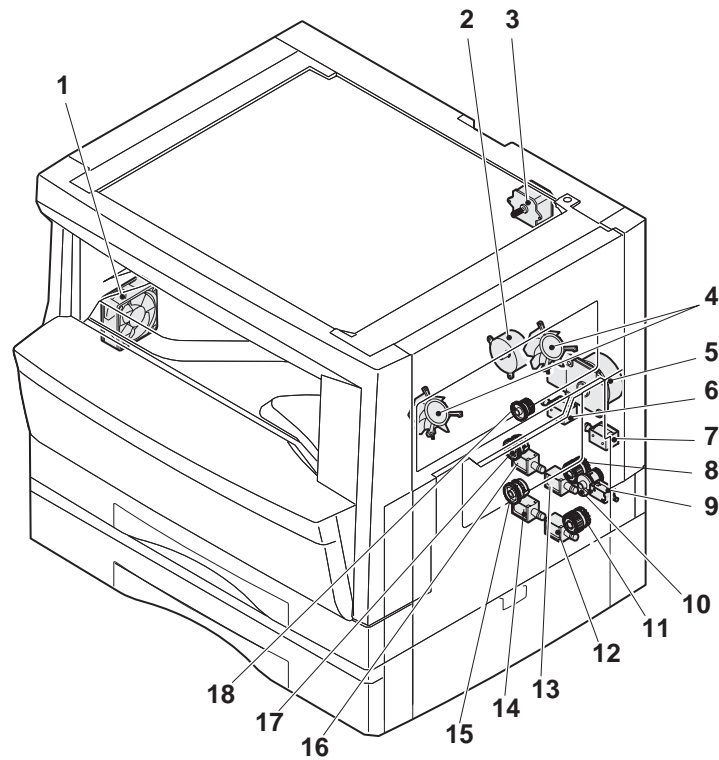
The combinations of the above display lamps are as follows:

(○ = ON. ● = OFF)

Lamp	Immediately after power ON	Ready	Copying
Pre-heat lamp	Blink	●	●
Ready lamp	●	○	●
Other lamps	●	○	○

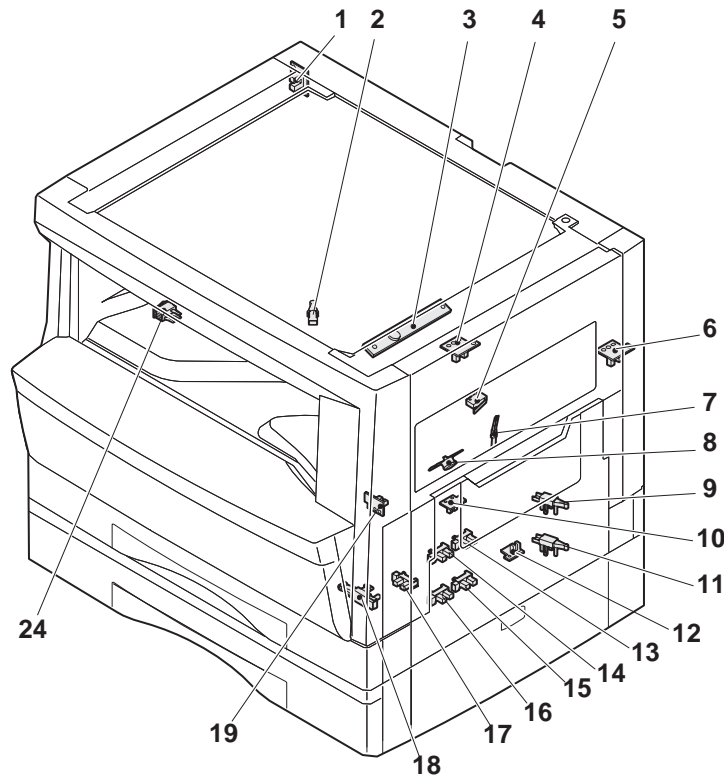
Lamp	Energy saving mode (Pre-heating)	Energy saving mode (Auto power shut off)	Resetting from energy saving mode	Copy is started during resetting from energy saving mode
Pre-heat lamp	○	○	Blink	Blink
Ready lamp	○	●	○	●
Other lamps	○	●	○	○

## 4. MOTOR, SOLENOID, CLUTCH



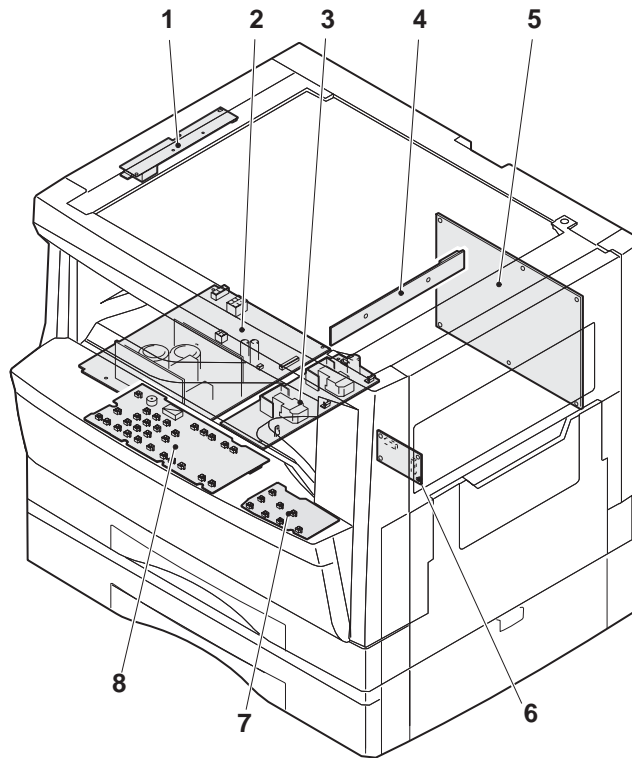
No.	Name	Code	Function, operation
1	Exhaust fan motor	VFM	Cools the inside of the machine.
2	Toner motor	TM	Toner supply
3	Mirror motor	MRM	Drives the optical mirror base (scanner unit).
4	Cooling fan motor	CFM	Cools the inside of the machine.
5	Main motor	MM	Drives the machine.
6	Paper feed solenoid	CPFS1	Solenoid for paper feed from cassette
7	Resist roller solenoid	RRS	Resist roller rotation control solenoid
8	Manual paper feed clutch	MPFC	Drives the manual paper feed roller.
9	Manual paper feed solenoid	MPFS	Manual paper feed solenoid
10	Manual paper transport clutch	MPTC	Drives the manual paper transport roller.
11	2nd tray transport clutch	CPFC2	Drives the 2nd tray transport roller. (Excluding AL-1611)
12	2nd tray transport solenoid	FSOL2	2nd tray transport solenoid (Excluding AL-1611)
13	1st tray transport solenoid	FSOL1	1st tray transport solenoid
14	2nd tray paper feed solenoid	PSOL2	2nd tray transport solenoid (Excluding AL-1611)
15	Paper feed clutch	CPFC2	Drives the cassette paper feed roller.
16	1st tray paper feed solenoid	PSOL1	1st tray transport solenoid
17	1st tray paper feed clutch	CPFC1	Drives the 1st tray transport roller.
18	PS clutch	RRC	Drives the resist roller

## 5. SENSOR, SWITCH



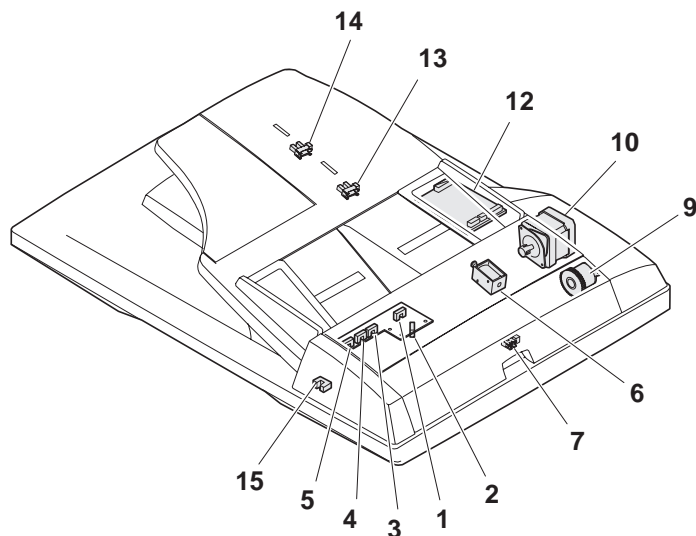
No.	Name	Code	Function, operation
1	Mirror home position sensor	MHPS	Detects the mirror (scanner unit) home position.
2	1st tray detection switch		1st tray detection
3	Toner density sensor	TCS	Toner quantity detection
4	Paper exit sensor (paper exit side)	POD1	Detects paper exit.
5	Right door switch	DSWR	Side door open/close detection
6	Paper exit sensor (DUP side)	PDPX	Paper transport detection
7	Thermistor	RTH	Fusing section temperature detection
8	Thermostat		Fusing section abnormally high temperature detection
10	Paper in	PIN	Paper transport detection
11	2nd tray detection switch		2nd tray detection (Excluding AL-1611)
12	Manual sensor	MPED	Manual transport detection
13	2nd tray door open/close sensor	DRS2	2nd tray door open/close detection (Excluding AL-1611)
14	2nd tray paper entry sensor	PPD2	Paper transport detection (Excluding AL-1611)
15	2nd tray paper empty sensor	CSS2	2nd tray paper empty detection (Excluding AL-1611)
16	Front door detection switch		
17	1st tray paper empty sensor	CSS1	1st tray paper empty detection
18	Power switch	MAIN SW	Turns ON/OFF the main power source.

## 6. PWB UNIT



No.	Name	Function, operation
1	Copy lamp Inverter PWB	Copy lamp control
2	Power PWB	AC power input/DC power control
3	High voltage PWB	High voltage control
4	CCD sensor PWB	Image scanning
5	Main PWB (MCU)	Machine control/Image process
6	Tray interface PWB	Paper tray control
7	ERDH operation PWB	Operation panel input and display
8	Copy operation PWB	Operation panel input and display, operation panel section control

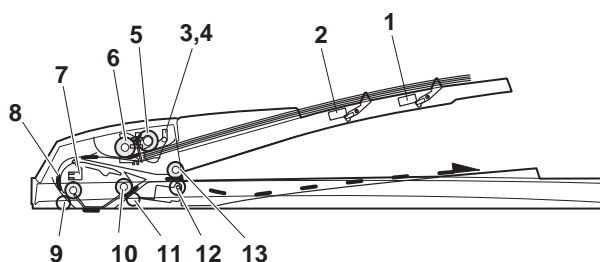
## 7. SPF UNIT <AL-1622 ONLY>



### [Sensors and detectors]

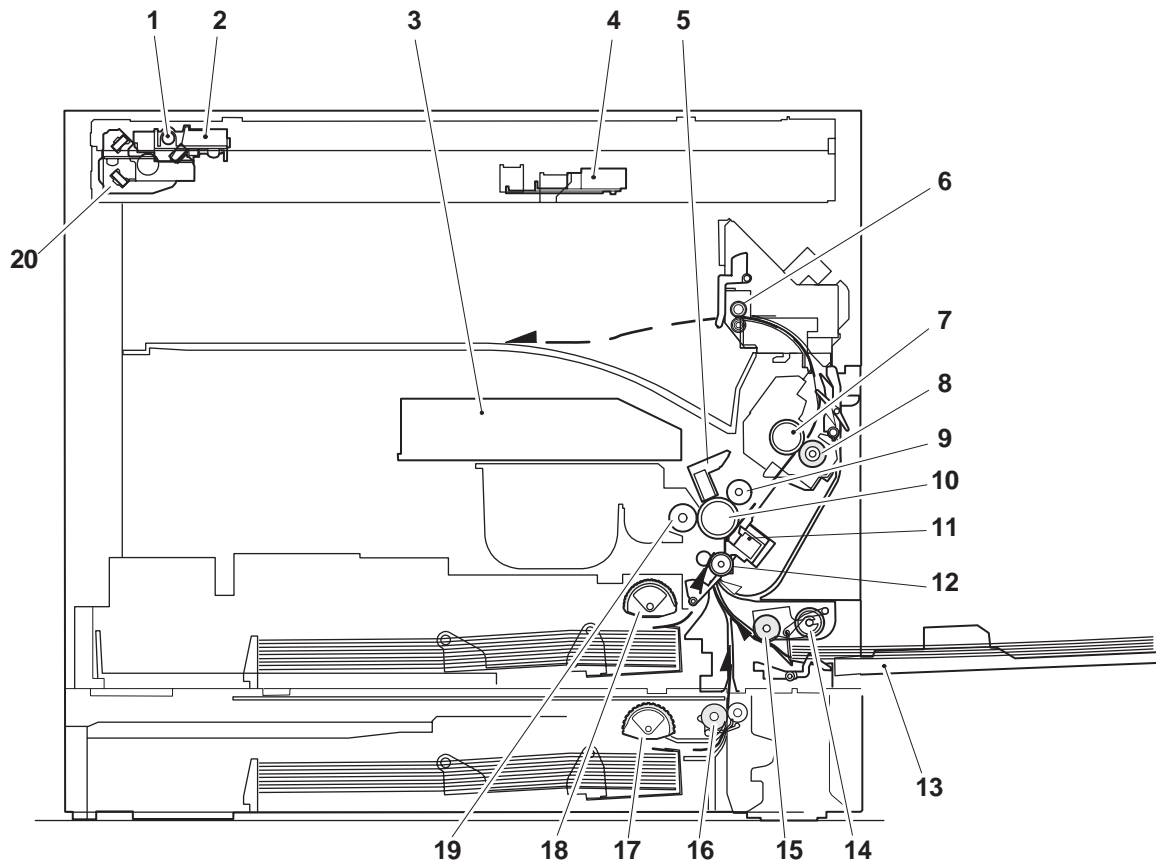
No.	Code	Name	Type	Function, operation
1	W0	Document set sensor	Photo transmission	Document presence detection
2	COVER	Open/close sensor	Photo transmission	Paper feed unit open/close detection
3	W1	Document sensor (A4R, LTR, A5)	Photo transmission	Tray document width detection
4	W2	Document width sensor (B4R, B5)	Photo transmission	Tray document width detection
5	W3	Document width sensor (WLTR, A5R, A4, LT)	Photo transmission	Tray document width detection
6	PSOL	Pickup solenoid	—	—
7	PAPER	Paper entry sensor	Photo transmission	Document presence detection
9	CLH	Transport clutch	—	—
10	MOT	SPF motor	Stepping motor	Tray paper feed, transport, paper exit roller drive
12	—	Interface PWB	—	SPF control and communication with the copier body
13	L1	Document length detection SW (Short)	Photo transmission	Tray document length detection
14	L2	Document length detection SW (Long)	Photo transmission	Tray document length detection
15	COVER OPEN	Book sensor	Photo transmission	Detects SPF floating.

## 8. PAPER FEED SECTION <AL-1622 ONLY>



No.	Name	Operation
1	Document length sensor (L2)	Detects the document length on the tray.
2	Document length sensor (L1)	Detects the document length on the tray.
3	Document length sensor (W0)	Detects the presence of document.
4	Document width sensor (W1, W2, W3)	Detects the document width.
5	Pickup roller	Picks up the document.
6	Paper feed roller	Feed and transport the document.
7	Paper entry sensor (PAPER)	Detects the document transport.
8	PS roller	Makes synchronization between the document lead edge and the image lead edge.
9	PS follower roller	Makes synchronization between the document lead edge and the image lead edge.
10	Transport roller	Transports the document.
11	Transport follower roller	Transports the document.
12	Paper exit follower roller	Discharges the document.
13	Paper exit roller	Discharges the document.

## 9. CROSS SECTIONAL VIEW

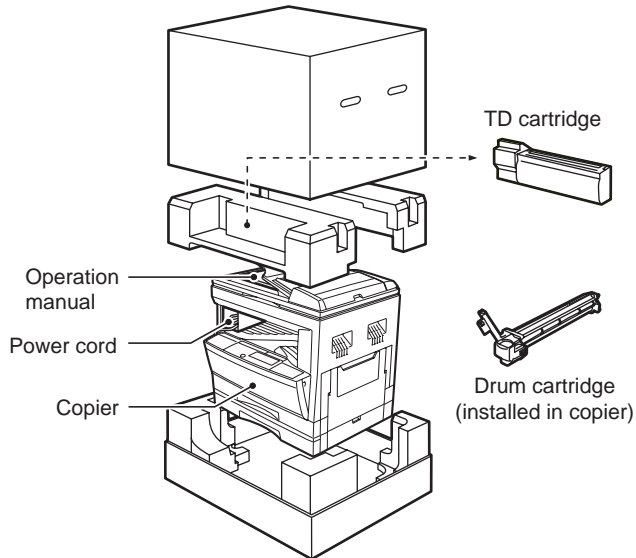


No.	Name	Function/Operation
1	Copy lamp	Image radiation lamp
2	Copy lamp unit	Operates in synchronization with No. 2/3 mirror unit to radiate documents sequentially.
3	LSU unit	Converts image signals into laser beams to write on the drum.
4	Lens unit	Reads images with the lens and the CCD.
5	MC holder unit	Supplies negative charges evenly on the drum.
6	Paper exit roller	Used to discharge paper.
7	Upper heat roller	Fuses toner on paper (with the teflon roller).
8	Lower heat roller	Fuses toner on paper (with the silicon rubber roller).
9	Waste toner transport roller	Transports waste toner to the waste toner box.
10	Drum unit	Forms images.
11	Transfer charger unit	Transfer images (on the drum) onto paper.
12	Resist roller	Takes synchronization between the paper lead edge and the image lead edge.
13	Manual paper feed tray	Manual paper feed tray
14	Manual paper feed roller	Picks up paper in manual paper feed.
15	Manual transport roller	Transports paper from the manual paper feed port.
16	2nd tray paper transport roller	Transports paper from the 2nd tray. (Excluding AL-1611)
17	2nd tray paper feed roller (semi-circular roller)	Picks up paper from the 2nd tray. (Excluding AL-1611)
18	1st tray paper feed roller (semi-circular roller)	Picks up paper from the 1st tray.
19	MG roller	Puts toner on the OPC drum.
20	No. 2/3 mirror unit	Reflects the images from the copy lamp unit to the lens unit.

# [ 5 ] UNPACKING AND INSTALLATION

## 1. CHECKING PACKED COMPONENTS AND ACCESSORIES

Open the carton and check to ensure that the following components and accessories are included.

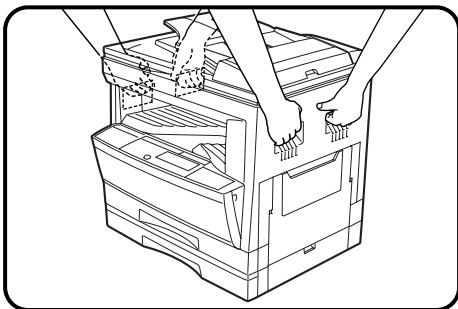


### Note:

- If anything is not included or is damaged, contact your authorised service representative.
- Save the carton and packing materials. These can be re-used for transporting the machine, should it be necessary.

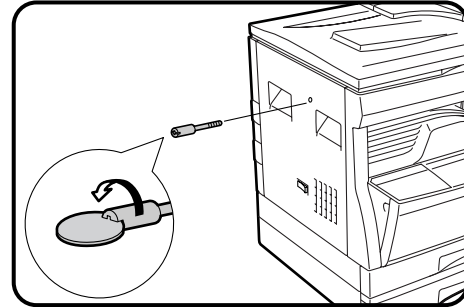
## 2. UNPACKING PROCEDURE

Be sure to hold the handles on both sides of the copier by two persons to unpack the copier and carry it to the installation location.

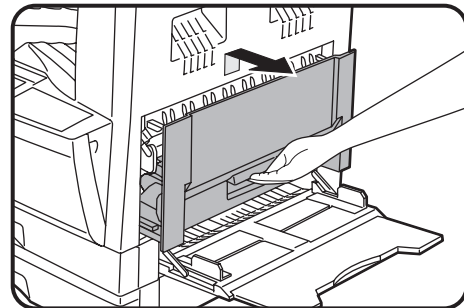


## 3. INSTALLING PROCEDURE

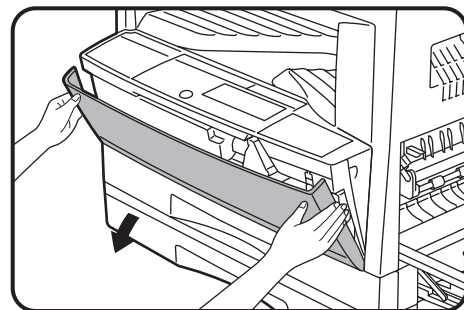
- 1) Remove all pieces of tape. Then open the original cover and remove the protective material.
- 2) Use a coin (or suitable object) to remove the screw.
- Store the screw in the paper tray because it will be used if the copier has to be moved. (Refer to the description in the following.)



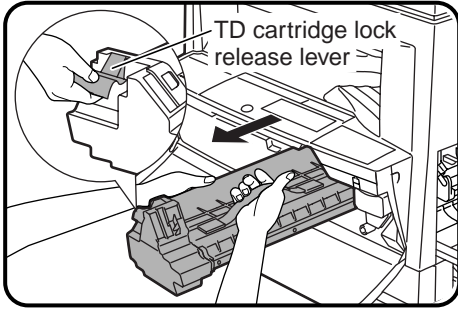
- 3) Ensure that the bypass tray is open. Raise the side cover release handle and pull out the side cover until it stops.



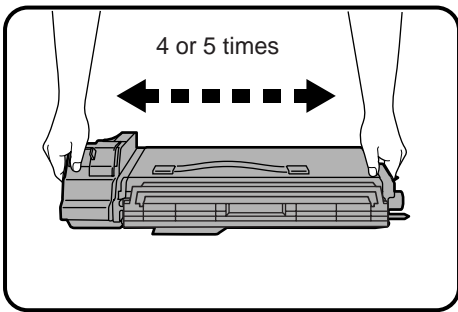
- 4) Push gently on both sides of the front cover to open the cover.



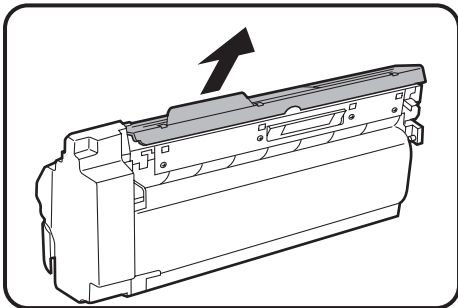
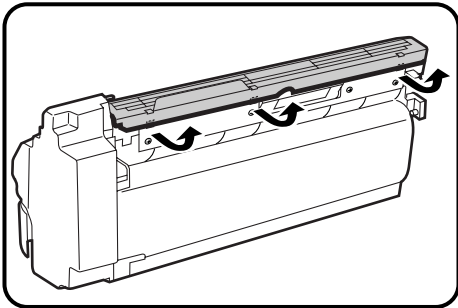
- 5) Gently pull the TD cartridge out while holding the handle.
- 6) Hold the strap on the cartridge and remove the TD cartridge upward.



- 7) Remove the new TD cartridge from the bag. Hold the cartridge on both sides and shake it horizontally four or five times.

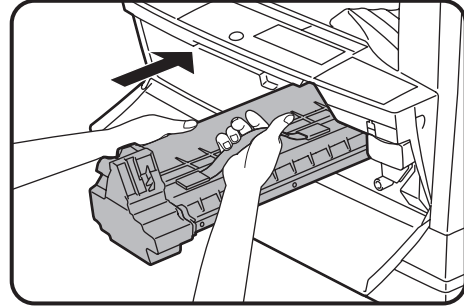


- 8) Remove the protective cover from the TD cartridge by unlatching three cover hooks from the holes on the cartridge and then pulling the cover in the direction indicated by the arrow in the illustration.



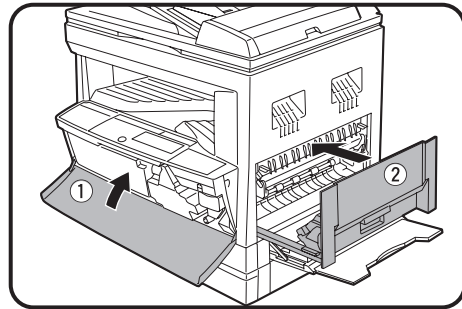
- 9) Gently insert the TD cartridge along the guides until it locks in place.

- If dirt or dust is adhered to the TD cartridge, remove it before installing the cartridge.

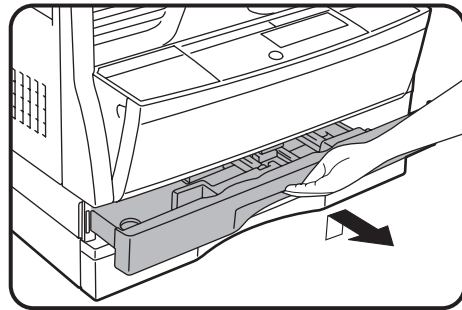


- 10) Close the front cover by holding both sides with your hands and then close the side cover. The TD cartridge replacement required indicator will go out and the START key indicator will light up.

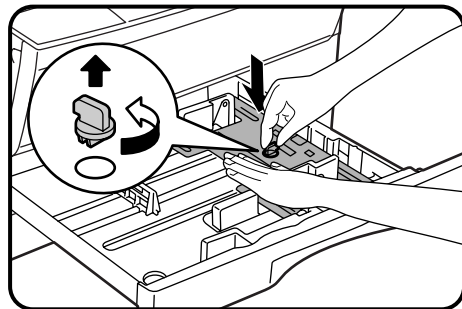
- When closing the covers, be sure to close the front cover securely and then close the side cover. If the covers are closed in the wrong order, the covers may be damaged.



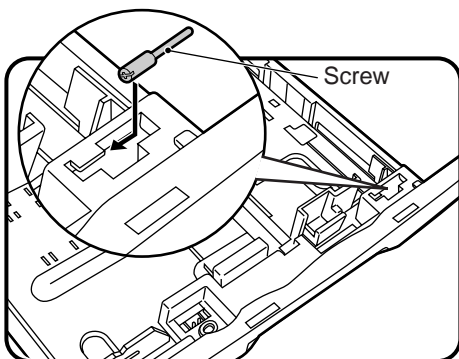
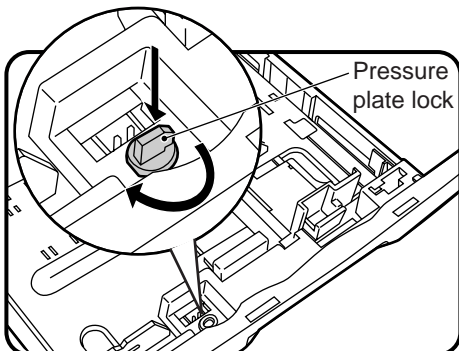
- 11) Raise the handle of the paper tray and pull the paper tray out until it stops.



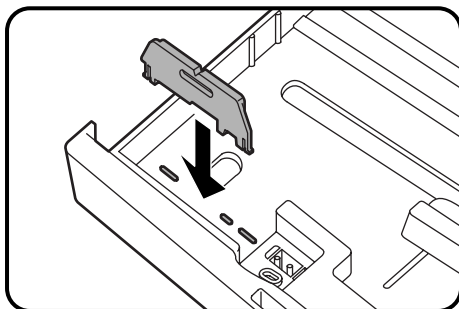
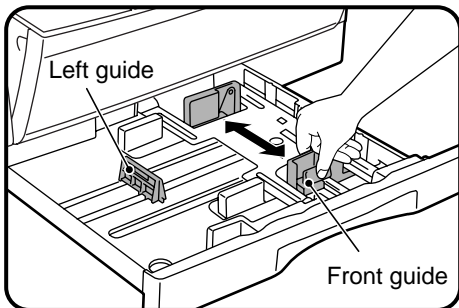
- 12) Remove the pressure plate lock. Rotate the pressure plate lock in the direction of the arrow to remove it while pressing down the pressure plate of the paper tray.



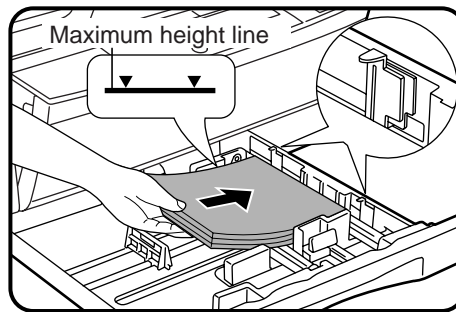
- 13) Store the pressure plate lock which has been removed in step 5 and the screw which has been removed in step 2 in the front of the paper tray.
- To store the pressure plate lock, rotate the lock to fix it on the relevant location.
  - For AL-1622, follow steps 3), 4), 13) for both the upper and lower trays except for storage of the screw.



- 14) Push the pressure plate down until it locks in place.
- 15) Squeeze the lock lever of the front guide and slide the front guide to match the width of the paper.
- 16) Move the left guide to the appropriate slot as marked on the tray.
- When using A3 copy paper, store the left guide in the slot at the left front of the paper tray.



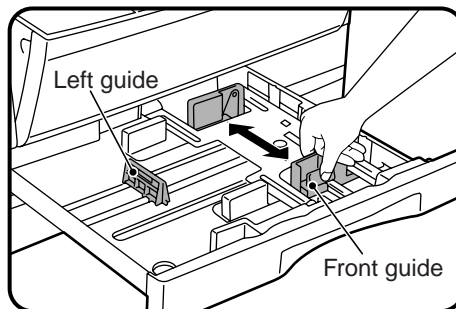
- 17) Load copy paper into the tray.
- Set the paper along the guides.
  - The tray holds up to 250 sheets of about 9kg bond paper. Do not load paper above the maximum height line.



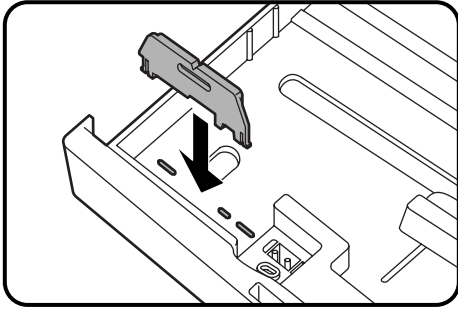
- 18) Push the paper tray firmly back into the copier.
- 19) Ensure that the power switch of the copier is in the OFF position. Insert the supplied power cord into the power cord socket at the rear of the copier.
- If you use the copier in a country other than the country where the copier was purchased, you will need to make sure that your local power supply is compatible with your model. If you plug the copier into an incompatible power supply, irreparable damage to the copier will result.
- 20) Plug the other end of the power cord into the nearest outlet.
- Only insert the power cord into a properly grounded wall socket. Do not use extension cords or power strips.

#### 4. CHANGING THE COPY PAPER SIZE IN THE TRAY

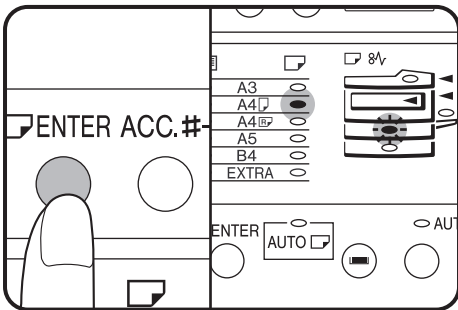
- 1) Gently lift and pull out the paper tray until it stops.
- 2) Push the pressure plate down until it locks in place.
- 3) Squeeze the lock lever of the front guide and slide the front guide to match the width of the paper.



- 4) Move the left guide to the appropriate slot as marked on the tray.
- When using 11"×17" copy paper, store the left guide in the slot at the left front of the paper tray.

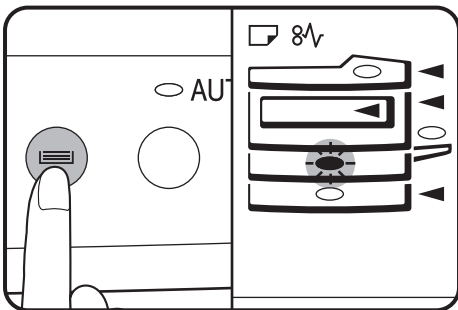


- 5) Load copy paper into the tray.
- 6) Place the paper size plate in the front of the paper tray.
  - The paper size indication which shows through the slot on the front of the copier should match the selected paper size.
- 7) Push the paper tray firmly back into the copier.
- 8) To set the selected paper size, press the PAPER SIZE ENTER (PAPER SIZE ENTER) key.
  - The selected paper feed location indicator will blink and the corresponding paper size (which is currently set) indicator will light up steadily. All other indicators except the START (START) key indicator will go out.



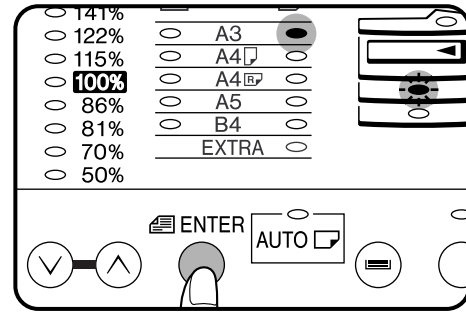
Note: If copying is being performed, paper size setting cannot be made.

- 9) AL-1622 only Use the TRAY SELECT (TRAY SELECT) key to select the paper tray of which the paper size has been changed.
  - Each time the TRAY SELECT (TRAY SELECT) key is pressed, a paper tray will be indicated with a blinking paper feed location indicator.

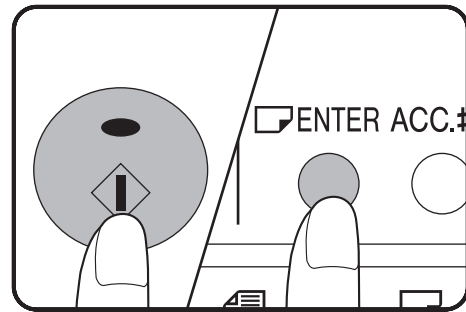


- 10) Use the ORIGINAL SIZE ENTER (ORIGINAL SIZE ENTER) key to select the paper size which is set in the paper tray.

- Each time the ORIGINAL SIZE ENTER (ORIGINAL SIZE ENTER) key is pressed, a paper size will be indicated with a paper size indicator.



- 11) Press the START (START) key and then the PAPER SIZE ENTER (PAPER SIZE ENTER) key.
  - AL-1622 only To change the paper size setting of the other tray, repeat steps 9 to 10 after pressing the START (START) key.

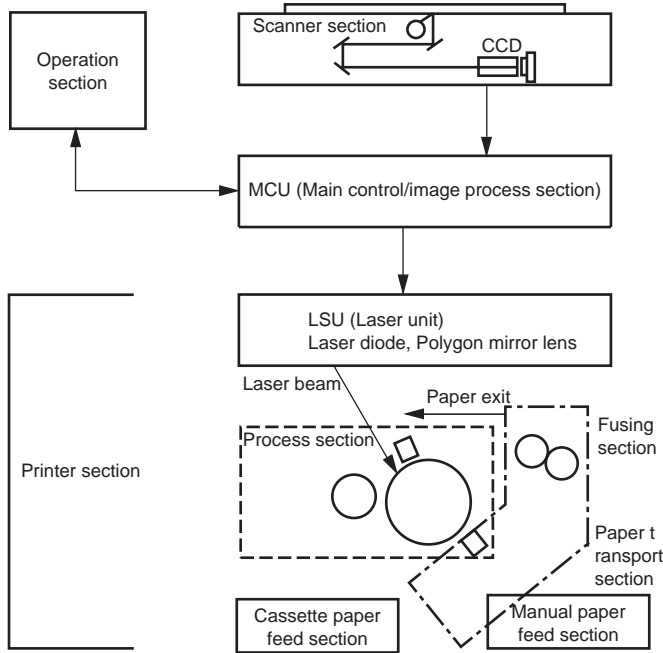


# [ 6 ] OPERATIONAL DESCRIPTIONS

## 1. OUTLINE OF OPERATION

The outline of operation is described referring to the basic configuration.

### (Basic configuration)



### Outline of copy operation

#### A. Setting conditions: Operation panel

- Set copy conditions such as the copy quantity and the copy density with the operation section, and press the START key. The information on copy conditions is sent to the MCU.

#### B. Image scanning: Scanner section

- When the START key is pressed, the scanner section starts scanning of images. The light from the copy lamp is reflected by the document and passed through the lens to the CCD.

#### C. Photo signal/Electric signal conversion: Scanner section

- The image is converted into electrical signals by the CCD circuit and passed to the MCU.

#### D. Image process: MCU

- The document image signal sent from the CCD circuit is processed under the revised conditions and sent to the LSU (laser unit) as print data.

#### E. Electric signal/Photo signal (laser beam) conversion: LSU

- The LSU emits laser beams according to the print data. (Electrical signals are converted into photo signals.)
- The laser beams are radiated through the polygon mirror and various lenses to the OPC drum.

#### F. Printing: Process section

- Electrostatic latent images are formed on the OPC drum according to the laser beams, and the latent images are developed to be visible images (toner images).
- Meanwhile the paper is fed to the image transfer section in synchronization with the image lead edge.
- The toner image is transferred on the paper.

#### G. Fusing: Fusing section

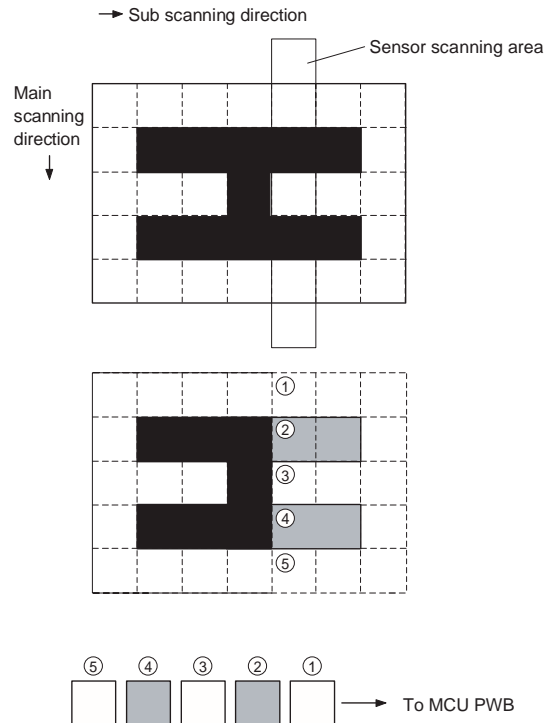
- Heat and a pressure are applied to the toner image on the copy paper to fuse the image on the paper.

## 2. SCANNER SECTION

### A. Scan process

The scanner has sensors that are arranged in a line. These sensors scan a certain area of a document at a time and deliver outputs sequentially. When the line is finished, the next line is scanned, and this procedure is repeated. The figure below shows the case where an image which is scanned is shown with solid lines.

The direction of this line is called main scanning direction, and the scanning direction sub scanning direction. In the figure above, one line is divided into 5 sections. Actually, however, one line is divided into thousands of sections. For scanning, the light receiving element called CCD is used.

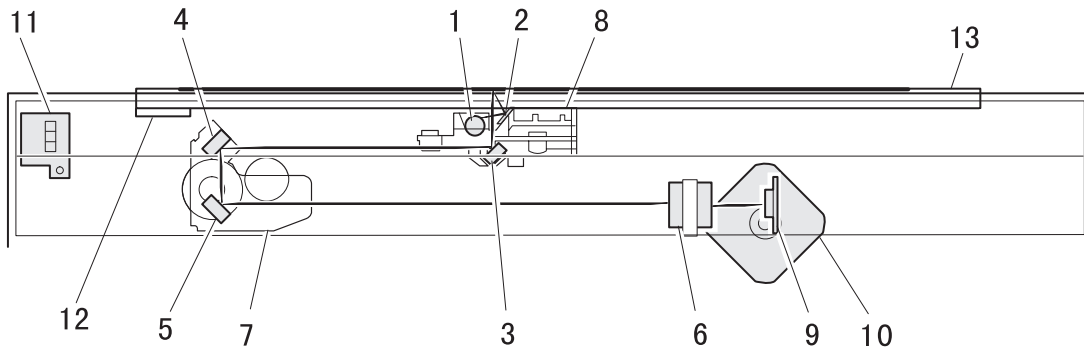


The basic resolution indicates the scanner capacity. The basic resolution is expressed in dpi (dot/inch) which shows the number of light emitting elements per inch on the document.

The basic resolution of this machine is 400dpi.

In the sub scanning direction, at the same time, the motor that drives the optical system is controlled to scan the image at the basic resolution.

## B. Basic structure of scanner section

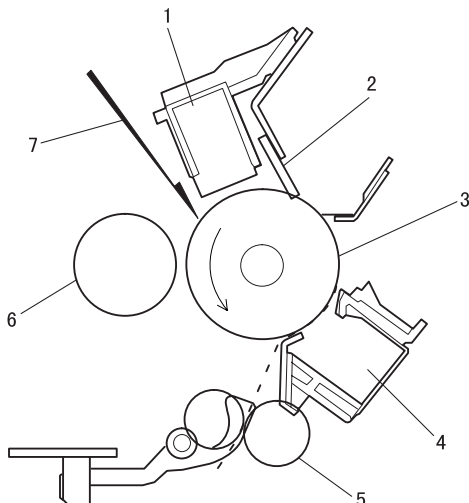


1	Copy lamp (Xenon lamp)	Generate photo energy to scan documents.
2	Reflector (Converging plate)	Collects light emitted from the copy lamp and radiate the document.
3	No. 1 mirror	Refracts the reflection light from the document to No. 2 mirror.
4	No. 2 mirror	Refracts the reflection light from No. 1 mirror.
5	No. 3 mirror	Refracts the reflection light from No. 2 mirror.
6	Lens	Converges reflected light from the document to form images on the CCD element.
7	No. 2/3 mirror unit	Includes No. 2/3 mirror. Driven in synchronization with the copy lamp unit.
8	Copy lamp unit	Includes the copy lamp, the reflector, and No. 1 mirror. Driven in synchronization with No. 2/3 mirror unit by the mirror motor.
9	CCD PWB	Reflected light (image) formed on the CCD is converted into electrical signals (analog signals) then into digital signals and sent to the MCU.
10	Mirror motor	Drives the copy lamp unit and No. 2/3 mirror unit according to the scanning speed.
11	MHPS (Mirror home position sensor)	Detects the home position of No. 2/3 mirror unit.
12	Reference white plate	Reference white sheet for scanning documents. The reference line of magnification ratio adjustment during SIM is also drawn.
13	OC glass	Glass table to put a document on it.

The light from the light source (Xenon lamp) is reflected by a document and passed through three mirrors and reduction lenses to the CCD element (image sensor) where images are formed. This system is known as the reduction image sensor system. Photo energy on the CCD element is converted into electrical signals (analog signals). (Photo-electric conversion). The output signals (analog signals) are converted into digital signals (A/D conversion) and passed to the MCU (main control/image process section). The resolution at that time is 400dpi. The mirror unit in the scanner section is driven by the mirror motor. The MHPS is provided to detect the home position of the copy lamp unit.

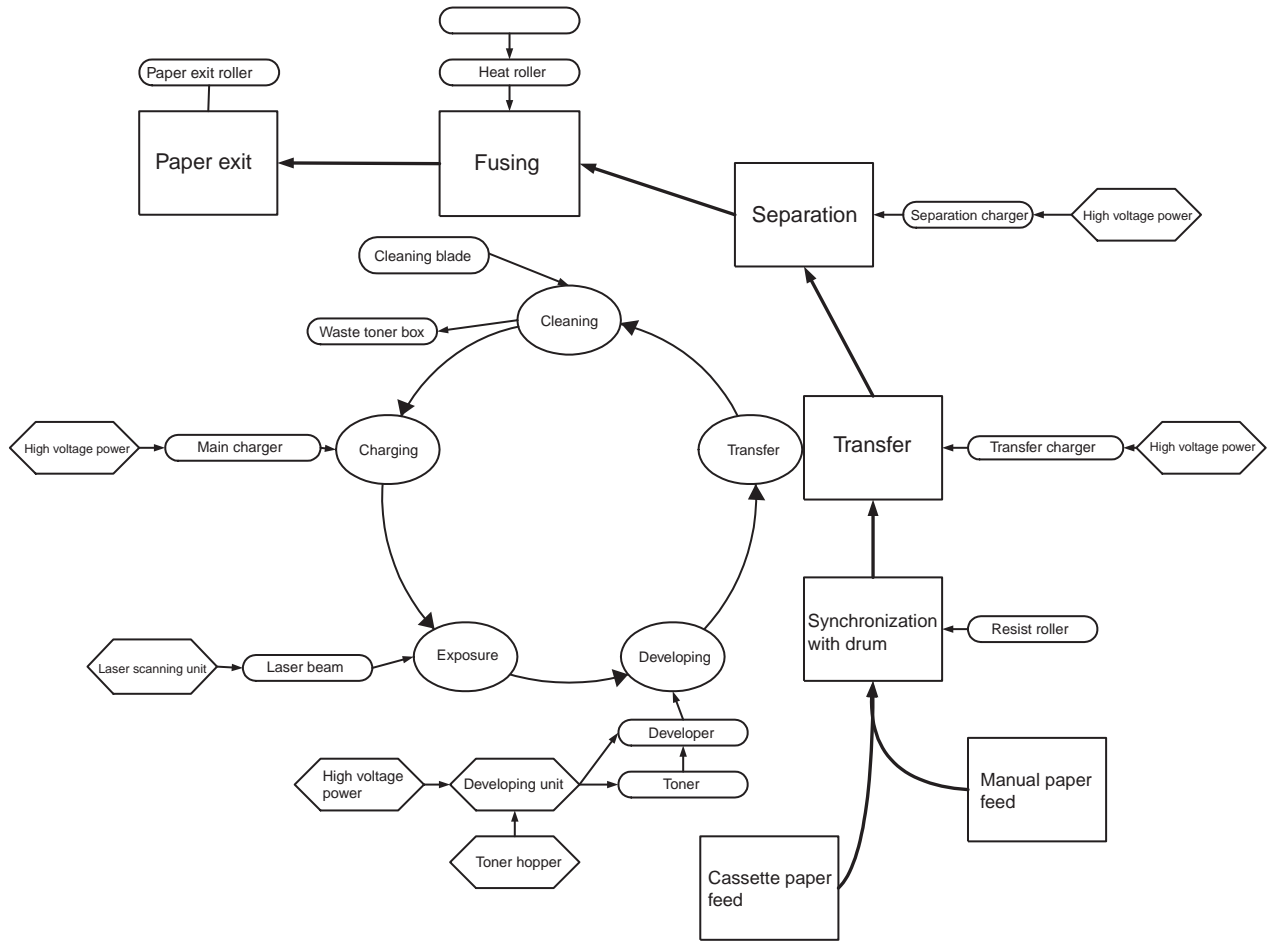
## 3. PROCESS SECTION

### A. Basic structure



1	Main charger unit	Charges the OPC drum.
2	Cleaning blade	Collects waste toner on the OPC drum.
3	OPC drum	Images are formed by laser beams electrically, and toner is attached to the image.
4	Transfer unit	Toner on the OPC drum is transferred to the print paper by the potential difference.
5	Resist roller	Makes synchronization between the paper and the print image.
6	MG roller	Magnetic brush is formed by developer to put toner on the OPC drum.
7	(Laser beam)	Forms images on the OPC drum.

## Operation cycle



## B. Outline of print process

The printer section of this machine employs the laser print system where print images are formed by the laser beams on the OPC drum.

A high voltage (corona) is applied from the main charger to the OPC drum to charge the OPC drum.

Laser beams are radiated to the charged OPC drum to form electrical images on the OPC drum. (Exposure)

(At that time, the print image on the OPC drum cannot be seen: latent electrostatic image)

By the potential difference between the unexposed area and the latent electrostatic images, toner is attracted only to the images. (Developing)

(At that time, the print image formed by toner on the OPC drum can be seen. Visible images)

The toner image on the OPC drum is transferred on the print paper by the transfer corona (voltage).

After that, the print paper with the toner image on it is subject to heat and pressure in the fusing section to fuse the image on the paper.

This machine employs the following organic photoconductor (OPC) drum.

An OPC drum is used for the photoconductor.  
(Structure of the OPC drum layers)

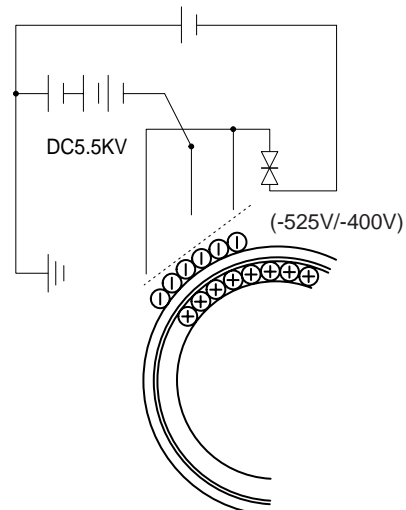


## C. Actual print process

### (1) Charging

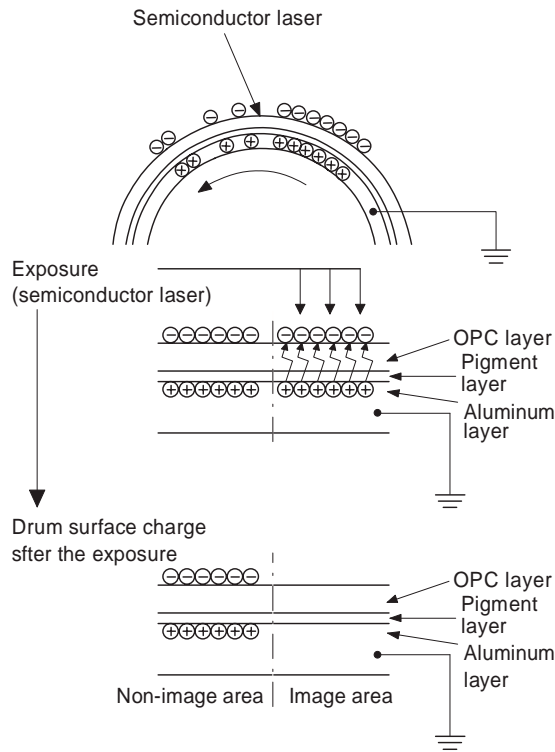
A high voltage is applied to the main charger, and negative charges are discharged to the OPC drum. A screen grid is provided between the main charger and the OPC drum, and negative charges are uniformly charged on the OPC drum surface.

Positive charges are attracted by the negative electrode on the OPC drum surface and excited in the aluminum layer in the OPC drum.



## (2) Exposure

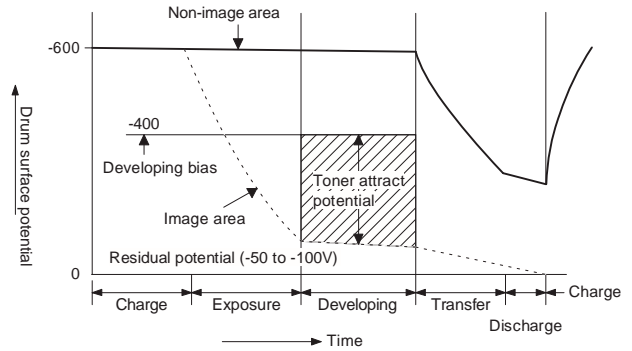
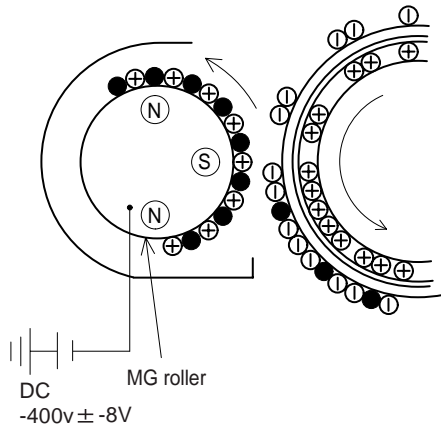
A Laser beam is generated from the semiconductor laser and controlled by the print pattern signal. The laser writes onto the OPC drum surface through the polygon mirrors and lens. The resistance of the OPC layer decreases for an area exposed by the laser beam (corresponding to the print pattern signal). The beam neutralizes the negative charge. An electrostatic latent image is formed on the drum surface.



## (3) Developing (DC bias)

A bias potential is applied to the MG roller in the two component magnetic brush developing method, and the toner is charged negative through friction with the carrier. Non-image area of the drum surface charged with negative potential repel the toner, whereas the laser exposed portions where no negative charges exist, attract the toner. As a result, a visible image appears on the drum surface.

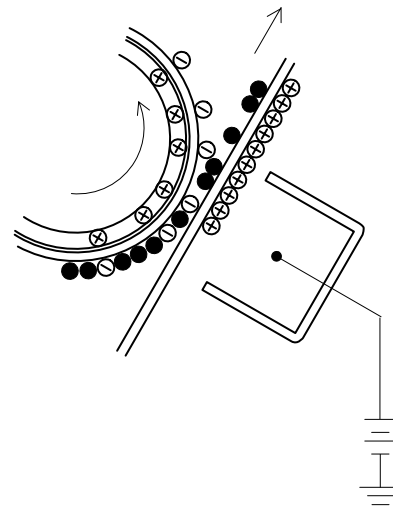
- ⊕ : Carrier (Magnetized particle)
- : Toner (Charge negative by friction)
- (N) (S) : Permanent magnet (provided in three locations)



Toner is attracted over the shadowed area because of the developing bias.

## (4) Transfer

The visible image on the drum surface is transferred onto the print paper by applying a positive charge from the transfer corona to the backside of the print paper.

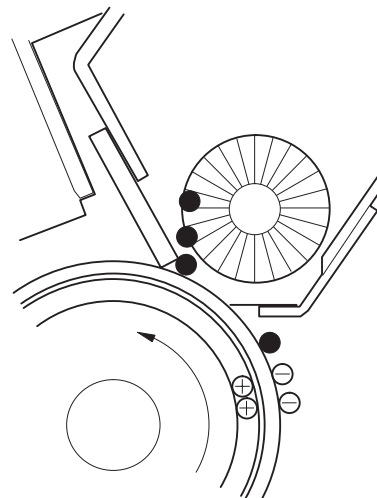


## (5) Separation

Since the print paper is charged positively by the transfer corona, it is discharged by the separation corona. The separation corona is connected to ground.

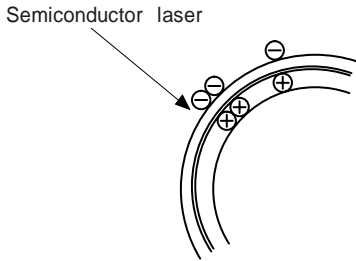
## (6) Cleaning

Toner remaining on the drum is removed and collected by the cleaning blade. It is transported to the waste toner collecting section in the cleaning unit by the waste toner transport roller.



**(7) Optical discharge (Semiconductor laser)**

Before the drum rotation is stopped, the semiconductor laser is radiated onto the drum to reduce the electrical resistance in the OPC layer and eliminate residual charge, providing a uniform state to the drum surface for the next page to be printed. When the electrical resistance is reduced, positive charges on the aluminum layer are moved and neutralized with negative charges on the OPC layer.



**a. Charge by the Scorotron charger**

**<1> Function**

The Scorotron charger functions to maintain the surface potential of the drum even at all times which. It is used to control the surface potential regardless of the charge characteristics of the photoconductor.

**<2> Basic function**

A screen grid is placed between the saw tooth and the photoconductor. A stable voltage is added to the screen grid to maintain the corona current on the photoconductor. As the photoconductor is charged by the saw tooth from the main corona unit, the surface potential increases. This increases the current flowing through the screen grid. When the photoconductor potential nears the grid potential, the current turns to flow to the grid so that the photoconductor potential can be maintained at a stable level.

**b. Process controlling**

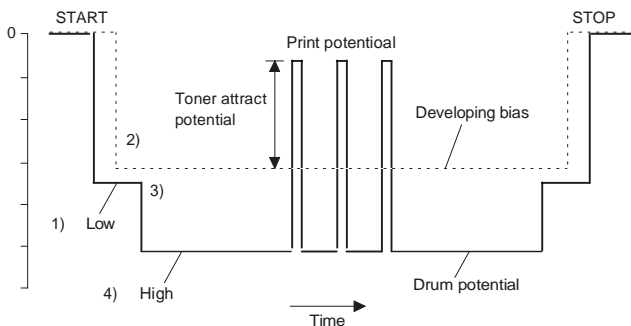
**<1> Function**

The print pattern signal is converted into an invisible image by the semiconductor laser using negative to positive (reversible) developing method. Therefore, if the developing bias is added before the drum is charged, toner is attracted onto the drum. If the developing bias is not added when the drum is charged, the carrier is attracted to the drum because of the strong electrostatic force of the drum.

To avoid this, the process is controlled by adjusting the drum potential and the grid potential of the Scorotron charger.

**<2> Basic function**

Voltage added to the screen grid can be selected, high and low. To make it easily understood, the figure below shows voltage transition at the developer unit.



**<3> Start**

- 1) Because the grid potential is at a low level, the drum potential is at about -400V. (Carrier may not be attracted though the carrier is pulled towards the drum by the electrostatic force of -400V.)

- 2) Developing bias (-400V) is applied when the photoconductor potential is switched from LOW to HIGH.
- 3) Once developing bias (-400V) is applied and the photoconductor potential rises to HIGH, toner will not be attracted to the drum.

**<4> Stop**

The reverse sequence takes place.

**c. Retaining developing bias at an abnormal occurrence**

**<1> Function**

The developing bias will be lost if the power supply was removed during print process. In this event, the drum potential slightly abates and the carrier makes deposits on the drum because of strong static power. To prevent this, the machine incorporates a function to retain the developing bias for a certain period and decrease the voltage gradually against possible power loss.

**<2> Basic function**

Normally, the developing bias voltage is retained for a certain time before the drum comes to a complete stop if the machine should stop before completing the normal print cycle. The developing bias can be added before resuming the operation after an abnormal interruption. Therefore, carrier will not make a deposit on the drum surface.

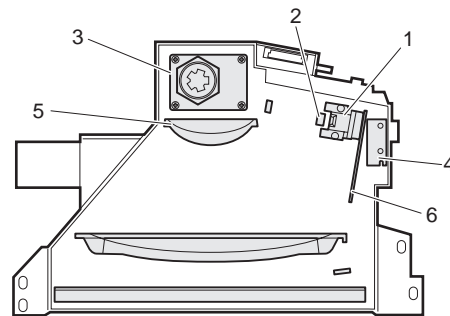
**4. LASER UNIT**

The image data sent from the MCU (image process circuit) is sent to the LSU (laser unit), where it is converted into laser beams.

**A. Basic structure**

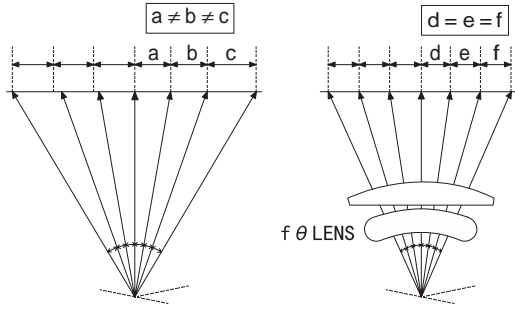
The LSU unit is the writing section of the digital optical system. The semiconductor laser is used as the light source, and images are formed on the OPC drum by the polygon mirror and fq lens, etc.

The laser beams are passed through the collimator lens, the cylindrical lens, the polygon mirror, the fq lens, and the mirror to form images on the OPC drum in the main scanning direction. The laser emitting PWB is provided with the APC (auto power control) in order to eliminate fluctuations in the laser power. The BD PWB works for measurement of the laser writing start point.

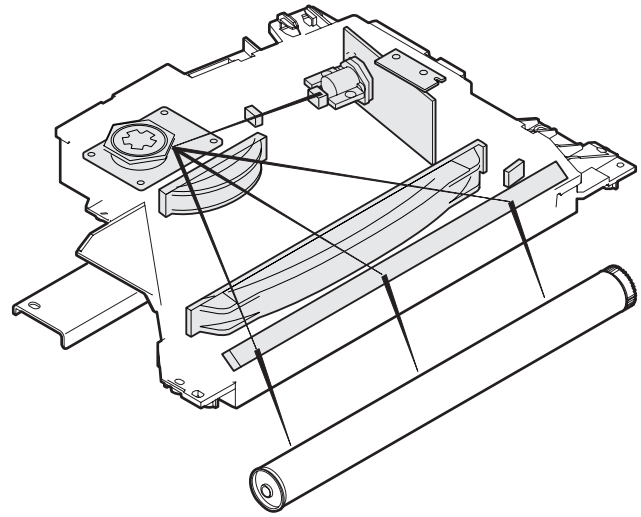


1	Semiconductor laser	Generates laser beams
2	Collimator lens	Converges laser beams in parallel
3	Polygon mirror, polygon motor	Reflects laser beams at a constant rpm
4	BD (Mirror, lens, PWB)	Detects start timing of laser scanning
5	fθ lens	Converges laser beams at a spot on the drum. Makes the laser scanning speeds at both ends of the drum same as each other. (Refer to the figure below.)
6	Laser emitting PWB	Emits laser beams according to the image data.

Makes the laser scanning speeds at both ends of the drum same as each other.

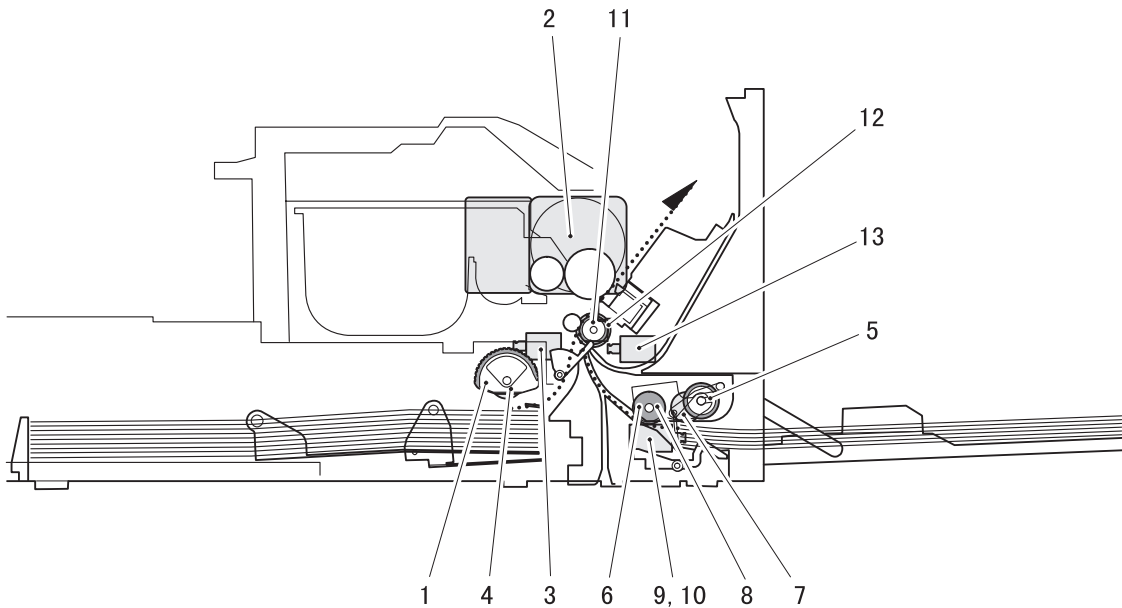


### B. Laser beam path



## 5. PAPER FEED SECTION

### A. Basic structure



1	No. 1 cassette paper feed roller (Semi-circular roller)	Picks up paper from No. 1 cassette.
2	Main motor	Drives the process section and the paper transport section.
3	No. 1 cassette paper feed solenoid	Rotates and controls No. 1 cassette paper feed roller.
4	No. 1 cassette paper feed roller clutch	Drives No. 1 cassette paper feed roller.
5	Manual paper feed roller	Picks up paper from the manual paper feed tray.
6	Manual paper transport roller	Transport paper which was picked up from the manual paper feed tray.
7	Manual paper feed roller clutch	Drives the manual paper feed roller.
8	Manual paper transport roller clutch	Drives the manual paper transport roller.
9	Manual paper feed roller solenoid	Rotates and controls the manual paper feed roller.
10	Manual paper transport roller solenoid	Rotates and controls the manual paper transport roller.
11	Resist roller	Takes synchronization between the paper lead edge and the image lead edge.
12	Resist roller clutch	Drives the resist roller.
13	Resist roller solenoid	Rotates and controls the resist roller.

## B. Brief descriptions of operations

This machine allows two ways of paper feed system: cassette paper feed and manual paper feed.

The cassette of universal type is employed to hold 250 sheets. The front loading system allows to attach or detach the cassette from the front of the machine.

Paper size can be selected by the user.

Since this model is not equipped with the automatic paper select function, paper size detection is not performed.

### (1) Cassette paper feed operation

Select the cassette and press the START button, and the paper feed roller solenoid will be turned on and the paper feed clutch will be released.

The drive power of the main motor is transmitted through the paper feed roller clutch to the paper feed roller, rotating the paper feed roller and feeding paper.

### (2) Manual paper feed tray operation

Select the manual paper feed tray and press the START button, and the manual paper feed roller will be turned on to bring the paper feed roller in contact with paper and lift the shutter simultaneously.

The drive power of the main motor is transmitted through the manual paper feed roller clutch to the manual paper feed roller, rotating the manual paper feed roller and feeding paper.

### (3) Resist roller

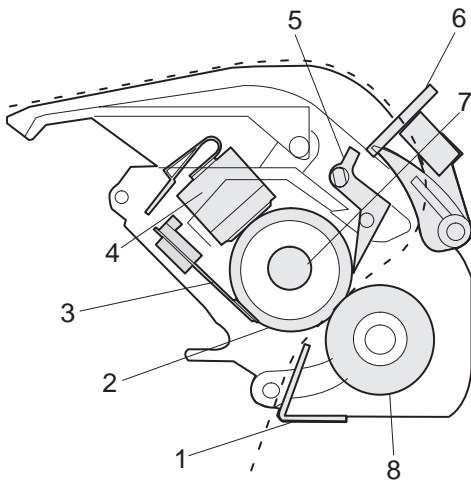
In order to make synchronization between the paper lead edge fed from the paper feed port and the image lead edge, the roller is kept stationary for a certain time after the paper reaches at the roller toward the paper a little.

When the paper is warped to a certain level, the resist roller solenoid is turned on to release the resist roller clutch.

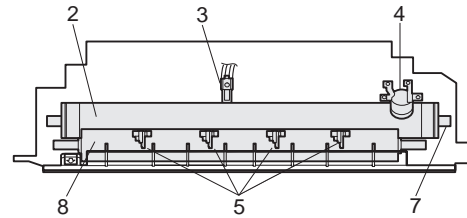
The drive power of the main motor is transmitted through the resist roller clutch to the resist roller, rotating the resist roller and feeding paper.

## 6. FUSING SECTION

### A. Basic composition



### (Top view)



1	Before-fusing paper guide	Guides the paper transported from the process section to the fusing unit.
2	Upper heat roller	Applies heat and pressure to the paper to fuse.
3	Thermistor	Detects the surface temperature of the upper heat roller.
4	Thermostat	Stops power supply to the heat roller in case of an abnormally high temperature of the heat roller.
5	Separation pawl	Separates the print paper from the upper heat roller.
6	POD1	Detects that the paper has been transported from the fusing section.
7	Heater lamp	Heats the heat roller.
8	Lower heat roller	Applies a pressure to the paper together with the upper heat roller.

### B. Heat roller

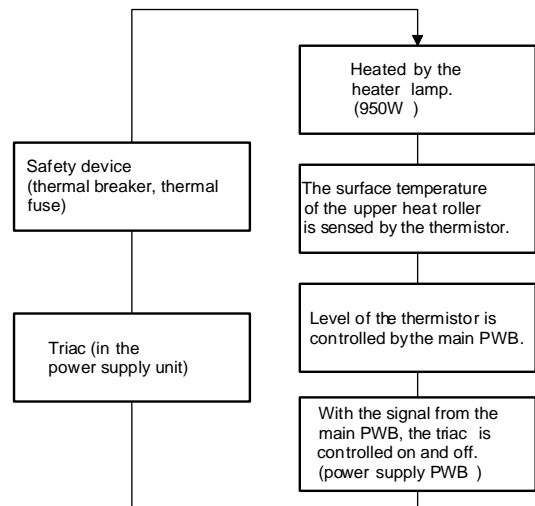
A pressure roller is used for the heat roller and a silicone rubber roller is used for the lower heat roller for better toner fusing performance and paper separation.

### C. Separator pawl

Four separator pawls are used on the upper heat roller. The separator pawls are teflon coated to reduce friction with the roller and prevent a smear on the paper caused by the separator pawl.

### D. Thermal control

- The heater lamp, thermistor, main PWB, DC power supply PWB, and triac within the power supply unit are used to control the temperature in the fuser unit. To prevent against abnormally high temperature in the fuser unit, a thermostat is used for safety purposes.



- The surface temperature of the upper heat roller is set to 180°C ~ 195°C. The surface temperature during the power save mode is set to 100°C.

- The self-check function comes active when one of the following malfunctions occurs, and an "H" is displayed on the copy quantity display.

Fusing temperature error value

H4 (Low temperature error)

- During machine operation

The case where the fusing temperature (thermistor output value) does not reach 155°C within 55 sec from lighting of the heater lamp. (If the toner motor rotates for 10 sec or more continuously when starting the machine, the case where the fusing temperature does not reach 155°C within 60 sec.)

- During printing

When the fusing temperature (thermistor output value) falls below 145°C.

H3 (High temperature error)

Fusing temperature (thermistor output value) of about 220 to 240°C (varies depending on the resistance.)

## E. Fusing resistor

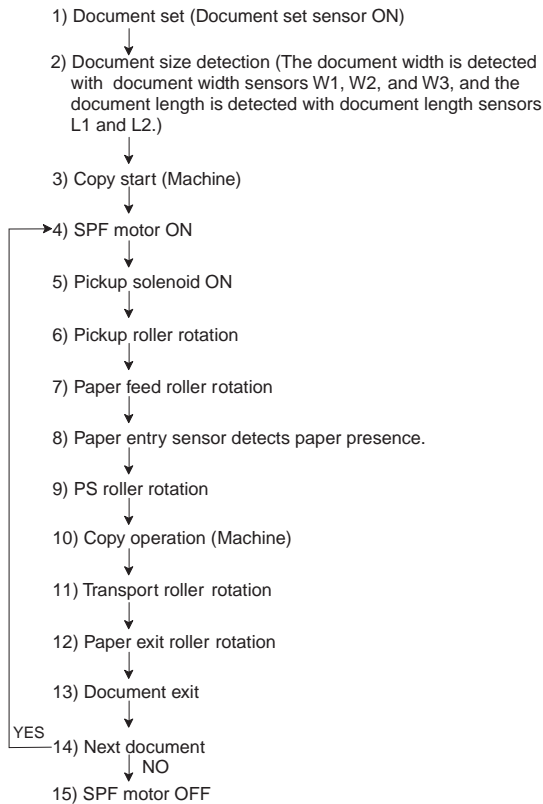
### (1) Fusing resistor

Since the upper heat roller is conductive when copy paper is highly moistured and the distance between the transfer unit and the fusing unit is short, the transfer current leaks through the copy paper, the upper heat roller and the discharging brush.

To prevent against this, a resistor of 150MOhm is provided between the frame and the discharge brush to minimize leak current and improve transfer efficiency.

## 7. SPF SECTION <AL-1622 ONLY>

### A. Brief descriptions of operations



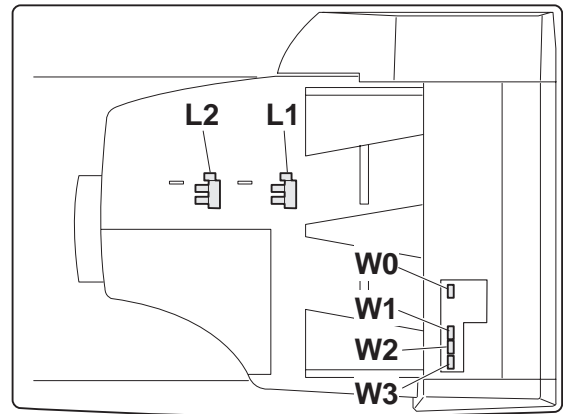
## B. Document size detection

### Document size detection by document set tray

When a document is set on the document set tray in the auto mode of paper/copy magnification ratio selection, the document size is detected to perform the auto selection function of paper and the copy magnification ratio according to the detected document size.

When documents of different sizes are mixed and set on the tray, the max. size is detected. The document width is detected by the document width sensors (W1, W2, W3), and the document length is detected by the document length sensors (L1, L2) to determine the document size.

The document size judgment is made after a certain time from when the document set sensor (W0) detects the document.



	Document size and set direction	Document width sensor			Document length sensor	
		W1	W2	W3	L1	L2
AB series	A5	○	●	●	●	●
	B5	○	○	●	●	●
	A5R	●	●	●	●	●
	A4	○	○	○	●	●
	B5R	●	●	●	○	●
	A4R	○	●	●	○	●
	8.5" x 13"	○	●	●	○	○
	B4	○	●	●	○	○
	A3	○	○	○	○	○
Inch series	8.5" x 5.5"	○	●	●	●	●
	8.5" x 5.5"R	●	●	●	●	●
	11" x 8.5"	○	○	○	●	●
	11" x 8.5"R	○	●	●	○	●
	8.5" x 13"	○	●	●	○	○
	8.5" x 14"	○	●	●	○	○
	11" x 17"	○	○	○	○	○

Note: Sensor ON: ○ OFF: ●

# [ 7 ] ADJUSTMENTS

## 1. ADJUSTMENT ITEM LIST

Section	Adjustment item	Adjustment procedure/SIM No.
A Process section	(1) Developing bias voltage output adjustment	
	(2) Main charger voltage output adjustment	
B Mechanism section	(1) Image lead edge position adjustment	SIM 50-1
	(2) Main scanning direction (FR direction) distortion balance adjustment	No. 2/3 mirror base unit installing position adjustment
		Copy lamp unit installing position adjustment
	(3) Main scanning direction (FR direction) distortion adjustment	Rail height adjustment
	(4) Sub scanning direction (scanning direction) distortion adjustment	Winding pulley position adjustment
	(5) Main scanning direction (FR direction) magnification ratio adjustment	SIM 48-1
	(6) Sub scanning direction (scanning direction) magnification ratio adjustment	a OC mode in copying (SIM 48-2)
		b SPF mode in copying (SIM 48-5)
		c OC mode in FAX (SIM 48-6)
d SPF mode in FAX (SIM 48-7)		
(7) Off center adjustment	a OC mode (SIM 50-13)	
	b SPF mode (SIM 50-16)	
(8) OC (SPF) open/close detection position adjustment	OC (SPF) open/close detection position adjustment	
(9) Document size detection sensor	SIM 41-3	
C Image density adjustment	(1) Copy mode	SIM 46-1
D SPF section	(1)	SIM 48-5
	(2)	SIM 50-16
	(3)	SIM 52-16

## 2. COPIER ADJUSTMENT

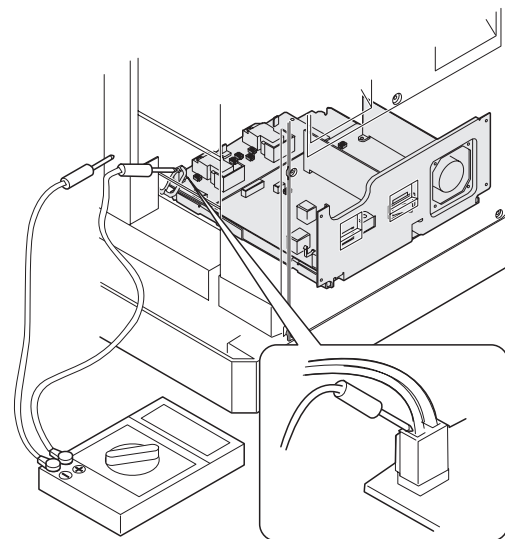
### A. Process section

#### (1) Developing bias voltage adjustment

Note: Use a digital multi-meter with an internal resistance of 10MΩ or more.

- 1) Set the digital multi-meter range to DC700V.
- 2) Put the test rod of the digital multi-meter on the developing bias voltage output check pin.
- 3) Turn on the power.

- 4) Adjust the adjustment volume VR31 so that the output voltage is within the specified range shown below.



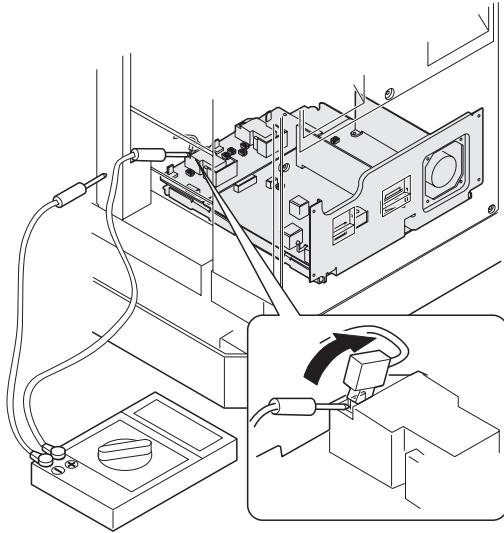
#### <Adjustment specification>

Mode	Specification	
Developing bias voltage	DC-400 ± 8V	VR31

## (2) Grid bias voltage adjustment

Note: Use a digital multi-meter with an internal resistance of 10MΩ or more.

- 1) Set the digital multi-meter range to DC700V.
- 2) Put the test rod of the digital multi-meter on the grid bias voltage output check pin.
- 3) Turn on the power.
- 4) Adjust the adjustment volumes (VR51, VR52) so that the output voltage is within the specified range. (The voltage is outputted in the grid bias high output mode during warming up, and in the grid bias low output mode after completion of warming up.)



### <Adjustment specification>

Mode	Specification	
Grid bias LOW	DC-400 ± 20V	VR52
Grid bias HIGH	DC-525 ± 10V	VR51

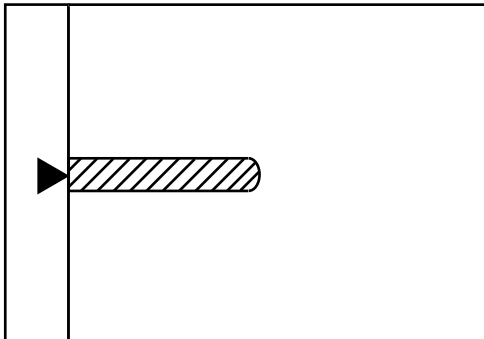
## B. Mechanism section

### (1) Image lead edge position adjustment (SIM 50-1)

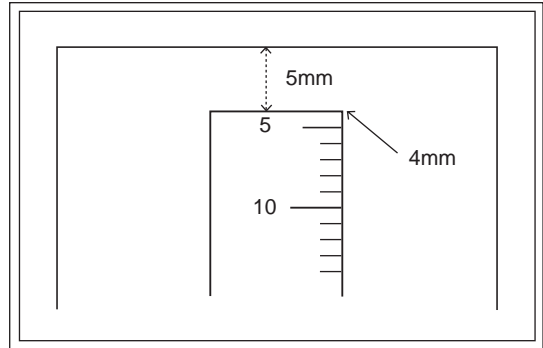
#### a. OC image lead edge position adjustment

Note: In advance to this adjustment, the sub scanning magnification ratio adjustment must be performed.

- 1) Set a scale on the OC table as shown below.

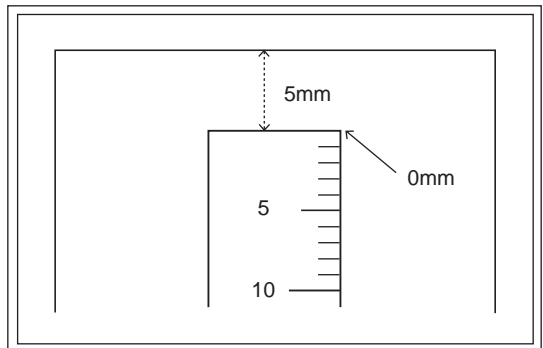


- 2) Make a copy.
- 3) Check the copy output. If necessary, perform the following adjustment procedures.
- 4) Execute SIM 50-1.
- 5) Set the OC lead edge position set value (Exposure display <AUTO> ON) to "99."  
The OC image scanning start position is shifted inside the document edge.
- 6) Set the main cassette lead edge void adjustment value (Exposure display <PHOTO> ON)\* to "1."  
The lead edge void becomes the minimum.
- 7) Set the print start position value (Exposure display <EXP1> ON) to "99" and make a copy.  
The print start position is shifted inside the document edge.



\*The dimension varies depending on the model.

- 8) Measure the image loss R of the copied image. Enter the set value of the image scanning lead edge position (Exposure display <AUTO> ON) again.
  - 1 step of the set value corresponds to about 0.127mm shift.
  - Calculate the set value from the formula below.
$$99 - R/0.127 \text{ (mm)} = \text{Image loss set value} <R: \text{Image loss measurement value (mm)}>$$



\*The scanning edge is set.  
(A line may be printed by scanning the document edge.)

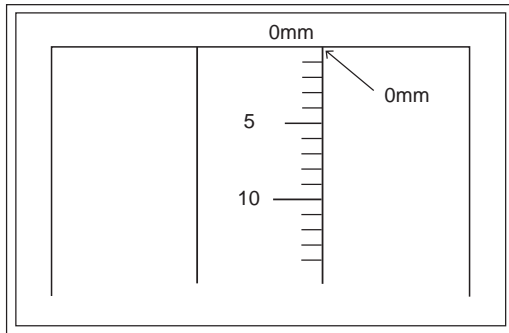
Example:  $99 - 4/0.127 = 99 - 31.5 = \text{about } 67$

Note: If the set value is not obtained from the above formula, perform the fine adjustment.

9) Measure the distance H between the paper lead edge and the image print start position. Set the image print start position set value (Exposure display <EXP1> ON) again.

- 1 step of the set value corresponds to about 0.127mm shift.
- Calculate the set value from the formula below.

$99 - H/0.127 \text{ (mm)} = \text{Image print start position set value}$  <H: Print start position measurement value (mm)>



\*Fit the print edge with the paper edge, and perform the lead edge adjustment.

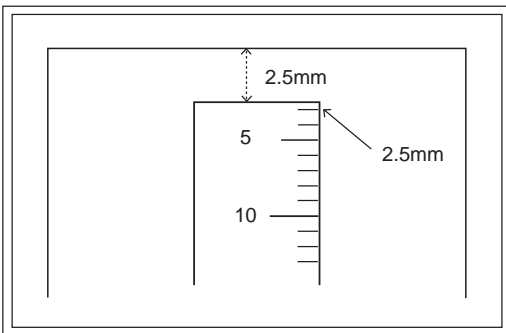
Example:  $99 - 5/0.127 = 99 - 39.4 = \text{about } 59$

Note: If the set value is not obtained from the above formula, perform the fine adjustment.

10) Set the main cassette lead edge void adjustment value (Exposure display <PHOTO> ON)\* again.

- 1 step of the set value corresponds to about 0.127mm shift.
- Calculate the set value from the formula below.

$B/0.127 \text{ (mm)} = \text{Lead edge void adjustment value}$  <B: Lead edge void (mm)>



Example: When setting the lead edge void to 2.5mm:  
 $2.5 / 0.127 = \text{about } 20$

Note: If the set value is not obtained from the above formula, perform the fine adjustment.

\*2nd tray lead edge void adjustment: Exposure display <AUTO + MANUAL + PHOTO>

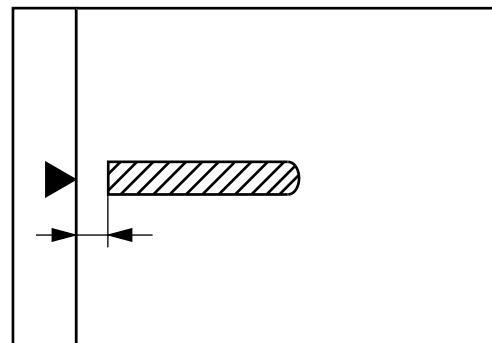
Multi bypass tray lead edge void adjustment: Exposure display <MANUAL + PHOTO>

<Adjustment specification>

Adjustment mode	SIM	LED	Set value	Spec value	Set range
OC image lead edge position		AUTO	99 R/0.127	Lead edge void: 1 - 4mm Image loss: 3mm or less	1 ~ 99
Main cassette lead edge void	SIM 50-1	PHOTO	B/0.127		
2nd tray lead edge void		AUTO + MANUAL + PHOTO			
Multi bypass tray lead edge void		MANUAL + PHOTO			
Print start position		EXP1			

b. SPF image lead edge position adjustment<AL-1622 only>

1) Set a scale on the OC table as shown below.



Note: Since the printed copy is used as a test chart, put the scale in parallel with the edge lines.

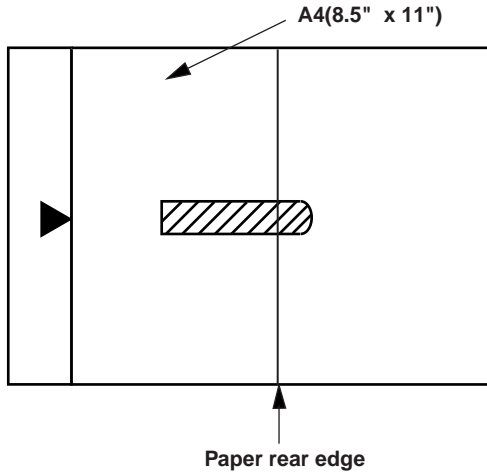
- 2) Make a copy, Then use the copy output as an original to make an SPF copy again.
- 3) Check the copy output. If necessary, perform the following adjustment procedures.
- 4) Execute SIM 50-1.
- 5) Set the SPF lead edge position set value (Exposure display <MANUAL> ON) so that the same image is obtained as that obtained in the previous OC image lead edge position adjustment.

<Adjustment specification>

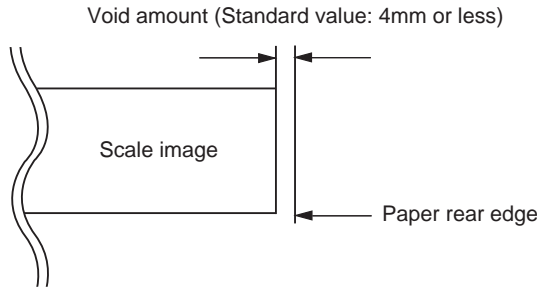
Adjustment mode	SIM	LED	Set value	Spec value	Set range
SPF image lead edge position	SIM 50-1	MANUAL	1 step: 0.127mm shift	Lead edge void: 1 - 4mm Image loss: 3mm or less	1 ~ 99

**c. Rear edge void adjustment**

1) Set a scale as shown in the figure below.



- 2) Set the document size to A4 (8.5" x 11"), and make a copy at 100%.
- 3) If necessary, perform the following adjustment procedure.



- 4) Execute SIM 50-1 and set the density mode to AUTO + PHOTO (Rear edge void).  
The currently set adjustment value is displayed.
  - 5) Enter the set value and press the start key.  
The correction value is stored and a copy is made.
- Note: Before performing the 2nd print surface rear edge void adjustment, be sure to perform the 2nd print surface lead edge position adjustment. Never reverse the sequence.

**<Adjustment specification>**

Mode	SIM	LED	Set value	Specification	Set range
Rear edge void	SIM 50-1	AUTO + PHOTO	1 step: 0.127mm shift	4mm or less	1 ~ 99

**d. Paper off center adjustment**

- 1) Execute SIM 50-1 and set the density mode of AUTO + MANUAL (Left edge void) to 1.
- 2) Set a test chart (UKOG-0089SCZZ) on the document table.
- 3) Select a paper feed port and make a copy.  
Compare the copy and the test chart. If necessary, perform the following adjustment procedure.
- 4) Execute SIM 50-10.  
After completion of warmup, shading is performed and the currently set off center adjustment value of each paper feed port is displayed.
- 5) Enter the set value and press the start key.  
The correction value is stored and a copy is made.

**<Adjustment specification>**

Mode	SIM	LED	Set value	Specification	Set range
Paper off center	SIM 50-10	Selected tray ON	Add 1: 0.127mm shift to R side. Reduce 1: 0.127mm shift to L side.	Single: Center ± 2.0mm	1 ~ 99

\*When SIM 48-01 (AE) is executed, the document off-center is automatically set. Therefore, the off-center adjustment previously described in 5) must be adjusted again.

**e. Left edge void area adjustment**

Note: Before performing this adjustment, be sure to check that the paper off center adjustment (SIM 50-10) is completed.

- 1) Set a test chart (UKOG-0089SCZZ) on the document table.
- 2) Select a paper feed port and make two copies.  
Compare the 2nd copy and the test chart. If necessary, perform the following adjustment procedure.  
\*The 1st copy does not show the void. Be sure to check the 2nd copy.
- 3) Execute SIM 50-1 and set the density mode to AUTO + MANUAL (Left edge void).  
The currently set adjustment value is displayed.  
(When the off center adjustment previously described is performed, "0" is displayed.)
- 4) Enter the set value and press the start key.  
The correction value is stored and a copy is made.

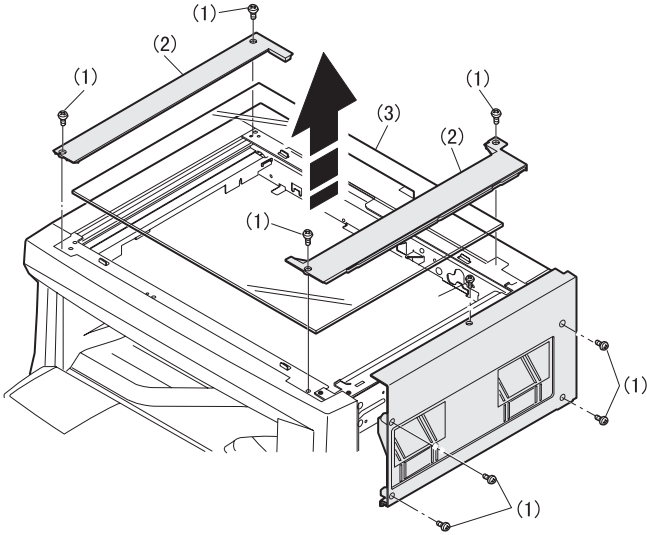
**<Adjustment specification>**

Mode	SIM	LED	Set value	Specification	Set range
Left edge void	SIM 50-1	AUTO + MANUAL	1 step: 0.127mm shift	0.5 ~ 4mm	1 ~ 99

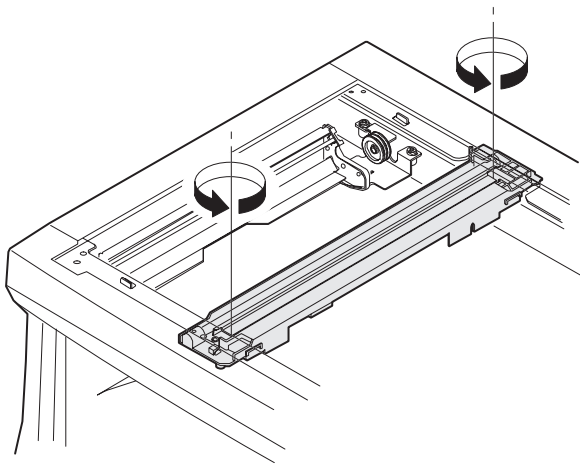
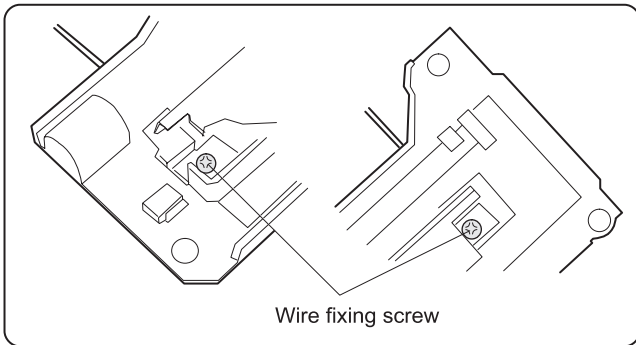
\*When the left edge void is set with the paper off center adjusted, the both edge void is automatically adjusted.

**(2) Main scanning direction  
(FR directional distortion balance adjustment)**

1) Remove the OC glass and the right cabinet.



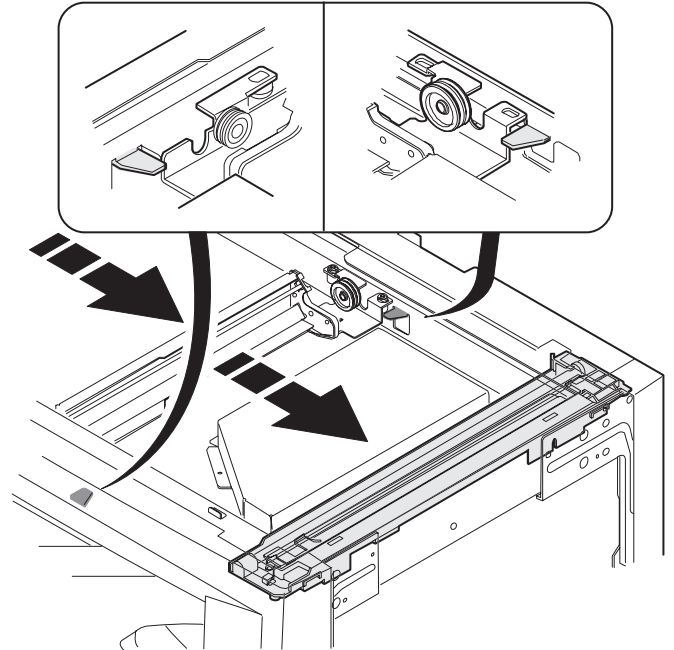
2) Loosen the copy lamp unit wire fixing screw.



3) Manually turn the mirror base drive pulley and bring No. 2/3 mirror base unit into contact with the positioning plate.

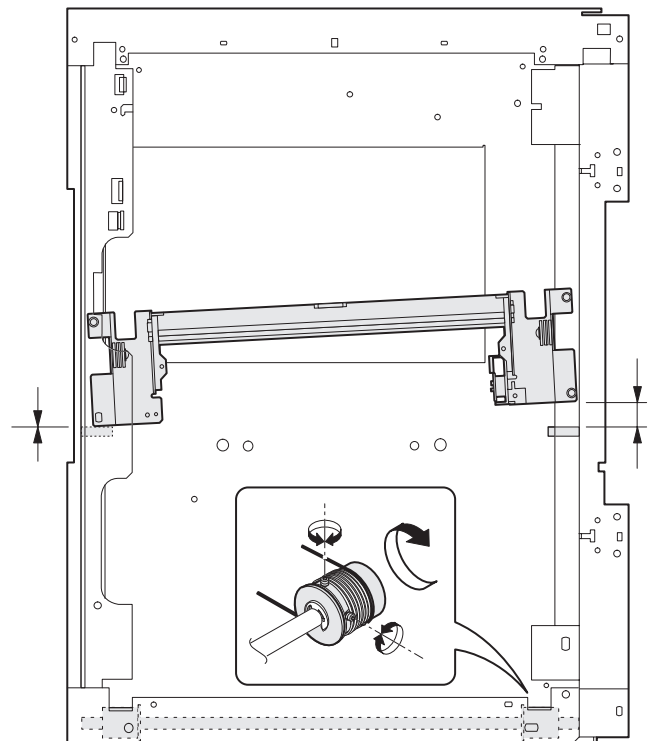
At that time, if the front frame side and the rear frame side of No. 2/3 mirror base unit are brought into contact with the positioning plate at the same time, the mirror base unit parallelism is proper.

If one of them is in contact with the positioning plate, perform the adjustment of 4).

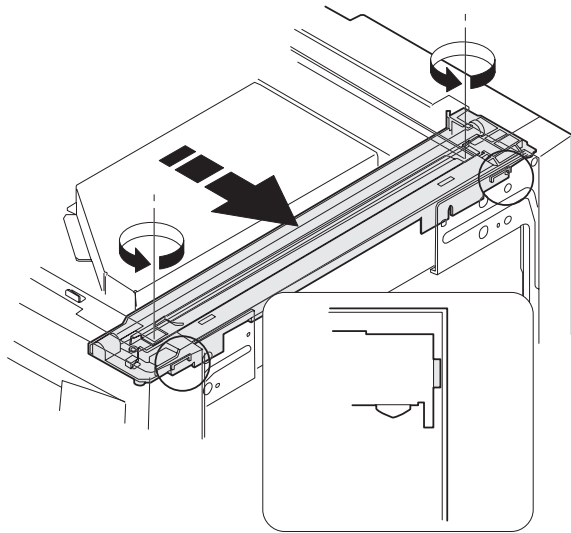
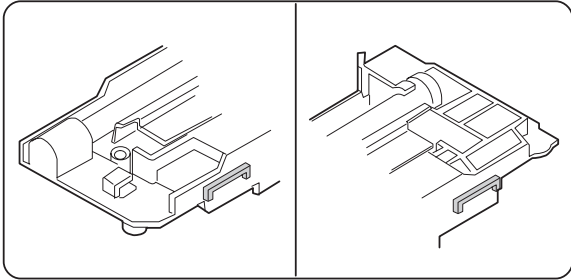


4) Loosen the set screw of the scanner drive pulley which is not in contact with No. 2/3 mirror base unit positioning plate.

5) Without moving the scanner drive pulley shaft, manually turn the scanner drive pulley until the positioning plate is brought into contact with No. 2/3 mirror base unit, then fix the scanner drive pulley.



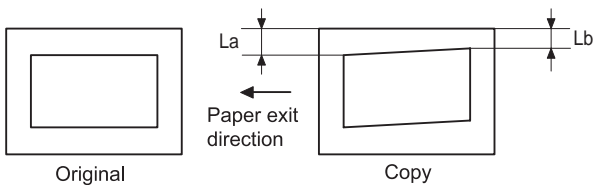
- Put No. 2/3 mirror base unit on the positioning plate again, push the projections on the front frame side and the rear frame side of the copy lamp unit to the corner frame, and tighten the wire fixing screw.



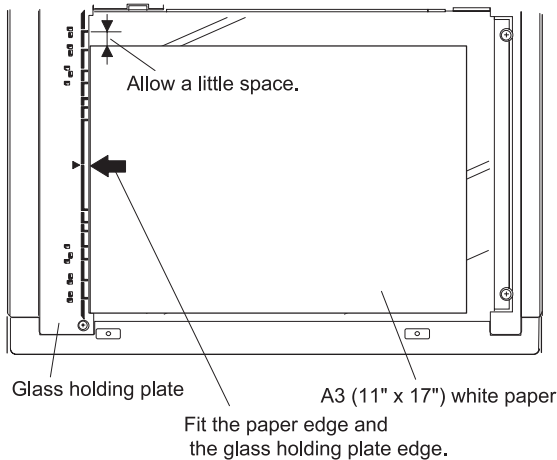
### (3) Main scanning direction (FR direction) distortion adjustment

This adjustment must be performed in the following cases:

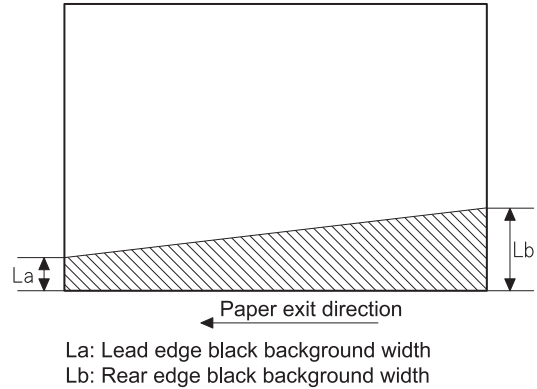
- When the mirror base drive wire is replaced.
- When the lamp unit, or No. 2/3 mirror holder is replaced.
- When a copy as shown is made.



- Set A3 (11" x 17") white paper on the original table as shown below.



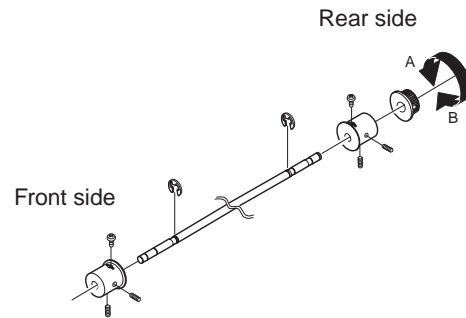
- Open the original cover and make a normal (100%) copy.
- Measure the width of the black background at the lead edge and at the rear edge.



If the width (La) of the black background at the lead edge is equal that (Lb) at the rear edge, there is no need to execute the following procedures of 4) ~ 7).

- Loosen the mirror base drive pulley fixing screw on the front frame side or on the rear frame side.

- When  $La < Lb$   
Turn the mirror base drive pulley on the front frame side in the arrow direction A. (Do not move the mirror base drive pulley shaft.)
- When  $La > Lb$   
Turn the mirror base drive pulley on the front frame side in the arrow direction A. (Do not move the mirror base drive pulley shaft.)



- Tighten the mirror base drive pulley fixing screw.

#### <Adjustment specification>

$La = Lb$

- Execute the main scanning direction (FR) distortion balance adjustment previously described in 2) again.

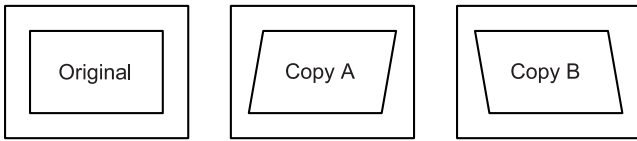
**(4) Sub scanning direction (scanning direction) distortion adjustment**

When there is no skew copy in the mirror base scanning direction and there is no horizontal error (right angle to the scanning direction), the adjustment can be made by adjusting the No. 2/3 mirror base unit rail height.

Before performing this adjustment, be sure to perform the horizontal image distortion adjustment in the laser scanner section.

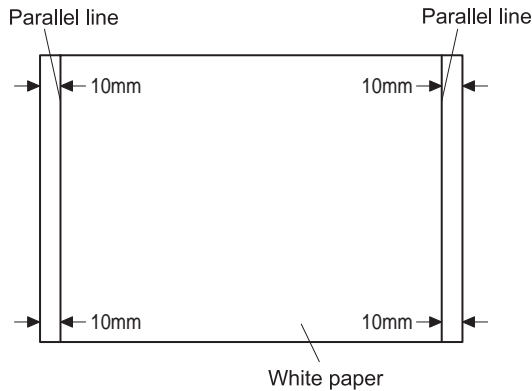
This adjustment must be performed in the following cases:

- When the mirror base wire is replaced.
- When the copy lamp unit or No. 2/3 mirror unit is replaced.
- When the mirror unit rail is replaced or moved.
- When a following copy is made.



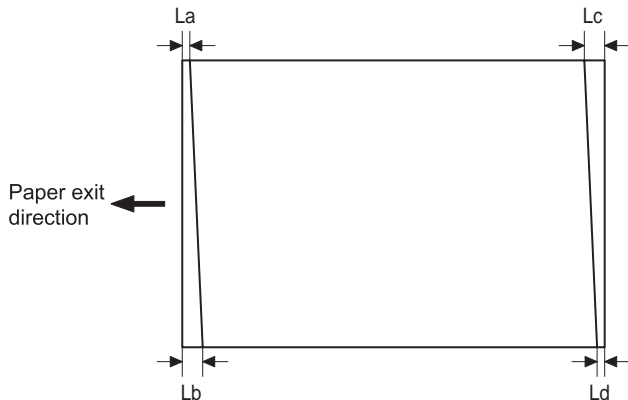
1) Making of a test sheet

Make test sheet by drawing parallel lines at 10mm from the both ends of A3 (11" x 17") white paper as shown below. (These lines must be correctly parallel to each other.)



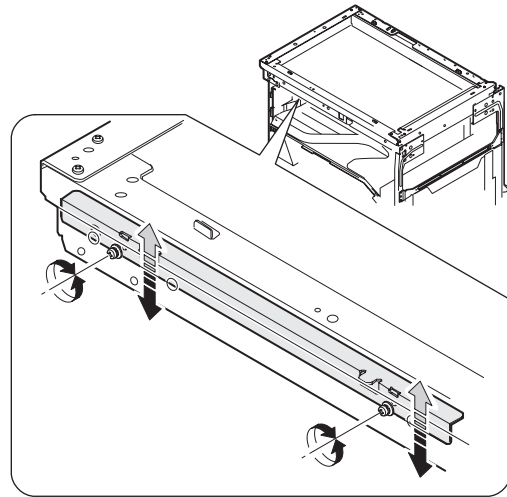
2) Make a normal (100%) copy of the test sheet on A3 (11" x 17") paper. (Fit the paper edge with the glass holding plate edge.)

3) Measure the distances (La, Lb, Lc, Ld) at the four corners as shown below.



When  $L_a = L_b$  and  $L_c = L_d$ , no need to perform the procedures 4) and 5).

4) Move the mirror base F rail position up and down (in the arrow direction) to adjust.



Note: If the rear side rail is used for the adjustment, the scanning position of the white balance sheet is shifted and "E7-04" may occur only when scanning with the SPF. Therefore it is advisable to use the front side rail for the adjustment.

- When  $L_a > L_b$   
Shift the mirror base B rail upward by the half of the difference of  $L_a - L_b$ .
  - When  $L_a < L_b$   
Shift the mirror base B rail downward by the half of the difference of  $L_b - L_a$ .  
Example: When  $L_a = 12\text{mm}$  and  $L_b = 9\text{mm}$ , shift the mirror base B rail upward by 1.5mm.
  - When  $L_c > L_d$   
Shift the mirror base B rail downward by the half of the difference of  $L_c - L_d$ .
  - When  $L_c < L_d$   
Shift the mirror base B rail downward by the half of the difference of  $L_d - L_c$ .
- \*When moving the mirror base rail, hold the mirror base rail with your hand.

**<Adjustment specification>**

$L_a = L_b, L_c = L_d$

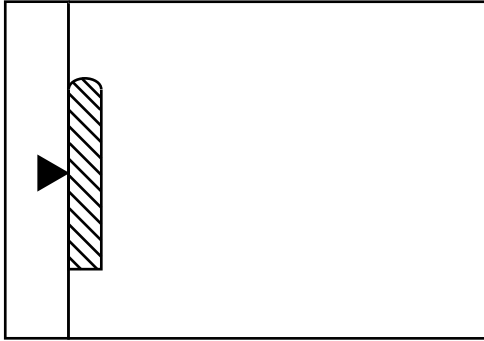
5) After completion of adjustment, manually turn the mirror base drive pulley, scan the mirror base A and mirror base B fully, and check that the mirror bases are not in contact with each other.

\*If the mirror base rail is moved extremely, the mirror base may be in contact with the frame or the original glass. Be careful to avoid this.

**(5) Main scanning direction (FR direction) magnification ratio adjustment (SIM 48-1)**

Note: Before performing this adjustment, be sure to check that the CCD unit is properly installed.

- Put a scale on the original table as shown below.



- Execute SIM 48-1.
- After warmup, shading is performed and the current set value of the main scanning direction magnification ratio is displayed on the display section in 2 digits.
- Select the mode and press the start key again.
- Auto correction mode (AE lamp ON)

The mirror unit moves to the shading position, and the reference width of the reference white plate is scanned, and the correction value is automatically calculated from that scanned value.

The correction value is displayed and a copy is made.

- Compare the scale image and the actual scale.  
If a fine adjustment is required, switch to the manual correction mode with the magnification ratio display key and perform fine adjustment.
- Manual correction mode (TEXT lamp ON)  
Enter the set value and press the start key.  
The set value is stored and a copy is made.

**<Adjustment specification>**

Note: A judgement must be made with 200mm width, and must not be made with 100mm width.

Mode	Specification	SIM	Set value	Set range
Main scanning direction magnification ratio	At normal: ± 1.0%	SIM 48-1	Add 1: 0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

- Error in the auto correction mode

Display	Content	Major cause
Copy quantity display “--”	The correction value calculated is over 5%.	<ul style="list-style-type: none"> <li>Improper position of reference width line of the reference white plate</li> <li>Improper installation of CCD unit</li> </ul>
Paper jam lamp ON	Reference line scanning error	<ul style="list-style-type: none"> <li>Defective CCD</li> <li>No reference white plate</li> </ul>

\*When SIM 48-01 (AE) is executed, the main scanning direction magnification ratio is automatically set. Therefore, the main scanning direction magnification ratio adjustment previously described in 5) must be made again.

**(6) Sub scanning direction (scanning direction) magnification ratio adjustment (SIM 48-2, SIM 48-5)**

**a. OC mode in copying**

Note: Before performing this adjustment, be sure to check that the CCD unit is properly installed.

- Put a scale on the original table as shown below, and make a normal (100%) copy.
- Compare the scale image and the actual image. If necessary, perform the following adjustment procedures.
- Execute SIM 48-2.
- After warmup, shading is performed and the current set value of the sub scanning direction magnification ratio is displayed on the display section in 2 digits.
- Enter the set value and press the start key.

The set value is stored and a copy is made.

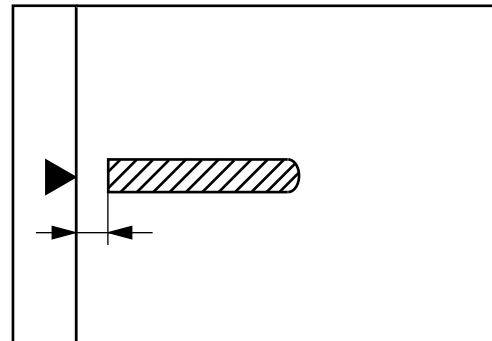
**<Adjustment specification>**

Mode	Specification	SIM	Set value	Set range
Sub scanning direction magnification ratio (OC mode)	Normal ± 1.0%	SIM 48-2	Add 1: 0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

**b. RSPF sub scanning direction magnification ratio**

Note:

- Before performing this adjustment, be sure to check that the CCD unit is properly installed.
  - Before performing this adjustment, the OC mode adjustment in copying must be completed.
- Put a scale on the original table as shown below, and make a normal (100%) copy to make a test chart.



Note: Since the printed copy is used as a test chart, put the scale in parallel with the edge lines.

- Set the test chart on the SPF and make a normal (100%) copy.
- Compare the scale image and the actual image. If necessary, perform the following adjustment procedures.
- Execute SIM 48-5.
- After warmup, shading is performed.

The auto density lamp lights up and the current front surface sub scanning direction magnification ratio correction value is displayed in two digits on the display section.

- Enter the set value and press the start key.  
The set value is stored and a copy is made.

- Change the mode from the duplex original mode to the simplex original mode.

"MANUAL" lamp lights up and the current back surface sub scanning direction magnification ratio is displayed in two digits on the display section.

- Enter the set value and press the start key.  
The set value is stored and a copy is made.

**<Adjustment specification>**

Mode	Specification	SIM	Set value	Set range
Sub scanning direction magnification ratio (SPF mode)	Normal ± 1.0%	SIM 48-5	Add 1: 0.1% increase Reduce 1: 0.1% decrease	1 ~ 99

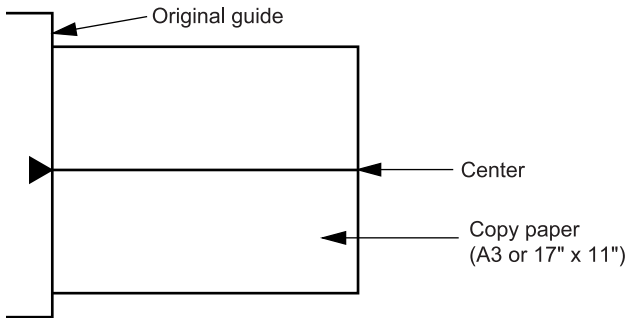
**(7) Off center adjustment (SIM 50-13, SIM 50-16)**

**a. OC mode**

Note: The operation of SIM 50-13 is the same as that of SIM 48-01 (Photo LED ON)

- Make a test chart as shown below and set it so that its center line is fit with the original guide center mark.

\*To make a test chart, draw a line on A3 or 11" x 17" paper at the center in the paper transport direction.



- Make a normal copy from the manual paper feed tray, and compare the copy and the test chart.  
If necessary, perform the following adjustment procedures.
- Execute SIM 50-13.
- After warmup, shading is performed and the current set value of the off center adjustment is displayed on the display section in 2 digits.
- Enter the set value and press the start key.  
The set value is stored and a copy is made.

**<Adjustment specification>**

Mode	Specification	SIM	Set value	Set range
Original off center mode (OC mode)	Single: Center ± 2.0mm	SIM 50-13	Add 1: 0.1mm shift to R side Reduce 1: 0.1mm shift to L side	1 ~ 99

**b. SPF original off-center adjustment <AL-1622 only>**

Note: Before performing this adjustment, be sure to check that the paper off center is properly adjusted.

- Make a test chart for the center position adjustment and set it on the SPF.

**<Adjustment specification>**

Draw a line on a paper in the scanning direction.

- Make a normal copy from the manual paper feed tray, and compare the copy and the original test chart.

If necessary, perform the following adjustment procedures.

- Execute SIM 50-16.
- After warmup, shading is performed and the current set value of the off center adjustment at each paper feed port is displayed on the display section in 2 digits.
- Enter the set value and press the start key.  
The set value is stored and a copy is made.

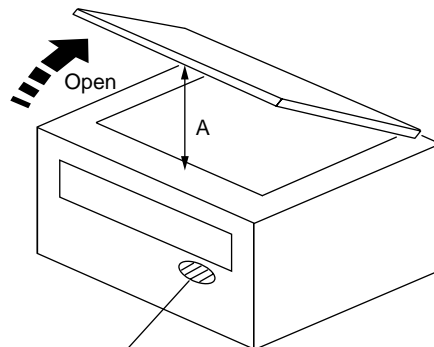
**<Adjustment specification>**

Mode	Specification	SIM	Set value	Set range
Original off center mode (SPF mode)	Single: Center ± 3.0mm	SIM 50-16	Add 1: 0.1mm shift to R side Reduce 1: 0.1mm shift to L side	1 ~ 99

**(8) OC (SPF) open/close detection position adjustment <AL-1622 only>**

- Set A4 or 8 1/2" x 11" paper on the OC table.  
Check that the document size display on the operation panel indicates the correct size of the set paper.
- Close the OC (SPF) with a small clearance for insertion of your hand left, and remove the paper from the OC table.  
The document size display does not change from the display in 1).
- Open the OC (SPF) slowly until the display on the operation panel changes (all the document size display lamps are turned off), and measure dimension A shown below under that state.

Distance A = Table glass top - OC (SPF) knob 117"

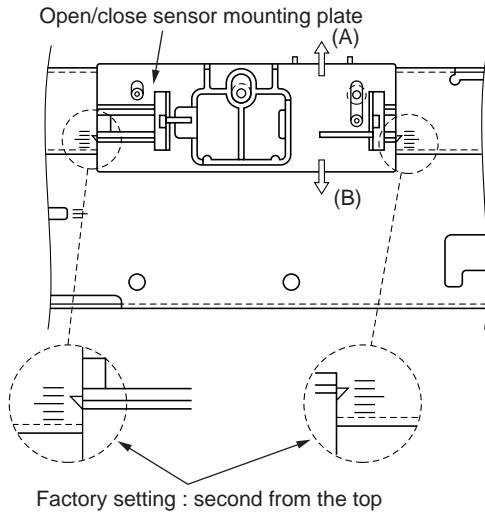


Check the position where the display checked in procedure 1) is changed.

<Spec value>

OC (SPF) open/close position A: 207 ~ 302mm

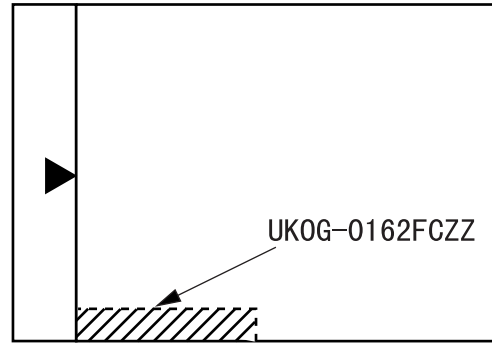
- 4) If the OC (SPF) open/close position A is not 207 ~ 302mm, adjust the open/close sensor mounting plate position as shown below.



### C. Image density adjustment

#### (1) Copy mode (SIM 46-1)

- 1) Set a test chart (UKOG-0162FCZZ) on the OC table as shown below.



- 2) Put several sheets of A3 or 11" x 17" white paper on the test chart.
- 3) Execute SIM 46-1.
- 4) After warmup, shading is performed and the current set value of the density level is displayed on the display section in 2 digits.  
For mode selection, use the density select key.
- 5) Change the set value with the 10-key to adjust the copy image density.
- 6) Make a copy and check that the specification below is satisfied.

#### <Adjustment specification>

Density mode	Display lamp	Exposure level	Sharp Gray Chart output	Set value	Set range
Auto	Auto	—	"3" is slightly copied.	The greater the set value is, the greater the density is. The smaller the set value is the smaller the density is.	1 ~ 99
Manual	Manual	3	"3" is slightly copied.		
Photo	Photo	3	"3" is slightly copied.		
Toner save	Manual/Photo	3	"3" is slightly copied.		

## [ 8 ] SIMULATIONS

### 1. ENTERING THE SIMULATION MODE

Perform the following procedure to enter the simulation mode.  
 Clear key → Interrupt key → "0" key → Interrupt key → Main code →  
 Start key → Sub code → Start key

### 2. CANCELLING THE SIMULATION MODE

When the clear all key is pressed, the simulation mode is cancelled.  
 When the interruption key is pressed, the process is interrupted and the  
 screen returns to the sub code entering display.

\*After canceling the simulation mode, be sure to turn OFF/ON the  
 power and check the operation.

### 3. LIST OF SIMULATIONS

Main code	Sub code	Contents	*
1	1	Mirror unit operation check	
	2	Optical system sensor operation check	
2	1	SPF aging	A
	2	SPF sensor operation check	A
	3	SPF motor forward rotation operation check	A
	4	SPF motor reverse rotation operation check	A
	8	SPF paper feed solenoid operation check	A
	9	RSPF reverse solenoid operation check	B
	10	RSPF paper exit gate solenoid operation check	B
3	2	Shifter job separator sensor operation check	B
	3	Shifter operation check	B
	4	Job separator operation check	B
	11	Shifter Home Position Check	B
5	1	Operation panel display check	
	2	Heater lamp lighting check, cooling fan motor operation check	
	3	Copy lamp lighting check	
6	1	Paper feed solenoid operation check	
	10	Main cassette semi-circular roller drive	
7	1	Aging with warmup time display	
	4	Warmup saving	
	6	Intermittent aging	
	8	Warmup time display	
8	1	Developing bias voltage output check	
	2	Main charger voltage output check (Grid bias high mode)	
	3	Main charger voltage output check (Grid bias low mode)	
	6	Transfer charger voltage check	
9	1	Duplex motor forward rotation operation check	B
	2	Duplex motor reverse rotation operation check	B
	4	Duplex motor rotation speed adjustment	B
	5	Duplex motor switchback time adjustment	B
10	Toner motor operation check		
14	Trouble (except for U2) cancel		
16	U2 trouble cancel		
20	1	Maintenance counter clear	B
	2	Mini maintenance cycle setting	B
22	1	Maintenance counter display	B
	2	Maintenance preset value display	B
	3	JAM memory display	
	4	Total JAM counter display	
	5	Total counter display	
	6	Developing counter display	B
	7	Developing preset counter value display	B
	8	SPF counter display	A
	9	Paper feed counter display	

Main code	Sub code	Contents	*	
22	12	Drum counter display		
	14	Copier ROM version display		
	15	Trouble memory display		
	16	Duplex print counter display	B	
	17	Copy counter display		
	18	Printer counter display	B	
	19	Electronic sort counter display	B	
	21	Scanner counter display		
24	1	JAM memory, JAM counter clear		
	2	Trouble memory clear		
	4	SPF counter clear	A	
	5	Duplex counter clear	B	
	6	Paper feed counter clear		
	7	Drum counter clear		
	8	Copy counter clear		
	9	Printer counter clear	B	
	10	Electronic sort counter clear	B	
	13	Scanner counter clear		
	25	1	Main motor operation check	
		10	Polygon motor operation check	
	26	1	Option switch display	B
3		Auditor setting		
5		Counter mode setting		
6		Destination setting		
7		CRUM set value display		
10		Model name setting		
22		Language setting		
30		CE mark conformity control setting		
32		Fan rotation duty change state setup		
38		Cancel of stop at dram life over	B	
42		Transfer timing adjustment		
50		Black-white reversion function setup		
51		Sort/Group copy temporary stop function setup	B	
30	1	Machine sensor operation check		
	2	OC document sensor adjustment	B	
41	3	Document sensor light reception level display	B	
	1	Developing counter clear	B	
42	1	Developing counter clear	B	
43	1	Fusing temperature setting		
46	1	Copy density level adjustment		
48	1	Main scanning (front/rear) direction magnification ratio adjustment (Copy/OC-SPF common)		
	2	OC mode sub scanning direction magnification ratio adjustment in copying		
	5	SPF mode sub scanning direction magnification ratio adjustment in copying	A	
50	1	Copy image lead edge position adjustment		
	10	Paper off center adjustment		
	13	OC mode document off center adjustment		
	16	SPF mode document off center adjustment	A	
	18	Duplex memory reverse print adjustment	B	
	19	Duplex rear edge void adjustment	B	
51	2	Resist amount adjustment		
53	8	SPF scan position auto adjustment	A	
	9	SPF white level value display	A	
63	1	Shading data check		
	7	White correction start pixel/position auto adjustment	A	
64	1	Self printing mode		
67	14	Printer Flash ROM Data Download	B	

\*A: Only AL-1622

B: Not used

## 4. CONTENTS OF SIMULATIONS

Main code	Sub code	Contents	Details of operation	Initial value	Set range				
1	1	Mirror unit operation check	Used to execute scanning at the speed corresponding to the set magnification ratio. <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Changing the magnification ratio: Fixed magnification ratio key ZOOM UP KEY, ZOOM DOWN KEY</td> <td>Set magnification ratio: Fixed magnification ratio LED ZOOM LED</td> </tr> </tbody> </table>	Key operation	Display	Changing the magnification ratio: Fixed magnification ratio key ZOOM UP KEY, ZOOM DOWN KEY	Set magnification ratio: Fixed magnification ratio LED ZOOM LED	100%	50 ~ 200%
	Key operation	Display							
Changing the magnification ratio: Fixed magnification ratio key ZOOM UP KEY, ZOOM DOWN KEY	Set magnification ratio: Fixed magnification ratio LED ZOOM LED								
2	Optical system sensor operation check	Used to check MHPS (Mirror home position sensor) ON/OFF state with the LED on the operation panel. <table border="1"> <thead> <tr> <th>Display</th> </tr> </thead> <tbody> <tr> <td>&lt;Lighting when the sensor is ON&gt; MHPS: Paper empty LED</td> </tr> </tbody> </table>	Display	<Lighting when the sensor is ON> MHPS: Paper empty LED					
Display									
<Lighting when the sensor is ON> MHPS: Paper empty LED									
2	1	SPF aging  <b>&lt;Only AL-1622&gt;</b>	Used to perform SPF document transport. The paper size is not detected. (Excluding postcards, extra large sheet of 1m or greater.) With SPF installed: Single transport operation With RSPF installed: Duplex transport operation <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Changing the magnification ratio: Fixed magnification ratio key ZOOM UP KEY, ZOOM DOWN KEY</td> <td>Set magnification ratio: Fixed magnification ratio LED ZOOM LED</td> </tr> </tbody> </table>	Key operation	Display	Changing the magnification ratio: Fixed magnification ratio key ZOOM UP KEY, ZOOM DOWN KEY	Set magnification ratio: Fixed magnification ratio LED ZOOM LED	100%	50 ~ 200%
	Key operation	Display							
	Changing the magnification ratio: Fixed magnification ratio key ZOOM UP KEY, ZOOM DOWN KEY	Set magnification ratio: Fixed magnification ratio LED ZOOM LED							
	2	SPF sensor operation check  <b>&lt;Only AL-1622&gt;</b>	Used to check sensors in SPF with the LED on the operation panel. <table border="1"> <thead> <tr> <th>Display</th> </tr> </thead> <tbody> <tr> <td>&lt;Lighting at sensor ON&gt; PW1: JAM LED PW2: Paper empty LED PW3: Machine position JAM LED PW4: SPF JAM LED PL1: Manual paper feed tray select LED PL2: 2nd tray position JAM LED P-IN: SPF select LED SPF COVER OPEN: Main cassette select LED</td> </tr> </tbody> </table>	Display	<Lighting at sensor ON> PW1: JAM LED PW2: Paper empty LED PW3: Machine position JAM LED PW4: SPF JAM LED PL1: Manual paper feed tray select LED PL2: 2nd tray position JAM LED P-IN: SPF select LED SPF COVER OPEN: Main cassette select LED				
	Display								
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	3	SPF motor forward rotation operation check <b>&lt;Only AL-1622&gt;</b>	Used to rotate the SPF motor forward for 10 sec.						
	4	SPF motor reverse rotation operation check <b>&lt;Only AL-1622&gt;</b>	Used to rotate the SPF motor reversely for 10 sec.						
8	SPF paper feed solenoid operation check <b>&lt;Only AL-1622&gt;</b>	Used to drive the SPF paper feed solenoid (PSOL) at the cycle of 500 msec ON and 500 msec OFF 20 times.							
9	RSPF reverse solenoid operation check <b>&lt;Not Used&gt;</b>	Used to drive the RSPF reverse solenoid (RSOL) at the cycle of 500 msec ON and 500 msec OFF 20 times.							
10	RSPF paper exit gate solenoid operation check <b>&lt;Not Used&gt;</b>	Used to drive the RSPF paper exit gate solenoid (GSOL) at the cycle of 500 msec ON and 500 msec OFF 20 times.							
11	SPF PS release solenoid operation check <b>&lt;Only AL-1622&gt;</b>	Used to drive the SPF PS release solenoid at the cycle of 500 msec ON and 500 msec OFF 20 times.							

Main code	Sub code	Contents	Details of operation	Initial value	Set range				
3	2	Shifter job separator sensor operation check  <b>&lt;Not Used&gt;</b>	Used to check the sensors state in the shifter job separator with the LED on the operation panel.  <table border="1" style="width: 100%;"> <tr> <th colspan="2" style="text-align: center;">Display</th> </tr> <tr> <td colspan="2">&lt;Lighting at sensor ON&gt; Shifter HP sensor: Machine position JAM LED Job separator HP sensor: SPF JAM LED Paper exit full sensor: 2nd tray position JAM LED</td> </tr> </table>	Display		<Lighting at sensor ON> Shifter HP sensor: Machine position JAM LED Job separator HP sensor: SPF JAM LED Paper exit full sensor: 2nd tray position JAM LED			
	Display								
	<Lighting at sensor ON> Shifter HP sensor: Machine position JAM LED Job separator HP sensor: SPF JAM LED Paper exit full sensor: 2nd tray position JAM LED								
	3	Shifter operation check  <b>&lt;Not Used&gt;</b>	Used to drive the shifter motor at the speed of printing of A4 (8-1/2 x 11"). Pressing the clear all key or interrupt key moves the shifter to the home position.  <table border="1" style="width: 100%;"> <tr> <th colspan="2" style="text-align: center;">Key operation</th> </tr> <tr> <td colspan="2">The shifter is moved to the home position: Clear all key, interrupt key</td> </tr> </table>	Key operation		The shifter is moved to the home position: Clear all key, interrupt key			
Key operation									
The shifter is moved to the home position: Clear all key, interrupt key									
4	Job separator operation check  <b>&lt;Not Used&gt;</b>	Used to drive the job separator one way. Pressing the clear all key or interrupt key stops the job separator at the home position.  <table border="1" style="width: 100%;"> <tr> <th colspan="2" style="text-align: center;">Key operation</th> </tr> <tr> <td colspan="2">Stops at the home position: Clear all key, interrupt key</td> </tr> </table>	Key operation		Stops at the home position: Clear all key, interrupt key				
Key operation									
Stops at the home position: Clear all key, interrupt key									
11	Shifter Home Position check  <b>&lt;Not Used&gt;</b>	Used to drive the shifter motor  <table border="1" style="width: 100%;"> <tr> <th colspan="2" style="text-align: center;">Key operation</th> </tr> <tr> <td colspan="2">Feed: Exposure up key or "3" key Return: Exposure down key or "4" key Move to Home Position: Magnification ratio display key or "5" key</td> </tr> </table>	Key operation		Feed: Exposure up key or "3" key Return: Exposure down key or "4" key Move to Home Position: Magnification ratio display key or "5" key				
Key operation									
Feed: Exposure up key or "3" key Return: Exposure down key or "4" key Move to Home Position: Magnification ratio display key or "5" key									
5	1	Operation panel display check	Used to light all LED's on the operation panel for 5 sec.						
	2	Heater lamp lighting check, cooling fan motor operation check	Used to turn ON the heater lamp for 500 msec and OFF for 500 msec 5 times. At the same time, the cooling fan is rotated at a high speed. After checking the heater lamp operation, the cooling fan motor rotate at a low speed.						
	3	Copy lamp lighting check	Used to light the copy lamp for 10 sec.						
6	1	Paper feed solenoid operation check	When the start key is pressed, the selected paper feed solenoid is driven at the cycle of 500 msec ON and 500 msec OFF 20 times.  <table border="1" style="width: 100%;"> <tr> <th style="width: 50%;">Key operation</th> <th style="width: 50%;">Display</th> </tr> <tr> <td>Solenoid selection: Tray select button</td> <td>&lt;Lighting at solenoid selection&gt; Main cassette paper feed solenoid: Main cassette select LED Multi manual paper feed solenoid: Manual paper feed select LED No. 2 cassette paper feed solenoid: No. 2 cassette select LED Resist roller solenoid: Machine position JAM LED No. 2 cassette transport solenoid: No. 2 cassette position JAM LED</td> </tr> </table>	Key operation	Display	Solenoid selection: Tray select button	<Lighting at solenoid selection> Main cassette paper feed solenoid: Main cassette select LED Multi manual paper feed solenoid: Manual paper feed select LED No. 2 cassette paper feed solenoid: No. 2 cassette select LED Resist roller solenoid: Machine position JAM LED No. 2 cassette transport solenoid: No. 2 cassette position JAM LED		
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Solenoid selection: Tray select button	<Lighting at solenoid selection> Main cassette paper feed solenoid: Main cassette select LED Multi manual paper feed solenoid: Manual paper feed select LED No. 2 cassette paper feed solenoid: No. 2 cassette select LED Resist roller solenoid: Machine position JAM LED No. 2 cassette transport solenoid: No. 2 cassette position JAM LED								
10	Main cassette semi-circular roller drive	Excute the simulation with the developer cartridge removed, used to rotate the semi-circular roller of the main cassette one turn to face it downward.							
7	1	Aging with warmup time display	Execute the simulation input with the copier side cover open, then close the side cover, and the machine will start warming up. Warm up time is counted up every 2nd and it is displayed. After completion of warmup, count up is terminated. When the clear all key is pressed ready lamp is lighted and the copy quantity is entered and the start key is pressed, copying is made to make the set quantity of copies. At that time, the paper size does not matter.  <table border="1" style="width: 100%;"> <tr> <th colspan="2" style="text-align: center;">Key operation</th> </tr> <tr> <td colspan="2">Copy quantity setting: Copy quantity keys</td> </tr> </table>	Key operation		Copy quantity setting: Copy quantity keys			1 ~ 99
	Key operation								
Copy quantity setting: Copy quantity keys									
4	Warmup saving	Used to bring the machine to the ready state without warmup.		1 ~ 99					

Main code	Sub code	Contents	Details of operation	Initial value	Set range										
7	6	Intermittent aging	<p>After completion of warmup, counting is stopped and the ready lamp is lighted. When the copy quantity is entered and the start key is pressed, copying is made to make the set quantity of copies. After 3 sec standby, copying is made again to make the set quantity of copies. After that this operation is repeated. The paper size does not matter.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>Key operation</td> </tr> <tr> <td>Copy quantity setting: Copy quantity keys</td> </tr> </table>	Key operation	Copy quantity setting: Copy quantity keys		1 ~ 99								
	Key operation														
Copy quantity setting: Copy quantity keys															
	8	Warmup time display	Execute the simulation input with the copier side cover open, then close the side cover, and the machine will starts warming up. Warm up time is counted up every 2nd and it is displayed.		1 ~ 99										
8	1	Developing bias voltage output check	Used to out put the developing bias for 30 sec. For the adjustment procedure of the developing bias, refer to the previous descriptions.												
	2	Main charger voltage output check (Grid bias high mode)	Used to output the main charger grid bias voltage at the high mode for 30 sec. For the adjustment procedure of the main charger grid bias voltage, refer to the previous descriptions.												
	3	Main charger voltage output check (Grid bias low mode)	Used to output the main charger grid bias voltage at the low mode for 30 sec. For the adjustment procedure of the main charger grid bias voltage, refer to the previous descriptions.												
	6	Transfer charger voltage check	Used to output the transfer charger voltage for 30 sec. For the adjustment procedure of the transfer charger voltage, refer to the previous descriptions.												
9	1	Duplex motor forward rotation operation check <b>&lt;Not Used&gt;</b>	Used to rotate the duplex motor forward for 30 sec.												
	2	Duplex motor reverse rotation operation check <b>&lt;Not Used&gt;</b>	Used to rotate the duplex motor reversely for 30 sec.												
	4	Duplex motor rotation speed adjustment  <b>&lt;Not Used&gt;</b>	<p>The currently set duplex motor rotation speed set value is displayed. When the set value is entered and the start key is pressed, the set value is stored.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>Key operation</td> </tr> <tr> <td>Duplex motor rotation speed set value: Copy quantity keys</td> </tr> </table>	Key operation	Duplex motor rotation speed set value: Copy quantity keys	6	1 ~ 13								
	Key operation														
Duplex motor rotation speed set value: Copy quantity keys															
5	Duplex motor switchback time adjustment  <b>&lt;Not Used&gt;</b>	<p>The currently set duplex motor switchback time set value is displayed. When the set value is entered and the start key is pressed, the set value is stored.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>Key operation</td> </tr> <tr> <td>Duplex motor switchback time set value: Copy quantity keys</td> </tr> </table>	Key operation	Duplex motor switchback time set value: Copy quantity keys	50	18 ~ 76									
Key operation															
Duplex motor switchback time set value: Copy quantity keys															
10		Toner motor operation check	Used to operate the toner motor for 30 sec. Note: If this simulation is executed with the toner hopper installed, toner is automatically supplied to the developer. Be careful of overtoner.												
14		Trouble (except for U2) cancel	Used to cancel troubles except for U2.												
16		U2 trouble cancel	Used to cancel U2 trouble.												
20	1	Maintenance counter clear	Used to clear the maintenance counter. *2												
21	1	Maintenance cycle setting	<p>Used to display the currently set maintenance cycle at the numbers shown at right. When the set value is entered and the start key is pressed, the set value is stored.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td colspan="2">Key operation/Display</td> </tr> <tr> <td>0: 2500 sheets</td> <td>4: 150000 sheets</td> </tr> <tr> <td>1: 5000 sheets</td> <td>5: FREE (999999 sheets)</td> </tr> <tr> <td>2: 25000 sheets (When toner save is ON)</td> <td>6: 10000 sheets</td> </tr> <tr> <td>3: 50000 sheets (When toner save is ON)</td> <td>7: 7500 sheets</td> </tr> </table>	Key operation/Display		0: 2500 sheets	4: 150000 sheets	1: 5000 sheets	5: FREE (999999 sheets)	2: 25000 sheets (When toner save is ON)	6: 10000 sheets	3: 50000 sheets (When toner save is ON)	7: 7500 sheets	2	0 ~ 7
Key operation/Display															
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1: 5000 sheets	5: FREE (999999 sheets)														
2: 25000 sheets (When toner save is ON)	6: 10000 sheets														
3: 50000 sheets (When toner save is ON)	7: 7500 sheets														

\*2: Display after clearing each counter 000

(0.75 sec) → Blank (0.35 sec) → 000 (0.75 sec) → Blank (1.0 sec) → Repetition

Main code	Sub code	Contents	Details of operation	Initial value	Set range										
21	2	Mini maintenance cycle setting	Used to display the currently set mini maintenance cycle at the numbers shown at right. When the set value is entered and the start key is pressed, the set value is stored.  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: 2500 sheets</td> <td>4: 30000 sheets (When toner save is OFF)</td> </tr> <tr> <td>1: 5000 sheets</td> <td>50000 sheets (When toner save is ON)</td> </tr> <tr> <td>2: 10000 sheets</td> <td></td> </tr> <tr> <td>3: FREE (999999 sheets)</td> <td></td> </tr> </tbody> </table>	Key operation/Display		0: 2500 sheets	4: 30000 sheets (When toner save is OFF)	1: 5000 sheets	50000 sheets (When toner save is ON)	2: 10000 sheets		3: FREE (999999 sheets)		4	0 ~ 4
Key operation/Display															
0: 2500 sheets	4: 30000 sheets (When toner save is OFF)														
1: 5000 sheets	50000 sheets (When toner save is ON)														
2: 10000 sheets															
3: FREE (999999 sheets)															
22	1	Maintenance counter display	Used to display the current maintenance counter value. *1												
	2	Maintenance preset value display	Used to display the current maintenance preset value (set with SIM 21-1). *1												
	3	JAM memory display	Used to display a JAM generated during copying on the JAM position display on the operation panel. Max. 30 recent jams are stored. JAM No. 1 is displayed even when there is no JAM.  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>JAM history select: Magnification ratio display key</td> <td>The history number (1 ~ 30) is displayed on the display. The JAM position LED corresponding to the history number is lighted.</td> </tr> </tbody> </table>	Key operation	Display	JAM history select: Magnification ratio display key	The history number (1 ~ 30) is displayed on the display. The JAM position LED corresponding to the history number is lighted.								
	Key operation	Display													
	JAM history select: Magnification ratio display key	The history number (1 ~ 30) is displayed on the display. The JAM position LED corresponding to the history number is lighted.													
	4	Total JAM counter display	Used to display the current total JAM counter value. *1												
	5	Total counter display	Used to display the current total counter value. *1												
	6	Developing counter display	Used to display the current developing unit counter value. *1												
	7	Developing preset counter value display	Used to display the current mini maintenance preset value (set with SIM 21-2). *1												
	8	SPF counter display <Only AL-1622>	Used to display the current SPF counter value. *1												
9	Paper feed counter display	Used to display the current paper feed counter value for each paper feed port. *1  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Key operation</th> </tr> </thead> <tbody> <tr> <td>Paper feed port selection: Tray select key</td> </tr> </tbody> </table>	Key operation	Paper feed port selection: Tray select key											
Key operation															
Paper feed port selection: Tray select key															
12	Drum counter display	Used to display the current drum counter value. *1													
14	Copier ROM version display	Used to display the version number of the main ROM.  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Display</th> </tr> </thead> <tbody> <tr> <td>(Example) When the ROM version is 4.01: 004 → Blank → 001 → Blank → Repetition</td> </tr> </tbody> </table>	Display	(Example) When the ROM version is 4.01: 004 → Blank → 001 → Blank → Repetition											
		Display													
(Example) When the ROM version is 4.01: 004 → Blank → 001 → Blank → Repetition															
15	Trouble memory display	Used to display the actually occurred trouble codes on the display on the operation panel. When the start key is pressed during the main code display, the sub code is displayed. Max. 20 recent trouble codes are stored.  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Sub code display: Start key</td> <td rowspan="2">Histories 1 ~ 10: The upper digit of display "A" ~ "J" lights up. Histories 11 ~ 20: The upper digit of display "A" ~ "J" blinks. • Display without trouble code Main code: "--" Sub code: "00"</td> </tr> <tr> <td>Trouble code history select: Magnification ratio display key</td> </tr> </tbody> </table>	Key operation	Display	Sub code display: Start key	Histories 1 ~ 10: The upper digit of display "A" ~ "J" lights up. Histories 11 ~ 20: The upper digit of display "A" ~ "J" blinks. • Display without trouble code Main code: "--" Sub code: "00"	Trouble code history select: Magnification ratio display key								
Key operation	Display														
Sub code display: Start key	Histories 1 ~ 10: The upper digit of display "A" ~ "J" lights up. Histories 11 ~ 20: The upper digit of display "A" ~ "J" blinks. • Display without trouble code Main code: "--" Sub code: "00"														
Trouble code history select: Magnification ratio display key															

\*1: Each counter display method

To display 123456: 123 (0.75 sec) → Blank (0.35 sec) → 456 (0.75 sec) → Blank (1.0 sec) → repetition

\*2: Display after clearing each counter

000 (0.75 sec) → Blank (0.35 sec) → 000 (0.75 sec) → Blank (1.0 sec) → Repetition

Main code	Sub code	Contents	Details of operation	Initial value	Set range
22	16	Duplex print counter display <b>&lt;Not Used&gt;</b>	Used to display the current duplex print counter value. *1		
	17	Copy counter display	Used to display the current copy counter value. *1		
	18	Printer counter display <b>&lt;Not Used&gt;</b>	Used to display the current printer counter value. *1		
	19	Electronic sort counter display <b>&lt;Not Used&gt;</b>	Used to display the current electronic sort counter value. *1		
	21	Scanner counter display	Used to display the current scanner counter value.		
24	1	JAM memory, JAM counter clear	Used to clear the JAM memory and the JAM counter. *2		
	2	Trouble memory clear	Used to clear the trouble memory. *2		
	4	SPF counter clear <b>&lt;Only AL-1622&gt;</b>	Used to clear the SPF counter. *2		
	5	Duplex counter clear <b>&lt;Not Used&gt;</b>	Used to clear the duplex counter. *2		
	6	Paper feed counter clear	Used to clear the paper feed counter. *2		
	7	Drum counter clear	Used to clear the drum counter. *2		
	8	Copy counter clear	Used to clear the copy counter. *2		
	9	Printer counter clear <b>&lt;Not Used&gt;</b>	Used to clear the printer counter. *2		
	10	Electronic sort counter clear <b>&lt;Not Used&gt;</b>	Used to clear the electronic sort counter. *2		
13	Scanner counter clear	Used to clear the scanner counter. *2			
25	1	Main motor operation check	Execute the simulation with the developer cartridge removed, and the main motor will rotate for 30 sec. At that time, the cooling motor rotates at a low speed.		
	10	Polygon motor operation check	Used to drive the polygon motor for 30 sec.		

\*2: Display after clearing each counter

000 (0.75 sec) → Blank (0.35 sec) → 000 (0.75 sec) → Blank (1.0 sec) → Repetition

Main code	Sub code	Contents	Details of operation	Initial value	Set range																
26	1	Option switch display	<p>Used to display the installed option on the operation panel. (The LED corresponding to the installed option is lighted.)</p> <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Display select:</td> <td>&lt;Lighting with an option installed&gt;</td> </tr> <tr> <td>Magnification ratio display key</td> <td> <p><b>When "A" is displayed:</b>  Shifter: Paper empty LED  Job separator: JAM LED  SPF: SPF select LED  RSPF: SPF JAM LED  Duplex mode: Main cassette select LED  Simplex mode: Multi manual paper feed select LED  MCU JMPER1: Top of the magnification ratio display  MCU JMPER2: 2nd of the magnification ratio display  MCU JMPER3: 3rd of the magnification ratio display  MCU JMPER7: 4th of the magnification ratio display  MCU JMPER7: 5th of the magnification ratio display  MCU JMPER7: 6th of the magnification ratio display  MCU JMPER7: 7th of the magnification ratio display  MCU JMPER8: Bottom of the magnification ratio display</p> <p><b>When "b" is displayed:</b>  Cassette (2nd step): No. 2 cassette select LED  Cassette (3rd step): No. 3 cassette select LED  Cassette (4th step): No. 4 cassette select LED  Memory installed: Paper empty LED  FAX: JAM LED  Printer: Main body JAM LED  ERDH: Main cassette select LED  16CPM: SPF JAM LED  20CPM: SPF select LED  Document sensor: Auto paper select LED</p> </td> </tr> </tbody> </table> <p>&lt;Not Used&gt;</p>	Key operation	Display	Display select:	<Lighting with an option installed>	Magnification ratio display key	<p><b>When "A" is displayed:</b>  Shifter: Paper empty LED  Job separator: JAM LED  SPF: SPF select LED  RSPF: SPF JAM LED  Duplex mode: Main cassette select LED  Simplex mode: Multi manual paper feed select LED  MCU JMPER1: Top of the magnification ratio display  MCU JMPER2: 2nd of the magnification ratio display  MCU JMPER3: 3rd of the magnification ratio display  MCU JMPER7: 4th of the magnification ratio display  MCU JMPER7: 5th of the magnification ratio display  MCU JMPER7: 6th of the magnification ratio display  MCU JMPER7: 7th of the magnification ratio display  MCU JMPER8: Bottom of the magnification ratio display</p> <p><b>When "b" is displayed:</b>  Cassette (2nd step): No. 2 cassette select LED  Cassette (3rd step): No. 3 cassette select LED  Cassette (4th step): No. 4 cassette select LED  Memory installed: Paper empty LED  FAX: JAM LED  Printer: Main body JAM LED  ERDH: Main cassette select LED  16CPM: SPF JAM LED  20CPM: SPF select LED  Document sensor: Auto paper select LED</p>												
Key operation	Display																				
Display select:	<Lighting with an option installed>																				
Magnification ratio display key	<p><b>When "A" is displayed:</b>  Shifter: Paper empty LED  Job separator: JAM LED  SPF: SPF select LED  RSPF: SPF JAM LED  Duplex mode: Main cassette select LED  Simplex mode: Multi manual paper feed select LED  MCU JMPER1: Top of the magnification ratio display  MCU JMPER2: 2nd of the magnification ratio display  MCU JMPER3: 3rd of the magnification ratio display  MCU JMPER7: 4th of the magnification ratio display  MCU JMPER7: 5th of the magnification ratio display  MCU JMPER7: 6th of the magnification ratio display  MCU JMPER7: 7th of the magnification ratio display  MCU JMPER8: Bottom of the magnification ratio display</p> <p><b>When "b" is displayed:</b>  Cassette (2nd step): No. 2 cassette select LED  Cassette (3rd step): No. 3 cassette select LED  Cassette (4th step): No. 4 cassette select LED  Memory installed: Paper empty LED  FAX: JAM LED  Printer: Main body JAM LED  ERDH: Main cassette select LED  16CPM: SPF JAM LED  20CPM: SPF select LED  Document sensor: Auto paper select LED</p>																				
	3	Auditor setting	<p>Used to display the current auditor setting with the numbers at right. After entering the set value, press the start key, and the set value is stored.</p> <table border="1"> <thead> <tr> <th>Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: Built-in auditor</td> </tr> <tr> <td>1: Coin vendor</td> </tr> <tr> <td>2: Others</td> </tr> </tbody> </table>	Key operation/Display	0: Built-in auditor	1: Coin vendor	2: Others	0	0 ~ 2												
Key operation/Display																					
0: Built-in auditor																					
1: Coin vendor																					
2: Others																					
	5	Counter mode setting	<p>Used to set the print counter mode in A3.  Used to display the currently set counter value with the numbers at right. After entering the set value, press the start key, and the set value is stored.</p> <table border="1"> <thead> <tr> <th>Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: Total/Developer = 2 counts      Maintenance = 2 counts</td> </tr> <tr> <td>1: Total/Developer = 1 count      Maintenance = 2 counts</td> </tr> <tr> <td>2: Total/Developer = 2 counts      Maintenance = 1 count</td> </tr> <tr> <td>3: Total/Developer = 1 count      Maintenance = 1 count</td> </tr> </tbody> </table>	Key operation/Display	0: Total/Developer = 2 counts      Maintenance = 2 counts	1: Total/Developer = 1 count      Maintenance = 2 counts	2: Total/Developer = 2 counts      Maintenance = 1 count	3: Total/Developer = 1 count      Maintenance = 1 count	0	0 ~ 3											
Key operation/Display																					
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	6	Destination setting	<p>Used to display the current destination setting with the numbers at right. After entering the set value, press the start key, and the set value is stored.</p> <table border="1"> <thead> <tr> <th>Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: Japan</td> </tr> <tr> <td>1: USA (Inch series)</td> </tr> <tr> <td>2: Canada (Inch series)</td> </tr> <tr> <td>3: Germany 1 (AB series)</td> </tr> <tr> <td>4: UK (AB series)</td> </tr> <tr> <td>5: Not used</td> </tr> <tr> <td>6: France (AB series)</td> </tr> <tr> <td>7: EX inch series</td> </tr> <tr> <td>8: X AB series</td> </tr> <tr> <td>9: X inch series (FC conformity)</td> </tr> <tr> <td>10: EX AB series (FC conformity)</td> </tr> <tr> <td>(Australia, Newzealand)</td> </tr> <tr> <td>11: China (AB series)</td> </tr> <tr> <td>12: Taiwan (AB series)</td> </tr> <tr> <td>13: Germany 2 (AB series)</td> </tr> </tbody> </table>	Key operation/Display	0: Japan	1: USA (Inch series)	2: Canada (Inch series)	3: Germany 1 (AB series)	4: UK (AB series)	5: Not used	6: France (AB series)	7: EX inch series	8: X AB series	9: X inch series (FC conformity)	10: EX AB series (FC conformity)	(Australia, Newzealand)	11: China (AB series)	12: Taiwan (AB series)	13: Germany 2 (AB series)	8	0 ~ 13
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11: China (AB series)																					
12: Taiwan (AB series)																					
13: Germany 2 (AB series)																					

Main code	Sub code	Contents	Details of operation	Initial value	Set range														
26	7	CRUM set value display	<p>The currently set value of CRUM is displayed with the following numbers:</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: Not set</td> <td>3: BTA-C</td> </tr> <tr> <td>1: BTA-A</td> <td>99: Conv</td> </tr> <tr> <td>2: BTA-B</td> <td></td> </tr> </tbody> </table>	Key operation/Display		0: Not set	3: BTA-C	1: BTA-A	99: Conv	2: BTA-B									
Key operation/Display																			
0: Not set	3: BTA-C																		
1: BTA-A	99: Conv																		
2: BTA-B																			
	10	Model name setting	<p>Used to set the model name of the machine used with the following numbers. After entering the set value, press the start key and the set value is stored.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: AL-1611</td> <td></td> </tr> <tr> <td>1: AL-1622</td> <td></td> </tr> </tbody> </table>	Key operation/Display		0: AL-1611		1: AL-1622		0	0 ~ 1								
Key operation/Display																			
0: AL-1611																			
1: AL-1622																			
	22	Language setting	<p>Used to display the current setting of the language information with the number at right. After entering the set value, press the start key, and the set value is stored.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: Japanese</td> <td>4: Italian</td> </tr> <tr> <td>1: English</td> <td>5: Dutch</td> </tr> <tr> <td>2: French</td> <td>6: Swedish</td> </tr> <tr> <td>3: German</td> <td>7: Spanish</td> </tr> </tbody> </table>	Key operation/Display		0: Japanese	4: Italian	1: English	5: Dutch	2: French	6: Swedish	3: German	7: Spanish	1	0 ~ 7				
Key operation/Display																			
0: Japanese	4: Italian																		
1: English	5: Dutch																		
2: French	6: Swedish																		
3: German	7: Spanish																		
	30	CE mark conformity control setting	<p>Used to display the current setting of CE mark conformity control with the number at right. After entering the set value, press the start key, and the set value is stored.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: CE mark control OFF</td> <td></td> </tr> <tr> <td>1: CE mark control ON</td> <td></td> </tr> </tbody> </table>	Key operation/Display		0: CE mark control OFF		1: CE mark control ON		1	0 ~ 1								
Key operation/Display																			
0: CE mark control OFF																			
1: CE mark control ON																			
	32	Fan rotation duty change state setup	<p>The currently set fan motor rotation duty is displayed with the following numbers. After entering the set value, press the start key to store the set value.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: Operating 50%, standby 30%</td> <td></td> </tr> <tr> <td>1: Operating 80%, standby 50%</td> <td></td> </tr> </tbody> </table>	Key operation/Display		0: Operating 50%, standby 30%		1: Operating 80%, standby 50%		0	0 ~ 1								
Key operation/Display																			
0: Operating 50%, standby 30%																			
1: Operating 80%, standby 50%																			
	38	Cancel of stop at drum life over	<p>The currently set value is displayed. After entering the set value, press the start key to store the set value.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0: The machine stops at drum life over.</td> <td></td> </tr> <tr> <td>1: The machine does not stop at drum life over.</td> <td></td> </tr> </tbody> </table>	Key operation/Display		0: The machine stops at drum life over.		1: The machine does not stop at drum life over.		1	0 ~ 1								
Key operation/Display																			
0: The machine stops at drum life over.																			
1: The machine does not stop at drum life over.																			
		<b>&lt;Not Used&gt;</b>																	
	42	Transfer timing adjustment	<p>After completion of warm up, shading is performed and the currently set transfer timing adjustment value is displayed.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation</th> </tr> </thead> <tbody> <tr> <td colspan="2">Transfer timing adjustment value: Copy quantity keys</td> </tr> <tr> <td>"1":</td> <td>240 ms</td> </tr> <tr> <td>"3":</td> <td>260 ms</td> </tr> <tr> <td>"5":</td> <td>280 ms</td> </tr> <tr> <td>"7":</td> <td>300 ms</td> </tr> <tr> <td>"9":</td> <td>320 ms</td> </tr> </tbody> </table>	Key operation		Transfer timing adjustment value: Copy quantity keys		"1":	240 ms	"3":	260 ms	"5":	280 ms	"7":	300 ms	"9":	320 ms	3	1, 3, 5, 7, 9
Key operation																			
Transfer timing adjustment value: Copy quantity keys																			
"1":	240 ms																		
"3":	260 ms																		
"5":	280 ms																		
"7":	300 ms																		
"9":	320 ms																		

Main code	Sub code	Contents	Details of operation	Initial value	Set range														
26	50	Black-white reversion function setup	<p>The current setup of black-white reversion is displayed with the following numbers. After entering the set value, press the start key to store the set value.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0:</td> <td>Black-white reversion function enabled</td> </tr> <tr> <td>1:</td> <td>Black-white reversion function disabled</td> </tr> </tbody> </table>	Key operation/Display		0:	Black-white reversion function enabled	1:	Black-white reversion function disabled	0	0 ~ 1								
Key operation/Display																			
0:	Black-white reversion function enabled																		
1:	Black-white reversion function disabled																		
	51	Sort/Group copy temporary stop function setup  <b>&lt;Not Used&gt;</b>	<p>Used to set whether temporary stop for every 250-sheet print (150-sheet print when the job separator is installed) is made or not during copying with the sort/group function. The current setup is displayed with the following numbers. After entering the set value, press the start key to store the set value.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation/Display</th> </tr> </thead> <tbody> <tr> <td>0:</td> <td>Does not stop.</td> </tr> <tr> <td>1:</td> <td>Stops.</td> </tr> </tbody> </table>	Key operation/Display		0:	Does not stop.	1:	Stops.	1	0 ~ 1								
Key operation/Display																			
0:	Does not stop.																		
1:	Stops.																		
30	1	Machine sensor operation check	<p>Used to check the sensors in the machine transport system with LED on the operation panel.</p> <table border="1"> <thead> <tr> <th colspan="2">Display</th> </tr> </thead> <tbody> <tr> <td colspan="2">&lt;Lighting at sensor ON&gt;</td> </tr> <tr> <td colspan="2">Paper entry sensor: Machine position JAM LED</td> </tr> <tr> <td colspan="2">Paper exit sensor: JAM LED</td> </tr> <tr> <td colspan="2">No. 2 cassette transport sensor: No. 2 cassette position LED</td> </tr> </tbody> </table>	Display		<Lighting at sensor ON>		Paper entry sensor: Machine position JAM LED		Paper exit sensor: JAM LED		No. 2 cassette transport sensor: No. 2 cassette position LED							
Display																			
<Lighting at sensor ON>																			
Paper entry sensor: Machine position JAM LED																			
Paper exit sensor: JAM LED																			
No. 2 cassette transport sensor: No. 2 cassette position LED																			
41	2	OC document sensor adjustment <b>&lt;Not Used&gt;</b>	<p>Used to read the document sensor input value with paper and perform the sensor detection level adjustment. For the adjustment procedure of the document sensor input value, refer to the previous descriptions.</p>																
	3	Document sensor light reception level display  <b>&lt;Not Used&gt;</b>	<p>Used to display the light reception level and the detection level of the document sensor. (The sensor level adjusted with SIM 41-2 is displayed.)</p> <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Light reception/Detection level select: Magnification ratio display key</td> <td>Display at the 3rd digit</td> </tr> <tr> <td>Sensor select: Auto magnification ratio select key</td> <td>"A": Light reception level display "b": Document detection level display</td> </tr> <tr> <td></td> <td>Sensor A: A3 (11 x 17) document size LED</td> </tr> <tr> <td></td> <td>Sensor B: A4 (8 1/2 x 14) document size LED</td> </tr> <tr> <td></td> <td>Sensor C: A4R (8 1/2 x 11) document size LED</td> </tr> <tr> <td></td> <td>Sensor D: B4 (8 1/2 x 5 1/2) document size LED</td> </tr> </tbody> </table>	Key operation	Display	Light reception/Detection level select: Magnification ratio display key	Display at the 3rd digit	Sensor select: Auto magnification ratio select key	"A": Light reception level display "b": Document detection level display		Sensor A: A3 (11 x 17) document size LED		Sensor B: A4 (8 1/2 x 14) document size LED		Sensor C: A4R (8 1/2 x 11) document size LED		Sensor D: B4 (8 1/2 x 5 1/2) document size LED		
Key operation	Display																		
Light reception/Detection level select: Magnification ratio display key	Display at the 3rd digit																		
Sensor select: Auto magnification ratio select key	"A": Light reception level display "b": Document detection level display																		
	Sensor A: A3 (11 x 17) document size LED																		
	Sensor B: A4 (8 1/2 x 14) document size LED																		
	Sensor C: A4R (8 1/2 x 11) document size LED																		
	Sensor D: B4 (8 1/2 x 5 1/2) document size LED																		
42	1	Developing counter clear	Used to clear the Developing counter. *2																
43	1	Fusing temperature setting	<p>Used to display the current setting of the fusing temperature at right. After selecting the fusing temperature with the magnification ratio display key, press the start key, and the set value is stored. The set range is 155 ~ 180°C. Use the magnification ratio key to adjust the value by 5°C.</p> <table border="1"> <thead> <tr> <th colspan="2">Key operation</th> </tr> </thead> <tbody> <tr> <td colspan="2">Fusing temperature select: Magnification ratio display key</td> </tr> </tbody> </table>	Key operation		Fusing temperature select: Magnification ratio display key		170	155 ~ 180										
Key operation																			
Fusing temperature select: Magnification ratio display key																			
46	1	Copy density level adjustment	<p>After completion of warmup, shading is performed and the currently set copy density level is displayed. For the adjustment procedure, refer to the previous descriptions.</p> <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Mode select: Exposure mode select key</td> <td>&lt;LED lighting at each mode selection&gt;</td> </tr> <tr> <td>Copy density level: Copy quantity keys</td> <td>Auto mode: AUTO LED</td> </tr> <tr> <td></td> <td>Manual mode: MANUAL LED</td> </tr> <tr> <td></td> <td>Photo mode: PHOTO LED</td> </tr> <tr> <td></td> <td>Toner save mode: MANUAL + PHOTO LED</td> </tr> <tr> <td></td> <td>AETS mode: AUTO + PHOTO LED</td> </tr> </tbody> </table>	Key operation	Display	Mode select: Exposure mode select key	<LED lighting at each mode selection>	Copy density level: Copy quantity keys	Auto mode: AUTO LED		Manual mode: MANUAL LED		Photo mode: PHOTO LED		Toner save mode: MANUAL + PHOTO LED		AETS mode: AUTO + PHOTO LED	48	1 ~ 99
Key operation	Display																		
Mode select: Exposure mode select key	<LED lighting at each mode selection>																		
Copy density level: Copy quantity keys	Auto mode: AUTO LED																		
	Manual mode: MANUAL LED																		
	Photo mode: PHOTO LED																		
	Toner save mode: MANUAL + PHOTO LED																		
	AETS mode: AUTO + PHOTO LED																		

Main code	Sub code	Contents	Details of operation	Initial value	Set range						
48	1	Main scanning (front/rear) direction magnification ratio adjustment (Copy/OC-SPF common)	<p>After completion of warmup, shading is performed and the currently set main scanning (front/rear) direction magnification ratio adjustment and the OC mode document center off adjustment are performed. For the adjustment procedure, refer to the previous descriptions.</p> <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Adjustment mode select: Magnification ratio display key</td> <td>Auto magnification ratio adjustment: AUTO LED</td> </tr> <tr> <td>Manual main scanning direction magnification ratio adjustment Set value: Copy quantity keys</td> <td>Manual magnification ratio adjustment: MANUAL LED OC mode document center off adjustment: PHOTO LED</td> </tr> </tbody> </table>	Key operation	Display	Adjustment mode select: Magnification ratio display key	Auto magnification ratio adjustment: AUTO LED	Manual main scanning direction magnification ratio adjustment Set value: Copy quantity keys	Manual magnification ratio adjustment: MANUAL LED OC mode document center off adjustment: PHOTO LED	55	1 ~ 99
	Key operation	Display									
	Adjustment mode select: Magnification ratio display key	Auto magnification ratio adjustment: AUTO LED									
Manual main scanning direction magnification ratio adjustment Set value: Copy quantity keys	Manual magnification ratio adjustment: MANUAL LED OC mode document center off adjustment: PHOTO LED										
2	OC mode sub scanning direction magnification ratio adjustment in copying	<p>After completion of warmup, shading is performed and the currently set OC mode sub scanning direction magnification ratio adjustment in copying is performed. For the adjustment procedure, refer to the previous descriptions.</p> <table border="1"> <thead> <tr> <th>Key operation</th> </tr> </thead> <tbody> <tr> <td>OC mode sub scanning direction magnification ratio in copying: Copy quantity keys</td> </tr> </tbody> </table>	Key operation	OC mode sub scanning direction magnification ratio in copying: Copy quantity keys	50	1 ~ 99					
Key operation											
OC mode sub scanning direction magnification ratio in copying: Copy quantity keys											
5	SPF mode sub scanning direction magnification ratio adjustment in copying  <b>&lt;Only AL-1622&gt;</b>	<p>After completion of warmup, shading is performed and the currently set SPF mode sub scanning direction magnification ratio adjustment in copying is performed. For the adjustment procedure, refer to the previous descriptions.</p> <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Adjustment mode select: Exposure mode select key Set value: Copy quantity keys</td> <td>Auto: SPF mode sub scanning direction magnification ratio in copying</td> </tr> </tbody> </table>	Key operation	Display	Adjustment mode select: Exposure mode select key Set value: Copy quantity keys	Auto: SPF mode sub scanning direction magnification ratio in copying	33	1 ~ 99			
Key operation	Display										
Adjustment mode select: Exposure mode select key Set value: Copy quantity keys	Auto: SPF mode sub scanning direction magnification ratio in copying										
50	1	Copy image position adjustment	<p>After completion of warmup, shading is performed and the currently set value is displayed. For the adjustment procedure, refer to the previous descriptions.</p> <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Adjustment mode select: Exposure mode select key Set value: Copy quantity keys</td> <td>Auto: Copy lead edge adjustment Manual: SPF lead edge adjustment <b>&lt;Not Used&gt;</b> Photo: Main cassette lead edge void adjustment Auto + Manual: Left edge void adjustment Auto + Photo: Rear edge void adjustment Auto + Manual + Photo: Option cassette lead edge void adjustment Manual + Photo: Multi bypass tray lead edge void adjustment Exposure 1: Print start position adjustment</td> </tr> </tbody> </table>	Key operation	Display	Adjustment mode select: Exposure mode select key Set value: Copy quantity keys	Auto: Copy lead edge adjustment Manual: SPF lead edge adjustment <b>&lt;Not Used&gt;</b> Photo: Main cassette lead edge void adjustment Auto + Manual: Left edge void adjustment Auto + Photo: Rear edge void adjustment Auto + Manual + Photo: Option cassette lead edge void adjustment Manual + Photo: Multi bypass tray lead edge void adjustment Exposure 1: Print start position adjustment	55 77 18 48 40 18 18 55	1 ~ 99		
	Key operation	Display									
	Adjustment mode select: Exposure mode select key Set value: Copy quantity keys	Auto: Copy lead edge adjustment Manual: SPF lead edge adjustment <b>&lt;Not Used&gt;</b> Photo: Main cassette lead edge void adjustment Auto + Manual: Left edge void adjustment Auto + Photo: Rear edge void adjustment Auto + Manual + Photo: Option cassette lead edge void adjustment Manual + Photo: Multi bypass tray lead edge void adjustment Exposure 1: Print start position adjustment									
10	Paper off center adjustment	<p>After completion of warmup, shading is performed and the currently set off center adjustment of each paper feed port is displayed. For the adjustment procedure, refer to the previous descriptions.</p> <table border="1"> <thead> <tr> <th>Key operation</th> <th>Display</th> </tr> </thead> <tbody> <tr> <td>Paper feed port tray select: Tray select key Off center adjustment value: numeric keys</td> <td>Main cassette: Main cassette select LED Manual paper feed: Manual feed select LED No. 2 cassette: No. 2 cassette select LED <b>&lt;Only AL-1622&gt;</b></td> </tr> </tbody> </table>	Key operation	Display	Paper feed port tray select: Tray select key Off center adjustment value: numeric keys	Main cassette: Main cassette select LED Manual paper feed: Manual feed select LED No. 2 cassette: No. 2 cassette select LED <b>&lt;Only AL-1622&gt;</b>	50	1 ~ 99			
Key operation	Display										
Paper feed port tray select: Tray select key Off center adjustment value: numeric keys	Main cassette: Main cassette select LED Manual paper feed: Manual feed select LED No. 2 cassette: No. 2 cassette select LED <b>&lt;Only AL-1622&gt;</b>										
13	OC mode document off center adjustment	<p>After completion of warmup, shading is performed and the currently set off center adjustment value for the document in OC reading is displayed. For the adjustment procedure, refer to the previous descriptions.</p> <table border="1"> <thead> <tr> <th>Key operation</th> </tr> </thead> <tbody> <tr> <td>Off center adjustment value: Copy quantity keys</td> </tr> </tbody> </table>	Key operation	Off center adjustment value: Copy quantity keys	55	1 ~ 99					
Key operation											
Off center adjustment value: Copy quantity keys											

\*2: Display after clearing each counter

000 (0.75 sec) → Blank (0.35 sec) → 000 (0.75 sec) → Blank (1.0 sec) → Repetition

Main code	Sub code	Contents	Details of operation	Initial value	Set range						
50	16	SPF mode document off center adjustment  <Only AL-1622>	After completion of warmup, shading is performed and the currently set off center adjustment value for the document in SPF reading is displayed. For the adjustment procedure, refer to the previous descriptions. <table border="1" style="width: 100%;"><tr><td style="text-align: center;">Key operation</td></tr><tr><td>Off center adjustment value: Copy quantity keys</td></tr></table>	Key operation	Off center adjustment value: Copy quantity keys	61	1 ~ 99				
	Key operation										
	Off center adjustment value: Copy quantity keys										
18	Duplex memory reverse position adjustment  <Not Used>	After completion of warmup, shading is performed and currently set value is displayed <table border="1" style="width: 100%;"><tr><td style="text-align: center;">Key operation</td></tr><tr><td>Memory reverse position adjustment value: Copy quantity keys</td></tr></table>	Key operation	Memory reverse position adjustment value: Copy quantity keys							
Key operation											
Memory reverse position adjustment value: Copy quantity keys											
19	Duplex rear edge void adjustment  <Not Used>	After completion of warmup, shading is performed and currently set value is displayed. <table border="1" style="width: 100%;"><thead><tr><th style="width: 50%;">Key operation</th><th style="width: 50%;">Display</th></tr></thead><tbody><tr><td>Adjustment mode select: Exposure mode select key</td><td>Auto: SPF/R-SPF rear edge void</td></tr><tr><td>Set value: Copy quantity keys</td><td>Manual: R-SPF off center Photo: R-SPF lead edge void</td></tr></tbody></table>	Key operation	Display	Adjustment mode select: Exposure mode select key	Auto: SPF/R-SPF rear edge void	Set value: Copy quantity keys	Manual: R-SPF off center Photo: R-SPF lead edge void	37 52 70	1 ~ 99	
Key operation	Display										
Adjustment mode select: Exposure mode select key	Auto: SPF/R-SPF rear edge void										
Set value: Copy quantity keys	Manual: R-SPF off center Photo: R-SPF lead edge void										
51	2	Resist amount adjustment	After completion of warmup, shading is performed and the currently set resist amount adjustment value is displayed. <table border="1" style="width: 100%;"><thead><tr><th style="width: 50%;">Key operation</th><th style="width: 50%;">Display</th></tr></thead><tbody><tr><td>Resist amount adjustment: Copy quantity keys</td><td>Auto: Main cassette Manual: 2nd tray</td></tr><tr><td>Adjustment mode select: Exposure mode select key</td><td>Photo: Manual feed tray</td></tr></tbody></table>	Key operation	Display	Resist amount adjustment: Copy quantity keys	Auto: Main cassette Manual: 2nd tray	Adjustment mode select: Exposure mode select key	Photo: Manual feed tray	50 1 50	1 ~ 99
Key operation	Display										
Resist amount adjustment: Copy quantity keys	Auto: Main cassette Manual: 2nd tray										
Adjustment mode select: Exposure mode select key	Photo: Manual feed tray										
53	8	SPF scan position auto adjustment  <Only AL-1622>	The mirror unit is shifted to 30mm in front of the SPF scan position. Then it is moved by self-booting to detect the window cabinet edge. In case of an error, "255" is displayed. This simulation must be executed with the SPF cover open and without anything on the document table.								
	9	SPF white level value display  <Only AL-1622>	The mirror unit is shifted to the SPF scan position, and the white adjustment reference level which serves as the reference for white adjustment is displayed on the display section for 30 sec. This simulation must be executed with the SPF cover closed.								
63	1	Shading data check	The copy lamp is shifted to the shading position and it is lighted with the reference voltage at AD conversion fixed ( $V_{ref-} = 0.5V$ , $V_{ref+} = 4.5V$ ). The level of one pixel at the center at that time is displayed. <table border="1" style="width: 100%;"><tr><td style="text-align: center;">Display</td></tr><tr><td>Display section: Shading data</td></tr></table>	Display	Display section: Shading data						
	Display										
Display section: Shading data											
7	White correction start/pixel position auto adjustment  <Only AL-1622>	The mirror unit is shifted to the SPF scan position to detect the white plate edge position. At that time, the edge position detection pixel is displayed on the display section for 30 sec. This simulation must be executed with the SPF cover open. When the detected value is in the range of 35-172, it is written into the EEPROM.									
64	1	Self print mode	Disregards the optical system and performs self printing in 1 by 2 mode.								
67	14	Printer Flash ROM Data Download <Not Used>	The machine enters the version up mode of the printer control PWB flash ROM. For details, refer to the later.								

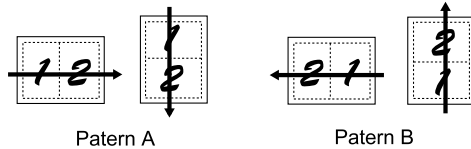
# [ 9 ] USER PROGRAM

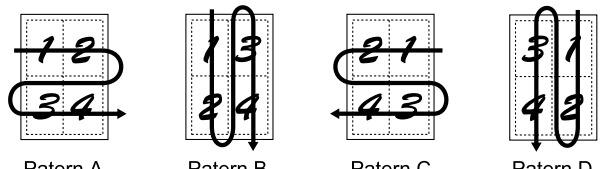
The user programs allow the parameters of certain functions to be set, changed, or canceled as desired.

## 1. LIST OF USER PROGRAMS

This copier has the following user programs.

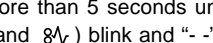
Program name	Program No	Description	Default	Parameters
Auto clear time	1	Sets the auto clear time. The copier returns to the initial settings when the auto clear time elapses after the last copy is made.	60sec	0 (OFF)
				1 (30sec)
				2 (60sec)
				3 (90sec)
				4 (120sec)
Preheat mode	2	Sets the time that elapses before the copier enters the preheat mode after any operation is made.	30sec	0 (OFF)
				1 (30sec)
				2 (60sec)
				3 (90sec)
				4 (120sec)
Auto power shut-off timer	3	Sets the time that elapses before the copier enters the auto power shut-off mode after any operation is made.	30min	1 (30min)
				2 (60min)
				3 (90min)
				4 (120min)
				5 (240min)
Stream feeding mode*	4	Enables or disables the stream feeding mode when an optional SPF or RSPF is installed.	OFF	0 (OFF)
				1 (ON)
Auto power shut-off setting	5	Enables or disables the auto power shut-off mode.	ON	0 (OFF)
				1 (ON)
Border line for 2 in 1 or 4 in 1*	6	Enables or disables the border line which is printed in 2 in 1 or 4 in 1 copying when an electronic sorting kit and an SPF or RSPF are installed.	OFF	0 (OFF)
				1 (ON)
Rotation copy*	7	Enables or disables rotation of original images.	ON	0 (OFF)
				1 (ON)
Auto paper select mode	8	Enables or disables the auto paper selection.	ON	0 (OFF)
				1 (ON)
Auto tray switching	9	Enables or disables the automatic tray switching which occurs when paper in a tray runs out. (This switching cannot switch to the bypass tray.)	ON	0 (OFF)
				1 (ON)
Auditing mode	10	Enables or disables the auditing mode, which controls access to copier.	OFF	0 (OFF)
				1 (ON)
Account number entry	11	Registers accounts for auditing mode.	—	—
Account number change	12	Changes account numbers for auditing mode.	—	—
Account number deletion	13	Deletes accounts for auditing mode.	—	—
Number of copies per account	14	Displays the total number of copies made against account numbers.	—	—
Resetting account	15	Resets all audit accounts or resets any desired individual account.	—	—
Erase width adjustment*	16	Sets the amount of the edge erase and center erase areas.	10mm [1/2"]	0 (0mm [0"])
				1 (5mm [1/4"])
				2 (10mm [1/2"])
				3 (15mm [3/4"])
				4 (20mm [1"])
Layout in 2 in 1 copy*	17	Selects a pattern for 2 in 1 copying.	Pattern 1	1 (Pattern 1)
				2 (Pattern 2)



Program name	Program No	Description	Default	Parameters
Layout in 4 in 1 copy*	18	Selects a pattern for 4 in 1 copying.  Patern A      Patern B      Patern C      Patern D	Pattern 1	1 (Pattern 1)
				2 (Pattern 2)
				3 (Pattern 3)
				4 (Pattern 4)
Offset of paper output tray*	19	Enables or disables the offset function of the paper output tray. The offset function can be specified respectively for the upper and lower areas separated by an optional job separator tray kit.	Upper ON, Lower ON	0 (Upper OFF, Lower OFF)
				1 (Upper ON, Lower On)
				2 (Upper ON, Lower OFF)
				3 (Upper OFF, Lower On)
Image rotation in duplex copying*	20	Enables or disables image rotation (180°) of the front side in one-sided to two-sided copying or two-sided to one-sided copying.	OFF	0 (OFF)
				1 (ON)
Location of the margin*	22	Selects the location of the expanded margin.	Left	1 (Left)
				2 (Top)

\*These programs do not affect the copier functions unless certain optional equipment is installed.

## 2. SETTING THE USER PROGRAMS

- Press and hold the light key for more than 5 seconds until all the alarm indicators (  and “- -” appears in the copy quantity display.
- Enter a program number using the numeric keys.
  - The selected program number will blink in the copy quantity display.
  - If a mistake is made in steps 2) to 4), press the CLEAR key. The copier will return to step 2).

For example, to change the setting of the auto power shut-off timer, press key 3.

- Press the START key.
  - For programs 1 to 9 and 16 to 19, the entered program number will be steadily lit on the left side of the copy quantity display and the currently selected parameter number for the program will blink on the right side.
  - For programs 10 to 15 (programs for auditing accounts), the display varies with the program number.
- Select the desired parameter using the numeric keys.
  - The entered parameter number will blink on the right side of the copy quantity display.
  - The parameters are shown in the table below.

For example, to change the setting of the auto power shut-off timer to 60 min., press key 2.

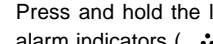
\*\* In European countries, the default setting of the preheat mode is 1 (30 sec.). For other programs, factory-default settings in these countries are same to those shown above with an asterisk (\*).

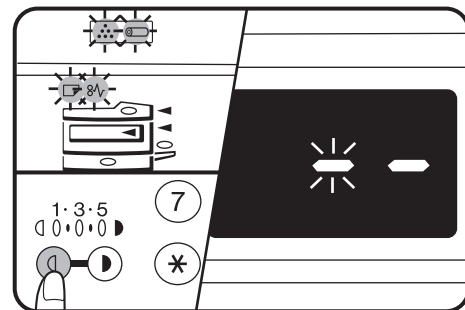
Note: If you select “0” (OFF) in a program, the corresponding function will be disabled.

- Press the START key.
  - The right-hand number in the copy quantity display will be steadily lit and the entered value will be stored.
- To continue with other user programs, press the PRESS key and then repeat steps 2 to 5. To exit the user program mode, press the light key.
  - All the alarm indicators will go out.

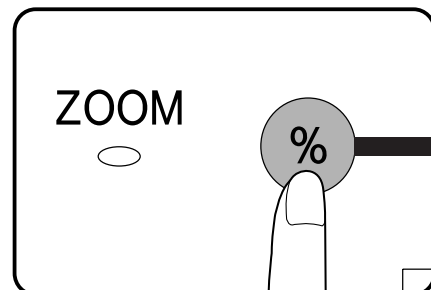
## 3. TONER CARTRIDGE LIFE

To find out the approximate quantity of toner remaining, follow the procedure below.

- Press and hold the light key for more than 5 seconds until all the alarm indicators (  ) blink and “- -” appears in the copy quantity display.



- Press and hold the copy ratio display key for more than 5 seconds.
  - The approximate quantity of toner remaining will be indicated as a percent in the copy quantity display. (“100”, “75”, “50”, “25”, “10” or “LO” is displayed. When “LO” is displayed, the toner is down to less than 10%.)



- Press the light key.
  - All the alarm indicators will go out.

# [10] TROUBLE CODE LIST

## 1. TROUBLE CODE LIST

Trouble code	Trouble content
E1	00 E-Sort board communication trouble
	10 E-Sort board trouble
	11 E-Sort ASIC error
	12 E-Sort CODEC error
	13 E-Sort flash ROM error
	14 E-Sort RAM error
	15 E-Sort page memory error
	16 E-Sort SIMM error
	17 Rotation RAM error
	80 E-Sort board communication trouble (Protocol)
	81 E-Sort board communication trouble (Parity)
	82 E-Sort board communication trouble (Overrun)
	84 E-Sort board communication trouble (Framing)
	88 E-Sort board communication trouble (Time-out)
	E7
04 CCD white level trouble	
05 CCD black level trouble	
F1	06 Shifter motor trouble
F2	04 CRUM data read trouble
F5	02 Copy lamp error
F6	00 FAX board communication trouble
	10 FAX board trouble
	80 FAX board communication trouble (Protocol)
	81 FAX board communication trouble (Parity)
	82 FAX board communication trouble (Overrun)
	84 FAX board communication trouble (Framing)
	88 FAX board communication trouble (Time-out)
F9	00 Printer PWB communication trouble
	10 Printer PWB trouble
	80 Printer PWB communication trouble (Protocol)
	81 Printer PWB communication trouble (Parity)
	82 Printer PWB communication trouble (Overrun)
	84 Printer PWB communication trouble (Framing)
	88 Printer PWB communication trouble (Time-out)
H2	00 Thermistor open detection
H3	00 Heat roller abnormally high temperature
H4	00 Heat roller abnormally low temperature
L1	00 Mirror base feed trouble
L3	00 Mirror base return trouble
	01 Main motor lock
L4	10 Job separator motor abnormality
	10 Polygon motor lock
L6	10 Polygon motor lock
L8	01 Zero cross pulse (FW) trouble
U2	04 EEPROM serial communication error
	11 Counter check sum error
	12 Adjustment value check sum error (EEPROM)
	40 CRUM communication error

Trouble code	Trouble content
U3	29 Mirror base home position error
U9	00 Operation control PWB communication trouble
	80 Operation control PWB communication trouble (Protocol)
	81 Operation control PWB communication trouble (Parity)
	82 Operation control PWB communication trouble (Overrun)
	84 Operation control PWB communication trouble (Framing)
	88 Operation control PWB communication trouble (Time-out)
U95	Operation control PWB connection error
U99	Operation control PWB connection error

## 2. DETAILS OF TROUBLE CODES

Main code	Sub code		Detail of trouble
E1	00	Content	Communication trouble between MCU and E-Sort.
		Detail	Communication setup error, framing, parity, protocol error
		Cause	E-Sort PWB connector disconnection E-Sort PWB MCU PWB harness failure E-Sort Motherboard connector pin breakage. E-Sort PWB ROM defect, data failure
		Check and remedy	Check the connectors and harness of the E-Sort PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the E-Sort PWB.
	10	Content	E-Sort PWB trouble
		Detail	Communication trouble between MCU and E-Sort
		Cause	E-Sort PWB connector disconnection E-Sort PWB MCU PWB harness failure E-Sort Motherboard connector pin breakage. E-Sort PWB ROM defect, data failure
		Check and remedy	Check the connectors and harness of the E-Sort PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the E-Sort PWB.
	11	Content	E-Sort PWB ASIC error
		Detail	E-Sort PWB ASIC abnormality
		Cause	An ASIC abnormality is detected in the E-Sort PWB. Control circuit hung up due to noises ASIC peripheral circuit error
		Check and remedy	Replace the E-Sort PWB. Check grounding of the machine.
12	Content	E-Sort PWB CODEC error	
	Detail	E-Sort PWB CODEC error	
	Cause	A CODEC error is detected in the E-Sort PWB. Control circuit hung up due to noises CODEC peripheral circuit error	
	Check and remedy	Replace the E-Sort PWB. Check grounding of the machine.	
13	Content	E-Sort PWB Flash ROM error	

Main code	Sub code		Detail of trouble
E1	13	Detail	E-Sort PWB Flash ROM abnormality
		Cause	A Flash ROM abnormality is detected in the E-Sort PWB. Control circuit hung up due to noises Flash ROM peripheral circuit error
		Check and remedy	Replace the E-Sort PWB. Rewrite the flash ROM data. Check grounding of the machine.
	14	Content	E-Sort PWB Work RAM error
		Detail	E-Sort PWB Work RAM abnormality
		Cause	A Work RAM abnormality is detected in the E-Sort PWB. Control circuit hung up due to noises RAM peripheral circuit error
		Check and remedy	Replace the E-Sort PWB. Check grounding of the machine.
	15	Content	E-Sort PWB Page Memory error
		Detail	E-Sort PWB Page Memory abnormality
		Cause	A Page Memory abnormality is detected in the E-Sort PWB. Control circuit hung up due to noises Page Memory peripheral circuit error
		Check and remedy	Replace the E-Sort PWB. Check grounding of the machine.
	16	Content	E-Sort PWB SIMM error
		Detail	E-Sort PWB SIMM abnormality
		Cause	A SIMM abnormality is detected in the E-Sort PWB. Control circuit hung up due to noises SIMM peripheral circuit error
		Check and remedy	Replace the E-Sort PWB. Replace the SIMM. Check grounding of the machine.
	17	Content	E-Sort PWB image rotating RAM error
		Detail	E-Sort PWB image rotating RAM abnormality
		Cause	An image rotating RAM abnormality is detected in the E-Sort PWB. Control circuit hung up due to noises Image rotating RAM peripheral circuit error
		Check and remedy	Replace the E-Sort PWB. Check grounding of the machine.
	80	Content	E-Sort PWB communication trouble (protocol)
Detail		Communication trouble between MCU and printer PWB (Protocol error)	
Cause		E-Sort PWB connector disconnection E-Sort PWB MCU PWB harness failure E-Sort Motherboard connector pin breakage. E-Sort PWB ROM defect, data failure	
Check and remedy		Check the connectors and harness of the E-Sort PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the E-Sort PWB.	
81	Content	E-Sort PWB communication trouble (Parity)	
	Detail	Communication trouble between MCU and printer E-Sort (Parity error)	

Main code	Sub code		Detail of trouble
E1	81	Cause	E-Sort PWB connector disconnection E-Sort PWB MCU PWB harness failure E-Sort Motherboard connector pin breakage. E-Sort PWB ROM defect, data failure
		Check and remedy	Check the connectors and harness of the E-Sort PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the E-Sort PWB.
	82	Content	E-Sort PWB communication trouble (Overrun)
		Detail	Communication trouble between MCU and E-Sort PWB (Overrun error)
		Cause	E-Sort PWB connector disconnection E-Sort PWB MCU PWB harness failure E-Sort Motherboard connector pin breakage. E-Sort PWB ROM defect, data failure
		Check and remedy	Check the connectors and harness of the E-Sort PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the E-Sort PWB.
	84	Content	E-Sort PWB communication trouble (Framing)
		Detail	Communication trouble between MCU and E-Sort PWB (Framing error)
		Cause	E-Sort PWB connector disconnection E-Sort PWB MCU PWB harness failure E-Sort Motherboard connector pin breakage. E-Sort PWB ROM defect, data failure
		Check and remedy	Check the connectors and harness of the E-Sort PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the E-Sort PWB.
	88	Content	E-Sort PWB communication trouble (Time-out)
		Detail	Communication trouble between MCU and E-Sort PWB (Time-out error)
Cause		E-Sort PWB connector disconnection E-Sort PWB and MCU PWB harness failure E-Sort Motherboard connector pin breakage. E-Sort PWB ROM defect, data failure	
Check and remedy		Check the connectors and harness of the E-Sort PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the E-Sort PWB.	
E7	03	Content	LSU trouble
		Detail	After the polygon motor becomes active, BD signal (HSYNC) from the LSU is not detected at the specified times (41 ± 10 times within 20msec).
		Cause	LSU connector disconnection or LSU's inside harness disconnection or breakage Polygon motor rotation abnormality Improper positioning of the laser home position sensor in the LSU. Laser power voltage failure Laser emitting diode abnormality MCU PWB abnormality

Main code	Sub code		Detail of trouble	
E7	03	Check and remedy	Improper connection of the LSU connector Check the polygon motor operation with SIM 25-10. Check printing with SIM64-1. Check laser emission of laser emitting diode. Check the LSU unit. Check the MCU PWB.	
		04	Content	CCD white level trouble
			Detail	CCD white reference level which is read during the copy lamp lighting is abnormal.
			Cause	Flat cable installation failure to CCD unit Dirt on the mirror, lens, and reference white plate Copy lamp lighting failure CCD unit installation failure CCD unit abnormality MCU PWB abnormality
			Check and remedy	Check and remedy Clean the mirror, the lens, and the reference white plate. Check the copy lamp (SIM 5-3) ON. Carriage unit position failure Check the sub scanning direction distortion adjustment (F rail height). CCD unit check MCU PWB check
		05	Content	CCD black level trouble
			Detail	CCD black level which is read while the copy lamp is off is abnormal.
			Cause	Flat cable installation failure CCD unit abnormality MCU PWB abnormality
			Check and remedy	Check flat cable installation to the CCD unit. CCD unit check MCU PWB check
	F1	06	Content	Shifter motor trouble
Details			The home position is not detected within 1 sec after shifter motor drive.	
Cause			The shifter home position sensor is defective. The shifter motor is defective. The shifter motor periphery circuit is defective. The condition of the MCU PWB JP4 is wrong. The assembly of the shifter motor unit is improper.	
Check and remedy			Check the shifter operation by means of SIM3-2 and 3. Check the harnesses and connectors. Check whether the shifter unit is properly assembled. Check whether the condition of the MCU PWB JP4 is correct.	
F2	04	Content	CRUM data read trouble	
		Detail	Communication error between CRUM PWB and MCU PWB	
		Cause	CRUM PWB data error MCU PWB error MCU PWB EEPROM error Disconnection between CRUM (toner cartridge) and MCU PWB	

Main code	Sub code		Detail of trouble
F2	04	Check and remedy	Replace the toner cartridge. Replace MCU PWB. Replace MCU PWB EEPROM Check and fix connection between CRUM (toner cartridge) and MCU PWB.
F5	02	Content	Copy lamp error
		Detail	Copy lamp voltage detection error
		Cause	Power unit trouble Copy lamp trouble Inverter trouble MCU PWB trouble
		Check and remedy	Replace the power unit. Check the copy lamp ON with SIM 5-3. Replace the copy lamp. Replace the inverter. Replace the MCU PWB.
F9	00	Content	Communication trouble between MCU and printer PWB (MCU detection)
		Detail	Communication establishment error, framing error, parity error, protocol error
		Cause	Bad connection of printer PWB connector Defective harness between printer PWB and MCU PWB. Motherboard connector pin breakage Printer PWB ROM error, data error
		Check and remedy	Check connector/harness of printer PWB and MCU PWB. Check grounding of the machine. Check printer PWB ROM.
	10	Content	Printer PWB trouble
		Detail	Communication trouble between MCU and printer PWB
		Cause	Bad connection of printer PWB connector Defective harness between printer PWB and MCU PWB. Motherboard connector pin breakage Printer PWB ROM error, data error
		Check and remedy	Check connector/harness of printer PWB and MCU PWB. Check grounding of the machine. Check printer PWB ROM.
80	Content	Printer PWB communication trouble (Protocol)	Printer PWB communication trouble (Protocol)
		Detail	Communication trouble between MCU and printer PWB (Protocol error)
		Cause	Bad connection of printer PWB connector Defective harness between printer PWB and MCU PWB. Motherboard connector pin breakage Printer PWB ROM error, data error
		Check and remedy	Check connector/harness of printer PWB and MCU PWB. Check grounding of the machine. Check printer PWB ROM.
81	Content	Printer PWB communication trouble (Parity)	Printer PWB communication trouble (Parity)
		Details	Communication trouble between MCU and printer PWB (Parity error)
		Cause	Printer PWB connector disconnection Printer PWB MCU PWB harness failure Printer PWB mother board connector pin breakage. Printer PWB ROM defect, data failure

Main code	Sub code		Detail of trouble	
F9	81	Check and remedy	Check the connectors and harness of the printer PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the printer PWB.	
		82	Content	Printer PWB communication trouble (Overrun)
			Details	Communication trouble between MCU and printer PWB (Overrun error)
			Cause	Printer PWB connector disconnection Printer PWB MCU PWB harness failure Printer PWB mother board connector pin breakage. Printer PWB ROM defect, data failure
	Check and remedy	Check the connectors and harness of the printer PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the printer PWB.		
	84	Content	Printer PWB communication trouble (Framing)	
		Details	Communication trouble between MCU and printer PWB (Framing error)	
		Cause	Printer PWB connector disconnection Printer PWB MCU PWB harness failure Printer PWB mother board connector pin breakage. Printer PWB ROM defect, data failure	
		Check and remedy	Check the connectors and harness of the printer PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the printer PWB.	
	88	Content	Printer PWB communication trouble (Time-out)	
		Details	Communication trouble between MCU and printer PWB (Time-out error)	
		Cause	Printer PWB connector disconnection Printer PWB MCU PWB harness failure Printer PWB mother board connector pin breakage. Printer PWB ROM defect, data failure	
		Check and remedy	Check the connectors and harness of the printer PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the printer PWB.	
	H2	00	Content	Thermistor open detection
Detail			Fusing thermistor open	
Cause			Thermistor defect MCU PWB defect Fusing section connector contact failure Power supply failure Fusing unit not installed	
Check and remedy			Check the harness and the connector of the thermistor and the MCU. Clear the self diag display with SIM 14.	
H3	00	Content	Heat roller abnormally high temperature	
		Detail	Fusing temperature of 220 ~ 240°C.	
		Cause	Thermistor defect MCU PWB defect Fusing connector connection failure Power supply failure	

Main code	Sub code		Detail of trouble
H3	00	Check and remedy	Check the heater lamp blinking with SIM 5-2. When the lamp blinks normally: Check the thermistor and the harness. Check the MCU PWB thermistor input circuit. When the lamp lights up instead of blinking: Check the lamp control circuit of the power supply PWB and the MCU PWB. Clear the trouble with SIM 14.
		H4	00
H4	00	Detail	When the temperature does not reach 155°C within 55 sec after turning on the power, or when it falls under 145°C during printing, or when it falls under 100°C during pre-heating.
		Cause	Thermistor failure Heater lamp failure MCU PWB failure Thermostat failure Power supply failure Interlock switch failure
		Check and remedy	Check blinking of the heater lamp with SIM 5-2. When the lamp blinks normally: Check the thermistor and the harness. Check the MCU PWB thermistor input circuit. When the lamp does not light: Check for heater lamp disconnection or thermostat disconnection. Check the interlock switch. Check the power supply PWB and MCU PWB lamp control circuit. Clear the trouble with SIM 14.
		L1	00
L1	00	Detail	The mirror home position (MHPS) does not turn off though the feed operation is completed during mirror initial operation after turning on the power. The mirror home position (MHPS) does not turn off during shading operation. The mirror home position (MHPS) does not turn on when the mirror base is returned for the specified time after copy feed is started and SPF scanning position shift is performed.
		Cause	Mirror unit defect Mirror home position sensor defect MCU PWB defect Scanner wire disconnection
		Check and remedy	Check the scanning operation with SIM 1-1.
L3	00	Content	Mirror base return trouble
		Detail	The mirror home position (MHPS) does not turn on though the mirror base returning is completed during mirror initial operation after turning on the power. The mirror home position does not turn on when the mirror is returned to the home position during shading. The mirror home position (MHPS) does not turn on when the mirror base returning is completed for the specified time (about 6 sec) after copy return start.

Main code	Sub code		Detail of trouble
L3	00	Cause	Mirror unit Mirror home position sensor defect MCU PWB defect Scanner wire disconnection
		Check and remedy	Check the scanning operation with SIM 1-1.
L4	01	Content	Main motor lock
		Detail	The main motor encoder pulse is not detected for 400msec.
		Cause	Main motor defect Harness disconnection between the MCU PWB and the main motor. Control circuit failure
		Check and remedy	Check the main motor operation with SIM 25-1. Check the harness and the connector between the MCU PWB and the main motor.
	10	Content	Job separator motor trouble
		Details	When the home is not detected within 2.5 sec after the job separator tray starts to move upwards.
		Cause	The job separator upper limit detection sensor is defective. The job separator motor is defective. The job separator motor periphery circuit is defective. The condition of the MCU PWB JP5 is wrong.
		Check and countermeasure	Check the job separator operation by means of SIM3-2 and 4. Check the harnesses and connectors. Check whether the condition of the MCU PWB JP5 is correct.
L6	10	Content	Polygon motor lock
		Detail	The lock signal (the specified rotation speed signal) is not supplied within the specified time (about 6 sec) after starting the polygon motor rotation.
		Cause	LSU connector disconnection or harness disconnection in the LSU.
		Check and remedy	Check the operation of the polygon motor with SIM 25-10. Check the harness and the connector connection. LSU replacement
L8	01	Content	Zero cross pulse (FW) trouble
		Detail	Zero cross pulse width is shifted by 55Hz $\pm$ 10% or more.
		Cause	MCU PWB defect Power supply unit breakdown
		Check and remedy	Check the harness and the connector. MCU PWB replacement Power supply unit replacement
U2	04	Content	EEPROM serial communication error
		Detail	Error in communication with EEPROM
		Cause	EEPROM failure Installation of uninitialized EEPROM MCU PWB EEPROM access circuit failure
		Check and remedy	Check that the EEPROM is properly set. To prevent against loss of counter/adjustment values, record the values with simulation. U2 trouble cancel with SIM 16 MCU PWB replacement

Main code	Sub code		Detail of trouble
U2	11	Content	Counter check sum error
		Detail	Counter check sum value stored in the EEPROM is abnormal.
		Cause	EEPROM failure Control circuit hung up by noises MCU PWB EEPROM access circuit defect
		Check and remedy	Check that the EEPROM is properly set. To prevent against loss of counter/adjustment values, record the values with simulation. U2 trouble cancel with SIM 16 MCU PWB replacement
	12	Content	Adjustment value check sum error (EEPROM)
		Detail	Adjustment value data area check sum error
		Cause	EEPROM failure Control circuit hung up by noises MCU PWB EEPROM access circuit failure
		Check and remedy	Check that the EEPROM is properly set. To prevent against loss of counter/adjustment values, record the values with simulation. U2 trouble cancel with SIM 16 MCU PWB replacement
	40	Content	CRUM communication error
		Detail	Toner cartridge CRUM data read error
		Cause	A toner cartridge of a different destination is installed. EEPROM trouble Check the destination setup. Toner cartridge CRUM PWB trouble MCU PWB trouble CRUM connector disconnection
		Check and remedy	Install a specified toner cartridge. Check the SIM 26-6 setup. Replace the EEPROM. Replace the toner cartridge. Replace the MCU PWB. Check connection of the CRUM connector. Execute SIM 16.
U3	29	Content	Mirror base home position error
		Detail	Home position is not detected when starting mirror base shift.
		Cause	Mirror unit defect Mirror home position sensor defect MCU PWB defect Scanner wire disconnection
		Check and remedy	Check the scanning operation with SIM 1-1.
U9	00	Content	Communication trouble between MCU and OPE (OPE detection)
		Detail	Communication setup error, framing, parity, protocol error
		Cause	Operation control PWB connector disconnection Operation control PWB MCU PWB harness failure
		Check and remedy	Check the connectors and harness of the operation control PWB and the MCU PWB. Check grounding of the machine. Check the ROM of the operation control PWB.

Main code	Sub code		Detail of trouble
U9	80	Content	Operation control PWB communication trouble (Protocol)
		Detail	Communication trouble between MCU and the operation control PWB (Protocol error)
		Cause	Operation control PWB connector disconnection Operation control PWB MCU PWB harness failure
		Check and remedy	Check the connectors and harness of the operation control PWB and the MCU PWB. Check grounding of the machine.
	81	Content	Operation control PWB communication trouble (Parity)
		Detail	Communication trouble between MCU and the operation control PWB (Parity error)
		Cause	Operation control PWB connector disconnection Operation control PWB MCU PWB harness failure
		Check and remedy	Check the connectors and harness of the operation control PWB and the MCU PWB. Check grounding of the machine.
	82	Content	Operation control PWB communication trouble (Overrun)
		Detail	Communication trouble between MCU and the operation control PWB (Overrun error)
		Cause	Operation control PWB connector disconnection Operation control PWB MCU PWB harness failure
		Check and remedy	Check the connectors and harness of the operation control PWB and the MCU PWB. Check grounding of the machine.
	84	Content	Operation control PWB communication trouble (Framing)
		Detail	Communication trouble between MCU and the operation control PWB (Framing error)
		Cause	Operation control PWB connector disconnection Operation control PWB MCU PWB harness failure
		Check and remedy	Check the connectors and harness of the operation control PWB and the MCU PWB. Check grounding of the machine.
88	Content	Operation control PWB communication trouble (Time-out)	
	Detail	Communication trouble between MCU and the operation PWB (Time-out error)	
	Cause	Operation control PWB connector disconnection Operation control PWB MCU PWB harness failure	
	Check and remedy	Check the connectors and harness of the operation control PWB and the MCU PWB. Check grounding of the machine.	

Main code	Sub code		Detail of trouble	
U95		Content	Operation control PWB communication error	
		Detail	Communication error between the operation control PWB and the MCU PWB (Detected by the OPE-PWB)	
		Cause	Disconnection or reverse connection of the flat cable between the Operation control PWB and the MCU PWB. Operation control PWB trouble MCU PWB trouble Connector trouble of the operation control PWB and the MCU PWB	
		Check and remedy	Check insertion of or replace the flat cable between the operation control PWB and the MCU PWB. Replace the operation control PWB. Replace the MCU PWB. Check connection of the connector of the operation control PWB and the MCU PWB.	
	U99		Content	Operation control PWB communication error
			Detail	Communication error between the operation control PWB and the MCU PWB (Detected by the OPE-PWB)
		Cause	Disconnection or reverse connection of the flat cable between the Operation control PWB and the MCU PWB. Operation control PWB trouble MCU PWB trouble Connector trouble of the operation control PWB and the MCU PWB	
			Check and remedy	Check insertion of or replace the flat cable between the operation control PWB and the MCU PWB. Replace the operation control PWB. Replace the MCU PWB. Check connection of the connector of the operation control PWB and the MCU PWB.

# [11] DISASSEMBLY AND ASSEMBLY

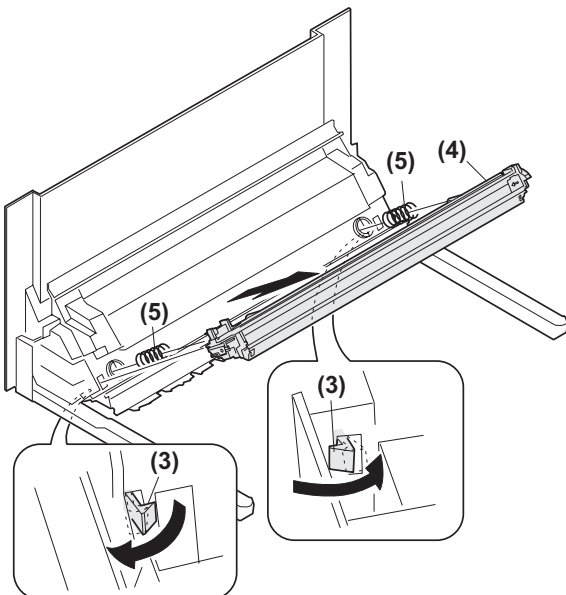
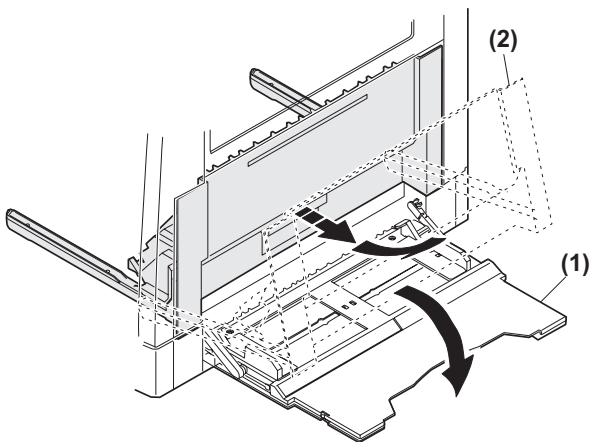
WARNING: Before performing the disassembly procedure, be sure to remove the power cord to prevent against an electric shock.

No.	Item
1	High voltage section/Duplex transport section
2	Optical section
3	Fusing section
4	Paper exit section
5	MCU
6	Optical frame unit
7	LSU
8	Tray paper feed section/Paper transport section
9	Manual multi paper feed section
10	Power section
11	SPF section <AL-1622 only>

## 1. HIGH VOLTAGE SECTION/DUPLEX TRANSPORT SECTION

No.	Content
A	Transfer charger unit
B	Charger wire

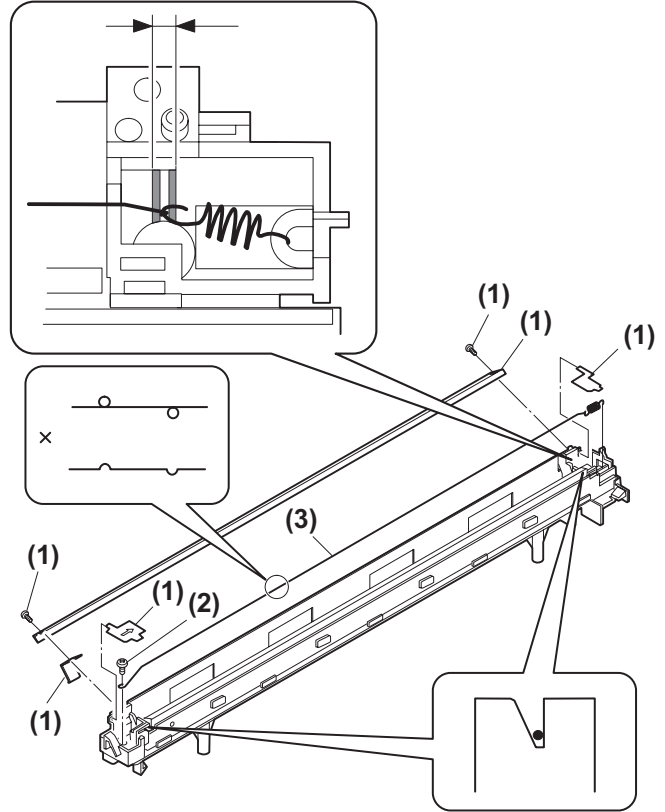
### A. Transfer charger unit



### B. Charger wire

Installation: The spring tip must be between two reference ribs.

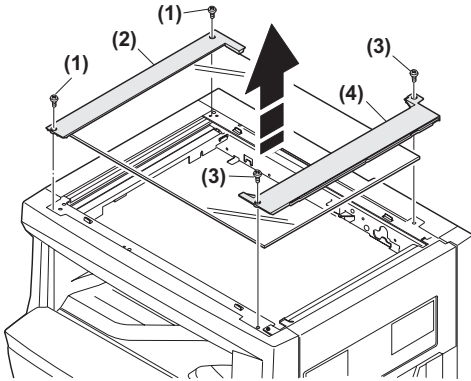
- The charger wire must be free from twist or bending.
- Be sure to put the charger wire in the V groove.



## 2. OPTICAL SECTION

No.	Content
A	Table glass
B	Copy lamp unit
C	Copy lamp
D	Lens unit

### A. Table glass

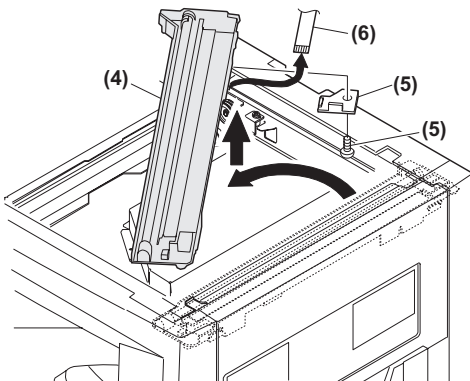
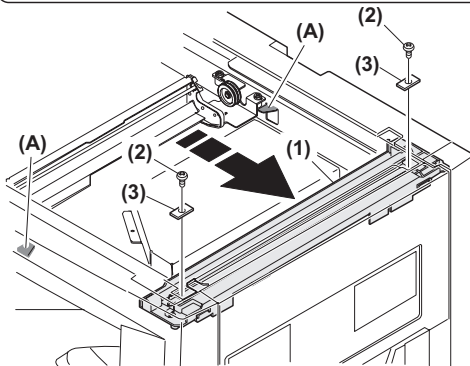
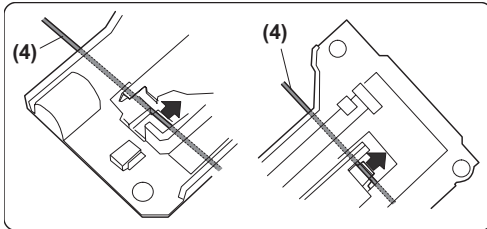


### B. Copy lamp unit

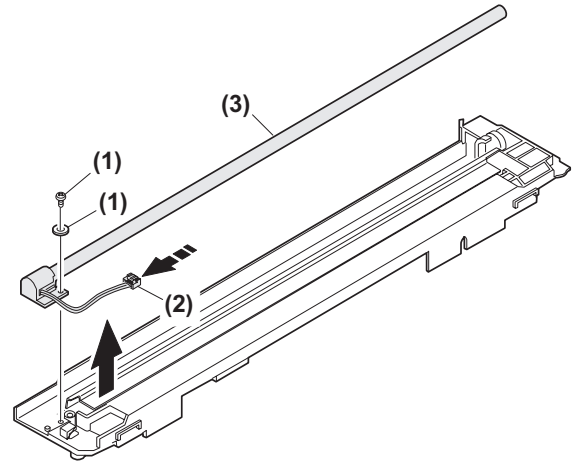
Disassembly: Be sure to put No. 2/3 mirror unit to the positioning plate (A).

Assembly: Put the notched surface of wire holder (3) downward, tighten temporarily, and install.

Adjustment: Main scanning direction distortion balance adjustment

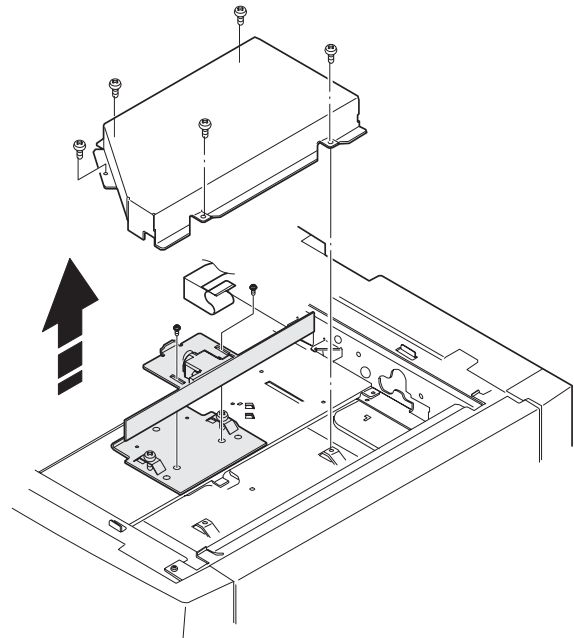


### C. Copy lamp



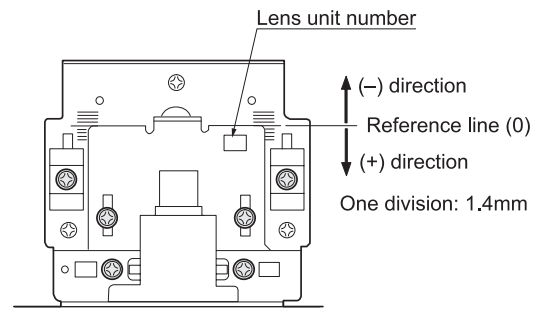
### D. Lens unit

Note: Do not remove screws which are not indicated in the figure. If the height of the base plate is changed, it cannot be adjusted in the market.



### Lens unit attachment reference

Attach the lens unit so that the lens unit number on the lens adjustment plate is aligned with the scribe line on the base plate.



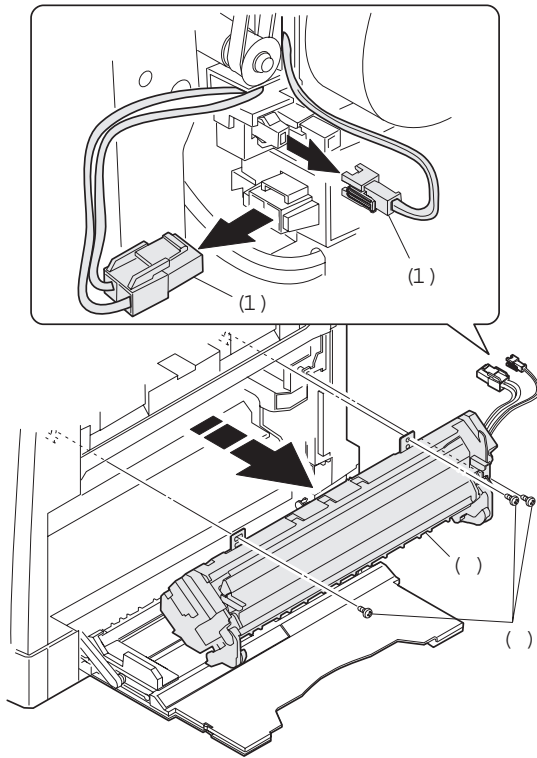
Example: Lens unit number -2.8 Attach the lens unit at 2 scales in the paper exit direction from the reference line.

Note: Never touch the other screws than the unit attachment screw. The lens unit is supplied only in a whole unit.

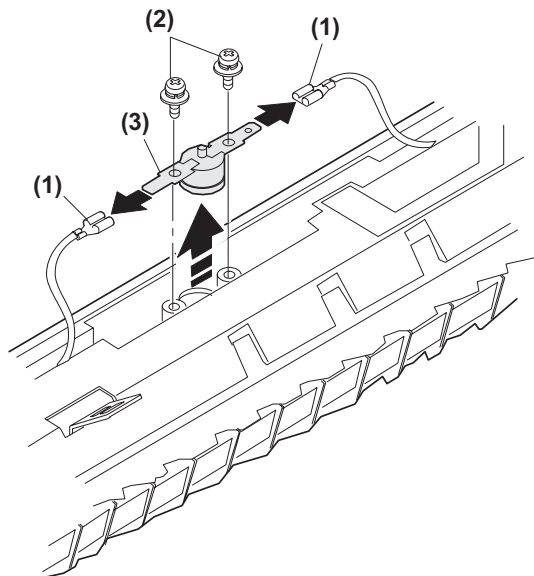
### 3. FUSING SECTION

No.	Contents
A	Fusing unit
B	Thermostat
C	Thermistor
D	Heater lamp
E	Upper heat roller
F	Separation pawl
G	Lower heat roller

#### A. Fusing unit removal

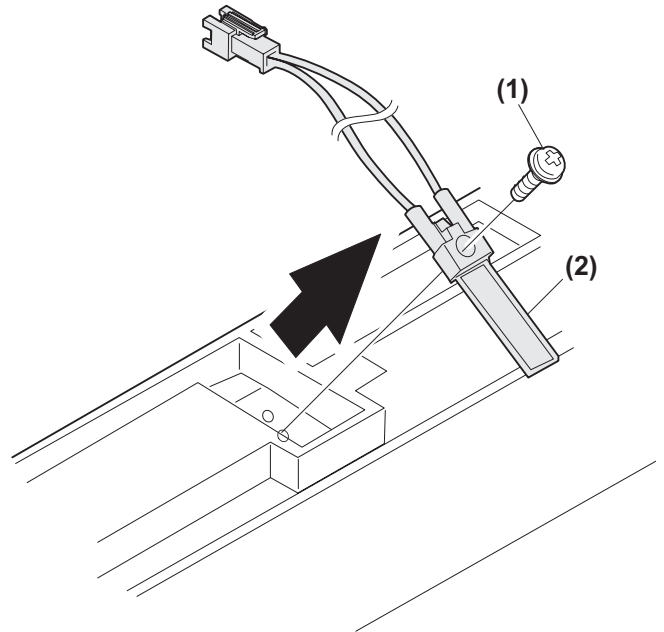


#### B. Thermostat



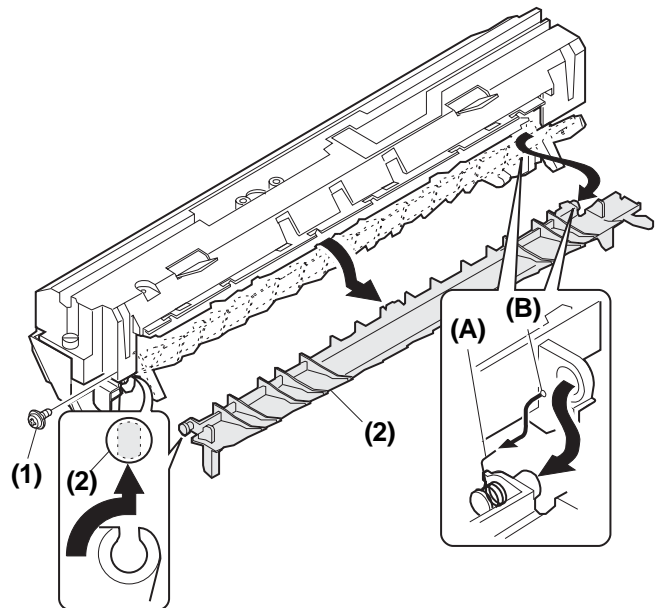
#### C. Thermistor

Installation: Check that the thermistor is in contact with the upper heat roller.



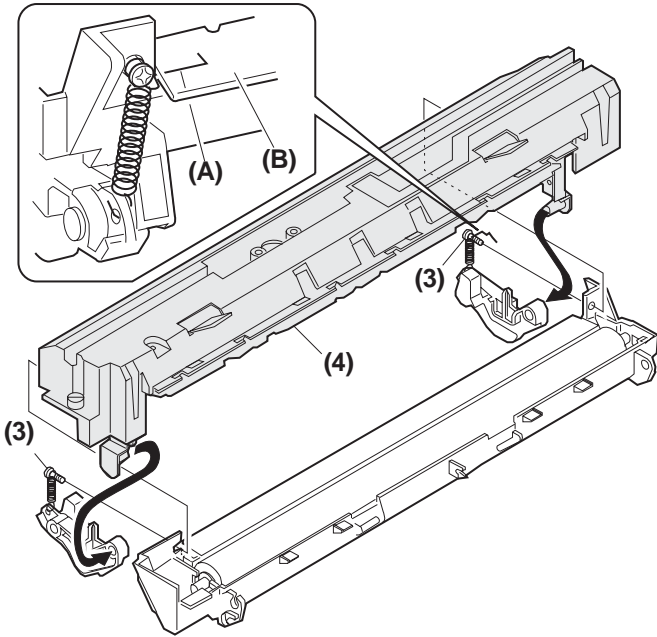
#### D. Heater lamp

Assembly: Insert the spring (A) into the hole (B) in the fusing frame.

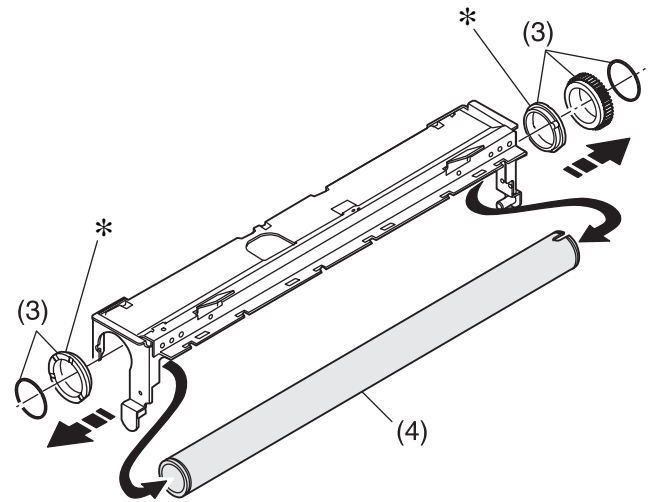
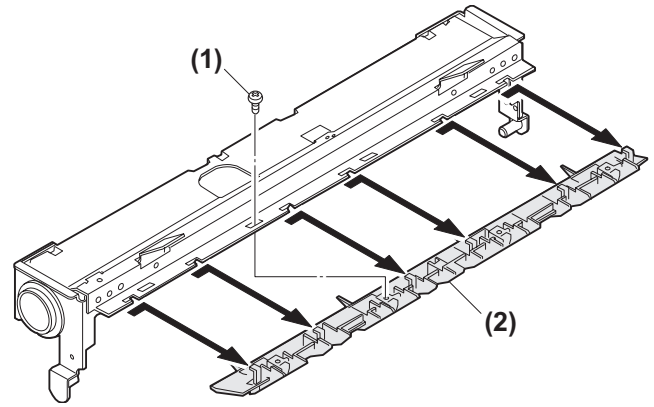


Assembly: Put the paper guide earth spring (A) under the paper guide (B) before fusing.

## E. Upper heat roller

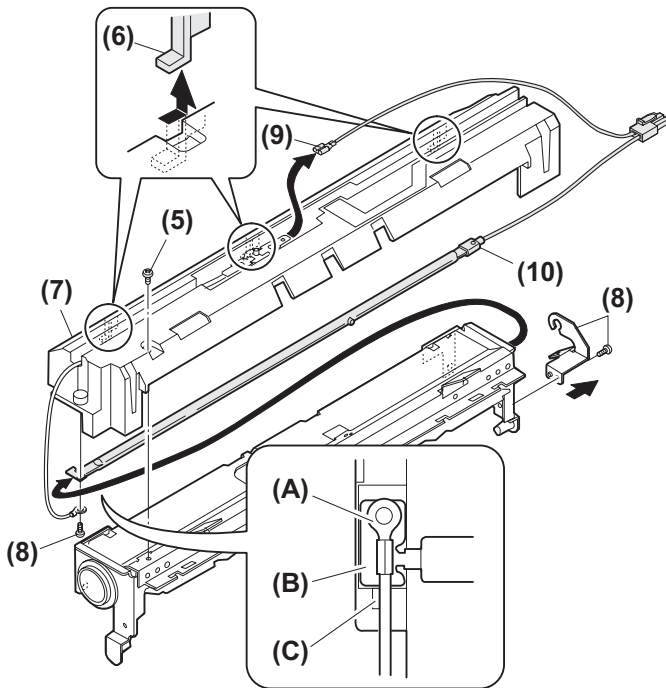


Disassembly: There are three pawls on the fusing cover. Remove the screws and slide the fusing cover to the right to remove. The heater lamp is fixed on the fusing cover with a screw. Slide the fusing cover to the front and remove the screw, then remove the heater lamp.

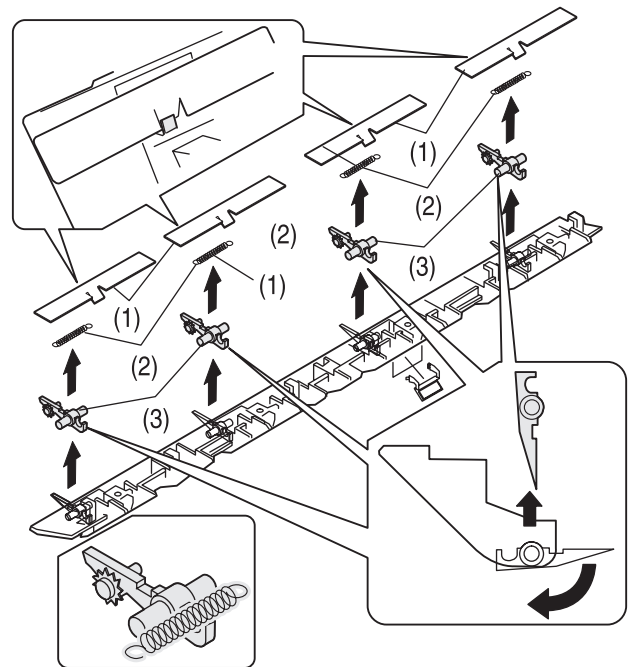


\*Apply heat-resistant grease (UKOG-0235FCZZ).

## F. Separation pawl

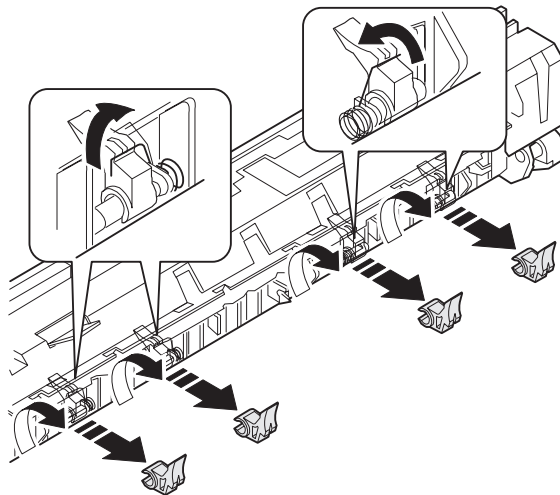
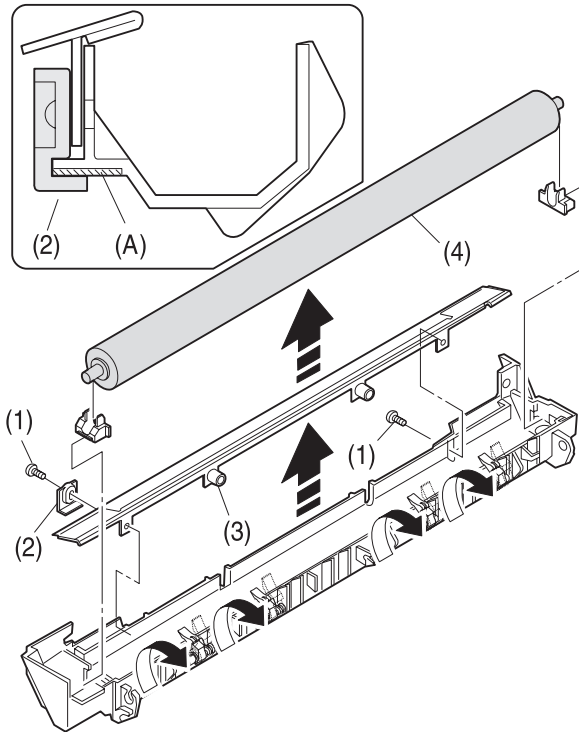


Assembly: Put the fusing harness (A) on the heater lamp (B) as shown in the figure and fix them together. Place the fusing harness inside the rib (C).



### G. Lower heat roller

Assembly: When installing the paper guide (3) before fusing, tighten the paper guide fixing plate so that the paper guide fixing plate (2) is in contact with the frame bottom section (A) under fusing.

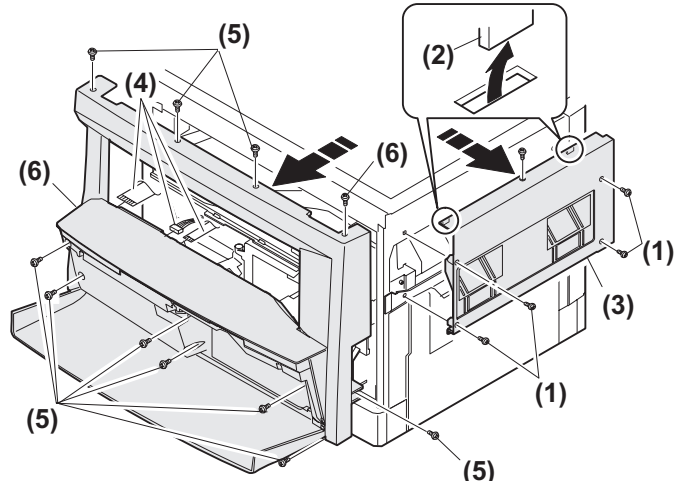


\*Apply heat-resistive grease (UKOG-0235FCZZ).

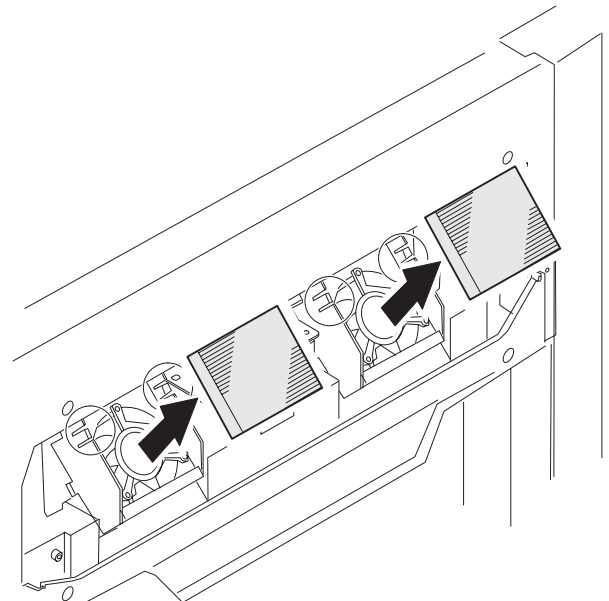
### 4. PAPER EXIT SECTION

No.	Content
A	Front cabinet unit/Right cabinet unit
B	Ozone filter
C	Paper exit unit
D	Paper exit roller

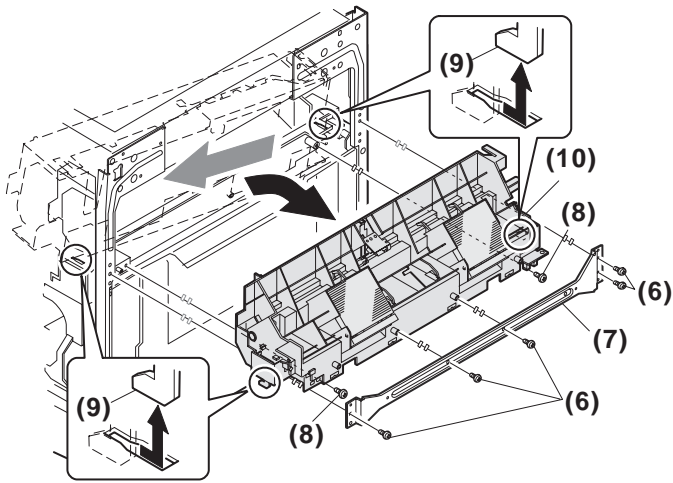
#### A. Front cabinet unit, right cabinet disassembly



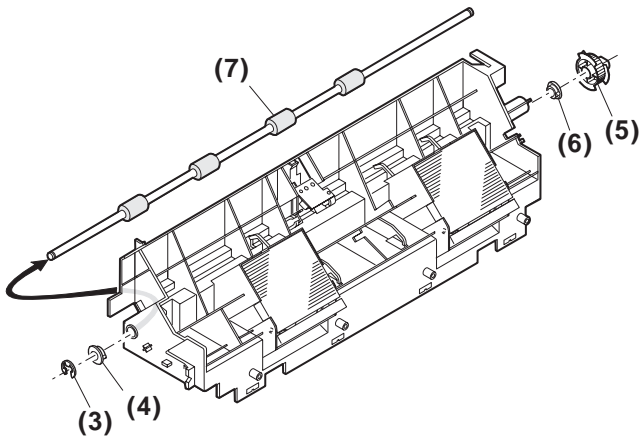
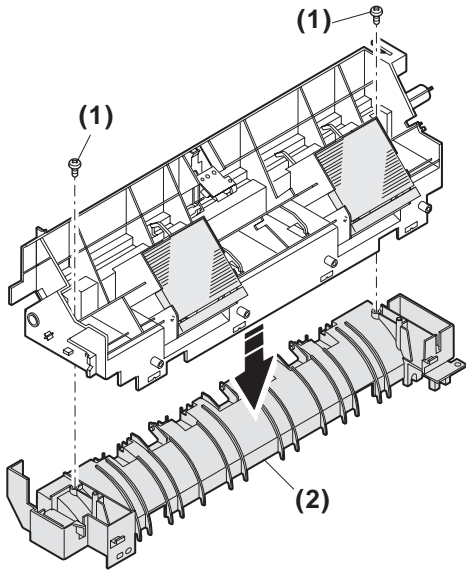
#### B. Ozone filter



### C. Paper exit unit



### D. Paper exit roller



### 5. MCU

No.	Content
A	MCU

#### A. MCU disassembly

Note: When replacing the MCU PWB, be sure to replace the EEPROM of the MCU PWB to be replaced.

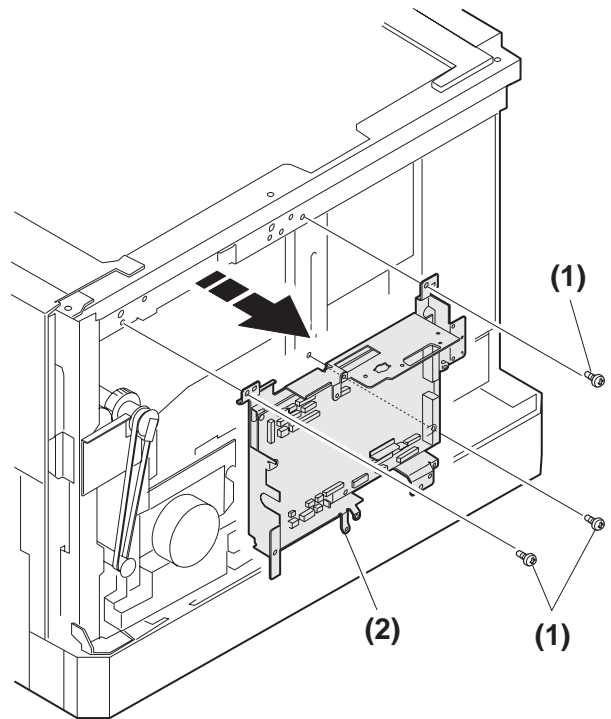
When replacing the MCU PWB, be sure to restore the original jumper conditions.

#### <Reference: Factory setup>

	JP1	JP2	JP3	JP4	JP5	JP6	JP7	JP8
AL-1611/1622	×	○	○	○	○	○	○	○

× : Cut, JP

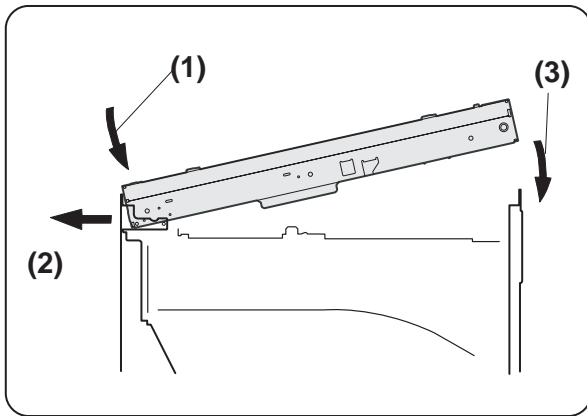
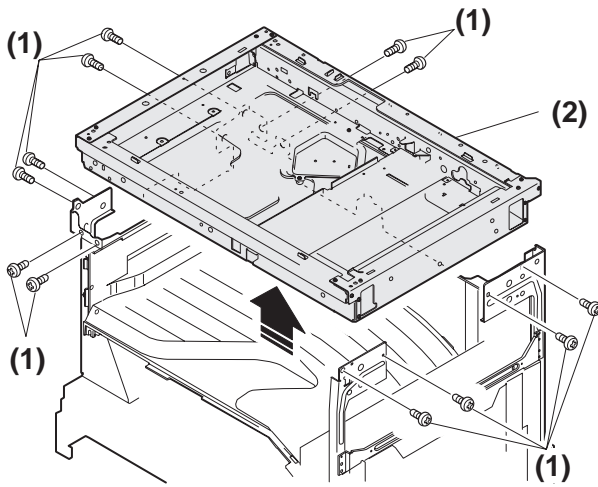
○ : Don't cut JP



## 6. OPTICAL FRAME UNIT

No.	Content
A	Optical frame unit

### A. Optical frame unit

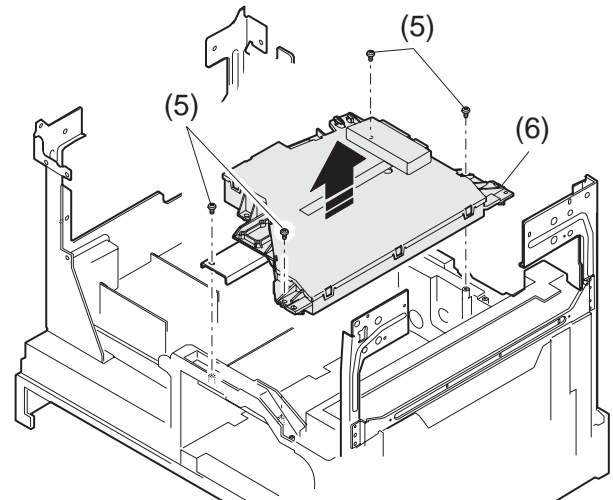
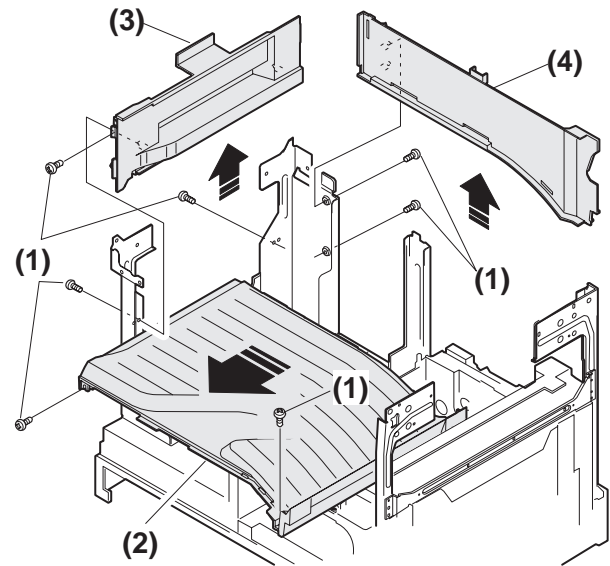


Installation: Install the optical unit in the sequence shown above.

## 7. LSU

No.	Content
A	LSU unit

### A. LSU unit



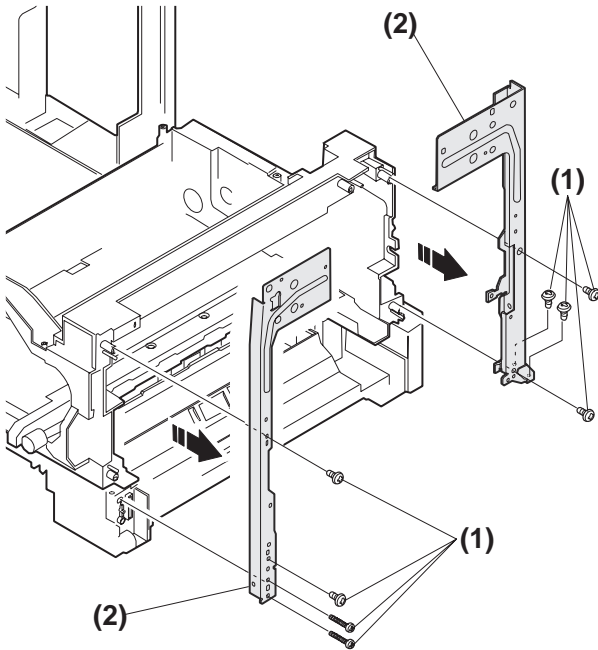
Note: Do not disassemble the LSU.

- Adjustment:
- Image lead edge position adjustment
  - Image left edge position adjustment
  - Paper off-center adjustment

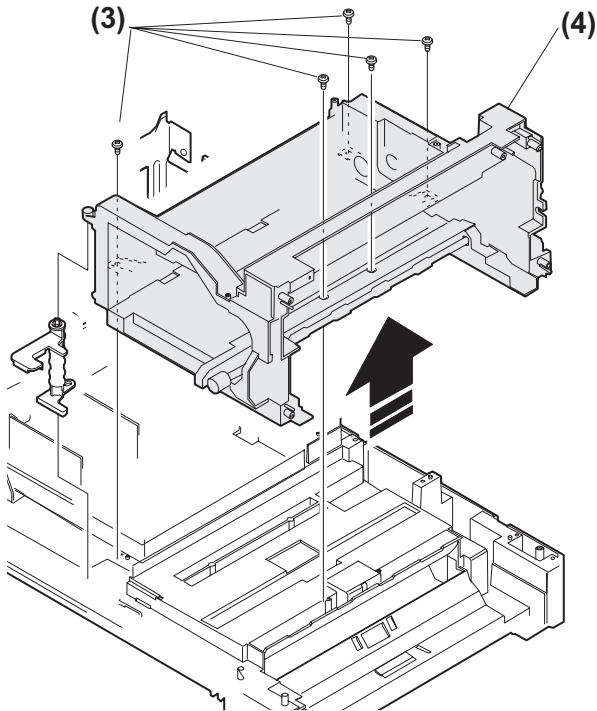
## 8. TRAY PAPER FEED SECTION/PAPER TRANSPORT SECTION

No.	Content
A	Interface frame unit
B	Drive unit
C	Solenoid (paper feed solenoid, resist roller solenoid)
D	Resist roller clutch, Resist roller
E	Paper feed clutch/Paper feed roller (Semi-circular roller)

### A. Intermittent frame unit

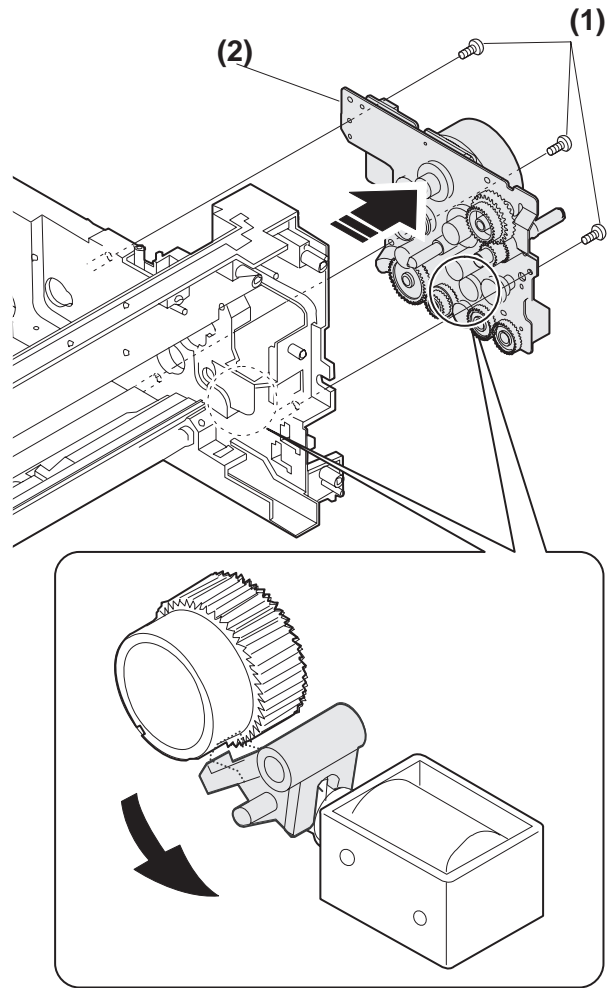


Assembly: Do not miss the door lock pawl.

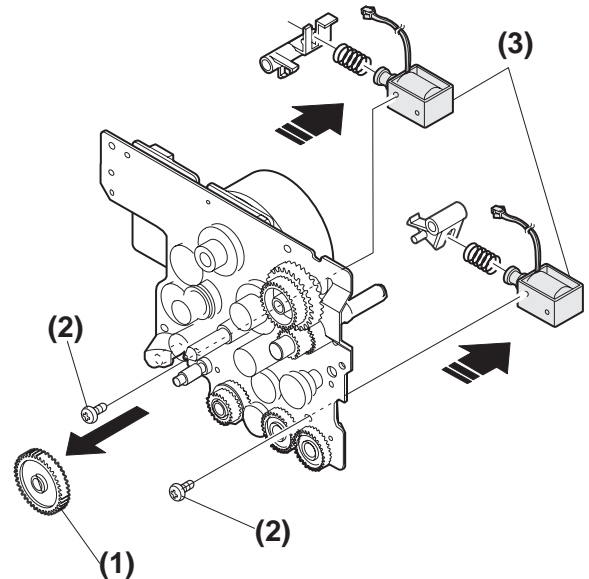


### B. Drive unit

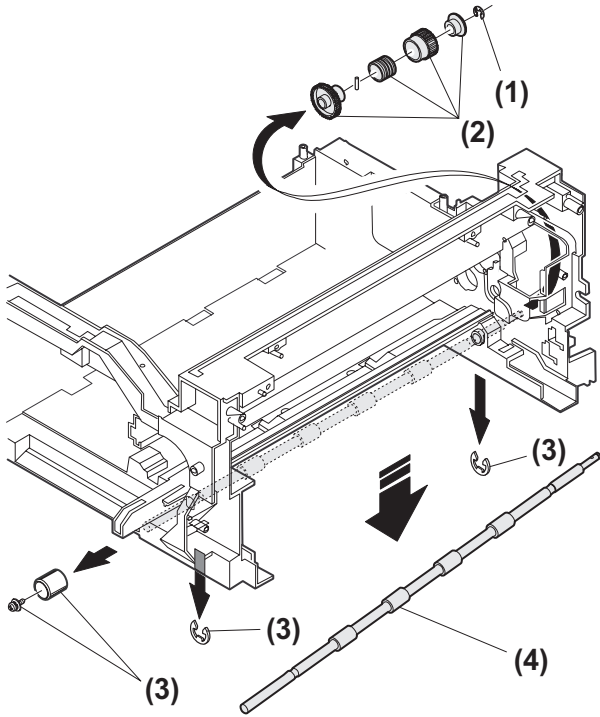
Assembly: Move down the clutch pawl as shown below, and avoid the clutch and install.



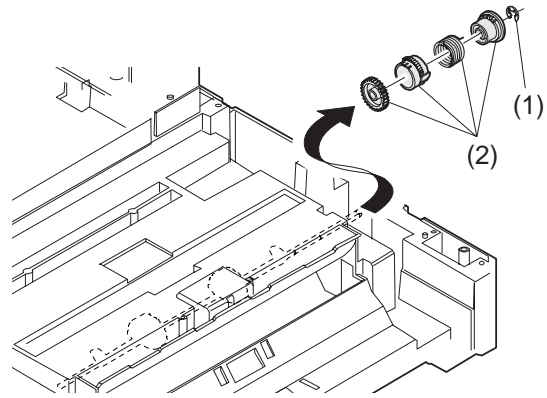
### C. Solenoid (paper feed solenoid, resist roller solenoid)



### D. Resist roller clutch/Resist roller

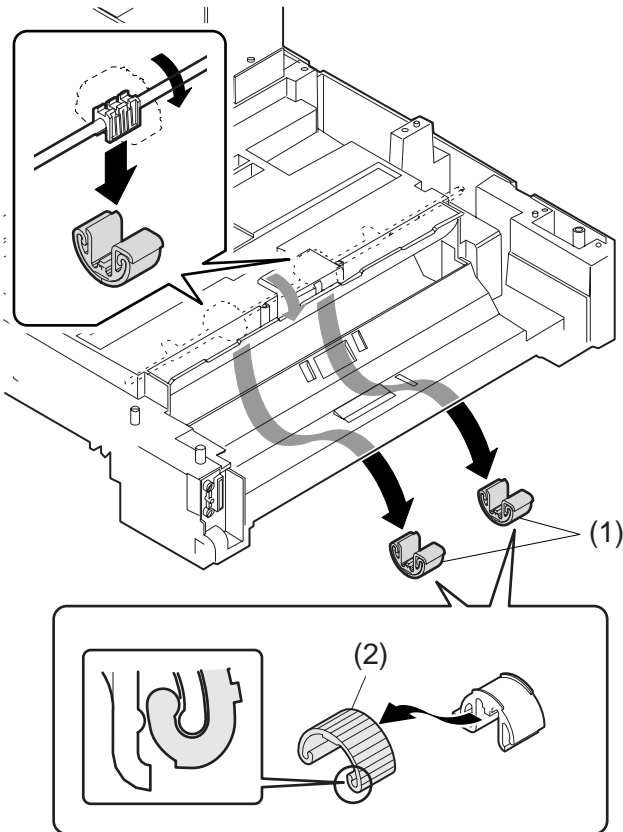


### F. Paper feed clutch



### E. Paper feed roller (Semi-circular roller)

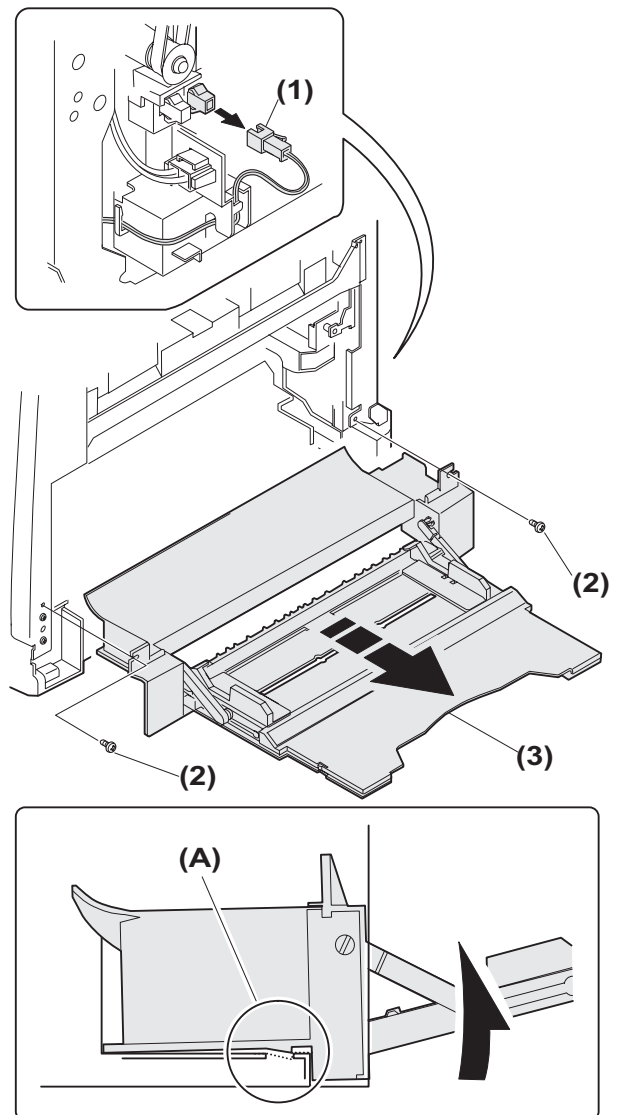
Use SIM6-10 to rotate the paper feed roller reversely, and remove the roller.



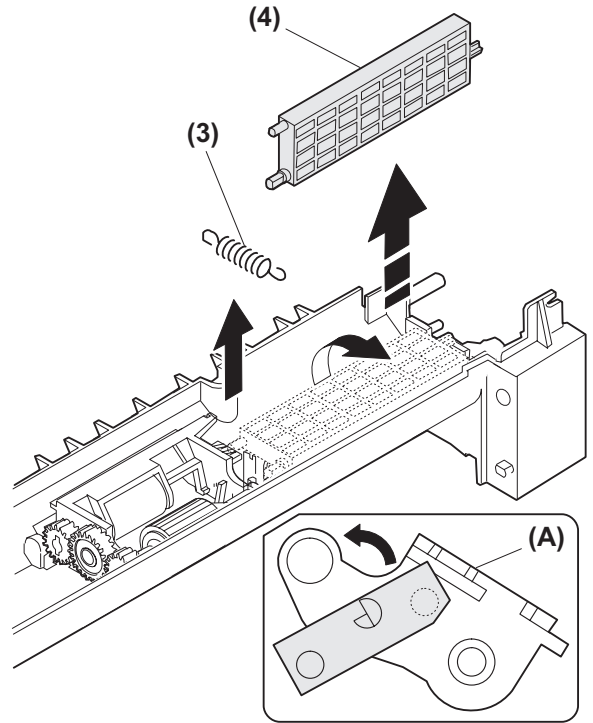
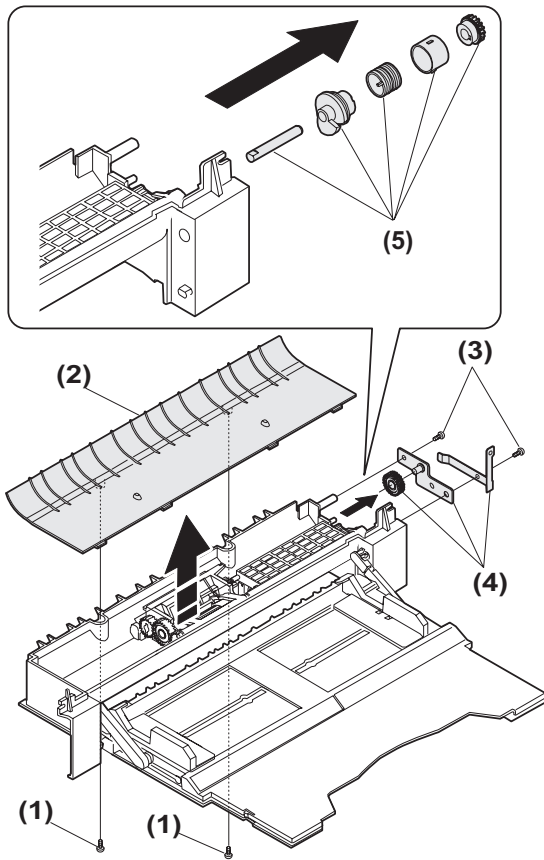
## 9. MANUAL MULTI PAPER FEED SECTION

No.	Content
A	Manual multi paper feed section
B	Manual transport clutch
C	Manual paper feed clutch
D	Manual transport roller/Manual paper feed roller
E	Multi feed solenoid

### A. Manual multi paper feed



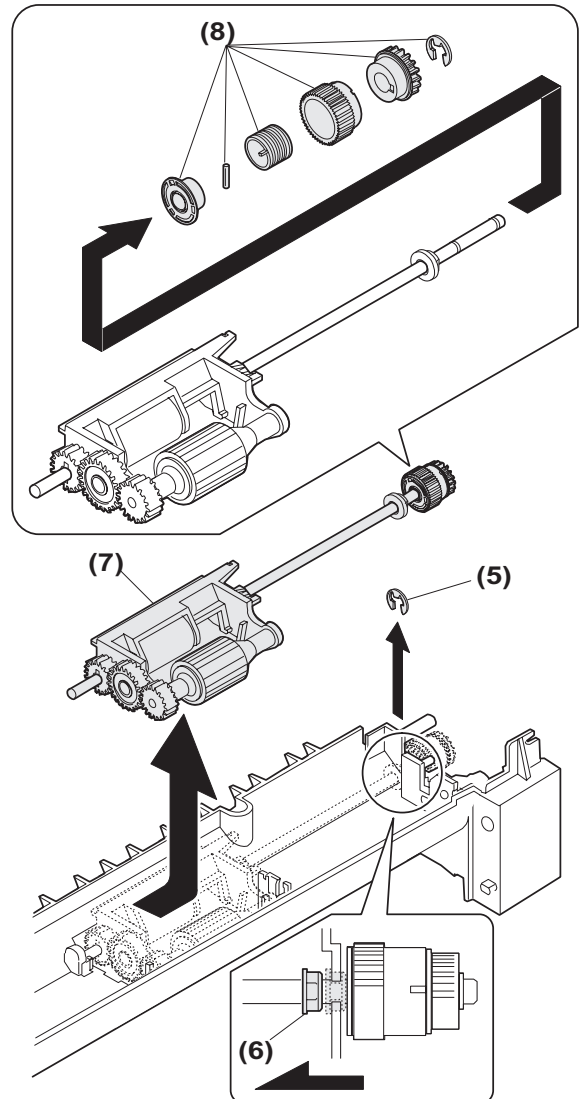
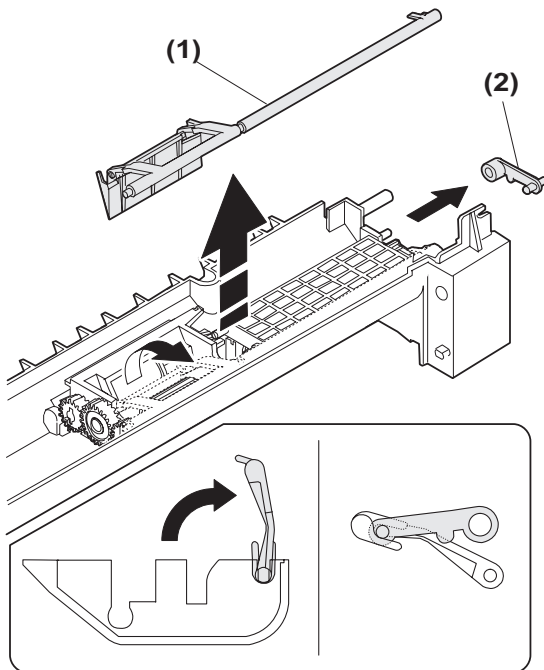
## B. Manual transport clutch



## C. Manual paper feed clutch

Disassembly: Set up the shutter arm (1) then remove it.

Assembly: Install so that the boss section of the fulcrum arm (2) comes between ribs.

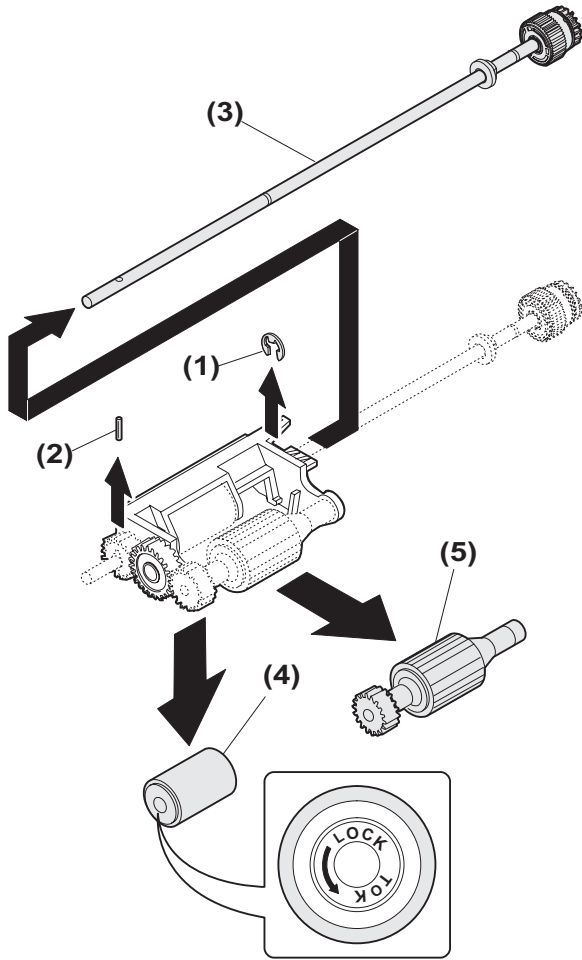


Disassembly: Set up the cam transmission arm (2), and remove it.

Assembly: Install so that the cam transmission arm (2) is under the roller arm (A).

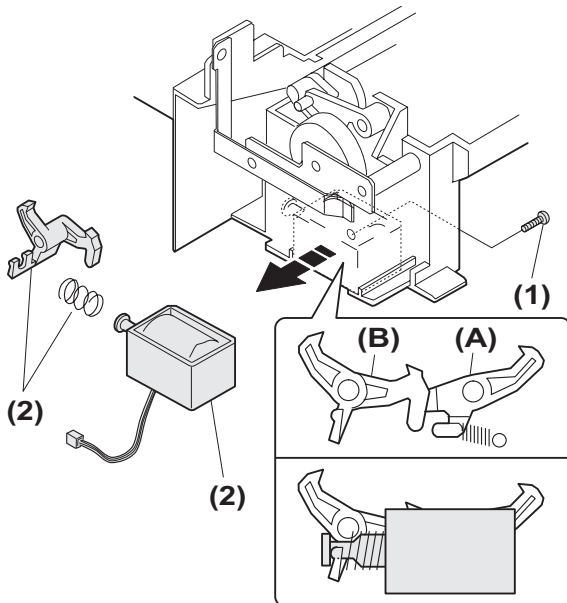
### D. Manual transport roller/Manual paper feed roller

Installation: Be careful of the installing direction of the manual transport roller (4).



### E. Multi feed solenoid

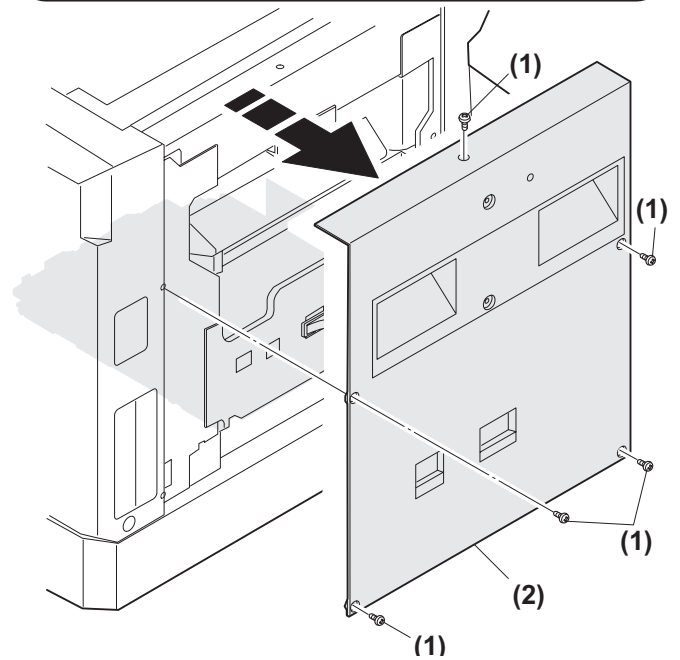
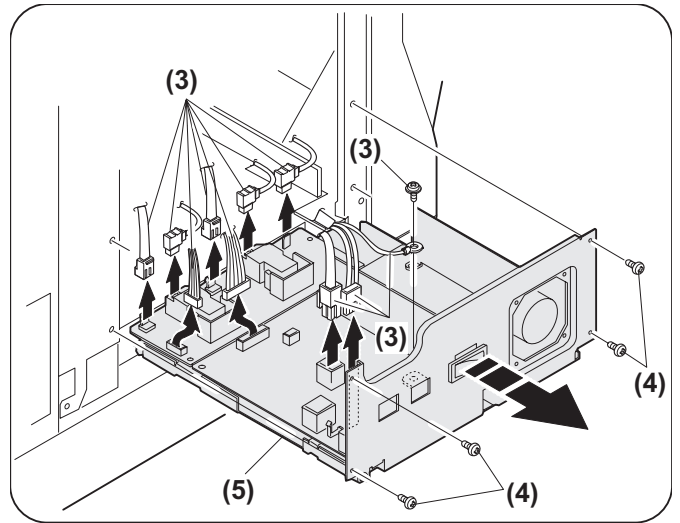
Assembly: Install so that the latches (A) and (B) move smoothly.



## 10. POWER SECTION

No.	Content
A	Power unit

### A. Power unit

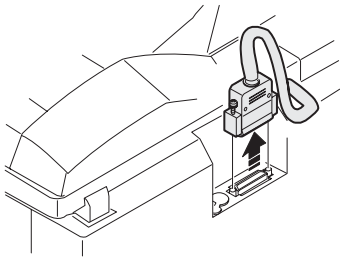


# 11. SPF SECTION <AL-1622 ONLY>

## A. Remove the SPF

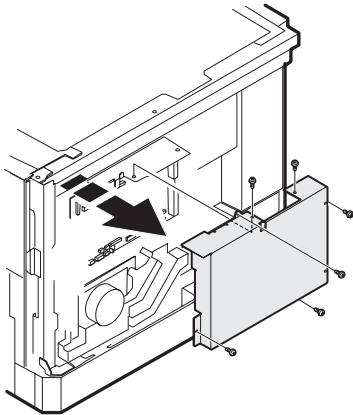
### 1) Remove the SPF connector.

Connect the interface harness extended from the SPF, and fix with the hand screws.



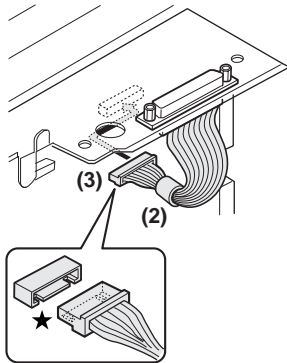
### 2) Remove the PWB shield plate.

Remove the six screws.



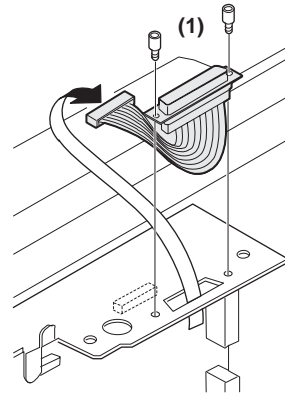
### 3) Remove the SPF harness and the ring core (included together with the unit).

Pass the SPF harness through the ring core (2), and connect it to the main PWB connector (CN11) inside the copier. (3)



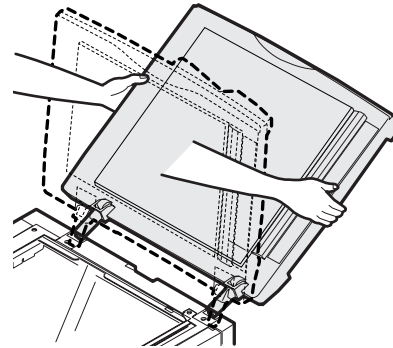
★ Be careful about the direction of the connector.

Pass the SPF harness through the plate hole from the above and fix it to the plate with the supplied two hex cap screws. (1)



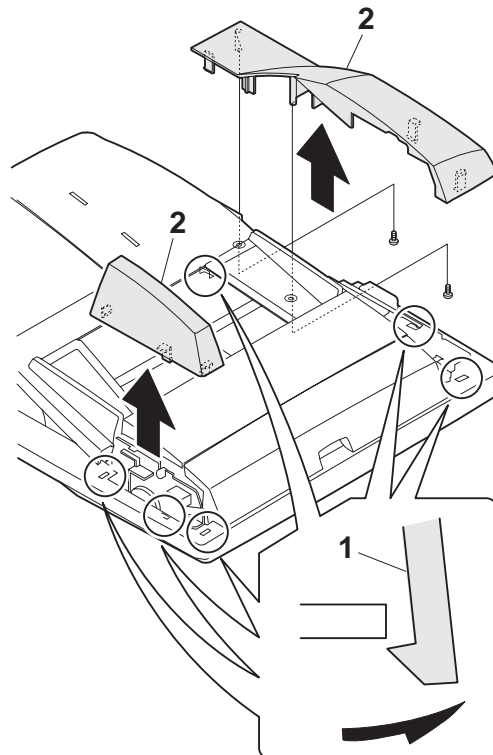
### 4) Remove the SPF to copier.

Tilt the SPF backward and insert into the hinge guide.



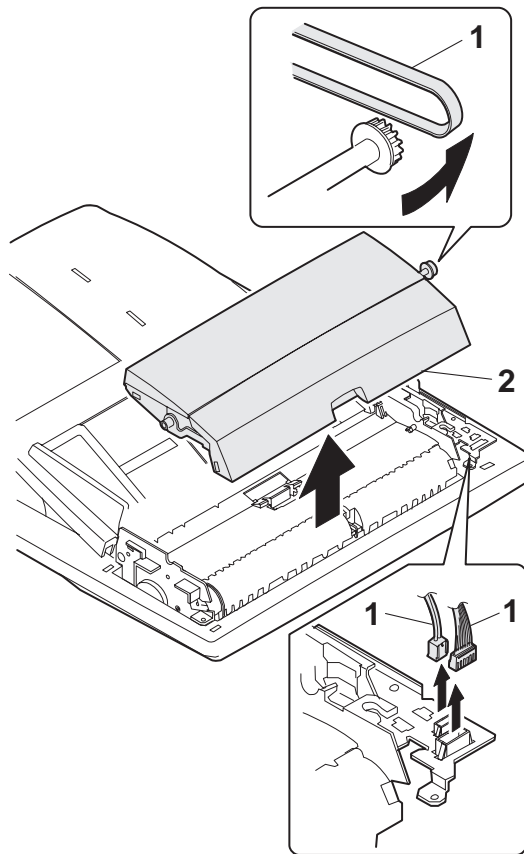
## B. External fitting section

Note: Remove the pawl in the arrow direction.

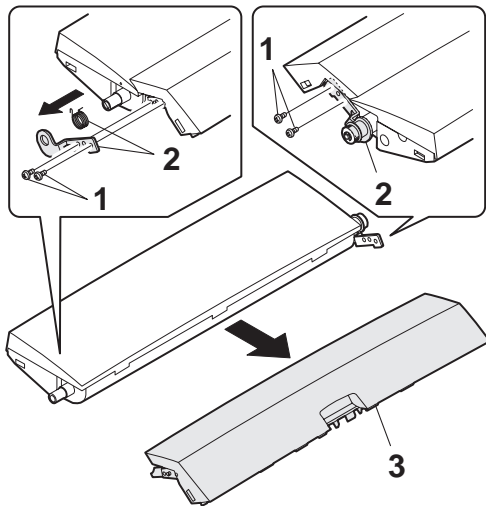


## C. Paper feed unit section

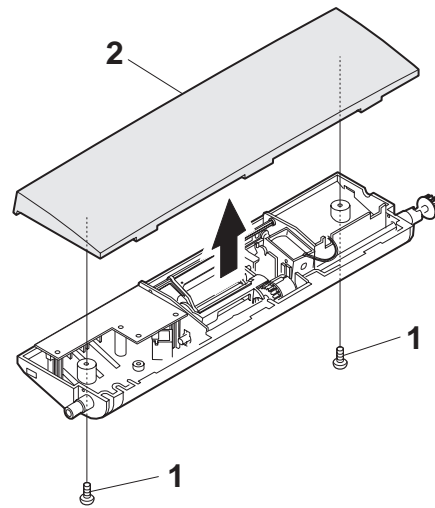
### 1) Paper feed unit



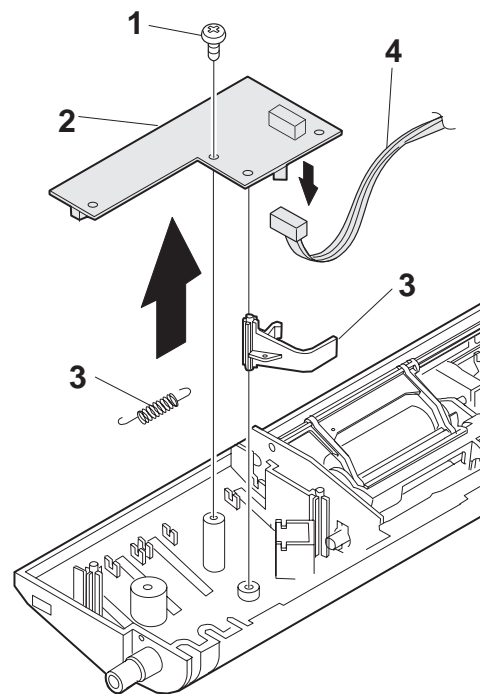
### 2) Document transport section cover



### 3) Document feed section cover

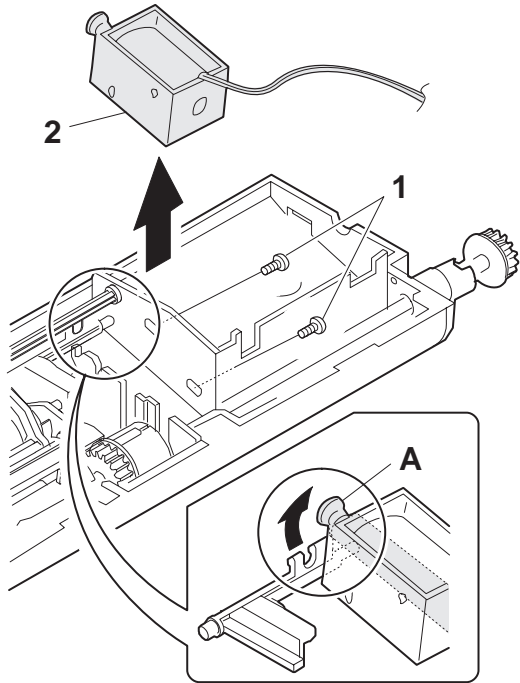


### 4) Sensor PWB



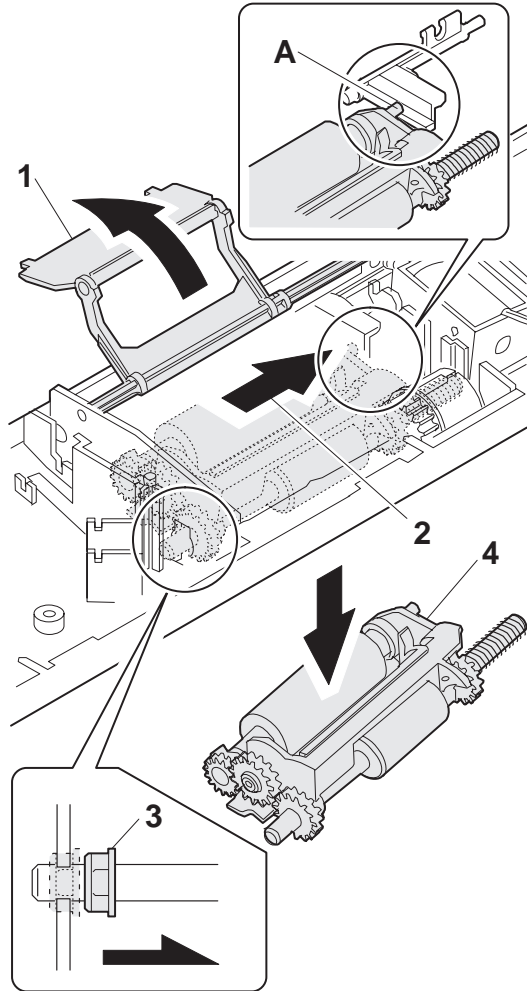
**5) Pickup solenoid**

Note: Remove section A of the pickup solenoid from the solenoid arm groove.

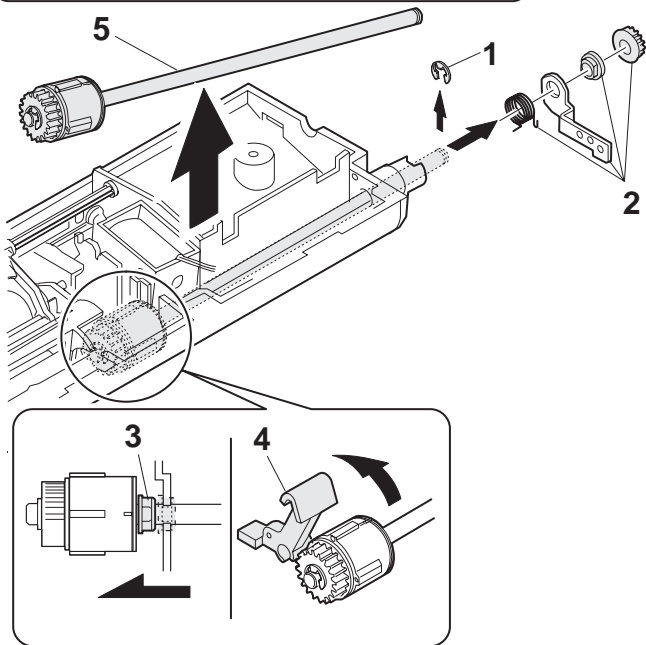
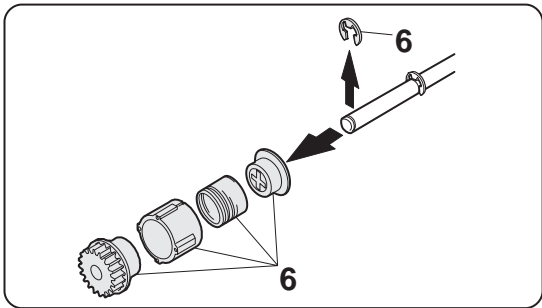


**7) Pickup roller ass'y**

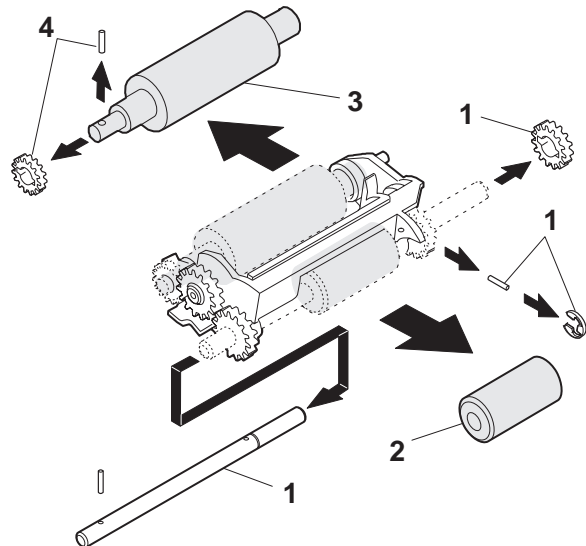
Note: When setting the pickup roller ass'y 4, check that rib A is on the solenoid arm rib.



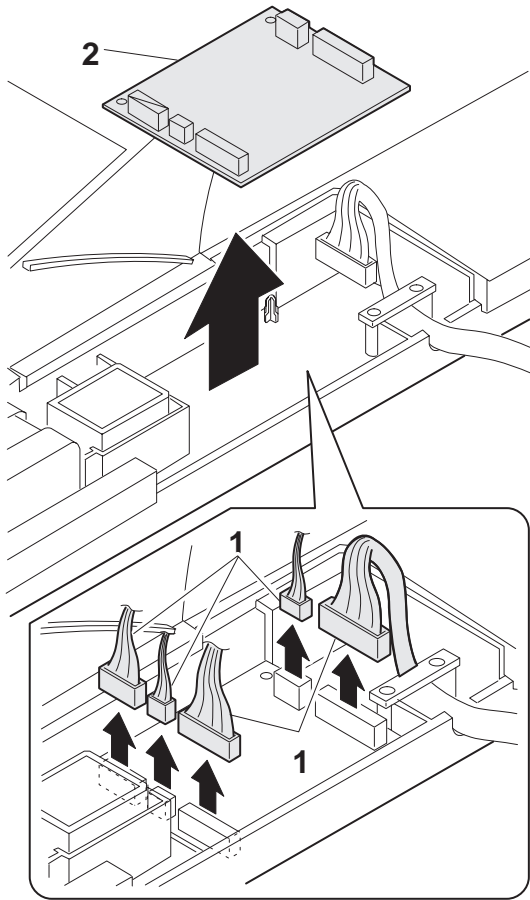
**6) Clutch gear ass'y**



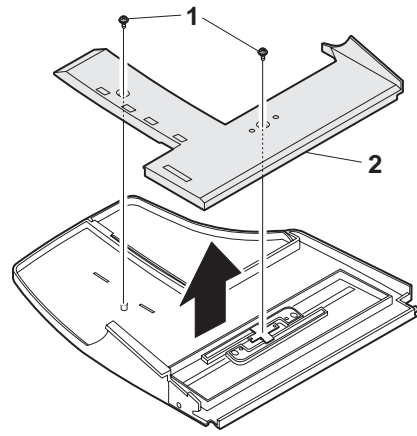
**8) Pickup roller, paper feed roller**



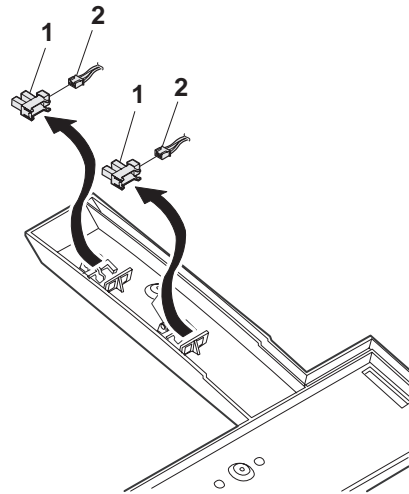
## D. Interface PWB



## 2) Rack cover

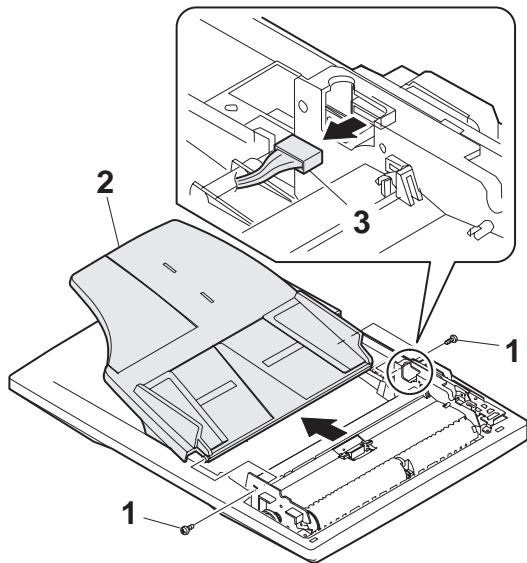


## 3) Document length detection SW



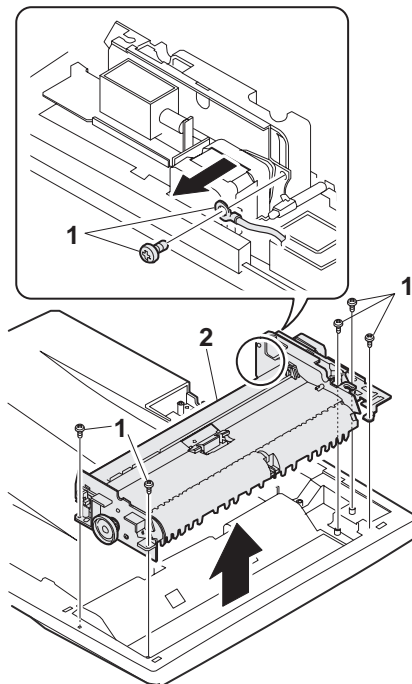
## E. Document tray section

### 1) Document tray

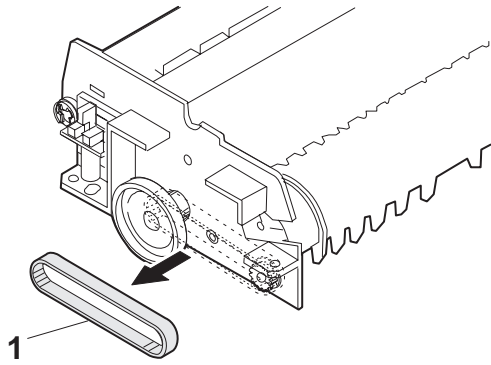


## F. Drive frame section

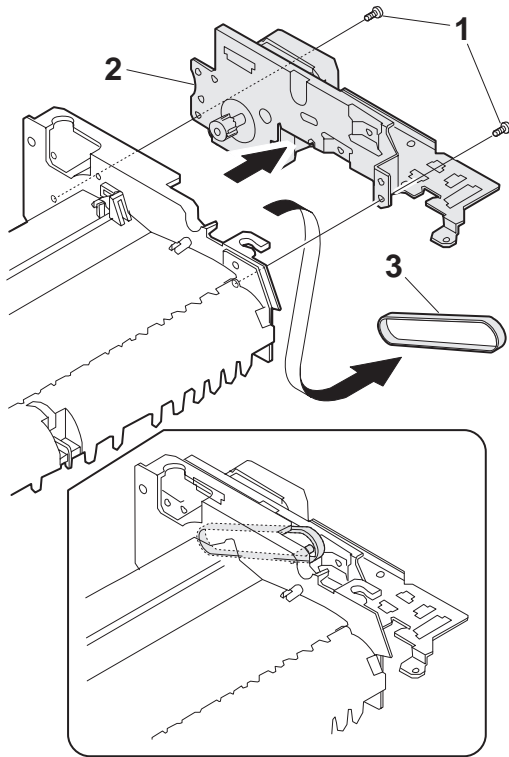
### 1) Drive frame unit



## 2) Transport belt



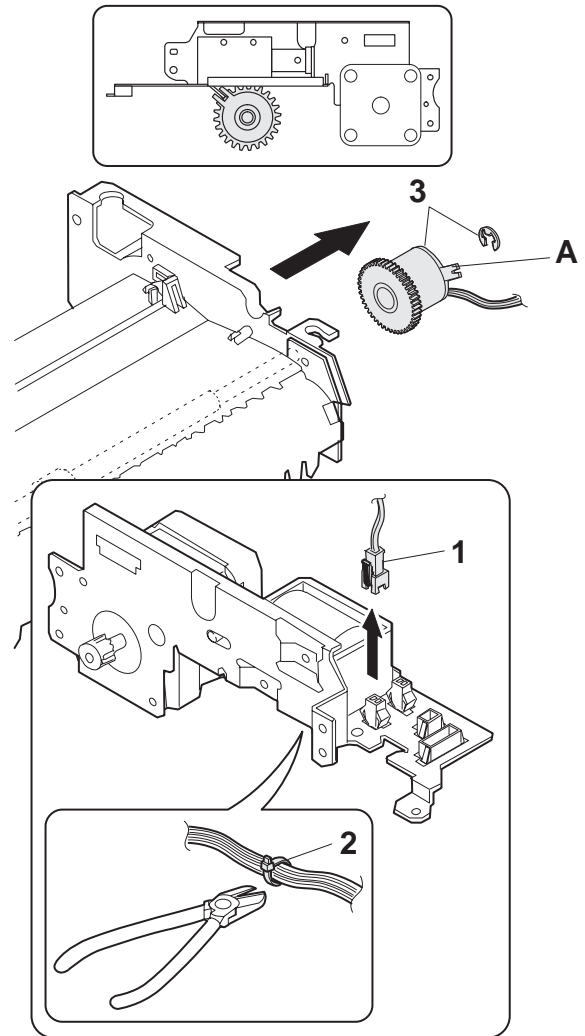
## 3) Drive frame ass'y and drive belt



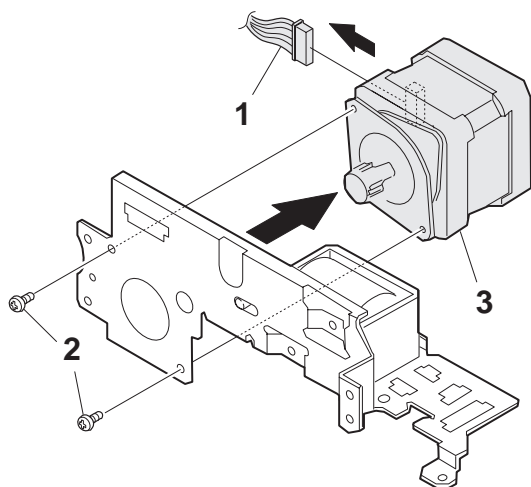
## G. Transport section

### 1) Clutch

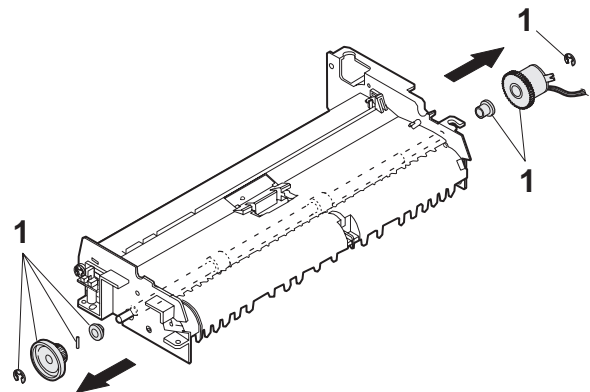
Note: When assembling, check that the rib is in the clutch groove A, and fix the E-ring.



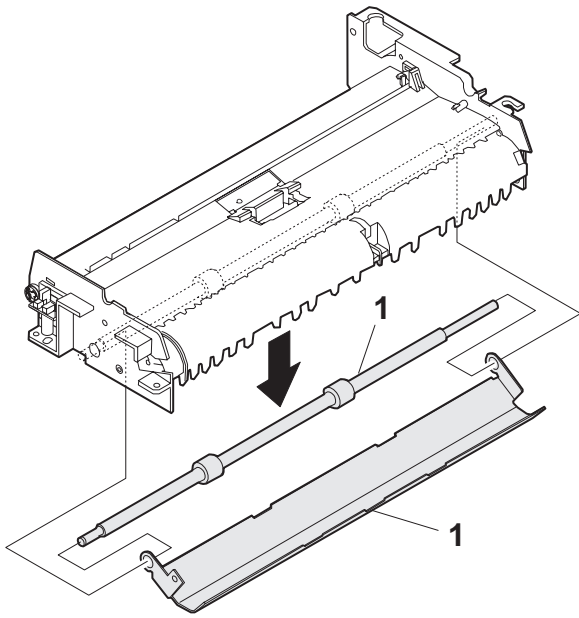
### 4) SPF motor



### 2) Transport roller gear

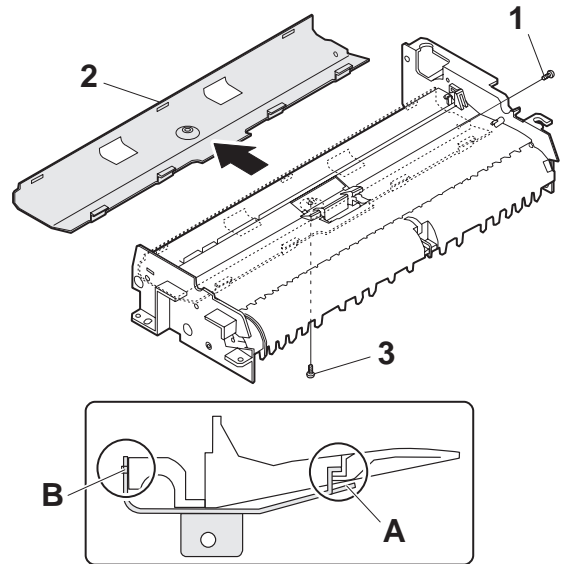


### 3) Transport roller

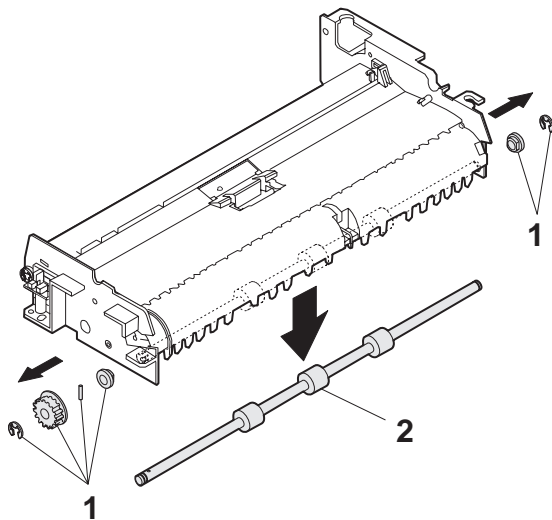


### 6) Paper feed paper guide upper

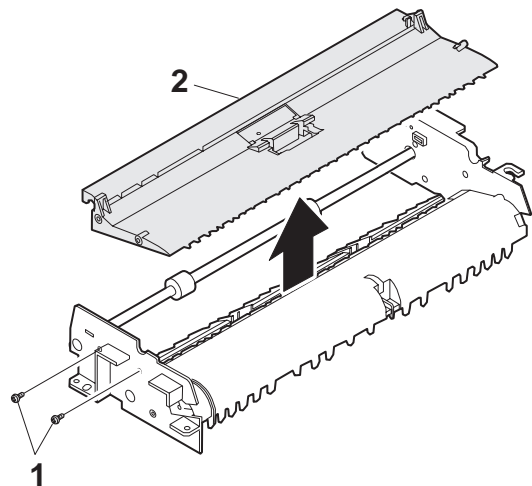
Note: When assembling, check that the paper feed paper guide upper is set to rib A and boss B.



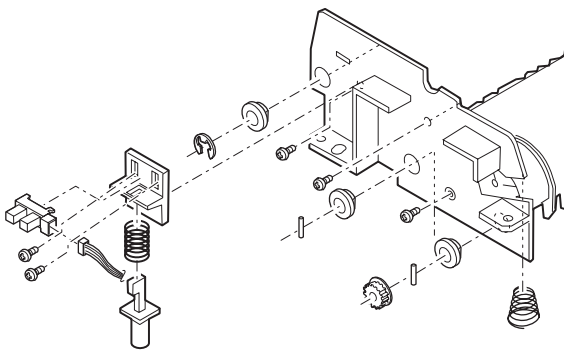
### 4) PS roller



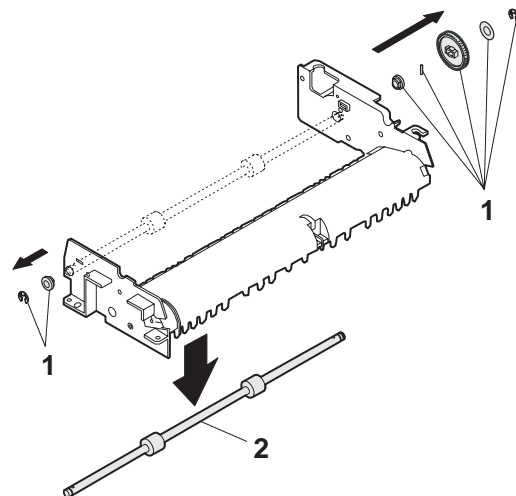
### 7) Paper feed paper guide lower



### 5) Book sensor



### 8) Paper exit roller



# [12] FLASH ROM VERSION UP PROCEDURE

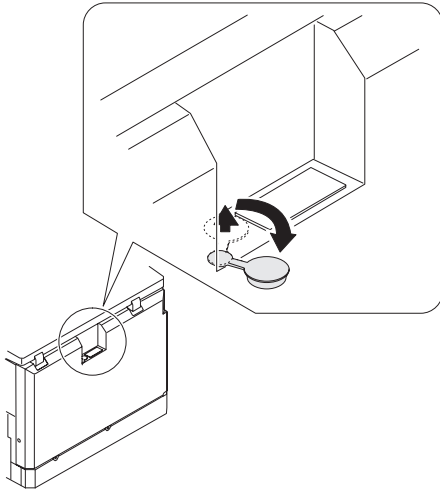
## 1. MCU/E-SORT

### A. Tool

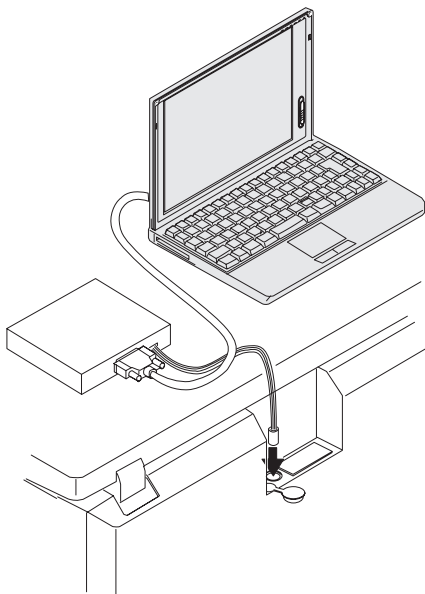
- Machine
- PC  
Operates on Windows 95/98.
- Level converter (UKOG-0002QSZZ) (with serial cable)
- Level converter (UKOG-0003QSZZ) (without serial cable)
- (Serial cable)

### B. Procedures

- 1) Connect the PC and the level converter, and start Windows.
- 2) Turn off the power of the machine.
- 3) Remove the cap at the rear of the machine.



- 4) Connect the serial connector.



- 5) Turn on the power of the machine.
  - The machine enters the download mode. (All LED lamps are turned off. The machine accepts no key operations.)

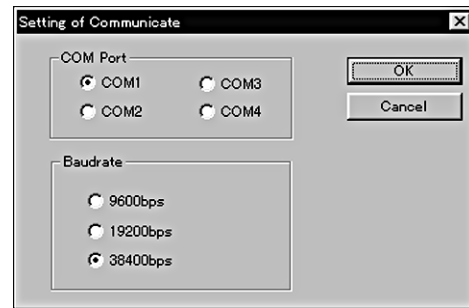
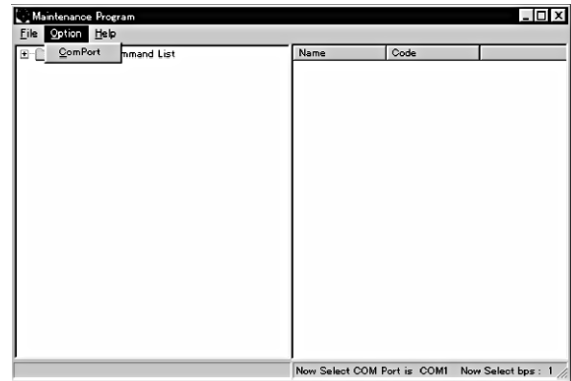
- 6) Execute "mainte-Vxxx.exe" on the PC.



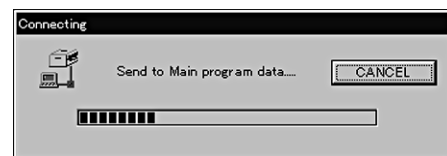
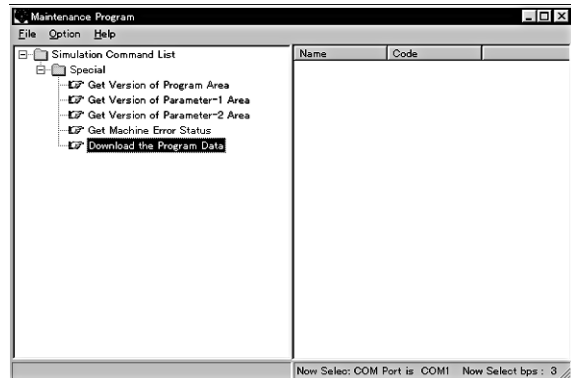
**mainte\_v1.06**

Note: Use "mainte\_vxxx.exe" ver.1.06 or later.  
Since version 1.05 or before cannot identify the model (AR-162/163/201/206/207/F201), it may erroneously perform writing. In this case, the machine does not operate properly.

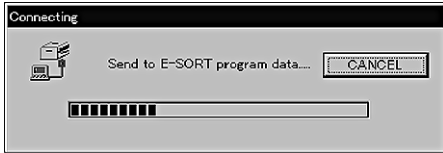
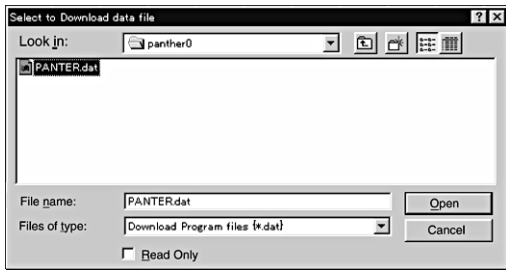
- 7) Communication port/communication speed setting
  - Select "Comport" in the option menu, and select the most suitable item with consideration of PC environment, work time, etc.



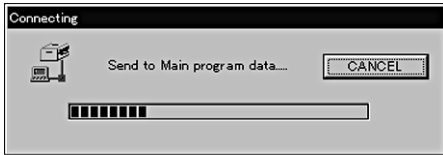
- 8) Select "Download the Program Data" in the SPECIAL folder, and transfer data.



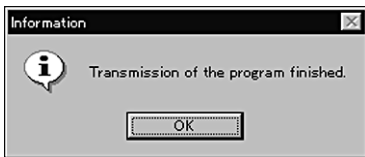
9) Select the data for MCU to be transferred.



10) Select the data for the electronic sort board to be transferred.  
\* When the electronic sort board is not installed, this procedure is automatically canceled. Go to procedure 11).



11) After transfer of data, turn off the machine and disconnect the connector.



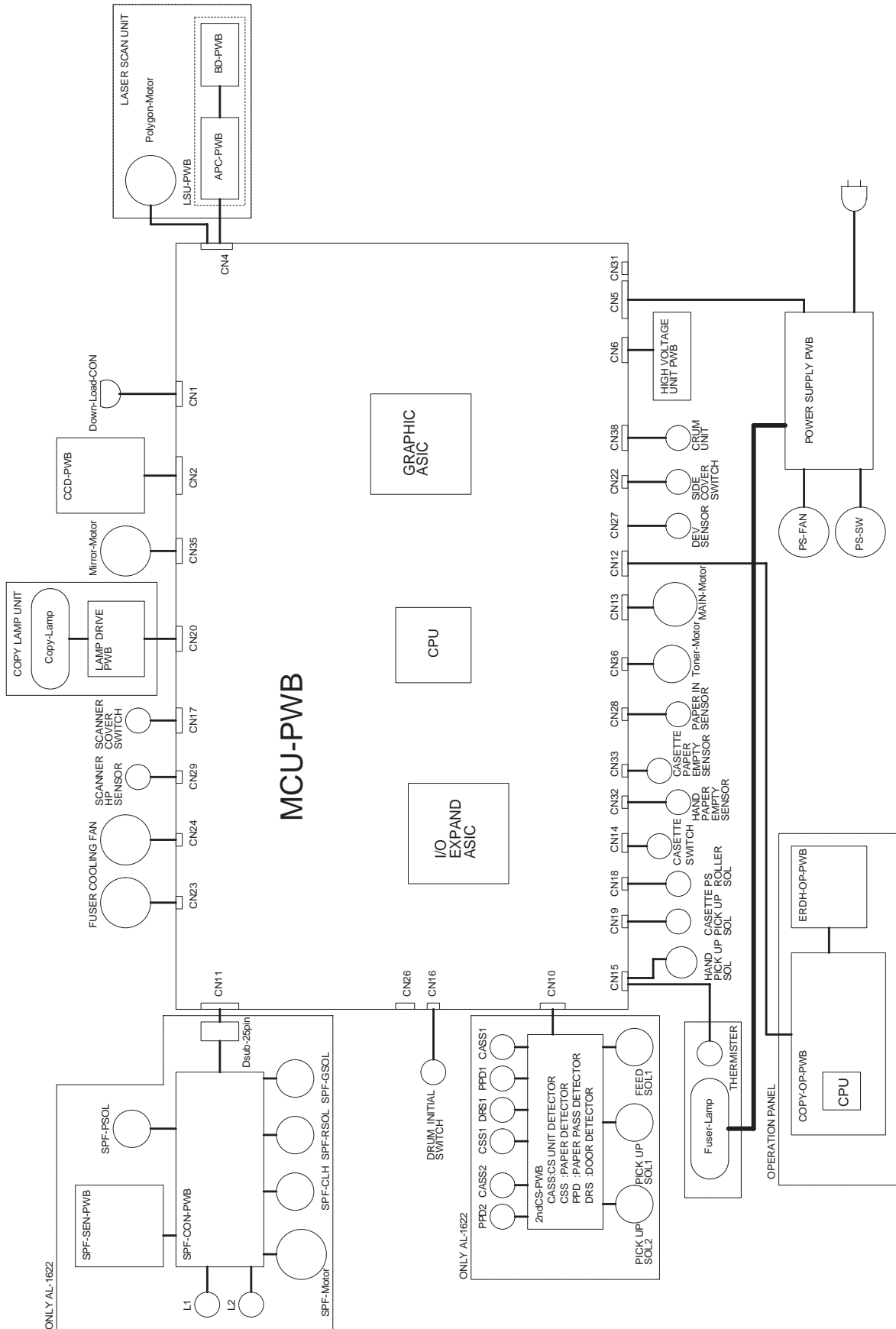
Reference: If the power is turned off during the procedure or in case of a communication error, resume the procedure from 2).



# [13] ELECTRICAL SECTION

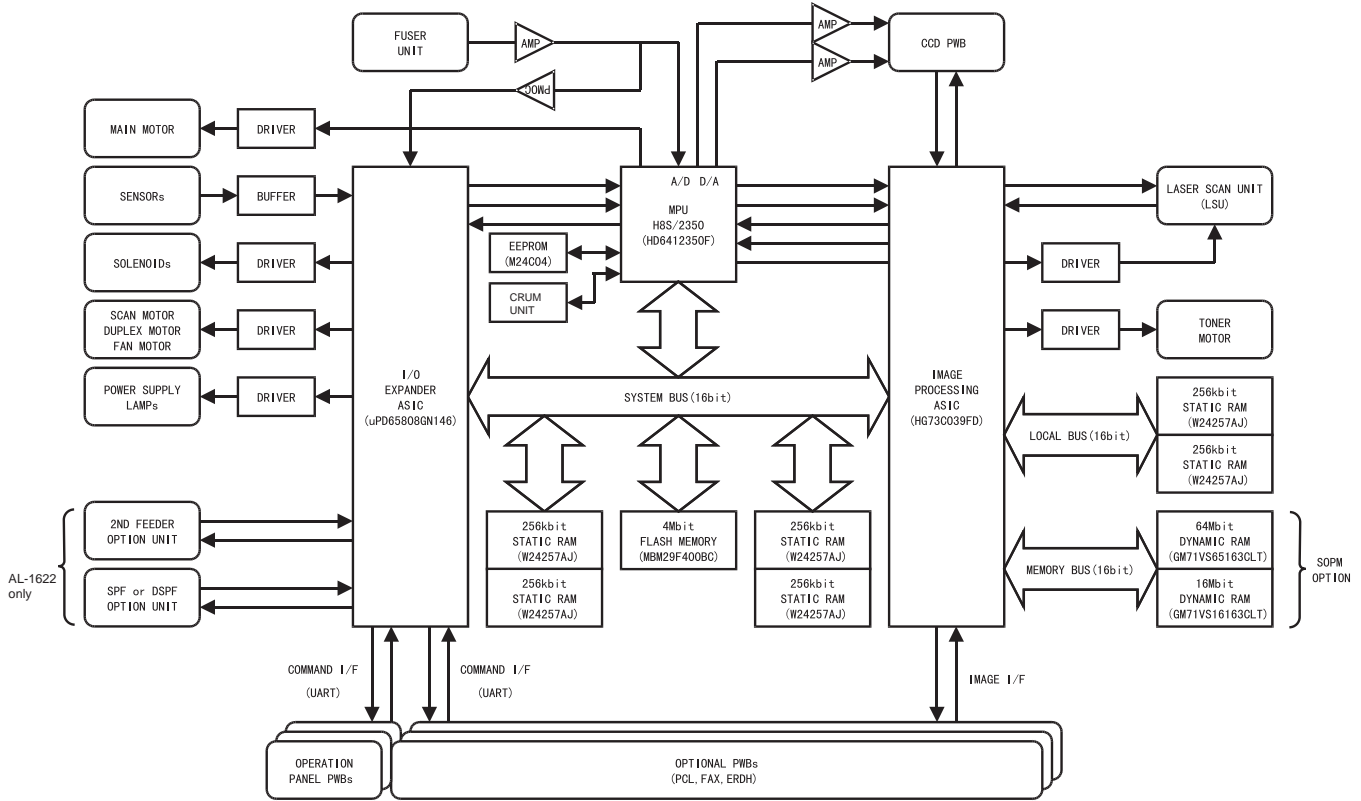
## 1. OUTLINE

### A. BLOCK DIAGRAM



## 2. MCU

### A. BLOCK DIAGRAM (MCU)



### B. CPU (HD6412351IF)

#### (1) pin/signal table

Pin No.	Pin name	Signal name	I/O	Function	Purpose	Descriptions
1	/CS1	/CS1	OUT	Area 1 chip select	SRAM chip select	L: Select
2	/CS0	/CS0	OUT	Area 0 chip select	Flash ROM chip select	L: Select
3	VSS		POW	Ground pin		
4	VSS		POW	Ground pin		
5	VCC		POW	Power pin		
6	A0	A0	OUT	Address bus 0	System bus	
7	A1	A1	OUT	Address bus 1	System bus	
8	A2	A2	OUT	Address bus 2	System bus	
9	A3	A3	OUT	Address bus 3	System bus	
10	VSS		POW	Ground pin		
11	A4	A4	OUT	Address bus 4	System bus	
12	A5	A5	OUT	Address bus 5	System bus	
13	A6	A6	OUT	Address bus 6	System bus	
14	A7	A7	OUT	Address bus 7	System bus	
15	A8	A8	OUT	Address bus 8	System bus	
16	A9	A9	OUT	Address bus 9	System bus	
17	A10	A10	OUT	Address bus 10	System bus	
18	A11	A11	OUT	Address bus 11	System bus	
19	VSS		POW	Ground pin		
20	A12	A12	OUT	Address bus 12	System bus	
21	A13	A13	OUT	Address bus 13	System bus	

(Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

Pin No.	Pin name	Signal name	I/O	Function	Purpose	Descriptions
22	A14	A14	OUT	Address bus 14	System bus	
23	A15	A15	OUT	Address bus 15	System bus	
24	A16	A16	OUT	Address bus 16	System bus	
25	A17	A17	OUT	Address bus 17	System bus	
26	A18	A18	OUT	Address bus 18	System bus	
27	A19	A19	OUT	Address bus 19	System bus	
28	VSS		POW	Ground pin		
29	A20	A20	OUT	Address bus 20	System bus	
30	/IRQ5	/SPFCOVER	IN	Interruption request 5	SPF cover sensor interruption	1: Cover close
31	/IRQ6	/OCCOVER	IN	Interruption request 6	OC cover sensor interruption	0: Cover close
32	/IRQ7	MHP	IN	Interruption request 7	Mirror home position sensor interruption	1: Home position
33	/IRQ3	/SPFPAPER	IN	Interruption request 3	SPF paper pass sensor interruption	0: Paper presence
34	/IRQ2	/CPUSYNC	IN	Interruption request 2	Horizontal sync signal interruption	0: Effective
35	VSS		POW	Ground pin		
36	VSS		POW	Ground pin		
37	/IRQ1	/FW	IN	Interruption request 1	Zero cross interruption	0: Effective
38	/IRQ0	/LOOPINT	IN	Interruption request 0	Loop interruption	0: Effective
39	VCC		POW	Power pin		
40	D0	D0	BIDIR	Data bus 0	System bus	
41	D1	D1	BIDIR	Data bus 1	System bus	
42	D2	D2	BIDIR	Data bus 2	System bus	
43	D3	D3	BIDIR	Data bus 3	System bus	
44	VSS		POW	Ground pin		
45	D4	D4	BIDIR	Data bus 4	System bus	
46	D5	D5	BIDIR	Data bus 5	System bus	
47	D6	D6	BIDIR	Data bus 6	System bus	
48	D7	D7	BIDIR	Data bus 7	System bus	
49	D8	D8	BIDIR	Data bus 8	System bus	
50	D9	D9	BIDIR	Data bus 9	System bus	
51	D10	D10	BIDIR	Data bus 10	System bus	
52	D11	D11	BIDIR	Data bus 11	System bus	
53	VSS		POW	Ground pin		
54	D12	D12	BIDIR	Data bus 12	System bus	
55	D13	D13	BIDIR	Data bus 13	System bus	
56	D14	D14	BIDIR	Data bus 14	System bus	
57	D15	D15	BIDIR	Data bus 15	System bus	
58	VCC		POW	Power pin		
59	P30	—	OUT	General port 30	(Not used)	L: Level fixing output
60	TXD1	TXD1	OUT	SCI channel 1 serial transmission	Service connector	UART serial output
61	P32	SDA	ODN	General port 32	EEPROM control	12CBUS data line
62	RXD1	RXD1	IN	SCI channel 1 serial reception	Service connector	UART input
63	P34	SCL	ODN	General port 34	EEPROM control	12CBUS clock line
64	P35	/FROMUP	IN	General port 35	Service connector	0: Service mode
65	VSS		POW	Ground pin		
66	/DREQ0	/DREQ0	IN	DMAC channel 0 external request	Mirror and SPF motor acceleration/reduction control	0: Request effective
67	VSS		POW	Ground pin		

(Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

Pin No.	Pin name	Signal name	I/O	Function	Purpose	Descriptions
68	VSS		POW	Ground pin		
69	/CS5	—	OUT	Area 5 chip select	(Not used)	L: Select
70	/DREQ1	/DREQ1	IN	DMAC channel 1 external request	Lifter and separator motor acceleration/reduction control	0: Request effective
71	P63	POFFR	OUT	General port 63	Power off relay control	H: AC switch OFF
72	P27	/ESPAGE	IN	General port 27	ERDH option page signal detection	0: Page effective
73	P26	/PCLPAGE	IN	General port 26	PCI operation page signal detection	0: Page effective
74	P25	/FAXPAGE	IN	General port 25	FAX option page signal detection	0: Page effective
75	P24	/READY	OUT	General port 24	Machine ready signal	L: Machine ready state
76	P23	/PWOFF	OUT	General port 23	Power off signal	L: Power interruption detecting state
77	P22	/SCANSP	OUT	General port 22	Scan stop signal	L: Scanning operation interruption
78	P21	/SCANST	OUT	General port 21	Scan start signal	L: Scanning operation effective
79	P20	/PRSTART	OUT	General port 20	Print start signal	L: Printing effective
80	/WDTOVR	—	OUT	Watch dog timer overflow	System reset	L: System restart
81	/RES	—	IN	System reset	System reset	0: Power on reset
82	NMI	—	IN	Non-maskable interruption request	(Not used)	1: Level fixing input
83	/STBY	—	IN	Stand-by	(Not used)	1: Level fixing input
84	VCC		POW	Power pin		
85	XTAL	—	IN	Oscillation pin	Oscillator (19.6608MHz)	
86	EXTAL	—	OUT	Oscillation pin	Oscillator (19.6608MHz)	
87	VSS		POW	Ground pin		
88	â	CPUCLK	OUT	System clock	System clock	19.6608MHz clock output
89	VCC		POW	Power pin		
90	/AS	/AS	OUT	Address strobe	System bus	L: Address effective
91	/RD	/RD	OUT	Lead strobe	System bus	L: Lead effective
92	/HWR	/HWR	OUT	Highlight enable	System bus	L: Highlight effective
93	/LWR	/LWR	OUT	Row write enable	System bus	L: Row write effective
94	PF2	/TMEN	OUT	General port F2	Toner motor drive control	L: Rotating
95	PF1	PMD	OUT	General port F1	Polygon motor drive control	H: Rotating
96	PF0	MMD	OUT	General port F0	Main motor drive control	H: Rotating
97	P50	/MMRDY	IN	General port 50	Main motor ready signal	0: Rotation stable state
98	P51	/PMRDY	IN	General port 51	Polygon motor ready signal	0: Rotation stable state
99	VSS		POW	Ground pin		
100	VSS		POW	Ground pin		
101	P52	/PRLINE	OUT	General port 52	Print line signal	L: Printing effective
102	P53	/SCLINE	OUT	General port 53	Scan line signal	L: Scanning operation effective
103	AVCC		POW	Analog power pin		
104	VREF		POW	Analog reference pin		
105	AN0	RTH	IN	Analog input 0	Fusing thermistor temperature detection	
106	AN1	—	IN	Analog input 1	(Not used)	
107	AN2	—	IN	Analog input 2	(Not used)	
108	AN3	TONER	IN	Analog input 3	Toner sensor	5V: Toner empty
109	AN4	—	IN	Analog input 4	(Not used)	
110	AN5	—	IN	Analog input 5	(Not used)	
111	DA0	DA0	OUT	Analog output 0	CCD reference + side	

(Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

Pin No.	Pin name	Signal name	I/O	Function	Purpose	Descriptions
112	DA1	DA1	OUT	Analog output 1	CCD reference – side	
113	AVSS		POW	Analog ground pin		
114	VSS		POW	Ground pin		
115	TCLKD	LFTCLK	IN	Timer clock external input	Separator motor step count	Separator motor clock input
116	TIOCA2	TMCLK	OUT	Timer clock external output	Toner motor clock	960Hz clock output
117	TCLKC	SFTCLK	IN	Timer clock external input	Shifter motor step count	Shifter motor clock input
118	TIOCA1	PMCLK	OUT	Timer clock external output	Polygon motor clock	2078.74Hz clock output
119	TCLKB	SPFCLK	IN	Timer clock external input	SPF motor step count	SPF motor clock input
120	TCLKA	MIRCLK	IN	Timer clock external input	Mirror motor step count	Mirror motor clock input
121	/DACK1	—	OUT	DMAC channel 1 acknowledge	(Not used)	L: Acknowledge effective
122	/DACK0	—	OUT	DMAC channel 0 acknowledge	(Not used)	L: Acknowledge effective
123	MD0	—	IN	Operation mode setting pin 0	Operation mode setting (MODE 4)	Operation mode 4
124	MD1	—	IN	Operation mode setting pin 1	Operation mode setting (MODE 4)	Operation mode 4
125	MD2	—	IN	Operation mode setting pin 2	Operation mode setting (MODE 4)	Operation mode 4
126	PG0	RY/BY	IN	General port G0	Flash ROM busy signal	0: Busy state
127	/CS3	/CS3	OUT	Area 3 chip select	I/O extension ASIC chip select	L: Select effective
128	/CS2	/CS2	OUT	Area 2 chip select	Image ASIC chip select	L: Select effective

(Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

## C. IMAGE ASIC (HG73C039FD)

### (1) Outline

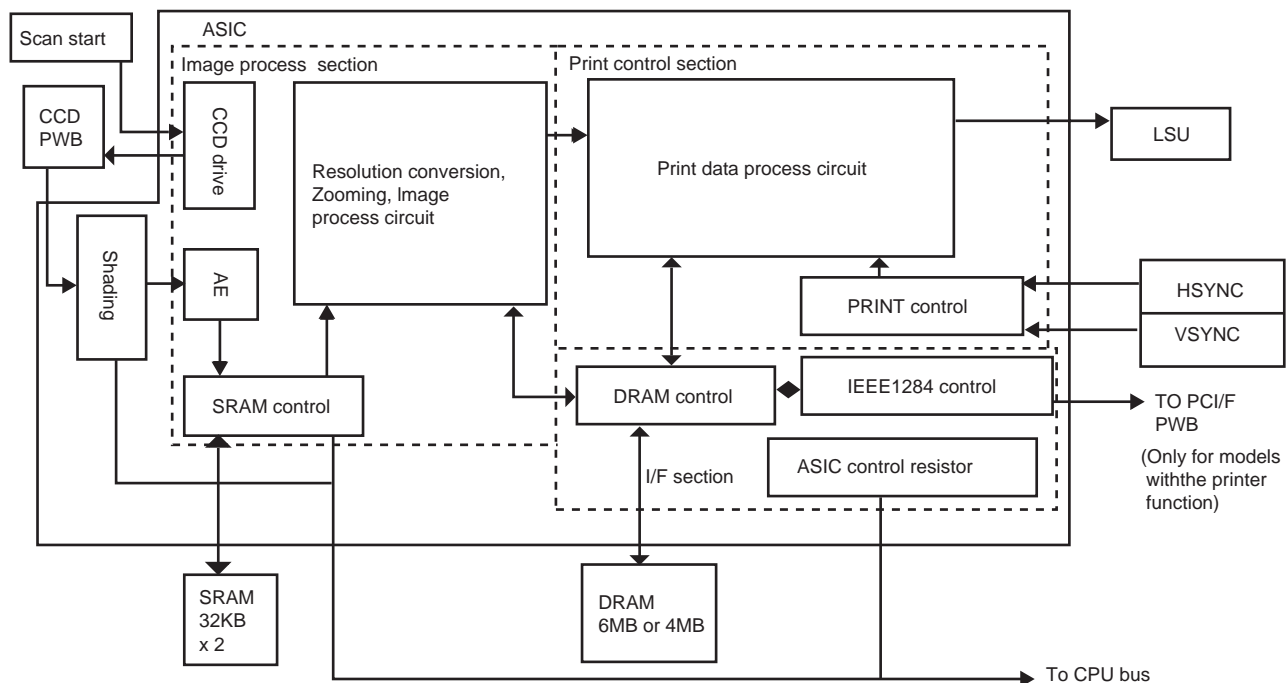
The following figure shows the block diagram of the ASIC.

The ASIC is composed of the following three blocks; the image process section, the print control section, and the I/F section.

The image process section processes the image data from the CCD PWB according to the operation mode, such as shading, AE process, resolution conversion and zooming.

The print control section outputs the image-processed data during copying to the LSU (Laser unit) in synchronization with writing timing of the LSU. The I/F section controls communication of interface (IEEE1284) with the host PC and controls DRAM of send/receive data buffer with the host PC. (Only for models with the printer function)

The ASIC is controlled by the CPU which writes the operation mode and the set values necessary for each operation mode to the ASIC control register.



**(2) pin/signal table**

PIN No.	Signal Name	IN/OUT	Description
1	/SCANSP	IN	Scanner process interrupt signal
2	/PRSTART	IN	Print start trigger signal
3	TMON	IN	Toner motor ON/OFF
4	TMCLK	IN	Toner motor reference clock
5	3.3V	Power	
6	CPUAD7	IN	CPU address bus
7	CPUAD6	IN	
8	GND	Power	
9	CPUAD5	IN	CPU address bus
10	CPUAD4	IN	
11	CPUAD3	IN	
12	CPUAD2	IN	
13	CPUAD1	IN	
14	/CPUSYNC	OUT	Horizontal synchronization signal
15	/INTR	OUT	Interruption request signal
16	/CPUCS	IN	CPU chip select signal
17	/RESET	IN	Reset signal
18	5V	Power	
19	GND	Power	
20	3.3V	Power	
21	GND	Power	
22	MDATA15	IN/OUT	Data bus of DRAM (page memory)
23	MDATA14	IN/OUT	
24	MDATA13	IN/OUT	
25	MDATA12	IN/OUT	
26	MDATA11	IN/OUT	
27	MDATA10	IN/OUT	
28	MDATA9	IN/OUT	
29	MDATA8	IN/OUT	
30	MDATA7	IN/OUT	
31	3.3V	Power	
32	MDATA6	IN/OUT	Data bus of DRAM (page memory)
33	MDATA5	IN/OUT	
34	GND	Power	
35	MDATA4	IN/OUT	Data bus of DRAM (page memory)
36	MDATA3	IN/OUT	
37	MDATA2	IN/OUT	
38	MDATA1	IN/OUT	
39	MDATA0	IN/OUT	
40	/RAS0	OUT	RAS signal 0 of DRAM (page memory)
41	/RAS1	OUT	RAS signal 1 of DRAM (page memory)
42	/RAS2	OUT	RAS signal 2 of DRAM (page memory)
43	/RAS64	OUT	(Not used)
44	3.3V	Power	
45	/RAS16	OUT	(Not used)

PIN No.	Signal Name	IN/OUT	Description
46	MAD0	OUT	Address bus of DRAM (page memory)
47	GND	Power	
48	MAD1	OUT	Address bus of DRAM (page memory)
49	MAD2	OUT	
50	MAD3	OUT	
51	MAD4	OUT	
52	MAD5	OUT	
53	MAD6	OUT	
54	MAD7	OUT	
55	MAD8	OUT	
56	MAD9	OUT	
57	3.3V	Power	
58	MAD10	OUT	Address bus of DRAM (page memory)
59	MAD11	OUT	
60	GND	Power	
61	/CAS0	OUT	CAS signal of DRAM (page memory)
62	/CAS1	OUT	
63	/OE	OUT	Read enable signal of DRAM (page memory)
64	/WE	OUT	Write enable signal of DRAM (page memory)
65	OUTD0	OUT	(Not used)
66	OUTD1	OUT	
67	OUTD2	OUT	
68	OUTD3	OUT	
69	3.3V	Power	
70	OUTD4	OUT	(Not used)
71	OUTD5	OUT	
72	GND	Power	
73	OUTD6	OUT	(Not used)
74	OUTD7	OUT	
75	OUTD8	OUT	
76	OUTD9	OUT	
77	OUTD11	OUT	
78	OUTD10	OUT	
79	OUTD12	OUT	
80	OUTD13	OUT	
81	OUTD14	OUT	
82	OUTD15	OUT	
83	/HSYNC	OUT	
84	/PCLPRD	IN	
85	/PCLREQ	OUT	
86	/PCLACK	IN	
87	/PCLCS	IN	
88	3.3V	Power	
89	GND	Power	
90	5V	Power	
91	GND	Power	
92	/FAXPRD	IN	(Not used)

PIN No.	Signal Name	IN/OUT	Description
93	/FAXREQ	OUT	(Not used)
94	/FAXACK	IN	
95	3.3V	Power	
96	/FAXCS	IN	(Not used)
97	/ESPRD	IN	
98	GND	Power	
99	/ESREQ	OUT	(Not used)
100	/ESACK	IN	
101	/ESCS	IN	
102	PARAD0	IN/OUT	
103	PARAD1	IN/OUT	
104	PARAD2	IN/OUT	
105	PARAD3	IN/OUT	
106	PARAD4	IN/OUT	
107	PARAD5	IN/OUT	
108	5V	Power	
109	PARAD6	IN/OUT	(Not used)
110	PARAD7	IN/OUT	
111	GND	Power	
112	/REV	OUT	(Not used)
113	INIT	IN	
114	/SLCTIN	IN	
115	/AUTOFD	IN	
116	/STB	IN	
117	/ACK	OUT	
118	BUSY	OUT	
119	PE	OUT	
120	/FAULT	OUT	
121	5V	Power	
122	SLCT	OUT	(Not used)
123	/TESTPIN0	IN	High: Normal Low: Test
124	GND	Power	
125	PFCLK	IN	Write clock
126	/TESTPIN1	IN	High: Normal Low: Test
127	/SYNCEN	OUT	Jitter adjustment IC trigger signal
128	SD10	IN/OUT	Data line to SRAM before are separation
129	SD11	IN/OUT	
130	SD12	IN/OUT	
131	SD13	IN/OUT	
132	SD14	IN/OUT	
133	5V	Power	
134	SD15	IN/OUT	Data line to SRAM before are separation
135	SD16	IN/OUT	
136	GND	Power	
137	SD17	IN/OUT	Data line to SRAM before are separation
138	SOE1	OUT	Read enable line to SRAM before area separation
139	SWE1	OUT	Write enable line to SRAM before area separation

PIN No.	Signal Name	IN/OUT	Description
140	SCS1	OUT	Chip select line to SRAM before area separation
141	SOE0	OUT	Read enable line to SRAM before area separation
142	SWE0	OUT	Write enable line to SRAM before area separation
143	SCS0	OUT	Chip select line to SRAM before area separation
144	SD00	IN/OUT	Data line to SRAM before are separation
145	SD01	IN/OUT	
146	5V	Power	
147	SD02	IN/OUT	Data line to SRAM before are separation
148	SD03	IN/OUT	
149	GND	Power	
150	SD04	IN/OUT	Data line to SRAM before are separation
151	SD05	IN/OUT	
152	SD06	IN/OUT	
153	SD07	IN/OUT	
154	SAD0	OUT	Address line to SRAM before area separation
155	SAD1	OUT	
156	SAD2	OUT	
157	SAD3	OUT	
158	SAD4	OUT	
159	SAD5	OUT	
160	SAD6	OUT	
161	SAD7	OUT	
162	GND	Power	
163	SAD8	OUT	Address line to SRAM before area separation
164	SAD9	OUT	
165	SAD10	OUT	
166	SAD11	OUT	
167	SAD12	OUT	
168	SAD13	OUT	
169	/f1	OUT	CCD drive signal transfer clock (First phase)
170	/f2	OUT	CCD drive signal transfer clock (Second phase)
171	/SH	OUT	CCD drive signal shift pulse
172	5V	Power	
173	RS	OUT	CCD drive signal reset pulse
174	SP	OUT	CCD drive signal sampling hold pulse
175	GND	Power	
176	CP	OUT	A/D conversion IC latch clock
177	BCLK	OUT	CCD shield output latch signal
178	IDIN0	IN	Image scan data (after 8bit A/D conversion)
179	IDIN1	IN	
180	IDIN2	IN	
181	IDIN3	IN	
182	IDIN4	IN	
183	IDIN5	IN	
184	IDIN6	IN	

PIN No.	Signal Name	IN/OUT	Description
185	5V	Power	
186	IDIN7	IN	Image scan data (after 8bit A/D conversion)
187	/SDCLK	OUT	Effective image area signal
188	GND	Power	
189	SFCLK	IN	CCD drive clock (48MHz)
190	TEST port 0	IN	High: Normal Low: Test
191	/SYNC	IN	Horizontal synchronization signal (HSYNC) from LSU
192	/LD	OUT	Laser drive signal
193	/LEND	OUT	Laser APC signal
194	/VIDEOCS	OUT	Video data control
195	—	OUT	NC
196	—	OUT	
197	3.3V	Power	
198	—	OUT	NC
199	—	OUT	
200	GND	Power	
201	—	OUT	NC
202	—	OUT	
203	—	OUT	
204	—	OUT	
205	—	OUT	
206	—	OUT	
207	—	OUT	
208	—	OUT	
209	—	OUT	
210	3.3V	Power	
211	—	OUT	NC
212	—	OUT	
213	GND	Power	
214	/PCLPCS	OUT	PCL option print data control
215	/FAXPCS	OUT	FAX option print data control
216	/ESPCS	OUT	Electronic sort option print data control
217	—	OUT	NC
218	CV_START	OUT	Copy vendor control
219	CV_COUNT	OUT	
220	CV_SIZE3	OUT	
221	CV_SIZE2	OUT	
222	CV_SIZE1	OUT	
223	5V	Power	
224	CV_SIZE0	OUT	Copy vendor control
225	CV_DPX	OUT	
226	GND	Power	
227	CV_CA	OUT	Copy vendor control
228	—	OUT	NC
229	TM	OUT	Toner motor drive output (+)
230	TM_	OUT	Toner motor drive output (-)
231	CPUD15	IN/OUT	CPU data bus

PIN No.	Signal Name	IN/OUT	Description
232	CPUD14	IN/OUT	CPU data bus
233	CPUD13	IN/OUT	
234	CPUD12	IN/OUT	
235	CPUD11	IN/OUT	
236	5V	Power	
237	CPUD10	IN/OUT	CPU data bus
238	CPUD9	IN/OUT	
239	GND	Power	
240	CPUD8	IN/OUT	CPU data bus
241	CPUD7	IN/OUT	
242	CPUD6	IN/OUT	
243	CPUD5	IN/OUT	
244	CPUD4	IN/OUT	
245	CPUD3	IN/OUT	
246	CPUD2	IN/OUT	
247	CPUD1	IN/OUT	
248	CPUD0	IN/OUT	
249	3.3V	Power	
250	/CPUWR	IN	CPU write signal
251	/CPURD	IN	CPU read signal
252	GND	Power	
253	CPUCLK	IN	CPU system clock
254	GND	Power	
255	TEST PORT1	IN	High: Normal Low: Test
256	/SCANST	IN	Scanner process start signal

## D. I/O ASIC

### (1) pin/signal table

Pin No.	Pin name	Signal name	I/O	Purpose	Descriptions
1	GND		POW		
2	GND		POW		
3	SCK		IN		0: Level fixing input
4	AMC		IN		0: Level fixing input
5	SMC		IN		0: Level fixing input
6	UART0SIN/ SIN	OPECMD	IN	Operation panel command interface	
7	UART0SOUT/ SOT	OPESTS	OUT	Operation panel command interface	
8	UART0CTSB	/OPESRDY	IN	Operation panel command interface	
9	UART0RTSB	/OPECRDY	OUT	Operation panel command interface	
10	GND		POW		
11	UART1SIN	OPECMD	IN	Electronic sort option command interface	
12	UART1SOUT	OPESTS	OUT	Electronic sort option command interface	
13	UART1CTSB	/OPESRDY	IN	Electronic sort option command interface	
14	UART1RTSB	/OPECRDY	OUT	Electronic sort option command interface	
15	UART2SIN	OPECMD	IN	FAX option command interface	
16	VCC		POW		
17	UART2SOUT	OPESTS	OUT	FAX option command interface	
18	UART2CTSB	/OPESRDY	IN	FAX option command interface	
19	UART2RTSB	/OPECRDY	OUT	FAX option command interface	
20	GND		POW		
21	VCC		POW		
22	GND		POW		
23	UART3SIN	OPECMD	IN	PQL option command interface	
24	UART3SOUT	OPESTS	OUT	PQL option command interface	
25	UART3CTSB	/OPESRDY	IN	PQL option command interface	
26	UART3RTSB	/OPECRDY	OUT	PQL option command interface	
27	VCC		POW		
28	DSLED1	LED1	OUT	3; Beam document size sensor control	
29	DSLED2	LED2	OUT	3; Beam document size sensor control	
30	DSLED3	LED3	OUT	3; Beam document size sensor control	
31	DSIN0	DSIN1	IN	1: Beam document size sensor detection	
32	GND		POW		
33	DSIN1	DSIN2A	IN	2: Beam document size sensor A detection	
34	DSIN2	DSIN2B	IN	2: Beam document size sensor B detection	
35	DSIN3	DS3IN	IN	3: Beam document size sensor detection	
36	PMC0POUT0	MIRMODA	OUT	Mirror motor phase A drive	H: Drive
37	VCC		POW		
38	PMC0POUT1	MIRMODB	OUT	Mirror motor phase B drive	H: Drive
39	PMC0POUT2	/MIRMODA	OUT	Mirror motor phase /A drive	H: Drive
40	VCC		POW		
41	GND		POW		
42	GND		POW		
43	PMC0POUT3	/MIRMODB	OUT	Mirror motor phase /B drive	H: Drive
44	PMC2POUT0	SFTDA	OUT	Shifter motor phase A drive	H: Drive
45	PMC2POUT1	SFTDB	OUT	Shifter motor phase B drive	H: Drive
46	PMC2POUT2	/SFTDA	OUT	Shifter motor phase /A drive	H: Drive
47	VCC		POW		

Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

Pin No.	Pin name	Signal name	I/O	Purpose	Descriptions
48	PMC2POUT3	/SFTDB	OUT	Shifter motor phase /B drive	H: Drive
49	PMC3POUT0	LFTDA	OUT	Separator motor phase A drive	H: Drive
50	PMC3POUT1	LFTDB	OUT	Separator motor phase B drive	H: Drive
51	PMC3POUT2	/LFTDA	OUT	Separator motor phase /A drive	H: Drive
52	GND		POW		
53	PMC3POUT3	/LFTDB	OUT	Separator motor phase /B drive	H: Drive
54	PMC4POUT0	DPXDA	OUT	Duplex motor phase A drive	H: Drive
55	PMC4POUT1	DPXDB	OUT	Duplex motor phase B drive	H: Drive
56	PMC4POUT2	/DPXDA	OUT	Duplex motor phase /A drive	H: Drive
57	TESTB		IN		1: Level fixing input
58	TESTB		IN		1: Level fixing input
59	GND		POW		
60	GND		POW		
61	VCC		POW		
62	PMC4POUT3	/DPXDB	OUT	Duplex motor phase /B drive	H: Drive
63	PWM0POUT	PFANMD	OUT	Power fan motor drive	H: Drive
64	PWM1POUT	TFANMD	OUT	Fusing fan motor drive	H: Drive
65	P0OUT8	SOPHIA	OUT	(Not used)	
66	P0OUT9	/LOOPINT	OUT	Loop interruption control	L: Interruption
67	P0OUT10	—	OUT	(Not used)	
68	P0OUT11	—	OUT	(Not used)	
69	GND		POW		
70	P0OUT12	MIRMO0	OUT	Mirror motor phase current control 0	H: Power down
71	P0OUT13	MIRMO1	OUT	Mirror motor phase current control 1	H: Power down
72	P0OUT14	PDOWN	OUT	SPF motor phase current control	H: Power down
73	P0OUT15	—	OUT	(Not used)	
74	P1OUT12	SPFPSOL	OUT	SPF pickup solenoid drive	H: Drive
75	P1OUT13	SPFGSOL	OUT	SPF gate solenoid	H: Drive
76	P1OUT14	SPFRSOL	OUT	SPF release solenoid drive	H: Drive
77	VCC		POW		
78	P1OUT15	SPFCLH	OUT	SPF clutch solenoid	H: Drive
79	P0IN0	PIN	IN	Paper in sensor detection	1: Paper presence
80	GND		POW		
81	VCC		POW		
82	P0IN1	POUT	IN	Paper out sensor detection	1: Paper presence
83	P0IN2	PDPX	IN	Duplex control sensor detection	0: Paper presence
84	P0IN3	LFTHP	IN	Separator home position sensor detection	1: Home position
85	GND		POW		
86	P0IN4	/SFTHP	IN	Shifter home position sensor detection	0: Home position
87	P0IN5	PFULL	IN	Tray paper full sensor detection	1: Paper full
88	P0IN6	MHP	IN	Mirror home position sensor detection	1: Home position
89	VCC		POW		
90	GND		POW		
91	PFCLK	PFCLK	IN	Dot count control	
92	GND		POW		
93	GND		POW		
94	LDB	/VIDEO	IN	Dot count control	0: Effective
95	LENDDB	S/H	IN	Dot count control	0: Effective
96	VCC		POW		
97	P0IN7	/CV_COPY	IN	Coin vendor copy enable detection	0: Copy enabled
98	P0IN8	/HTEMP	IN	Fusing thermistor abnormally high temperature detection	0: Abnormally high temperature

Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

Pin No.	Pin name	Signal name	I/O	Purpose	Descriptions
99	P0IN9	/THOPEN	IN	Fusing thermistor disconnection detection	0: Wire disconnection
100	VCC		POW		
101	GND		POW		
102	P0IN10	CASSETTE	IN	Copier cassette switch detection	1: Cassette installed
103	P0IN11	/CPEMPTY	IN	Copier cassette paper empty sensor detection	0: Paper empty
104	GND		POW		
105	P0IN12	HPEMPTY	IN	Manual feed tray paper empty sensor detection	1: Paper empty
106	P0IN13	/DEV	IN	Developing unit installation detection	0: Unit installed
107	P0IN14	DRUM	IN	Drum initial switch detection	1: Drum initial
108	P0IN15	/CSW	IN	Side cover switch detection	0: Cover close
109	P1IN0	/PMEMO	IN	Memory print operation setup jumper detection	1: Operation enabled
110	P1IN1	/CSPEED	IN	Copy speed setup jumper detection	"1: 20ppm,
111	P1IN2	/DPXSW	IN	Duplex print operation setup jumper detection	1: Operation enabled
112	VCC		POW		
113	P1IN3	/SFTSW	IN	Shifter operation setup jumper detection	1: Operation enabled
114	P1IN4	/LFTSW	IN	Separator operation setup jumper detection	1: Operation enabled
115	P1IN5	/INCHSW	IN	Inch series document size sensor setup jumper detection	1: Operation enabled
116	P1IN6	/JPNABSW	IN	Japan AB series document size sensor setup jumper detection	1: Operation enabled
117	P1IN7	/EXJABSW	IN	EX AB series document size sensor setup jumper detection	1: Operation enabled
118	P1IN8	/ESREADY	IN	Electronic sort board option installation detection	0: Option installed
119	P1IN9	/FAXREADY	IN	FAX board option installation detection	0: Option installed
120	VCC		POW		
121	GND		POW		
122	GND		POW		
123	TEST		IN	(Not used)	0: Level fixing input
124	TEST		IN	(Not used)	0: Level fixing input
125	TEST		IN	(Not used)	0: Level fixing input
126	P1IN10	/PCLREADY	IN	FAX board option installation detection	0: Option installed
127	P1IN11	/SPFOPEN	IN	SPF unit float sensor detection	
128	P1IN12	—	IN	(Not used)	
129	P1IN13	—	IN	(Not used)	
130	VCC		POW		
131	P1IN14	—	IN	(Not used)	
132	P1IN15	—	IN	(Not used)	
133	P1OUT0	HPSOL	OUT	Manual feed tray pickup solenoid drive	H: Drive
134	P1OUT1	CPSOL	OUT	Copier cassette pickup solenoid drive	H: Drive
135	GND		POW		
136	P1OUT2	PSRSOL	OUT	PS roller solenoid drive	H: Drive
137	P1OUT3	—	OUT	(Not used)	
138	P1OUT4	—	OUT	(Not used)	
139	GND		POW		
140	VCC		POW		
141	P1OUT5	—	OUT	(Not used)	
142	P1OUT6	PSOL1	OUT	Option cassette 1 pick up solenoid drive	H: Drive
143	P1OUT7	FSOL1	OUT	Option cassette 1 feed solenoid drive	H: Drive
144	P1OUT8	PSOL2	OUT	Option cassette 2 pickup solenoid drive	H: Drive
145	GND		POW		
146	P1OUT9	FSOL2	OUT	Option cassette 2 feed solenoid drive	H: Drive
147	P1OUT10	PSOL3	OUT	Option cassette 3 pickup solenoid drive	H: Drive

Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

Pin No.	Pin name	Signal name	I/O	Purpose	Descriptions
148	P1OUT11	FSOL3	OUT	Option cassette 3 feed solenoid drive	H: Drive
149	SELOUT0	SELA	OUT	Option sensor select control	
150	VCC		POW		
151	SELOUT1	SELB	OUT	Option sensor select control	
152	SELOUT2	SELC	OUT	Option sensor select control	
153	YIN0	YSPF	IN	SPF option related sensor	
154	YIN1	Y1	IN	Option cassette 1 related sensor detection	
155	GND		POW		
156	YIN2	Y2	IN	Option cassette 2 related sensor detection	
157	YIN3	Y3	IN	Option cassette 3 related sensor detection	
158	P0OUT0	HL	OUT	Halogen lamp control	H: Lamp ON
159	P0OUT1	CL	OUT	Copy lamp control	H: Lamp ON
160	VCC		POW		
161	GND		POW		
162	P0OUT2	PR	OUT	Power relay control	H: Relay ON
163	P0OUT3	MC	OUT	Main charger voltage control	H; Voltage ON
164	P0OUT4	TC	OUT	Transfer charger voltage control	H; Voltage ON
165	GND		POW		
166	P0OUT5	/GRIDL	OUT	Grid bias voltage control	"H: HIGH,
167	P0OUT6	/BIAS	OUT	Developing bias voltage control	L: Voltage ON
168	P0OUT7	APCSTT	OUT	APC circuit control	H: APC circuit ON
169	PMC0TCLK	MIRCLK	OUT	Mirror motor step count	Mirror motor clock output
170	VCC		POW		
171	PMC0DREQB	—	OUT	(Not used)	
172	PMC1TCLK	SPFCLK	OUT	SPF motor step count	SPF motor clock output
173	PMC1DREQB	—	OUT	(Not used)	
174	PMC2TCLK	SFTCLK	OUT	Shifter motor step count	Shifter motor clock output
175	PMC2DREQB	—	OUT	(Not used)	
176	TEST		IN	(Not used)	0: Level fixing input
177	TESTB		IN	(Not used)	1: Level fixing input
178	TEST		IN	(Not used)	0: Level fixing input
179	GND		POW		
180	GND		POW		
181	VCC		POW		
182	PMC3TCLK	LFTCLK	OUT	Separator motor step count	Separator motor clock output
183	PMC3DREQB	—	OUT	(Not used)	
184	PMC4TCLK	—	OUT	(Not used)	
185	PMC4DREQB	—	OUT	(Not used)	
186	DREQ0B	/DREQ0	OUT	"Mirror,SPF motor acceleration/reduction control"	L:Request
187	DREQ1B	/DREQ1	OUT	"Shifter,separator motor acceleration/reduction control"	L:Request
188	A16	A16	IN	System bus	
189	VCC		POW		
190	CS1B	/CS1	IN	System bus	0: Select
191	CSOUT10B	/CS10	OUT	System bus	L: Select
192	CSOUT11B	/CS11	OUT	System bus	L: Select
193	CS3B	/CS3	IN	System bus	0: Select
194	RDB	/RD	IN	System bus	0: Read
195	HWRB	/HWR	IN	System bus	0: Highlight
196	LWRB	/LWR	IN	System bus	0: Row write
197	GND		POW		
198	A1	A1	IN	System bus	

Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

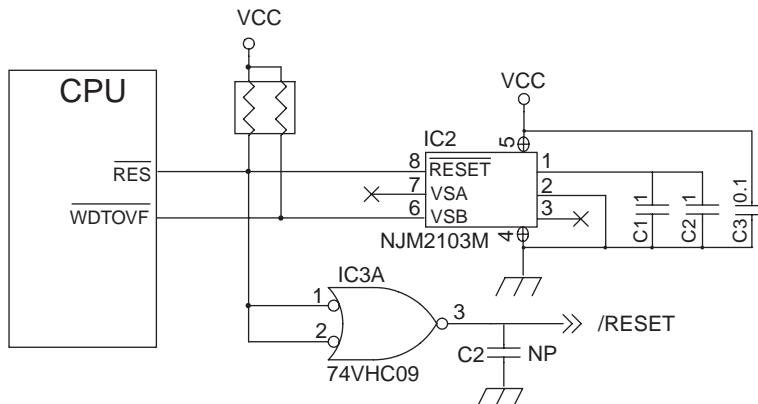
Pin No.	Pin name	Signal name	I/O	Purpose	Descriptions
199	A2	A2	IN	System bus	
200	GND		POW		
201	VCC		POW		
202	A3	A3	IN	System bus	
203	A4	A4	IN	System bus	
204	A5	A5	IN	System bus	
205	VCC		POW		
206	A6	A6	IN	System bus	
207	A7	A7	IN	System bus	
208	GND		POW		
209	RSTB	/RESET	IN	System reset	0: Reset
210	GND		POW		
211	CLK	CPUCLK	IN	System clock	
212	GND		POW		
213	D0	D0	BIDIR	System bus	
214	D1	D1	BIDIR	System bus	
215	D2	D2	BIDIR	System bus	
216	GND		POW		
217	D3	D3	BIDIR	System bus	
218	D4	D4	BIDIR	System bus	
219	D5	D5	BIDIR	System bus	
220	VCC		POW		
221	GND		POW		
222	D6	D6	BIDIR	System bus	
223	D7	D7	BIDIR	System bus	
224	VCC		POW		
225	D8	D8	BIDIR	System bus	
226	D9	D9	BIDIR	System bus	
227	D10	D10	BIDIR	System bus	
228	D11	D11	BIDIR	System bus	
229	D12	D12	BIDIR	System bus	
230	D13	D13	BIDIR	System bus	
231	D14	D14	BIDIR	System bus	
232	GND		POW		
233	D15	D15	BIDIR	System bus	
234	PMC1POUT0	SPFDA	OUT	SPF motor phase A drive	H: Drive
235	PMC1POUT1	SPFDB	OUT	SPF motor phase B drive	H: Drive
236	PMC1POUT2	/SPFDA	OUT	SPF motor phase /A drive	H: Drive
237	PMC1POUT3	/SPFDB	OUT	SPF motor phase /B drive	H: Drive
238	DSCLK	DSCLK	ODN	Document size sensor control	
239	DSLED0	LED0	OUT	2: Beam document size sensor control	
240	VCC		POW		

Pin descriptions) IN: Input pin OUT: Output pin BIDIR: Bi-directional pin ODN: Open drain output pin TR1: 3-state output pin POW: Power pin

## E. RESET CIRCUIT

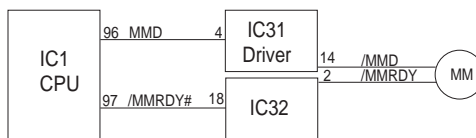
This circuit detects ON/OFF of power to control start/stop of each circuit. The 5V voltage and WTOVF signal of the main PWB is detected by the reset IC to generate the reset signal.

When the power voltage reaches the specified level, the circuit operations are started. Before the power voltage falls below the specified level, the circuit operations are stopped to prevent against malfunctions.



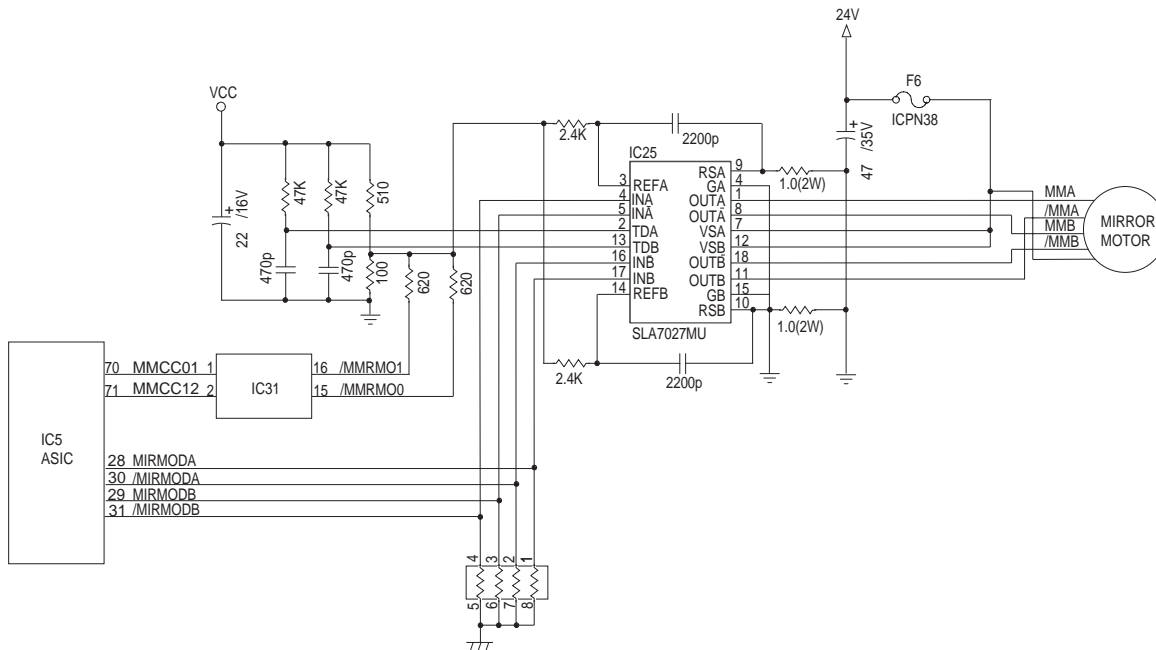
## F. MAIN MOTOR DRIVE CIRCUIT

The main motor is driven by the MMD signal from ASIC. While the main motor is rotating, the MMD signal is driven to HIGH and passed through IC35 to the control circuit in the main motor to rotate the main motor. The /MMRDY signal is kept HIGH until the main motor speed reaches the specified rpm, and passed to the CPU.



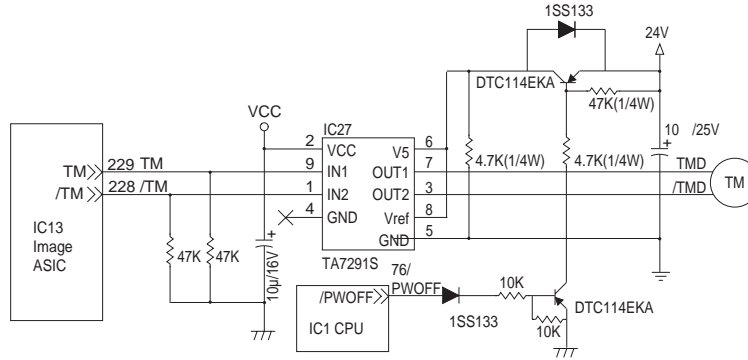
## G. MIRROR MOTOR CIRCUIT

The mirror motor is a stepping motor, and it uses the IC29 and the constant current chopper control IC (SLA7027). For control, the CPU outputs the drive signal to the IC29 to drive the mirror motor with 1-2 phase excitation.



## H. TONER SUPPLY MOTOR DRIVE CIRCUIT

The IC31 is the motor control IC, which generates the pseudo AC waveform with the pulse signals (TM, TM-) outputted from ASIC, driving the toner supply motor.



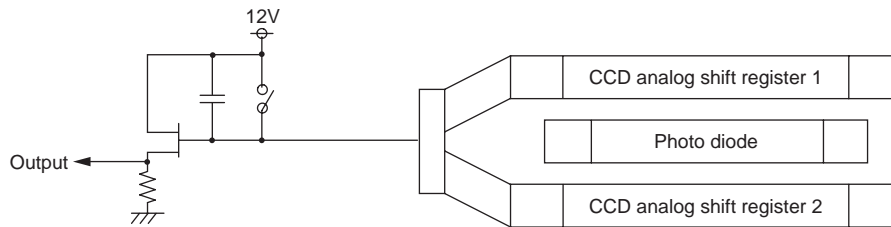
## 3. CCD PWB

The CCD PWB is provided with the CCD (Charge-Coupled Device), the differential amplifier which amplifies image signals, and the AD convertor which converts the amplified image signals into digital signals.

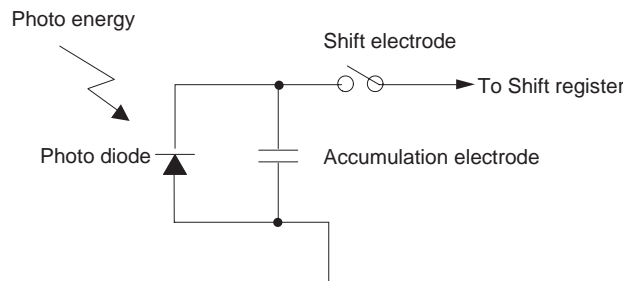
The DC power and the pulse supply pins necessary for operating the CCD image sensor are the power source (CD pin), GND (SS pin), shift pulse (SH pin), transfer pulse ( $\phi$  1 pin), ( $\phi$  2 pin), reset pulse (/RS pin), clamp pulse (/CP pin), and sampling (/SP pin).

Photo data are stored in the light receiving element at the center of the CCD by the SH signal. Even number pixel data are sent to one of the two shift registers which are positioned at both ends of the light receiving element, and odd number pixel data are sent to the other shift register. The time interval between inputting two SH signals is called the photo accumulation time.

The signals are transferred to the register, then to the shift register sequentially by transfer pulses  $\phi$  1 and  $\phi$  2 and to the floating capacitor section where electric signals are voltage-converted. Electric charges from the even number pixel shift register and the odd number pixel shift register are flowed to the floating capacitor section alternatively.



The /RS signal is the reset signal of the CCD output signal. The CCD output is expressed as electric charges equivalently accumulated in the capacitor. Therefore, to take the CCD output data one pixel by one pixel, one output data must be cleared after it is outputted. The /RS signal is used for that operation.



The /SP pulse signal is the peak hold signal of the signal voltage.

The output signal from the CCD is amplified by about 4.7 times greater in the differential amplifier circuit in the CCD PWB.

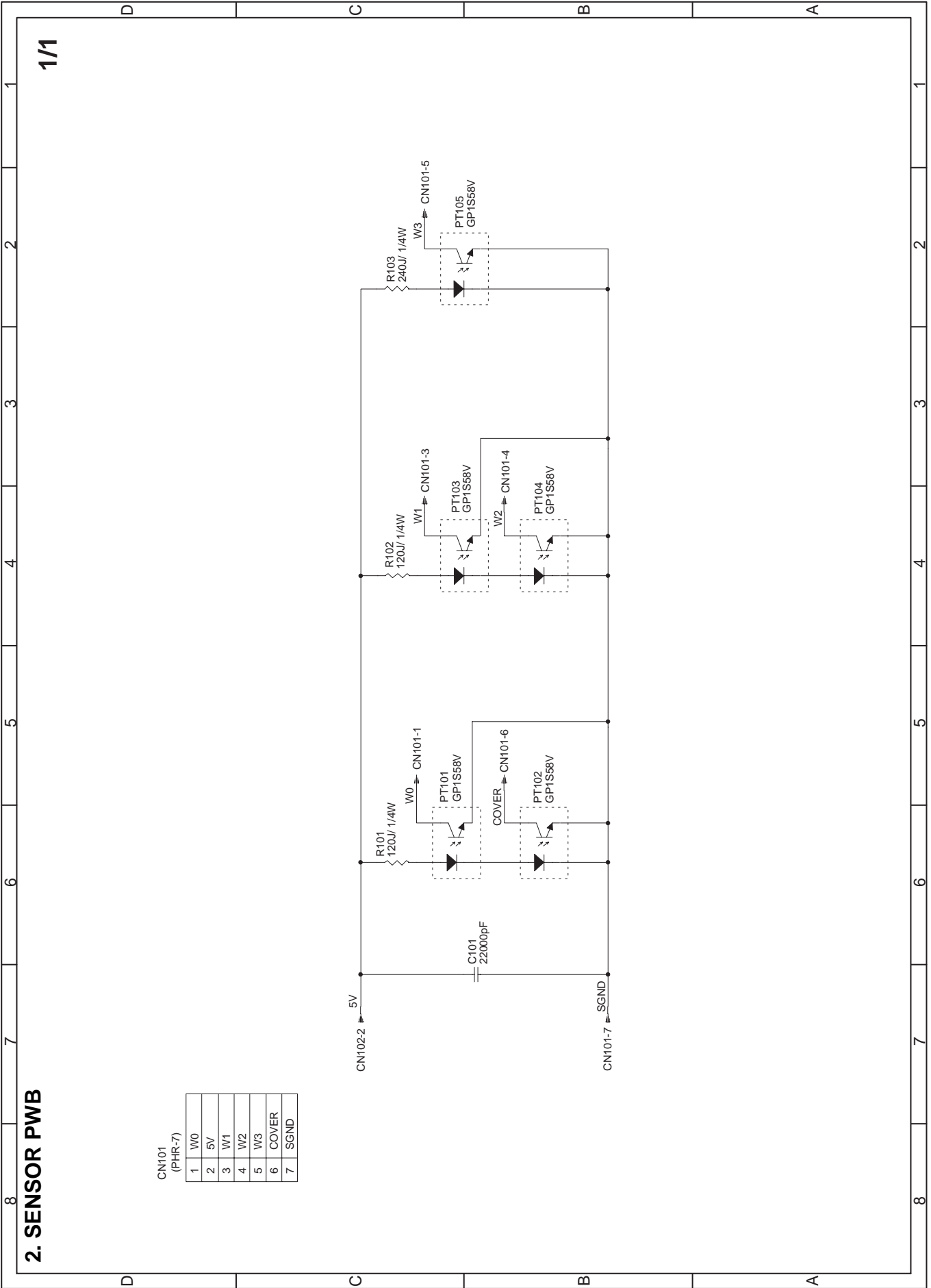
Differential amplification is made for the signal output (OS) and the compensation output (DOS).

The amplified CCD signal output is sent to the clamp circuit. In the clamp circuit, the black level is clamped to 2V at the BCLK signal timing by the analog switch. The clamped voltage is maintained for one line by the coupling capacitor. The clamped analog signal is impedance-converted and inputted to the AD convertor.

The analog signal inputted to the AD convertor is converted into 8bit digital data and passed to the PCU PWB.

The machine employs the TCD1501C as the image sensor. The TCD1501C is the reduction type high sensitivity CCD linear sensor of one-output system. 5000 pixels of 7µm x 7µm are arranged in line to allow scanning of A3 document at 400dpi (16 lines/mm).





1/1

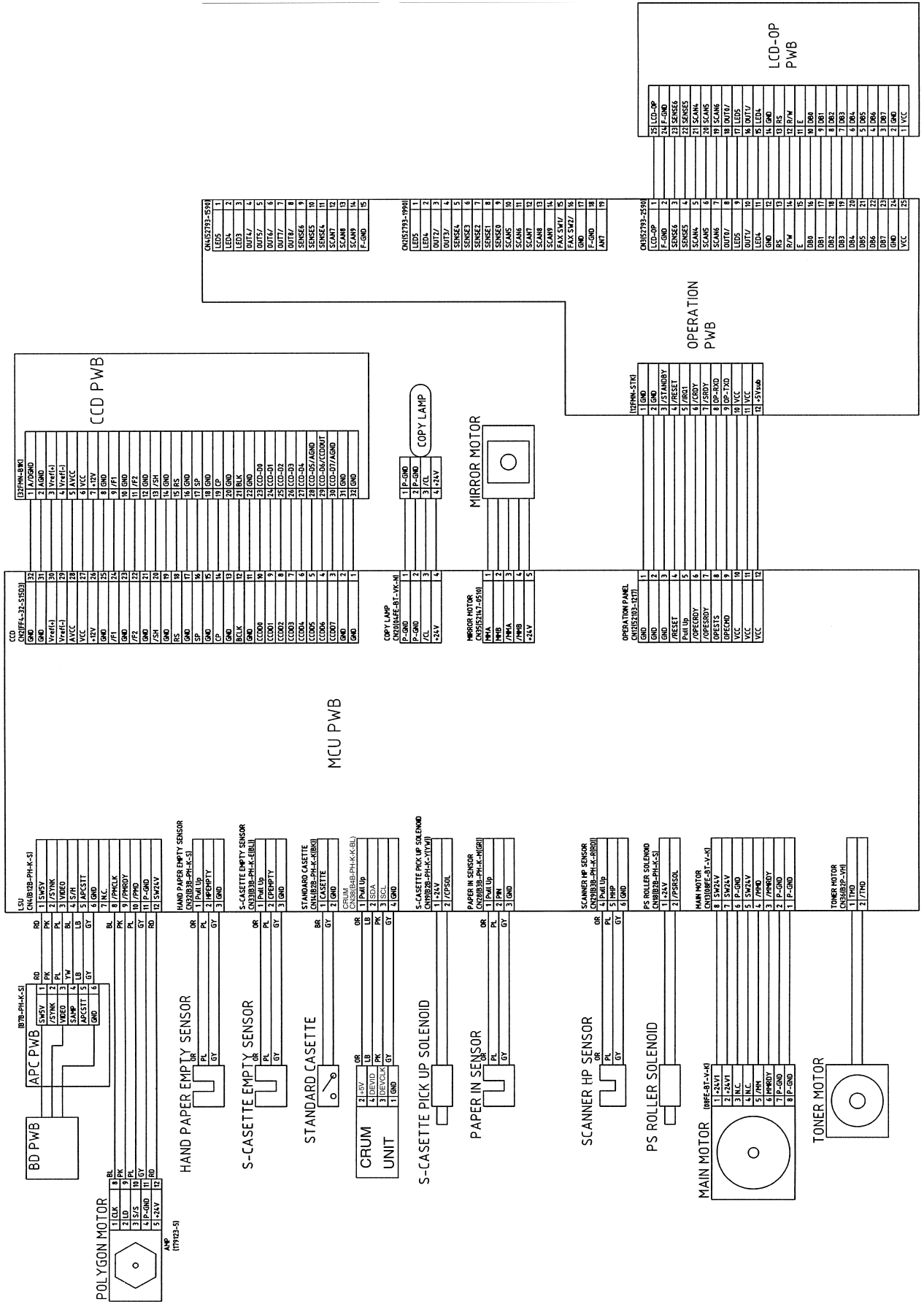
2. SENSOR PWB

CN101 (PHR-7)

1	W0
2	5V
3	W1
4	W2
5	W3
6	COVER
7	SGND

# [15] ACTUAL WIRING DIAGRAM

## 1. ACTUAL WIRING DIAGRAM 1/4



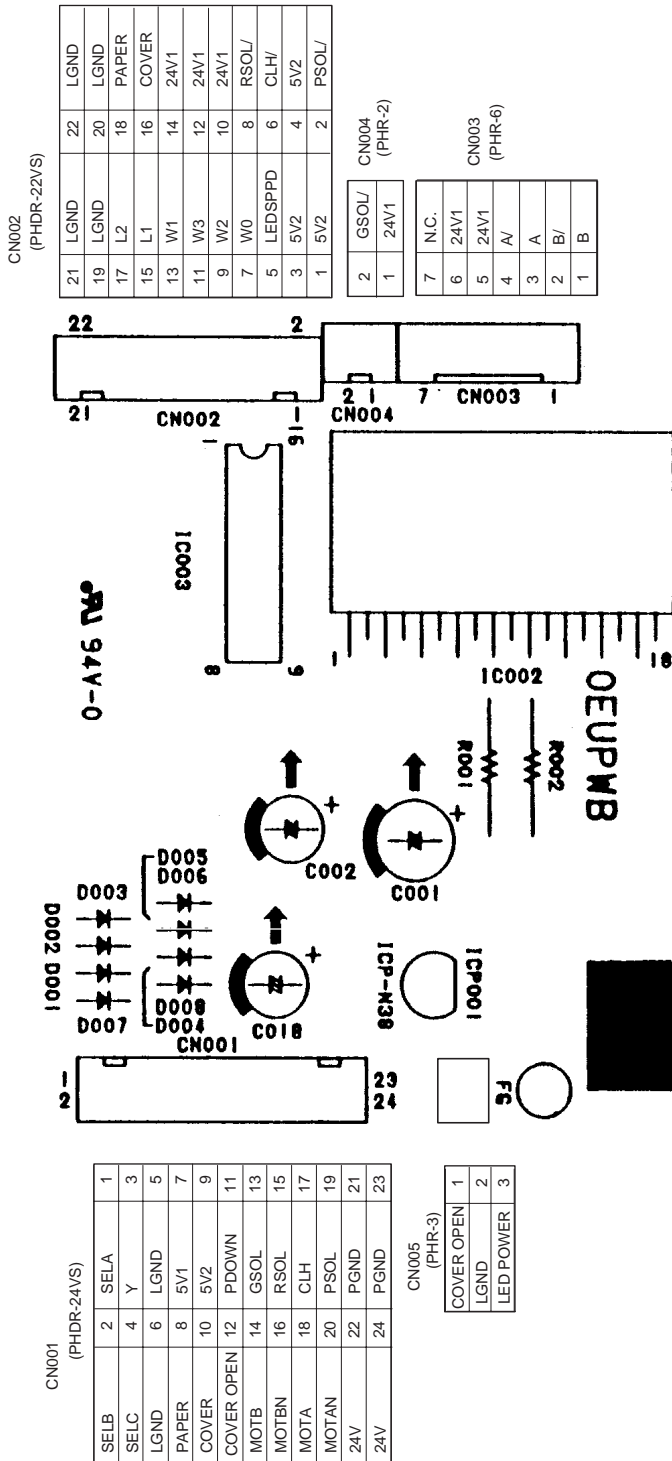




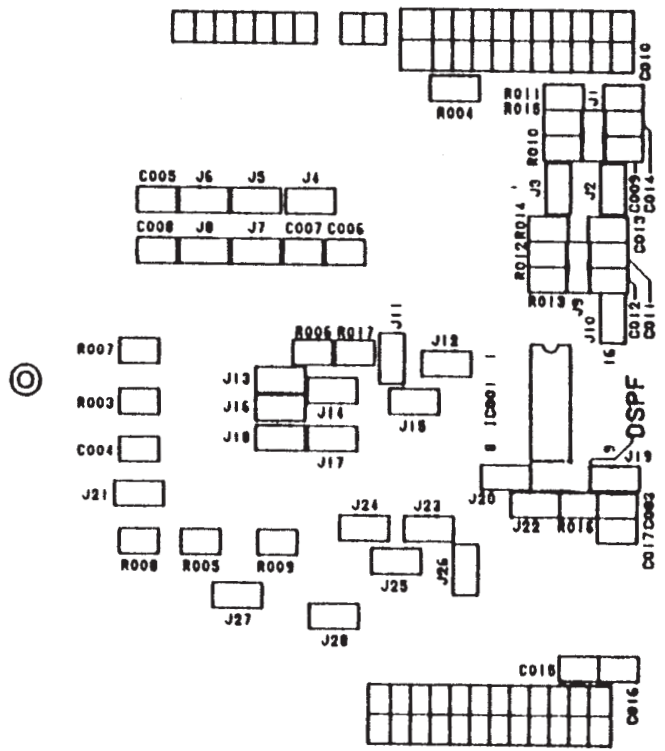


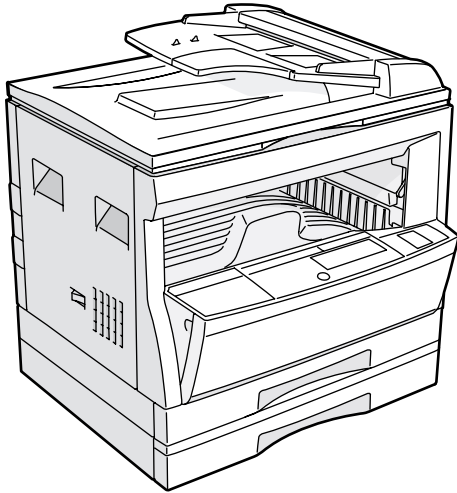
# [16] SPF PARTS ARRANGEMENT

## [PARTS SURFACE]



## [SOLDER SURFACE]





## DIGITAL COPIER

# AL-1611 MODEL AL-1622

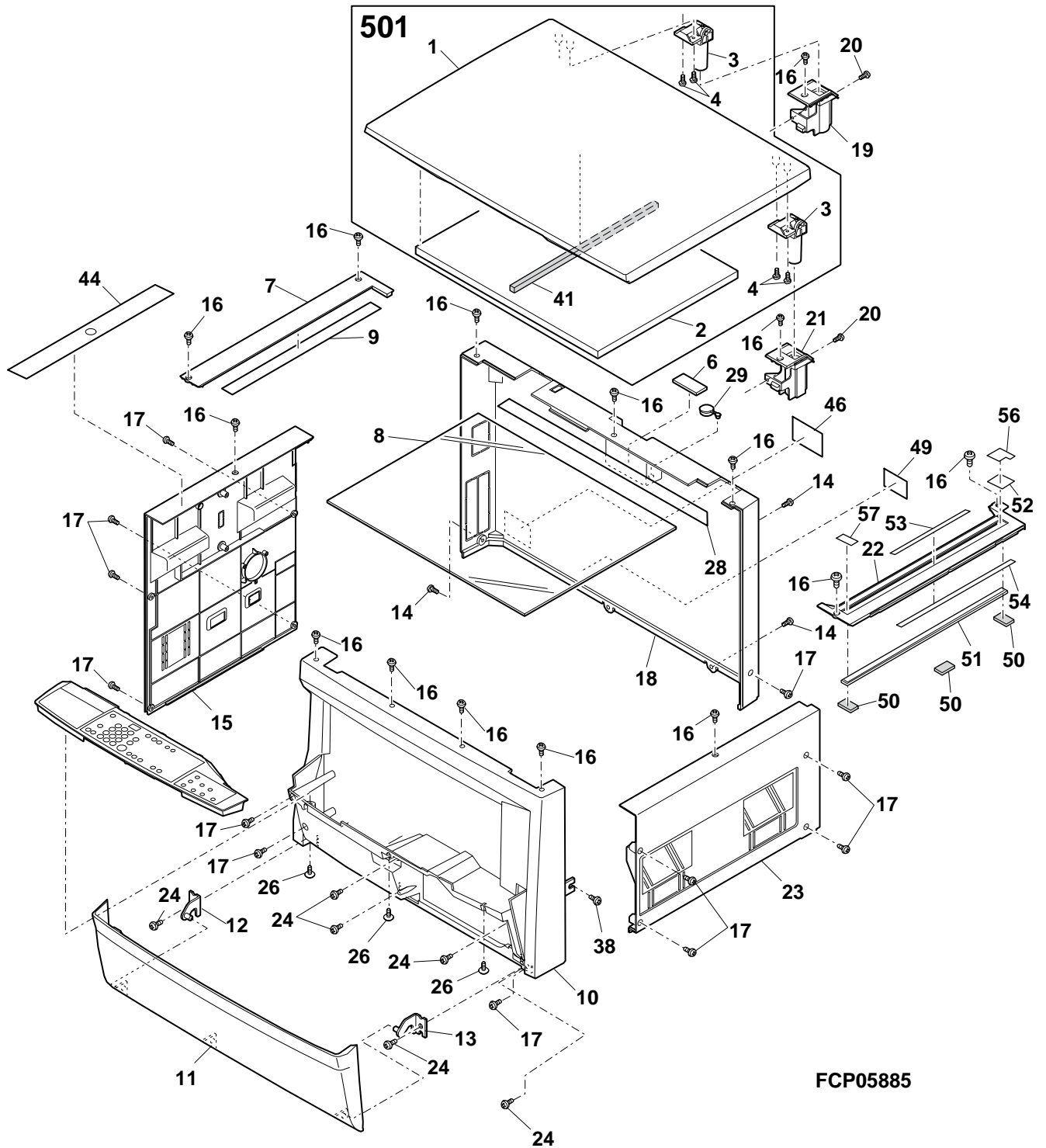
### CONTENTS

- |    |                                      |    |                                  |
|----|--------------------------------------|----|----------------------------------|
| 1  | Exteriors                            | 18 | MCU PWB                          |
| 2  | Operation panel section              | 19 | COPY-Operation PWB               |
| 3  | Side door unit                       | 20 | Duplex/P-out sensor PWB          |
| 4  | 2nd,3rd mirror unit                  | 21 | MHPS PWB                         |
| 5  | Optical unit                         | 22 | Tray sensor PWB                  |
| 6  | Middle frame unit                    | 23 | Manual paper feeding sensor PWB  |
| 7  | Fusing unit                          | 24 | PS sensor PWB                    |
| 8  | Main driving unit                    | 25 | RCU PWB                          |
| 9  | Base plate unit 1                    | 26 | Low voltage power supply unit    |
| 10 | Base plate unit 2                    | 27 | ERDH OP PWB                      |
| 11 | Manual paper feeding multi unit      | 28 | 1ST Tray interface PWB (AL-1622) |
| 12 | Delivery frame unit                  | 29 | SPF Exteriors (AL-1622)          |
| 13 | TC case unit                         | 30 | SPF Pick up unit (AL-1622)       |
| 14 | 250 sheets tray unit                 | 31 | SPF Transport unit (AL-1622)     |
| 15 | Packing material & Accessories       | 32 | SPF interface PWB (AL-1622)      |
| 16 | 1ST Tray exteriors (AL-1622)         | 33 | SPF sensor PWB (AL-1622)         |
| 17 | 1ST Tray paper feeding unit (AL1622) | ■  | Index                            |

Because parts marked with "△" is indispensable for the machine safety maintenance and operation, it must be replaced with the parts specific to the product specification.



1 Exteriors

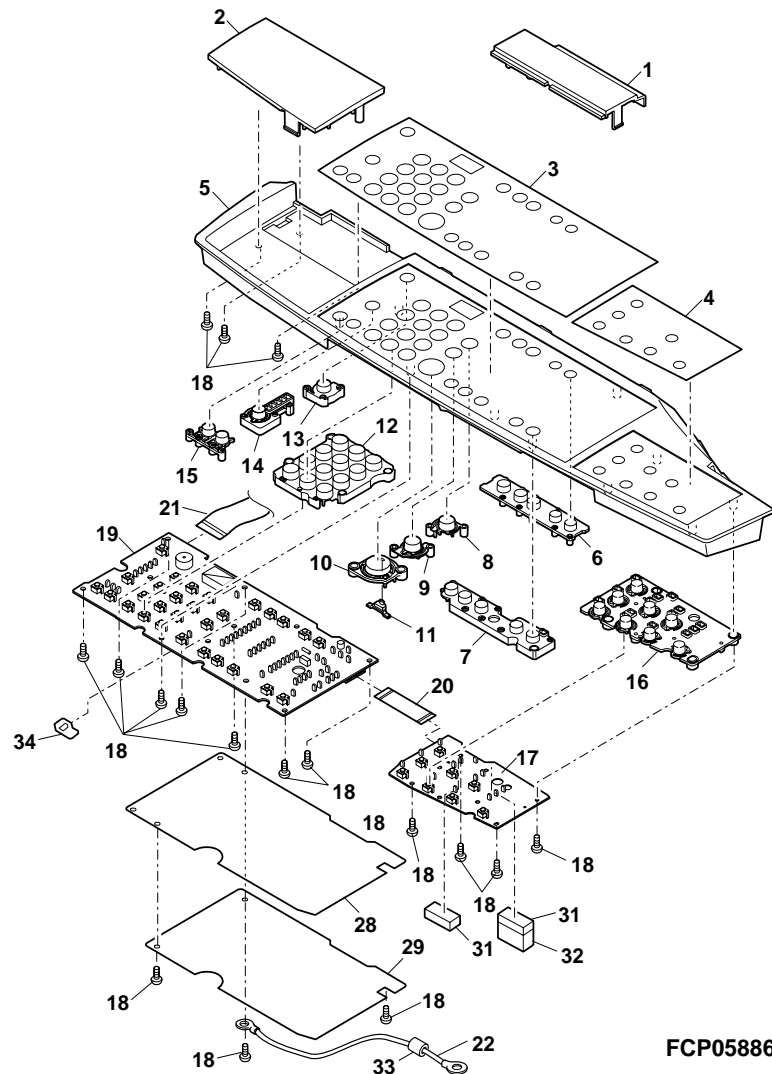


FCP05885

## 2 Operation panel section

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	GCOVH0015QSZZ	AG		D	LCD dummy cover
2	GCOVH0016QSZZ	AH		D	FAX dummy cover
3	HPNLH0024QSZ3	AT		D	Main Deco.panel (AL-1611 U.Kingdom)
	HPNLH0024QSZ2	AT		D	Main Deco.panel (AL-1611 Germany)
	HPNLH0024QSZ5	AT		D	Main Deco.panel (AL-1622 U.Kingdom)
	HPNLH0024QSZ4	AT		D	Main Deco.panel (AL-1622 Germany)
4	HPNLH0022QSZ4	AK		D	DUP Deco.panel (U.Kingdom)
	HPNLH0022QSZ3	AK		D	DUP Deco.panel (Germany)
5	GCAB-0017QSZ1	AV		D	Operation panel cabinet
6	JBTN-0018QSZZ	AE		C	Function key
7	JBTN-0029QSZZ	AE		C	Select key
8	CBTN-0022QS01	AF		C	CA key
9	CBTN-0021QS01	AF		C	Clear key
10	CBTN-0019QS02	AF		C	Copy key
11	JBTN-0020QSZZ	AC		C	Copy key (LIGHT IND)
12	CBTN-0016QS01	AN		C	Ten key
13	JBTN-0026QSZZ	AE		C	Interrupt key
14	JBTN-0030QSZZ	AD		C	Mode select key
15	JBTN-0027QSZZ	AD		C	Density select key
16	JBTN-0023QSZZ	AG		C	Special function key
17	CPWBF0025QSE3	AH		E	ERDH operation PWB
18	XEBSD30P08000	AA		C	Screw(3x8)
19	CPWBF0024QSE7	BH	N	E	COPY operation PWB
20	DHAI-0116QSZZ	AC		C	Panel ERDH harness
21	DHAI-0115QSZZ	AF		C	Operation panel harness
22	DHAI-0149QSZZ	AE		C	OP. earth harness
28	PSHEZ0137QSZZ	AH		C	OP mylar sheet
29	PSHEZ0131QSZZ	AG		C	OP shield sheet
31	PCUSG0018QSZZ	AD		C	Rubber cushion(T8)
32	PCUSG0019QSZZ	AC		C	Rubber cushion(T4S)
33	RCORF0005QSZZ	AH		C	Ferrite core
34	PSHEZ0399QSZZ	AB		C	OP-PWB protect sheet

## 2 Operation panel section

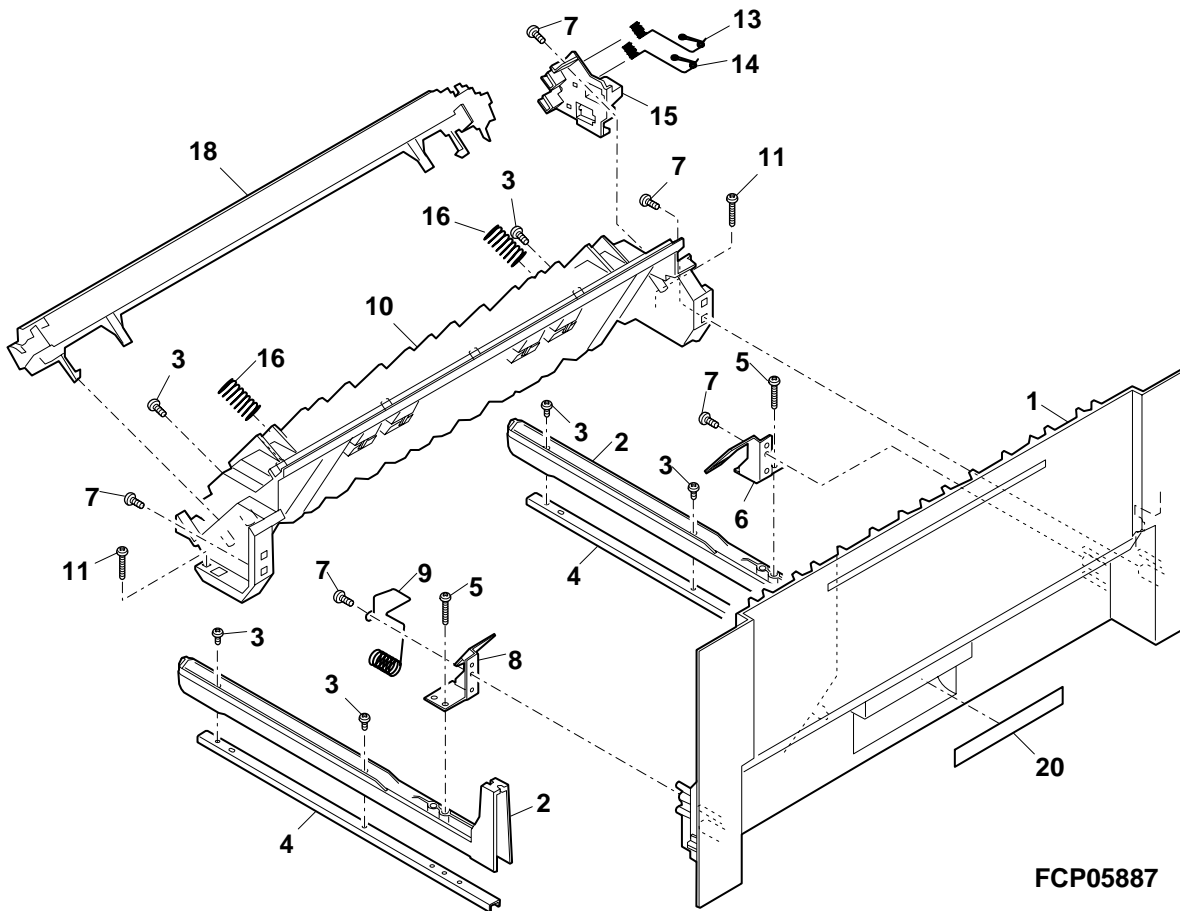


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### 3 Side door unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	GDOR-0001QSZZ	AW		D	Right door
2	LRALP0004QSZ1	AH		C	Right door rail
3	XHBSD30P10000	AA		C	Screw(3x10)
4	LPLTM0092QSZZ	AF		C	Rail reinforce plate
5	XHBSD30P14000	AA		C	Screw(3x14)
6	LPLTM0091QSZZ	AE		C	Inner reinforce plate R
7	XEBSD30P10000	AA		C	Screw(3x10)
8	LPLTM0090QSZZ	AE		C	Inner reinforce plate F
9	MSPRC0085QSZZ	AE		C	TC case GND spring
10	LFRM-0016QSZ3	AQ		C	Right door inner N
11	XHBSD30P16000	AA		C	Screw(3x16)
13	MSPRC0084QSZ1	AD		C	BC I/F spring
14	MSPRC0083QSZ1	AD		C	TC I/F spring
15	LHLDZ0033QSZ1	AF		C	TC terminal I/F holder
16	MSPRC0082QSZ1	AC		C	Pressure spring
18	CHLDZ0030RS51	BA		E	TC unit
20	TLABH0124QSZZ	AC		D	Green label

### 3 Side door unit

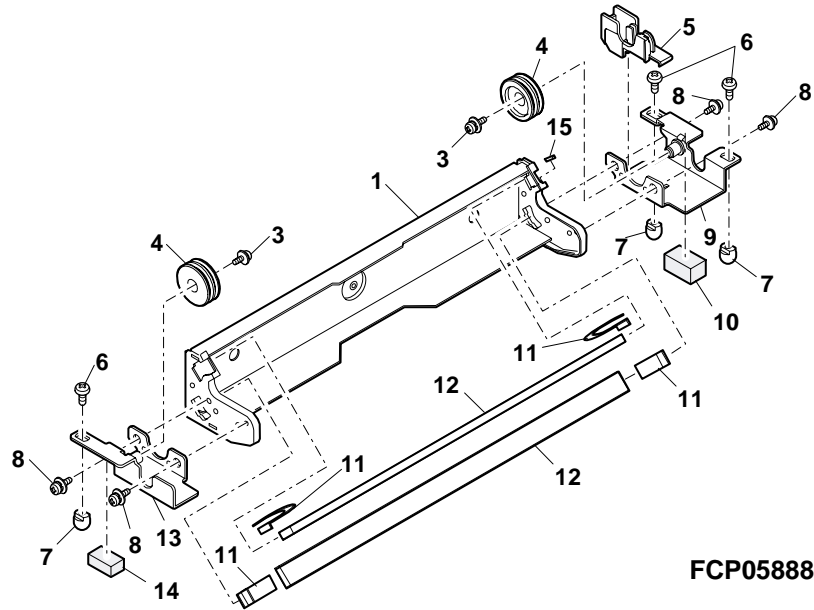


FCP05887

#### 4 2nd,3rd mirror unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	LHLDZ0044QSZZ	AP		C	2nd,3rd mirror holder
3	XBPSD40P06KS0	AA		C	Screw(4×6KS)
4	NPLYZ0017QSZZ	AE		C	W pulley
5	LHLDZ0013QSZZ	AD		C	CL guide holder
6	XEBSD40P06000	AA		C	Screw(4×6)
7	MSLi-0138FCZZ	AC		E	Slider
8	LX-BZ0335FCZZ	AA		C	Screw(4×6)(Red)
9	CPLTM0156QS02	AH		C	Pulley fixing plate R
10	PCUSS0009QSZZ	AA		C	MB-B cushion R
11	LFiX-0284FCZZ	AC		C	2nd,3rd mirror fixing plate F
12	PMiR-0008QSZZ	AP		B	2nd,3rd mirror
13	CPLTM0155QS02	AH		C	Pulley fixing plate F
14	PCUSS0201FCZZ	AA		C	MB-B cushion
15	PSPAZ0011QSZZ	AD		C	Mirror spacer
	(Unit)				
901	CMiR-0008QS32	BB		E	2nd,3rd mirror unit

#### 4 2nd,3rd mirror unit



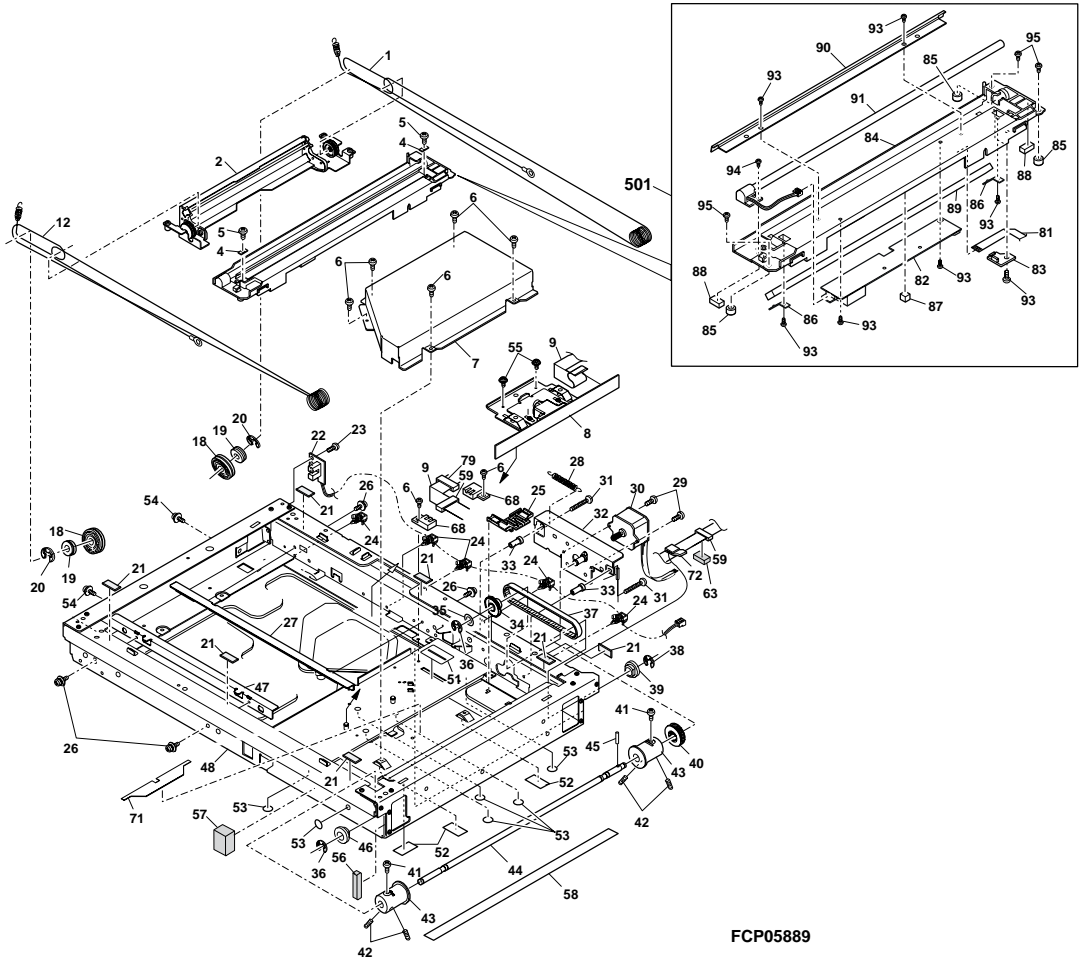
#### 5 Optical unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	PWiR-0005QSZ1	AQ		C	MB wire R
2	CMiR-0008QS32	BB		E	2nd,3rd mirror unit
4	LHLDZ0056QSZZ	AC		C	Wire holder
5	XBPSD40P06K00	AA		C	Screw(4×6K)
6	XHBSD30P06000	AA		C	Screw(3×6)
7	PCASZ0008QSZZ	AM		C	Dark box
8	CLNS-0003RS53	BR		E	Lens unit
9	DHAI-0120QSZZ	AG		C	CCD harness
12	PWiR-0006QSZZ	AQ		C	MB wire F
18	NPLYZ0016QSZZ	AF		C	Pulley
19	NPLYZ0006QSZZ	AD		C	L pulley
20	XRESP40-05000	AA		C	E type ring
21	PGUMS0004QSZZ	AA		C	Table glass cushion
22	CPWBF1177DS63	AR		E	MHPS PWB
23	XBBSD30P08000	AA		C	Screw(3×8)
24	LBNDJ0043FCZ1	AA		C	Band(SG-130)
25	LHLDZ0043QSZZ	AE		C	CL lead holder
26	LX-BZ0004QSZZ	AB		C	Screw(3×63)(Red)
27	LRALM0007QSZZ	AG		C	MB-B rail R
28	MSPRC0040QSZZ	AB		C	MB drive spring
29	XBPSD30P05K00	AA		C	Screw(3×5K)
30	RMOTP0021QSZ1	BC		B	Mirror motor
31	XBPSD40P16KS0	AA		C	Screw(4×16KS)
32	CPLTM0084QS01	AL		C	Mirror motor fixing plate
33	PGUMS0002QSZZ	AL		C	Protection rubber
34	NGERH0027QSZZ	AH		C	Mirror motor idle gear
35	LX-WZ0119FCZZ	AA		C	Washer
36	XRESP70-08000	AA		C	E type ring
37	NBLTT0002QSZZ	AH		B	Winder drive belt
38	XRESP50-06000	AA		C	E type ring
39	NBRGC0387FCZ1	AC		C	Bearing

## 5 Optical unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
40	NPLYZ0004QSZZ	AG		C	Winder drive shaft pulley
41	LX-BZ0324FCZZ	AA		C	Screw(3x4)
42	LX-BZ0049FCZZ	AB		C	Screw(4x6)
43	NPLYZ0013QSZZ	AL		C	Winder pulley
44	NSFTZ0028QSZZ	AM		C	Winder drive shaft
45	XPSSJ30-12000	AB		C	Spring pin(φ3-12)
46	NBRGC0133FCZ1	AC		C	PF bearing(M8)
47	LRALM0006QSZZ	AG		C	MB-B rail F
48	CDAIU0012QS06	BL		D	Optical base plate
51	PSHEP0085QSZZ	AC		C	Optical edge protect sheet D
52	PSHEZ0108QSZZ	AC		C	Optical base plate bottom myler A
53	PSHEZ0109QSZZ	AC		C	Optical base plate bottom myler B
54	XHBSD30P04000	AA		C	Screw(3x4)
55	LX-BZ0004QSZZ	AB		C	Screw(3x63)(Red)
56	PMLT-0033QSZZ	AC		C	Optical cushion D
57	PMLT-0034QSZZ	AC		C	Optical cushion E
58	PSHEZ0152QSZZ	AD		C	Optical bottom sheet
59	RCORF0002QSZZ	AE		C	Ferrite core(HF57SH35*1)
63	PMLT-0035QSZZ	AB		C	Core holding cushion
68	LHLDZ7021XCZZ	AD		C	Holder(FRH-12)
71	PSHEZ0160QSZZ	AE		C	Dark box lower sheet
72	PSPAZ0018QSZZ	AE		C	Cable fixing spacer
79	RCORF0002QSZZ	AE		C	Ferrite core(HF57SH35*1)
81	DHAi-0200QSZZ	AS		C	CL harness
82	DUNTK0034QSZZ	BC		E	Inverter unit
83	LFiX-0009QSZZ	AF		C	Harness fixer
84	LHLDZ0047QSZZ	AW		C	Base plate
85	MSLi-0138FCZZ	AC		E	Slider
86	MSPRP0145QSZZ	AF		C	Mirror spring
87	PCUSF0334FCZZ	AP		C	Mirror cushion
88	PCUSU0203FCZZ	AE		C	Cushion
89	PMiR-0009QSZZ	AS		B	1st mirror
90	PREFL0004QSZZ	AP		C	Reflector
91	RLMPU0012QSZZ	BG		B	Lamp
93	XEBSD30P06000	AA		C	Screw(3x6)
94	XEBSD30P08000	AA		C	Screw(3x8)
95	XEBSD40P06000	AA		C	Screw(4x6)
501	CREFL0004QS33	BL		E	Copy lamp unit

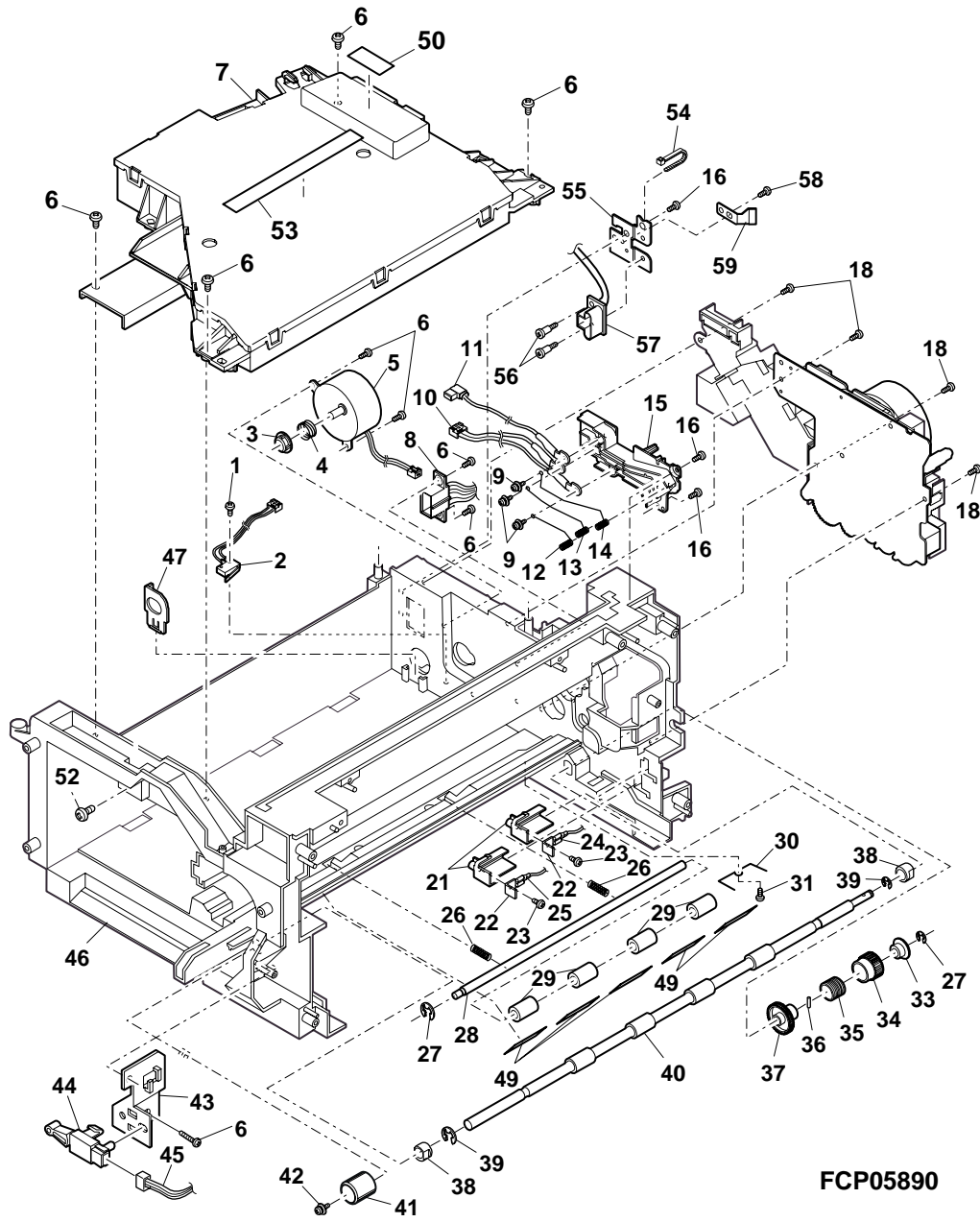
## 5 Optical unit



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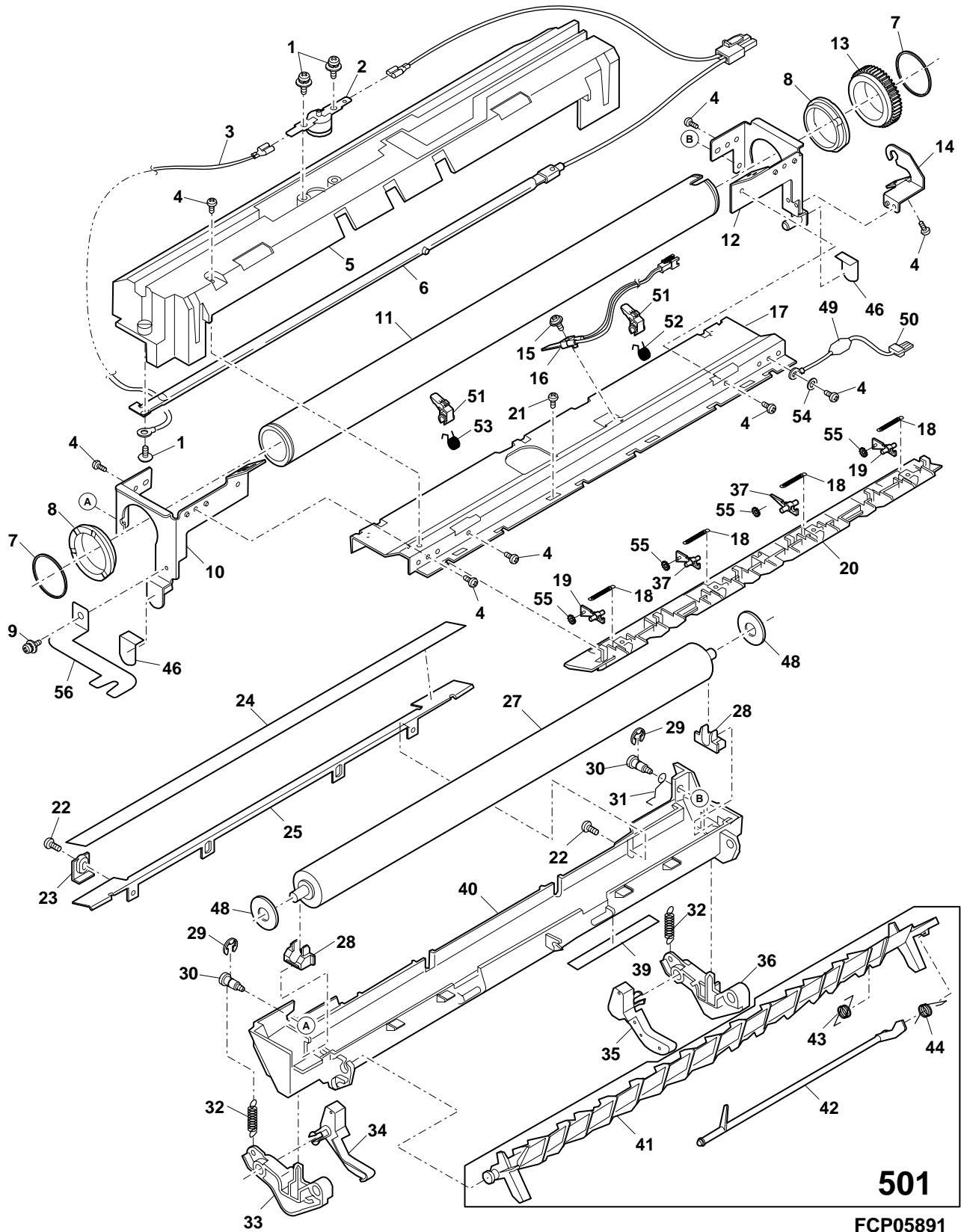
6 Middle frame unit



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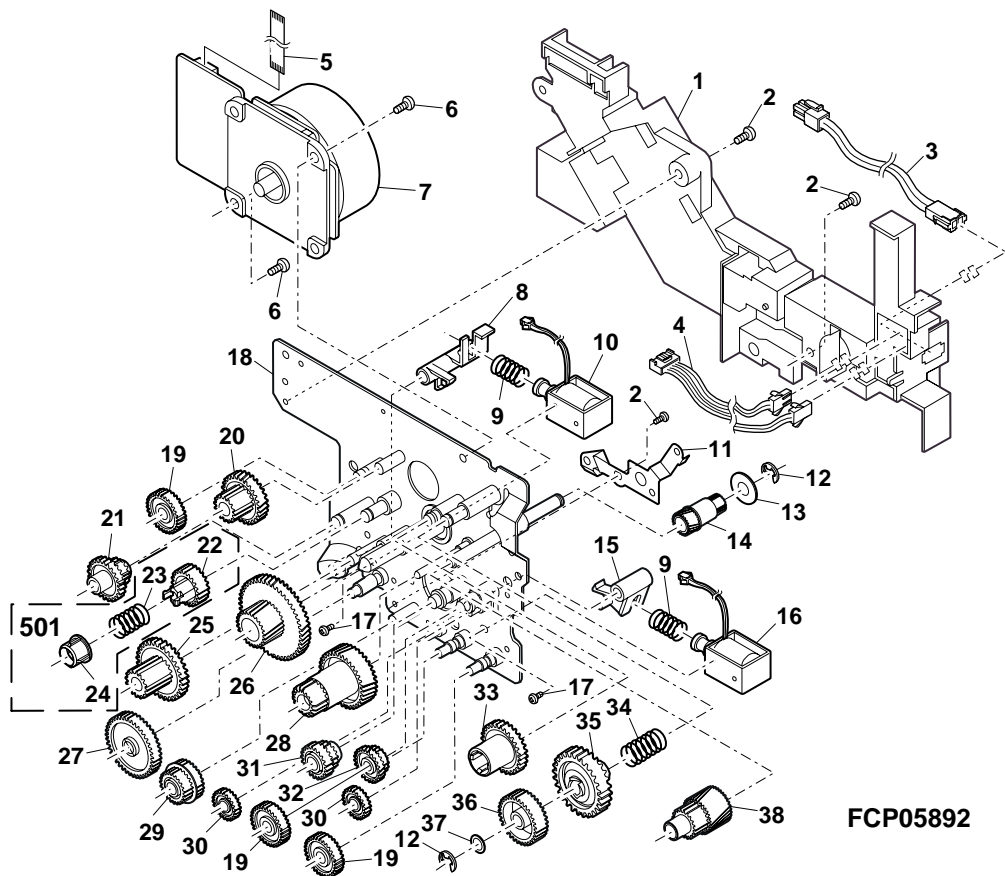
7 Fusing unit



## 8 Main driving unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	PGIDM0030QSZZ	AL		C	Harness guide
2	XHBSD30P08000	AA		C	Screw(3x8)
3	DHAI-0110QSZZ	AP		C	HL harness
4	DHAI-0089QSZZ1	AL		C	Thermistor harness
5	DHAI-0309QSZZ	AF		C	Main motor harness
6	XBBS40P10000	AA		C	Screw(4x10)
7	RMOTP0039QSZZ	BF		B	Main motor
8	PTME-0003QSZZ1	AD		C	Roller pawl
9	MSPRC1318FCZ1	AA		C	Spring B
10	RPLU-0009QSZZ	AN		B	Solenoid CSA
11	LPLTM0048QSZZ	AF		C	Drive earth plate
12	XRESP40-06000	AA		C	E type ring
13	LX-WZ0002QSZZ	AB		C	PO belt washer
14	NGERH0053QSZZ	AD		C	Gear(25/18T)
15	PTME-0012QSZZ	AC		C	PS clutch pawl
16	RPLU-0008QSZZ	AN		B	Solenoid PS
17	XBBS40P04000	AA		C	Screw(3x4)
18	CPLTM0047QS02	BA		C	Main drive plate
19	NGERH0010QSZZ	AD		C	Gear(28T)
20	NGERH0009QSZZ	AD		C	Gear(46/16T)
21	NGERH0014QSZZ	AD		C	Gear(30/15T)
22	NGERH0011QSZZ	AD		C	MG gear
23	MSPRC2132FCZ1	AA		C	MG roller spring
24	NCPL-0004FCZZ	AB		C	Coupling B
25	NGERH0052QSZZ	AE		C	Gear(38/18T)
26	NGERH0007QSZZ	AH		C	Gear(68/26T)
27	NGERH0057QSZZ	AE		C	Gear(41T)
28	NGERH0008QSZZ3	AL		C	Gear(55/19T)
29	NGERH0059QSZZ	AD		C	Gear(23/27T)
30	NGERH0012QSZZ	AE		C	Gear(20T)
31	NGERH0058QSZZ	AF		C	Gear(21/17T)
32	NGERH0013QSZZ	AG		C	Gear(31/17T)
33	NGERH0016QSZZ	AD		C	Coupling gear(34T)
34	MSPRC0081QSZZ	AB		C	HT ratchet spring
35	NGERH0055QSZZ	AE		C	Ratchet gear(44T)
36	NGERH0056QSZZ	AE		C	Ratchet gear(33T)
37	LX-WZ0314FCZZ	AA		C	Washer
38	NGERH0054QSZZ	AD		C	Gear(33/20T)
501	CGERH0011RS51	AE		E	MG gear unit

## 8 Main driving unit

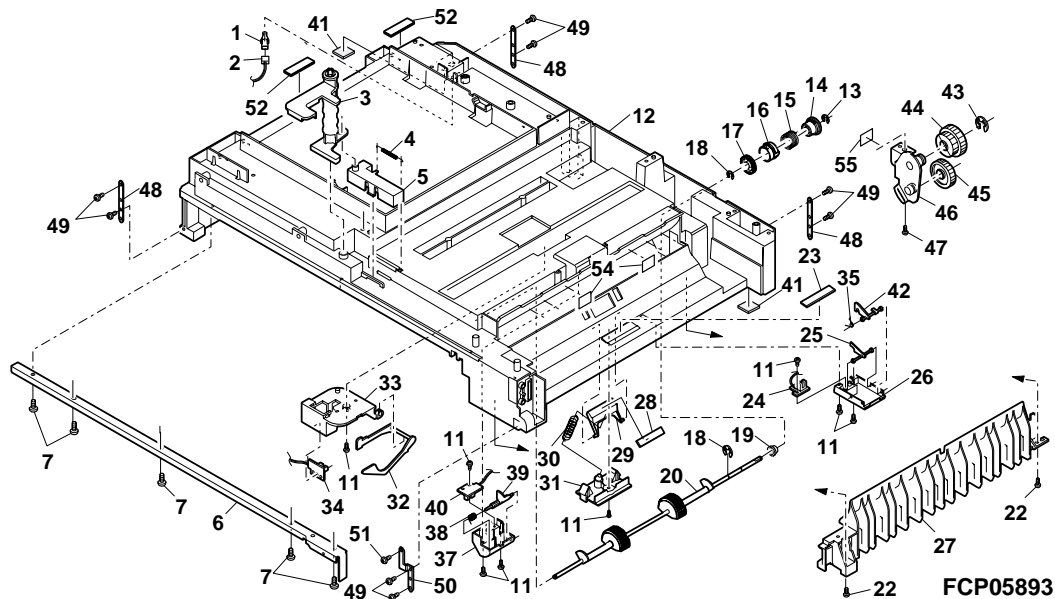


FCP05892

9 Base plate unit 1

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	QSW-B0003QSZZ	AF		B	Tray detect switch
2	DHAI-0091QSZ1	AK		C	Tray SW harness (AL-1622)
3	PTME-0013QSZZ	AL		C	Door lock pawl
4	MSPRT0100QSZZ	AB		C	Door lock lever spring
5	MLEVP0022QSZ1	AE		C	Door lock lever
6	LPLTM0065QSZZ	AL		C	Base reinforce plate F
7	XEPSD40P12000	AA		C	Screw(4x12)
11	XEBSD30P08000	AA		C	Screw(3x8)
12	GDAI-0002QSZZ	BH		C	Base plate
13	XRESP40-06000	AA		C	E type ring
14	LBOSZ1031FCZZ	AC		C	Clutch boss
15	MSPRC0161QSZZ	AF		C	Clutch spring
16	PPiPP0006QSZZ	AD		C	Clutch sleeve
17	NGERH0060QSZZ	AH		C	Clutch gear(34T)
18	XRESP50-06000	AA		C	E type ring
19	NBRGP0007QSZZ	AD		C	Bearing(φ6)
20	CSFTZ0066RS71	AU		C	Paper feeding roller
22	XEBSD40P12000	AA		C	Screw(4x12)
23	PSHEZ0133QSZZ	AD		C	Paper feeding sheet
24	CPWBF1177DS66	AR		E	Manual paper feeding sensor PWB
25	MLEVP0023QSZZ	AE		C	MF sensor actuator
26	PCOVP0033QSZZ	AF		C	Manual feed sensor cover
27	LRALP0005QSZ1	AN		C	Base plate rail R
28	PSHEZ2026FCZZ	AB		C	Sheet M1
29	LHLDZ0017QSZZ	AD		C	Pressure plate holder
30	MSPRC0101QSZ1	AB		C	Pressure plate spring
31	GFTA-0007QSZZ	AE		C	Pressure plate cover
32	MLEVP0024QSZZ	AF		C	Sensor lever ACT
33	LDAIU0011QSZZ	AF		C	Sensor base
34	CPWBF1177DS65	AR		E	Tray sensor PWB
35	MSPRD0148QSZZ	AB		C	MF sensor spring
37	PCOVP0032QSZ1	AD		C	PS sensor cover
38	MSPRC0099QSZ1	AC		C	PS front actuator spring
39	MLEVP0021QSZZ	AD		C	PS front actuator
40	CPWBF1177DS67	AR		E	PS sensor PWB
41	GLEGG0064FCZZ	AC		C	Rubber foot
42	MLEVP0044QSZZ	AE		C	MF sensor actuator 2
43	XRESP70-08000	AA		C	E type ring
44	NGERH0078QSZZ	AE		C	Joint gear(39/33T) (AL-1622)
45	NGERH1169FCZZ	AF		C	2ND Joint gear (AL-1622)
46	CPLTM0114QS01	AG		B	Joint gear fixing plate (AL-1622)
47	XEBSE40P12000	AA		C	Screw(4x12) (AL-1622)
48	LPLTM0112QSZZ	AE		C	Adjustment plate (AL-1622)
49	XEBSE40P14000	AA		C	Screw(4x14) (AL-1622)
50	LPLTM0136QSZZ	AD		C	2ND joint R front plate (AL-1622)
51	LX-BZ0018QSZZ	AB		C	Screw(3x6) (AL-1622)
52	LPLTM0125QSZZ	AD		C	Blind plate
54	PSHEZ0196QSZ1	AD		C	Manual paper guide mylar
55	PSPAZ0024QSZZ	AB		C	2nd joint spacer (AL-1622)

9 Base plate unit 1



FCP05893

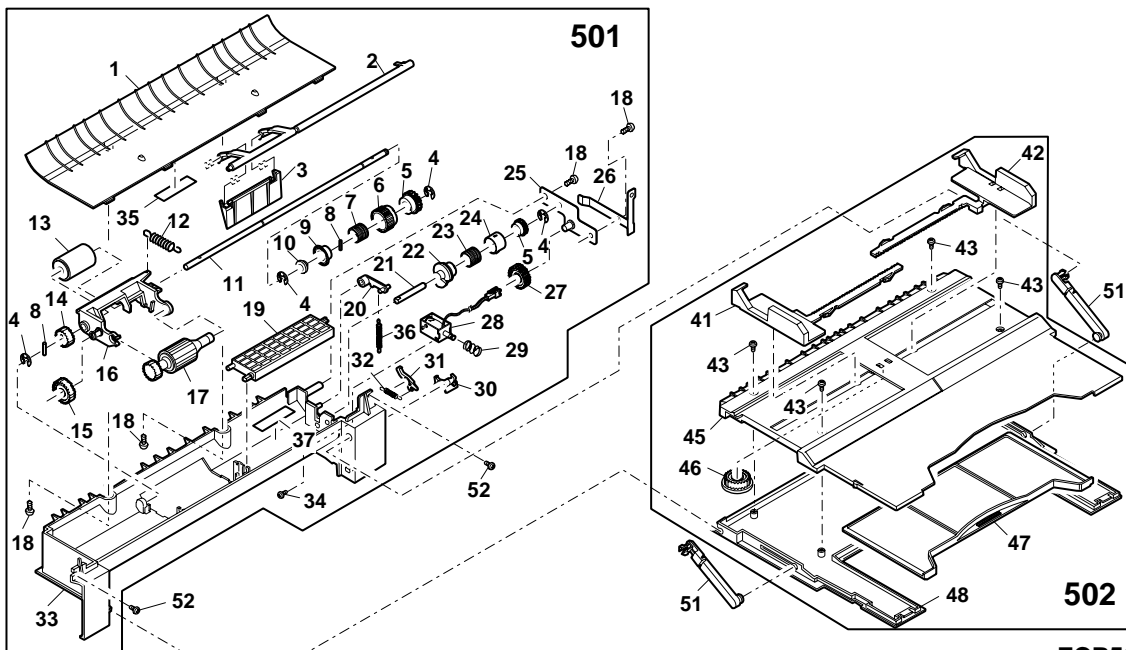




# 11 Manual paper feeding multi unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	PCOVP0030QSZZ	AN		C	Multi frame cover
2	MARMP0008QSZZ	AH		C	Stopper arm
3	LPLTP0056QSZZ	AD		C	Stopper plate
4	XRESP40-06000	AA		C	E type ring
5	LBOSZ1510FCZZ	AF		C	Cam boss A1
6	PPiPP0109FCZZ	AB		C	Pipe A
7	MSPRC1315FCZ1	AD		C	Clutch spring A
8	XPSSJ20-07000	AA		C	Spring pin(φ2-7)
9	LBOSZ1508FCZZ	AG		C	Cam boss A2
10	LBSHZ0303FCZZ	AC		C	M bushing C
11	NSFTZ0018QSZZ	AL		C	Roller shaft
12	MSPRT0091QSZZ	AC		C	Roller arm spring
13	NROLR0922FCZZ	AR		C	Manual paper feed roller
14	NGERH0495FCZZ	AC		C	Gear(20T)
15	NGERH0061QSZZ	AD		C	Gear(24T)
16	MARMP0009QSZZ	AF		C	Roller arm
17	CRÖLP1115FC01	AN		C	Manual feed take-up roller
18	XEBSD30P08000	AA		C	Screw(3x8)
19	MARMP0007QSZZ	AE		C	Cam transmission arm
20	MARMP0006QSZZ	AD		C	Arm
21	NSFTZ0017QSZZ	AG		C	Manual feed cam shaft
22	MCAMP0001QSZZ	AF		C	Drive cam
23	MSPRC1316FCZ1	AE		C	MF clutch spring B
24	PPiPP0009QSZZ	AD		C	Cam clutch sleeve
25	CPLTM0055QS01	AF		C	Paper feeding joint plate
26	MSPRD0092QSZZ	AE		C	MF earth spring
27	NGERH0972FCZZ	AB		C	Gear(27T)
28	RPLU-0007QSZZ	AN		B	Multi feeding solenoid
29	MSPRC1318FCZ1	AA		C	Spring B
30	PTME-0179FCZZ	AC		C	Manual paper feeding pawl B
31	PTME-0178FCZZ	AC		C	Manual paper feeding pawl A
32	MSPRC2175FCZZ	AA		C	Pawl A spring
33	LFRM-0020QSZZ	AV		C	Multi feed frame
34	XBBSD30P10000	AA		C	Screw(3x10)
35	PSHEZ0099QSZZ	AC		C	Vibration proof sheet
36	MSPRT0147QSZZ	AC		C	Stopper arm spring
37	PSHEZ0100QSZZ	AC		C	Vibration proof sheet C
41	PGiDM0037QSZZ	AG		C	MB side guide F
42	PGiDM0038QSZZ	AG		C	MB side guide R
43	XEBSE30P08000	AA		C	Screw(3x8)
45	LSOU-0009QSZZ	AR		D	Multi feed tray 1-U
46	NGERH0193FCZZ	AB		C	UC manual feed gear
47	LSOU-0011QSZZ	AL		D	Multi feed tray 2
48	LSOU-0010QSZZ	AU		D	Multi feed tray 1-L
51	MARMP0005QSZZ	AE		C	Tray arm
52	XEBSD30P08000	AA		C	Screw(3x8)
501	CFRM-0020RS51	BK		E	Manual paper feeding multi unit
502	CSOU-0009QS32	AZ		E	Manual paper tray unit

# 11 Manual paper feeding multi unit

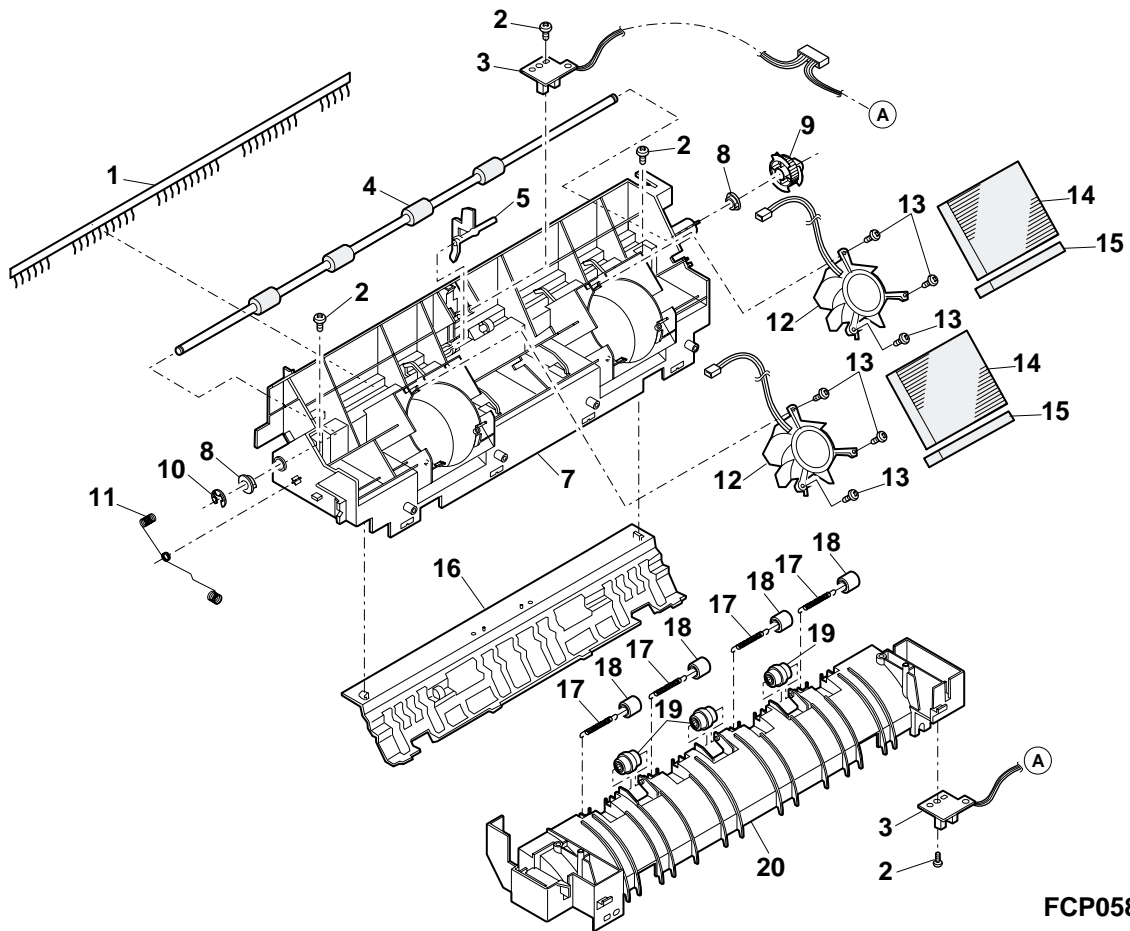


FCP5895

## 12 Delivery frame unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	PBRSS0026QSZZ	AF		B	Discharge brush
2	XEBSD30P08000	AA		C	Screw(3x8)
3	CPWBF1177DS64	AS		E	Duplex/P-out sensor PWB
4	NROLR0092QSZZ	AM		C	Delivery roller S
5	MLEVP0025QSZZ	AD		C	Delivery actuator
7	LFRM-0065QSZZ	AT		C	Delivery upper frame
8	NBRGM5006BCZZ	AB		C	Bearing
9	NPLYZ0029QSZZ	AD		C	Delivery drive gear(34T)
10	XRESP50-06000	AA		C	E type ring
11	MSPRD0297QSZZ	AG		C	Delivery earth spring A
12	NFANP0002QSZZ1	AX		B	Cooling fan
13	XEBSD20P06000	AA		C	Screw(2x6)
14	PFILZ0004QSZZ	AM		B	Ozone filter
15	PMLT-0027QSZZ	AC		C	Cleaning fan cushion
16	PGIDM0062QSZZ	AP		C	Delivery upper paper guide
17	MSPRT0229GCAZ	AC		C	FU spring R
18	NROLP0034QSZZ	AD		C	Delivery roller
19	NKOM-0002QSZZ	AC		C	Delivery collar
20	LFRM-0066QSZZ	AT		C	Delivery lower frame

## 12 Delivery frame unit



FCP05896

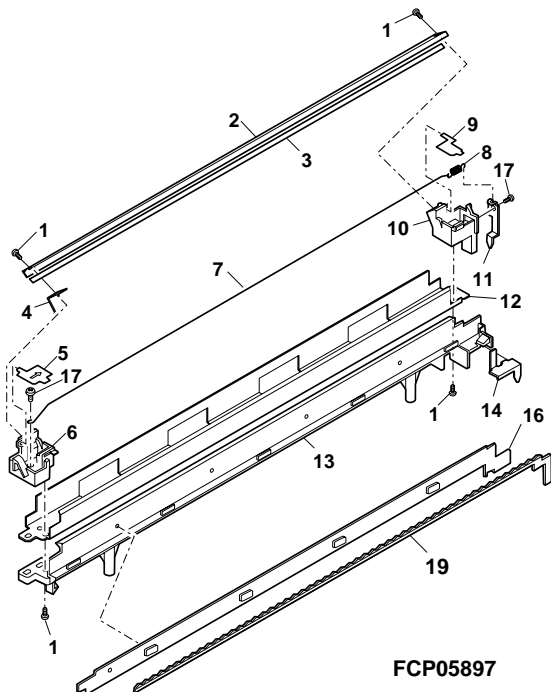
13 TC case unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	XEBSE30P08000	AA		C	Screw(3x8)
2	PGiDH0031QSZZ	AH		C	TC front guide
3	PSHEP0050QSZ1	AD		C	TC sheet
4	LPLTM0059QSZZ	AC		C	TC upper PG earth spring plate
5	PSHEP0051QSZZ	AB		C	TC cover sheet F
6	LHLDZ0030QSZZ	AD		C	TC holder F
7	DWiR-0466CSZZ	BG		B	Charger wire
8	MSPRT0513FCZ1	AA		C	MC tension spring
9	PSHEP0052QSZZ	AB		C	TC cover sheet R
10	LHLDZ0032QSZZ	AD		C	TC holder R
11	QSLP-0009QSZZ	AD		C	TC electrode plate
12	PCASZ0006QSZZ	AM		C	TC case
13	LHLDZ0031QSZZ	AH		C	Discharge holder
14	QSLP-0008QSZZ	AD		C	BC electrode plate
16	PGiDM0032QSZZ	AE		C	Separator guide
17	XEBSD30P06000	AA		C	Screw(3x6)
19	PSHEZ0125QSZZ	AE		C	Discharger delivery sheet
	(Unit)				
901	CHLDZ0030RS51	BA		E	TC unit

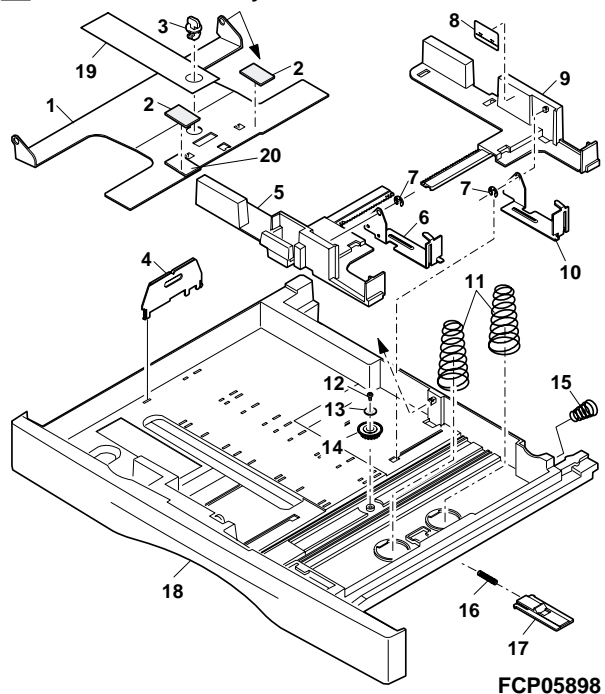
14 250 sheets tray unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	LPLTM0053QSZ1	AS		C	Rotation plate
2	PSHEZ0054QSZ1	AC		C	Rotation plate sheet
3	LHLDW1226FCZZ	AB		C	Turn fasner
4	LPLTM2642FCGZ	AD		C	Tray rear plate
5	PGiDM0035QSZZ	AP		C	Guide F
6	PTME-0022QSZ1	AL		C	250 Tray pawl F
7	XRESP40-06000	AA		C	E type ring
8	TLABH0064QSZ1	AC		D	Indicator label
9	PGiDM0036QSZZ	AP		C	Guide R
10	PTME-0023QSZ1	AL		C	250 Tray pawl R
11	MSPRC0090QSZZ	AD		C	Tray spring
12	XEBSD30P08000	AA		C	Screw(3x8)
13	XWBSD30-08100	AA		C	Washer
14	NGERH0193FCZZ	AB		C	UC manual feed gear
15	MSPRC0152QSZZ	AB		C	Tray drawer lower spring D
16	MSPRC1145FCZZ	AA		C	Stopper spring
17	LSTPP0161FCZZ	AB		C	Rotation plate stopper
18	GCASP0003QSZZ	AZ		D	Tray case
19	TTAG-0004QSZZ	AC		D	Tray rotation tag
20	PSPAZ0022QSZZ	AC		C	Rotation plate spacer
	(Unit)				
901	CCASP0003RS52	BG		E	250 Tray unit

13 TC case unit



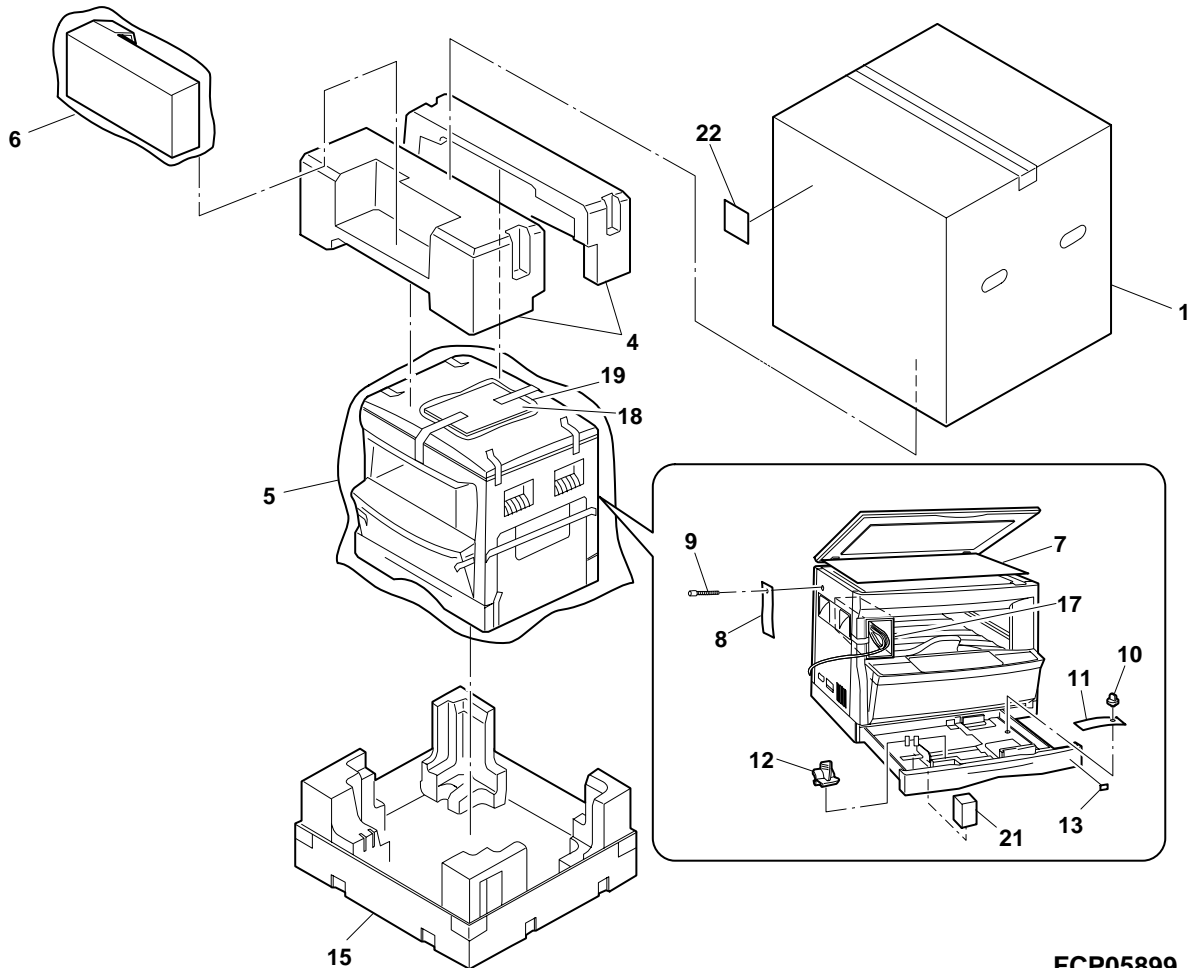
14 250 sheets tray unit



## 15 Packing material & Accessories

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	SPAKC0416RS11	BU	N	D	Packing case (AL-1611)
	SPAKC04145RS23	BU	N	D	Packing case (AL-1622)
4	SPAKA0083RSZZ	AD		D	Top packing cushion (AL-1611)
	SPAKA0120RSZZ	BS	N	D	Top packing cushion OC (AL-1622)
5	SSAKZ0003QSZZ	AF		D	Vinyl bag
6	UBAGF0018YSZ1	AF		D	DV aluminum bag
7	SPAKA0134QSZZ	AE		D	OC protect sheet
8	TCADZ0010QSZZ	AC		D	Fixer screw caution card
9	LX-BZ0015QSZZ	AF		C	2nd,3rd mirror fixing screw
10	LHLDW1226FCZZ	AB		C	Turn fasner
11	TTAG-0004QSZZ	AC		D	Tray rotation tag
12	CCL EZ0005RS51	AQ		E	Charger cleaner unit
13	TLABH0065QSZZ1	AG		D	Size display label (AL-1611)
	TLABH0065QSZZ	AN		D	Size display label (AL-1622)
15	CPAKA0084RS01	AF		B	Bottom add
17	SPAKA0150RSZZ	AA		D	Accessories protect packing cushion
18	TINSE0854QSZZ	AY		D	Operation manual (English)
	TINSG0847QSZZ	AY		D	Operation manual (German)
	TLABH0068QSZZ1	AF		D	Magnification select label
	TLABH0138QSZZ	AD		D	D-F cover label
19	SSAKA2343QCZZ	AA		D	Vinyl bag(260x380mm)
21	SPAKA0167RSZZ	AA		D	Tray protect sheet
22	TLABS3760FCZZ	AC		D	CE mark label

## 15 Packing material & Accessories

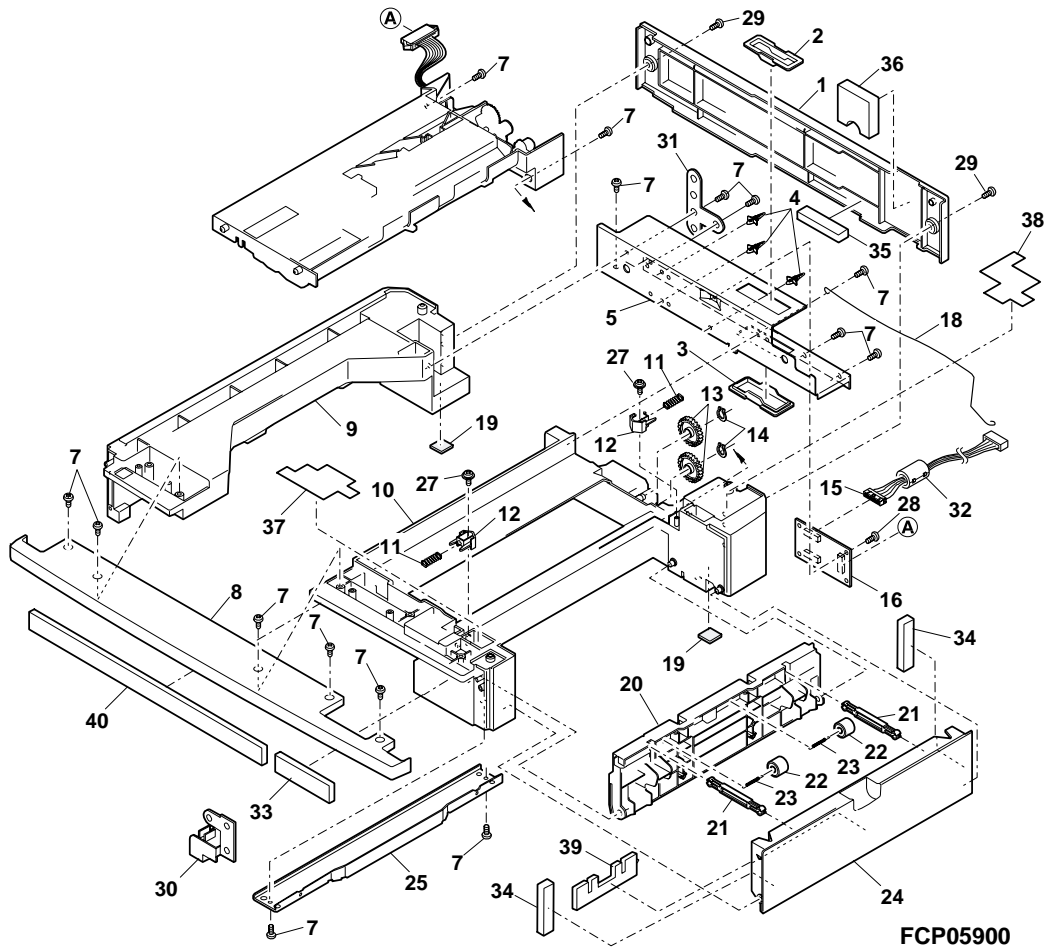


FCP05899

16 1ST Tray exteriors (AL-1622)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	GCOV-0020QSZZ	AQ		D	Rear cover
2	GGAD-0001QSZZ	AE		C	Edge guard upper
3	GGAD-0002QSZZ	AE		C	Edge guard lower
4	LSUPP0083FCZZ	AB		C	Supporter(LCBS-3)
5	LPLTM0116QSZZ	AQ		C	Joint plate R
7	XEBSE40P12000	AA		C	Screw(4x12)
8	GCOV-0019QSZ1	AR		D	Front cover
9	PGiDM0049QSZ1	AV		C	Guide L
10	PGiDM0048QSZ1	AW		C	Guide R
11	MSPRC0141QSZZ	AB		C	Transport PG lock spring
12	MLOKZ0001QSZZ	AC		C	Transport PG lock
13	NGERH1169FCZZ	AF		C	2ND Joint gear
14	PRNGP0019FCZZ	AA		C	V ring(GTW-6)
15	DHAI-0085QSZ3	BA		C	OP interface harness
16	CPWBF0019QSE3	AV		E	1ST tray interface PWB
18	MSPRD0135QSZZ	AD		C	Joint earth spring
19	GLEGG0064FCZZ	AC		C	Rubber foot
20	PGiDM0050QSZ1	AN		C	1ST transport paper guide
21	MARMP0015QSZZ	AD		C	1ST door arm
22	NROLP1060FCZZ	AF		C	U-turn roller
23	MSPRT0129QSZ1	AC		C	Roller spring
24	GCOV-0021QSZ1	AM		D	2ND right cover
25	LPLTM0113QSZZ	AH		C	Guide R joint plate
27	XEP30P08X00	AA		C	Screw(3x8X)
28	XHBSE30P10000	AA		C	Screw(3x10)
29	XHBSE40P10000	AA		C	Screw(4x10)
30	LPLTM0135QSZZ	AF		C	Joint earth plate
31	LPLTM0138QSZZ	AD		C	2ND earth L rear
32	RCORF0006QSZZ	AL		C	Ferrite core
33	PSHEZ0172QSZZ	AB		C	Front sheet 2
34	PSHEZ0173QSZZ	AB		C	Right cover sheet
35	PSP0-0008QSZZ	AC		C	Rear cover cushion 1
36	PSP0-0009QSZZ	AD		C	Rear cover cushion 2
37	PSP0-0010QSZZ	AD		C	Guide R cushion F
38	PSP0-0011QSZZ	AD		C	Guide R cushion R
39	PSP0-0014QSZZ	AG		C	Right cover cushion 3
40	PSHEZ0171QSZZ	AD		C	Front sheet 1

16 1ST Tray exteriors (AL-1622)

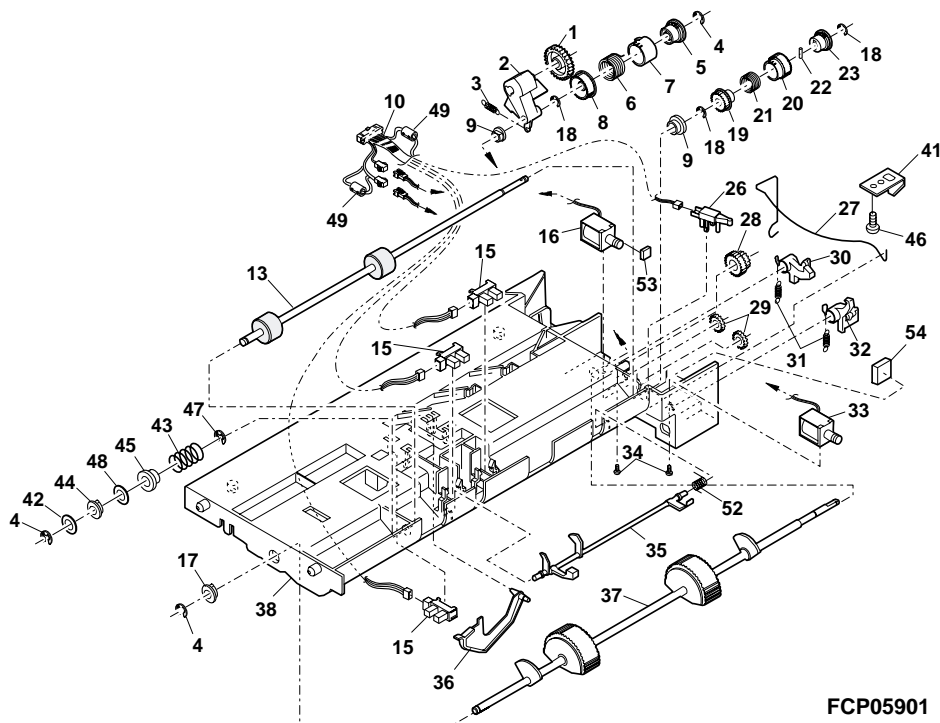


FCP05900

17 1ST Tray paper feeding unit (AL1622)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	NGERH1207FCZZ	AF		C	Joint gear(40T)
2	MARMP0229FCZZ	AE		C	Joint arm
3	MSPRT0128QSZZ	AB		C	Joint arm spring
4	XRESP50-06000	AA		C	E type ring
5	LBOSZ1031FCZZ	AC		C	Clutch boss
6	MSPRC0161QSZZ	AF		C	Clutch spring
7	PPiPP0007QSZZ	AD		C	Clutch sleeve
8	NGERH1132FCZZ	AH		C	Clutch gear(29T)
9	NBRGM0501FCZZ	AB		C	Metal D(B-F6-7)
10	DHAi-0075QSZZ	AR		C	1ST harness
13	NROLP0044QSZZ	AQ		C	2ND transport roller
15	VHGP1A71A1-1	AG		B	Photo transistor(GP1A71A1)
16	RPLU-0012QSZZ	AN		B	Paper feeding solenoid
17	NBRGC0188FCZZ	AB		C	PF bearing
18	XRESP40-06000	AA		C	E type ring
19	LBOSZ1510FCZZ	AF		C	Cam boss A1
20	PPiPP0109FCZZ	AB		C	Pipe A
21	MSPRC1315FCZZ	AD		C	Clutch spring A
22	LPiNS0181FCZZ	AA		C	Spring pin
23	LBOSZ1508FCZZ	AG		C	Cam boss A2
26	QSW-B0003QSZZ	AF		B	Tray detect switch
27	MSPRD0134QSZZ	AC		C	Paper feeding earth spring
28	NGERH0041QSZZ	AF		C	2ND gear ID(18T/26T)
29	NGERH0990FCZZ	AB		C	Gear(16T)
30	PTME-0017QSZZ	AD		C	Paper feeding clutch pawl
31	MSPRT0130QSZZ	AB		C	Clutch pawl spring
32	PTME-0016QSZZ	AD		C	Transport clutch pawl
33	RPLU-0013QSZZ	AN		B	Transport solenoid
34	XBBSD30P05000	AA		C	Screw(3x5)
35	MLEVP0039QSZZ	AE		C	PPDI actuator
36	MLEVP0046QSZZ	AD		C	CICS actuator
37	CSFTZ0067RS51	AU		C	Paper feeding roller
38	LFRM-0031QSZZ	AU		C	Paper feeding frame
41	LPLTM0137QSZZ	AD		C	Boss reinforce plate
42	LX-WZ0314FCZZ	AA		C	Washer
43	MSPRC0157QSZZ	AC		C	Break spring
44	NBRGC0529FCZZ	AD		C	Bearing
45	PPiPP0011QSZZ	AC		C	Break sleeve
46	XBBSE30P06000	AA		C	Screw(3x6)
47	XRESP50-06000	AA		C	E type ring
48	XWHSD60-10000	AA		C	Washer
49	RCORF0006QSZZ	AL		C	Ferrite core
52	MSPRD0156QSZZ	AB		C	PPD1ACT spring
53	PSP0-0005QSZZ	AA		C	Clutch pawl cushion
54	PSP0-0007QSZZ	AB		C	Transport clutch pawl cushion
(Unit)					
901	CFRM-0031QS55	BS		E	Paper feeding unit (1ST tray) (AL-1622)

17 1ST Tray paper feeding unit (AL1622)



18 MCU PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	VH i 29F04027QS	AW	N	B	Flash ROM(29F04028QS) [IC21]
2	QCNCM0017QSZZ	AC		C	Connector(4pin) [CN17]
3	QCNCM0877FCZZ	AF		C	Connector(20pin) [CN10]
4	QCNCM0923FC24	AF		C	Connector(24pin) [CN11]
5	QCNCM2401SC0D	AC		C	Connector(4pin) [CN31]
6	QCNCW0885FCZZ	AG		C	Connector(1-171825-2) [CN30]
7	VH i SC65165V6T	BW		B	IC(64M EDO DRAM)(SC65165V6T) [IC36]
8	VHV i CPN38 / - 1	AF		B	IC_protector(ICPN38) [F1,2,3,6,7]
9	QCNCM0019QSZZ	AB		C	Connector(B2B-PH-K-YW) [CN19]
10	QCNCW7191RC1B	AG		C	Connector(12pin) [CN12]
11	QCNCM0923FC22	AF		C	Connector(22pin) [CN5]
12	QCNCM1005MCZZ	AB		C	Connector(2pin) [CN36]
13	QCNCM1006MCZZ	AB		C	Connector(3pin) [CN22]
14	QCNCM1119LC0C	AC		C	Connector(3pin) [CN28]
15	QCNCM1119LC0D	AC		C	Connector(B4B-PH-K-M)(4pin) [CN15]
16	QCNCM2401SC0C	AB		C	Connector(3pin) [CN29]
17	QCNCM2401SC0E	AC		C	Connector(5pin) [CN1]
18	QCNCM7014SC0B	AD		C	Connector(2pin) [CN18]
19	QCNCM7014SC0C	AA		C	Connector(3pin) [CN32]
20	QCNCM7014SC0D	AB		C	Connector(4pin) [CN27]
21	QCNCM7014SC0F	AB		C	Connector(6pin) [CN26]
22	QCNCM7014SC0G	AB		C	Connector(7pin) [CN6]
23	QCNCM7014SC1B	AD		C	Connector(12pin) [CN4]
24	QCNC P 0240QCZZ	AA		C	Connector(2pin) [CN14]
25	QCNC P 0341QCZZ	AC		C	Connector(3pin) [CN33]
26	QCNCW0015QSZZ	AE		C	Connector(5pin) [CN35]
27	QCNCW0024QSZZ	AF		C	Connector(32pin) [CN2]
28	QCNCW0948FCZ3	AC		C	Connector(3pin) [CN23,CN24]
29	QCNCW1124LC0D	AB		C	Connector(4pin) [CN20]
30	QCNCW1124LC0H	AC		C	Connector(8pin) [CN13]
31	RCRSP0016QSZZ	AD		B	Crystal(19.6608MHz) [X1]
32	RCRUB0009QSZZ	AP		B	Crystal(22.000MHz) [X2]
33	RCRUB0010QSZZ	AP		B	Crystal(20.3094MHz) [X3]
34	RF i LN0019GCZZ	AC		C	Bead filter(ZE221) [FB2,10,11]
35	RMP TW 4000QCJ J	AB		B	Block resistor(0Ω×4 1/32W ±5%) [BR4,29,30]
36	RMP TW 4103QCJ J	AB		B	Block resistor(10KΩ×4 1/32W ±5%) [BR1-3,6,7,11]
	RMP TW 4103QCJ J	AB		B	Block resistor(10KΩ×4 1/32W ±5%) [BR13-24,31,47]
	RMP TW 4103QCJ J	AB		B	Block resistor(10KΩ×4 1/32W ±5%) [BR51,52,66-73]
37	RMP TW 4203QCJ J	AA		B	Block resistor(20KΩ×4 1/32W ±5%) [BR43-45,53-65]
38	RMP TW 4222QCJ J	AB		B	Block resistor(2.2KΩ×4 1/32W ±5%) [BR50]
39	RMP TW 4330QCJ J	AB		B	Resistor arrey(33Ω×4 1/32W ±5%) [BR5,8-10,12,32-38]
	RMP TW 4330QCJ J	AB		B	Resistor arrey(33Ω×4 1/32W ±5%) [BR40-42,74-82]
40	VCCCCY1HH101J	AA		C	Capacitor(50WV 100pF) [C266,269,270,273]
41	VCCCCY1HH120J	AA		C	Capacitor(50WV 12pF) [C253]
42	VCCCCY1HH7R0D	AA		C	Capacitor(50WV 7.0pF) [C11,12]
43	VCCUCY1AJ105Z	AC		C	Capacitor(10WV 1μF) [C15,281]
44	VCEAGU1CW106M	AA		C	Capacitor(16WV 10μF) [C7,9,103]
45	VCEAGU1CW107M	AB		C	Capacitor(16WV 100μF) [C25,32,33,35,37,41,42,73]
46	VCEAGU1CW226M	AA		C	Capacitor(16WV 22μF) [C91,98,254,255]
47	VCEAGU1CW476M	AB		C	Capacitor(16WV 47μF) [C262,263]
48	VCEAGA1HW107M	AA		C	Capacitor(50WV 100μF) [C74]
49	VCEAGA1VW106M	AA		C	Capacitor(35WV 10μF) [C102]
50	VCEAGU1VW476M	AB		C	Capacitor(35WV 47μF) [C72,75,76,96]
51	VCKYCY1EB223K	AA		C	Capacitor(25WV 0.022μF) [C13,14,17,24,30,89]
52	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.10μF) [C1,8,10,16,19,20,22,26-29,31,34,36,43]
	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.10μF) [C58,62,65,69,84,85,87,88,90]
	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.10μF) [C104,113,114,131-138,200-203]
	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.10μF) [C205-251,264,271,272,279]
53	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000pF) [C4,5,18,21,23,77-81]
	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000pF) [C105-112,115-130]
54	VCKYCY1HB222K	AA		C	Capacitor(50WV 2200pF) [C39,61,68,95,101]
55	VCKYCY1HB471K	AB		C	Capacitor(50WV 470pF) [C99,100,252]
56	VHDDSS133 / - 1	AA		B	Diode(DSS133) [D2-9]
57	VHD1N4005E / - 1	AB		B	Diode(1N4005E) [D10]
58	VHERD20EB3 / - 1	AB		B	Zener diode(RD20EB3) [D1]
59	VHEUDZS5.6B-1	AC		B	Zener diode(UDZS5.6B) [ZD1-16]
60	VH i HG73C025FD	BE		B	IC(HG73C025FD) [IC13]
61	VH i H8S / 2350FP	AY		B	CPU(H8S/2350FP) [IC1]
62	VH i LM358PS / - S	AC		B	IC(LM358PS) [IC10]
63	VH i MC7805CT-1	AD		B	IC(MC7805CT-2) [IC15]
64	VH i 27C00401QS	AM		B	EEPROM(27C00401) [IC4]
65	VH i NJM2103M-1	AH		B	IC(NJM2103M) [IC2]
66	VH i M66236FP-1	AT		B	IC(M66236FP) [IC14]
67	VH i NJM2903M / -	AD		B	IC(NJM2903M) [IC16]
68	VH i NJM3414M-1	AF		B	IC(NJM3414M) [IC9]
69	VH i SLA7027MUL	AQ		B	IC(SLA7027MUL) [IC25]
70	VH i TA7291S / - 1	AF		B	IC(TA7291S) [IC27]
71	VH i TC74ACT32F	AF		B	IC(TC74ACT32F) [IC12]
72	VH i TD62503F / -	AG		B	IC(TD62503F) [IC31]
73	VH i ULN2003AN1	AE		B	IC(ULN2003AN1) [IC28,29,38]

18 MCU PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
74	RH-iX0009QSZZ	AP		B	SRAM(UT61256JC-12) [IC18,19,21,22,35,37]
75	VHiW42C3103G/	AU		B	IC(W42C31-03G) [IC40]
76	VHi65808GN146	BF		B	IC(65808GN146) [IC5]
77	VHi74HCT244MF	AH		B	IC(74HCT244MF) [IC8]
78	VHi74LS244NS1	AH		B	IC(74LS244NS1) [IC30,32,33]
79	VHi74VHC08/-1	AE		B	IC(74VHC08) [IC3,39]
80	VRS-CY1JD000J	AA		C	Resistor(1/16W 0Ω ±5%) [FB3,4,9,R94,115,202,206]
	VRS-CY1JD000J	AA		C	Resistor(1/16W 0Ω ±5%) [R208,209,210,217]
81	VRS-CY1JD100J	AA		C	Resistor(1/16W 10Ω ±5%) [R8,51-56,61-66,216]
82	VRS-CY1JD101J	AA		C	Resistor(1/16W 100Ω ±5%) [R3,4,7,117,118]
83	VRS-CY1JD102J	AA		C	Resistor(1/16W 1KΩ ±5%) [R13-18,24,25,33,137,201]
84	VRS-CY1JD103F	AB		C	Resistor(1/16W 10KΩ ±1%) [R29,31,72,74]
85	VRS-CY1JD103J	AA		C	Resistor(1/16W 10KΩ ±5%) [R1,2,5,6,10,23,50]
	VRS-CY1JD103J	AA		C	Resistor(1/16W 10KΩ ±5%) [R70,73,85,93,97,205]
	VRS-CY1JD203J	AA		C	Resistor(1/16W 20KΩ ±5%) [R27,32,34,35]
86	VRS-CY1JD203J	AA		C	Resistor(1/16W 20KΩ ±5%) [R57-60,67,68]
	VRS-CY1JD203J	AA		C	Resistor(1/16W 20KΩ ±5%) [R138-140,211]
87	VRS-CY1JD205J	AA		C	Resistor(1/16W 2MΩ ±5%) [R28,30]
88	VRS-CY1JD220F	AA		C	Resistor(1/16W 22Ω ±1%) [R76]
89	VRS-CY1JD221J	AA		C	Resistor(1/16W 220Ω ±5%) [R107]
90	VRS-CY1JD242F	AA		C	Resistor(1/16W 2.4KΩ ±1%) [R69,75]
91	VRS-CY1JD242J	AA		C	Resistor(1/16W 2.4KΩ ±5%) [R81,100,109]
92	VRS-CY1JD330J	AA		C	Resistor(1/16W 33Ω ±5%) [R36-49]
93	VRS-CY1JD331J	AA		C	Resistor(1/16W 330Ω ±5%) [R106,FB1]
94	VRS-CY1JD472J	AA		C	Resistor(1/16W 4.7KΩ ±5%) [R19,21,26,77-79,87]
95	VRS-CY1JD473J	AA		C	Resistor(1/16W 47KΩ ±5%) [R101,102,113,114]
96	VRS-CY1JD511J	AA		C	Resistor(1/16W 510Ω ±5%) [R103]
97	VRS-CY1JD680J	AA		C	Resistor(1/16W 68Ω ±5%) [R105]
98	VRS-RE3DA1R0J	AB		C	Resistor(2W 1.0Ω ±5%) [R104,108]
99	VRS-RE3DA131J	AC		C	Resistor(2W 130Ω ±5%) [R71]
100	VRS-TP2BD221J	AB		C	Resistor(1/8W 220Ω ±5%) [R80,82-84,86,88,89]
101	VRS-TP2BD472J	AA		C	Resistor(1/8W 4.7KΩ ±5%) [R111,112]
102	VRS-TP2BD473J	AA		C	Resistor(1/8W 47KΩ ±5%) [R110]
103	VRS-TS2AD101J	AA		C	Resistor(1/10W 100Ω ±5%) [FB8]
104	VSDTC114EK/-1	AB		B	Transistor(DTC114EK) [Q1,Q3]
105	VS2SA1036KQRC	AB		B	Transistor(2SA1036KQRC) [Q2]
106	QCNCM0060QS06	AB		C	Connector(4pin) [CN38]
107	QCNCPO242QCZZ	AA		C	Connector(2pin) [CN16]
108	QSOCZ0002QSZZ	AD		C	Socket(8pin) [IC4]
109	RH-iX0013QSZZ	AU		B	IC(MSM51V16165D) [IC34]
110	VRS-CY1JD301J	AA		C	Resistor(1/16W 300Ω ±5%) [R213,214]
	(Unit)				
901	CPWBX0096QSG7	CB	N	E	MCU PWB

19 COPY-Operation PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	QCNCW0020QSZZ	AG		C	Connector(12pin) [CN1]
2	QCNCW0022QSZZ	AE		C	Connector(25pin) [CN3]
3	QSW-P0008QSZZ	AC		B	Switch(EVQ-23G-04K) [K1-5,7,8]
	QSW-P0008QSZZ	AC		B	Switch(EVQ-23G-04K) [K9,11-14]
4	RCRMZ0001QSZZ	AE		B	Crystal(9.8304MHZ) [K16-20,22-33]
5	VCCCCY1HH300J	AB		C	Capacitor(50WV 30PF) [C14,15]
6	VCEAJU1CW476M	AB		C	Capacitor(16WV 47μF) [C1]
7	VCKYCY1HB102K	AA		C	Capacitor(50WV 1000PF) [C2-7,10,11]
8	VCKYCY1HF103Z	AA		C	Capacitor(50WV 0.010μF) [C8]
9	VCCUCY1AJ105Z	AC		C	Capacitor(10WV 1μF) [C9]
10	VCKYCY1HF223Z	AA		C	Capacitor(50WV 0.022μF) [C17]
11	VHDDSS133//--1	AA		B	Diode(DSS133) [D56-66]
12	VHiH8/3643/-1	AU		B	IC(H8/3643) [IC1]
13	VHiTB62706AN/	AS		B	IC(TB62706AN) [IC3]
14	VHiTD62785F//	AN		B	IC(TD62785F) [IC2]
15	VHPLTC3650G01	AQ		B	Photo transistor(LTC3650G01) [U1]
16	VHP1LHLE-002A	AC		B	LED (Green)(1LHLE-002A) [D1-4,6,7,10,11,12]
	VHP1LHLE-002A	AC		B	LED (Green)(1LHLE-002A) [D14,15,16,18-24]
	VHP1LHLE-002A	AC		B	LED (Green)(1LHLE-002A) [D26-33,35,36,37,38,39]
	VHP1LHLE-002A	AC		B	LED (Green)(1LHLE-002A) [D40,41,43,44,46-50,52]
17	VHP1LHEE-002A	AC		B	LED (Red)(1LHEE-002A) [D5,8,9,13,17,42,45,51,53,54]
18	VRD-RC2EY161J	AA		C	Resistor(1/4W 160Ω ±5%) [R1,9]
19	VRS-CY1JD000J	AA		C	Resistor(1/16W 0Ω ±5%) [R58,17]
20	VRS-CY1JD103J	AA		C	Resistor(1/16W 10KΩ ±5%) [R11-16,20-24]
	VRS-CY1JD103J	AA		C	Resistor(1/16W 10KΩ ±5%) [R26-44,46-49]
21	VRS-CY1JD105J	AA		C	Resistor(1/16W 1MΩ ±5%) [R45]
22	VRS-CY1JD123J	AA		C	Resistor(1/16W 12KΩ ±5%) [R18]
23	VRS-CY1JD471J	AA		C	Resistor(1/16W 470Ω ±5%) [R8]

19 COPY-Operation PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
24	VRS-TP2BD6R8J	AA		C	Resistor(1/8W 6.8Ω ±5%) [R2-7,52-57]
25	VS2SA1162-Y-1	AB		B	Transistor(2SA1162) [Q1]
26	VCKYCY1EF104Z	AA		C	Capacitor(25WV 0.10μF) [C18]
	(Unit)				
901	CPWBF0024QSE7	BH	N	E	COPY operation PWB

20 Duplex/P-out sensor PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DHAI-0100QSZZ	AG		C	Duplex/P-out sensor harness
2	LBNDJ0037FCZ1	AA		C	Wire band(T18S)
3	VCKYPU1HB102K	AA		C	Capacitor(50WV 0.001μF)
4	VHPGP1S53V/-1	AE		B	Photo transistor(GP1S53V)
	(Unit)				
901	CPWBF1177DS64	AS		E	Duplex/P-out sensor PWB

21 MHPS PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DHAI-0096QSZZ	AF		C	Scanner HP sensor harness
2	LBNDJ0037FCZ1	AA		C	Wire band(T18S)
3	VCKYPU1HB102K	AA		C	Capacitor(50WV 0.001μF)
4	VHPGP1S53V/-1	AE		B	Photo transistor(GP1S53V)
	(Unit)				
901	CPWBF1177DS63	AR		E	MHPS PWB

22 Tray sensor PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DHAI-0092QSZZ	AF		C	Tray empty sensor harness
2	LBNDJ0037FCZ1	AA		C	Wire band(T18S)
3	VCKYPU1HB102K	AA		C	Capacitor(50WV 0.001μF)
4	VHPGP1S53V/-1	AE		B	Photo transistor(GP1S53V)
	(Unit)				
901	CPWBF1177DS65	AR		E	Tray sensor PWB

23 Manual paper feeding sensor PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DHAI-0093QSZZ	AF		C	Hand empty sensor harness
2	LBNDJ0037FCZ1	AA		C	Wire band(T18S)
3	VCKYPU1HB102K	AA		C	Capacitor(50WV 0.001μF)
4	VHPGP1S53V/-1	AE		B	Photo transistor(GP1S53V)
	(Unit)				
901	CPWBF1177DS66	AR		E	Manual paper feeding sensor PWB

24 PS sensor PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DHAI-0094QSZZ	AF		C	Paper in sensor harness
2	LBNDJ0037FCZ1	AA		C	Wire band(T18S)
3	VCKYPU1HB102K	AA		C	Capacitor(50WV 0.001μF)
4	VHPGP1S53V/-1	AE		B	Photo transistor(GP1S53V)
	(Unit)				
901	CPWBF1177DS67	AR		E	PS sensor PWB

25 RCU PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DHAI-0133QSZZ	AH		C	RCS PWB harness
2	QCNCM0029QSZZ	AK		C	Connector(MD-S5130)(5pin)
	(Unit)				
901	CPWBF0033QSE1	AP		E	RCU PWB

26 Low voltage power supply unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	0AV1690000106	AD		C	Ceramic capacitor(DE1007-486E222M-KH)(2200PF) [C20,C021]
2	0AV1690000088	AC		C	Ceramic capacitor(TRPE132R104K50)(0.1μF 50V) [C4,C019,C114,C012]
3	0AV1560000002	AD		C	Film capacitor(RE104-C)(0.1μF 250V) [C5,C006]
4	0AV1690000111	AD		C	Ceramic capacitor(DE1210-2E222M-KX)(2200PF) [C1,C003,C007]
5	0AV1480000083	AC		C	Film capacitor(ECQB1H102JF4)(1000PF 50V) [C8,C023]
6	0AV1480000079	AC		C	Film capacitor(ECQB1H103JF4)(0.01μF 50V) [C9,0014]
7	0AV1390000198	AR		C	Al-electrolytic capacitor(LLS2G151MHLZ)(150μF 400V) [C10]
8	0AV1610000091	AC		C	Ceramic capacitor(DE0905-979R102K1K)(1000PF 1KV) [C11,C101]
9	0AV1390000184	AC		C	Al-electrolytic capacitor(UPJ1H2R2MDH)(2.2μF 50V) [C106]
10	0AV1390000107	AC		C	Aluminum Electrolytic capacitor(0.47μF 50V) [C13,C112]
11	0AV1610000108	AD		C	Ceramic capacitor(DE1307-486R222K1K)(2200PF 1KV) [C15]
12	0AV1390000108	AC		C	Aluminum Electrolytic capacitor(22μF 35V) [C17,C018,C107]
13	0AV1390000177	AC		C	Al-electrolytic capacitor(UPJ1E221MPH)(220μF 25V) [C102]
14	0AV1390000181	AE		C	Al-electrolytic capacitor(UHD1A102MPP)(1000μF 10V) [C103,C104]
15	0AV1390000110	AF		C	Al-electrolytic capacitor(UPJ1V681MHH)(680μF 35V) [C105,C117]
16	0AV1610000109	AC		C	Ceramic capacitor(DE0705-979R471K1K)(470PF 1KV) [C113]
17	0AV1560000005	AH		C	Film capacitor(RE474-C)(0.47μF 250V) [C24]
18	0AV1610000114	AD		C	Ceramic capacitor(DE0605-979SL680J2K)(68PF 2KV) [C16]
19	0AV3050086000	AB		B	Diode(1SS270) [D1,D014,D106,D108]
20	0AV3060027000	AH		B	Diode(D3SB60)(4A 600V) [D2]
21	0AV3060043000	AC		B	Diode(RLIN4005-E)(1A 600V) [D3,D004,D012,D015]
22	0AV3070058000	AC		B	Zener diode(RD5.6ES) [D5,D110]
23	0AV3050036000	AF		B	Diode(RG1C) [D6]
24	0AV3050019000	AF		B	Diode(ERA91-02) [D7,D008,D010]
25	0AV3070085000	AC		B	Zener diode(RD33ES) [D9]
26	0AV3070056000	AD		B	Zener diode(RD20ES)(400MW) [D11]
27	0AV3050097000	AG		B	Diode(SF10LC20U)(10A 200V) [D101]
28	0AV3050099000	AD		B	Diode(D1NL20U) [D102]
29	0AV3050098000	AG		B	Diode(SF5SC4)(5A 40V) [D103]
30	0AV3070057000	AC		B	Zener diode(RD30ES) [D107,D013]
31	0AV3070074000	AC		B	Zener diode(RD13ES) [D109]
32	0AV3070081000	AC		B	Zener diode(RD3.9ES) [D112]
33	0AV3060044000	AC		B	Diode(ERA1504)(1A 400V) [D114]
34	0AV3042605000	AN		B	Transistor(2SK2605)(5A 800V) [Q1]
35	0AV3001015090	AD		B	Transistor(2SA1015)(-0.15A - 50V) [Q2]
36	0AV3020143999	AD		B	Transistor(DTC114ESA)(0.1A 50V) [Q114]
37	0AV3021815090	AC		B	Transistor(2SC1815)(0.15A 50V) [Q104,Q106]
38	0AV2014733030	AB		C	Fixed carbon film resistor(RDF50S470KΩJ)(470KΩ 1/2W) [R1,R027]
39	0AV2041013020	AC		C	Fusing resistor(RF25S100ΩJ)(100Ω 1/4W) [R2]
40	0AV2011213030	AB		C	Fixed carbon film resistor(RDF50S120ΩJ)(120Ω 1/2W) [R3]
41	0AV2041213030	AC		C	Fusing resistor(RF50S120ΩJ)(120Ω 1/2W) [R4]
42	0AV2011043030	AA		C	Flame proof fixed carbon film resistor(100KΩ 1/2W) [R5,R006]
43	0AV2011543020	AC		C	Fixed carbon film resistor(RDF25S150KΩJ)(150KΩ 1/4W) [R7,R008]
44	0AV2013333010	AA		C	Flame proof fixed carbon film resistor(33KΩ 1/6W) [R10,R014]
45	0AV2011003020	AA		C	Flame proof fixed carbon film resistor(10Ω 1/4W) [R11]
46	0AV2091083042	AC		C	Special power resistor(SPR1B0.1ΩJ)(0.1Ω 1W) [R12]
47	0AV2043303010	AB		C	Fusing resistor(RF16S33ΩJ)(33Ω 1/6W) [R13]
48	0AV2011033010	AA		C	Flame proof fixed carbon film resistor(10KΩ 1/6W) [R15,R019,R023]
49	0AV2016833010	AA		C	Flame proof fixed carbon film resistor(68KΩ 1/6W) [R16]
50	0AV2011013010	AA		C	Flame proof fixed carbon film resistor(100Ω 1/6W) [R17]
51	0AV2021043062	AD		C	Metal film resistor(RSS3FB100KΩJ)(100KΩ 3W) [R18]
52	0AV2016803030	AA		C	Flame proof fixed carbon film resistor(1/2W 68Ω) [R20]
53	0AV2015633010	AA		C	Flame proof fixed carbon film resistor(1/6W 56KΩ) [R21]
54	0AV2011023010	AA		C	Flame proof fixed carbon film resistor(1KΩ 1/6W) [R22]
55	0AV2012243020	AA		C	Flame proof carbon resistor(220KΩ 1/4W) [R24,R025]
56	0AV2011033030	AB		C	Fixed carbon film resistor(RDF50S10KΩJ)(10KΩ 1/2W) [R101]
57	0AV2011833010	AA		C	Flame proof fixed carbon film resistor(18KΩ 1/6W) [R9]
58	0AV2014723010	AA		C	Flame proof fixed carbon film resistor(4.7KΩ 1/6W) [R116]
59	0AV2990007000	AC		C	Metal film resistor(2.2KΩ 1/6W) [R109,R111]
60	0AV2014713010	AA		C	Flame proof carbon resistor(470Ω 1/6W) [R103,R105,R110,R112]
61	0AV2011223030	AB		C	Fixed carbon film resistor(RDF50S1.2KΩJ)(1.2KΩ 1/2W) [R117,R118]
62	0AV2014733010	AA		C	Flame proof fixed carbon film resistor(47KΩ 1/6W) [R26]
63	0AV2012203010	AA		C	Flame proof fixed carbon film resistor(22Ω 1/6W) [R132]
64	0AV4070062000	AF		C	Inductor(LF-4Z-E822) [L1,L002]
65	0AV4120002000	AC		C	Inductor(B-01-A) [L3,L101]
66	0AV4080010000	AP		C	Inductor(DR-18728B) [L5,L007]
67	0AV4120013000	AC		C	Inductor(T3140P3206536HW) [L104]
68	0AV4070065000	AQ		C	Inductor(DRB25-16196A) [L6]
69	0AV4000135411	BD		B	Transformer(N-T01-354-D11) [T1]
70	0AV3160034000	AQ		B	Transformer(TM1661PL(L)LF113) [TR1]
71	0AV5140022000	AF		B	Thermistor(M10010T3C) [TH1]
72	0AV5190009000	AL		B	Varistor(470V)(127V) [X1]
73	0AV3180000004	AL		B	Photo coupler(S21ME3Y) [PC1]
74	0AV3082561300	AF		B	Photo coupler(PS2561) [PC2,PC003]
75	0AV3090076000	AF		B	IC(MM1431ATT) [IC1,IC102]
76	0AV3090077000	AN		B	IC(FA3647P) [IC2]
77	0AV3090080000	AN		B	IC(PQ12RF11) [IC101]
78	0AV3090081000	AL		B	IC(UPC29M33HF) [IC103]
79	0AV5030126000	AG		C	Connector(B03P-VL) [CN1]
80	0AV5030132000	AL		C	Connector(B04P-VL) [CN2]

26 Low voltage power supply unit

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
81	0AV5030133000	AF		C	Connector(B02P-XL) [CN3]
82	0AV5030134000	AL		C	Connector(B06P-VL) [CN4]
83	0AV5030135000	AG		C	Connector(B26B-PHDSS-B) [CN101]
84	0AV5030136000	AC		C	Connector(B3B-PH-K-S) [CN101]
85	0AV5080010000	AQ		B	Relay(FTR-H1AA024V) [RL1]
86	0AV5060085000	AF		A	Fuse(215SB-10AA-SB)(10A/250V) [F1,F003]
87	0AV5060083000	AF		A	Fuse(215SB-3R15AA-SB)(3.15A/250V) [F2]
88	0AV5060092000	AE		A	Fuse(382RB4AR-ALT)(4A/250V) [F101,F102]
89	0AV5050005000	AA		C	Fuse holder(PFC5000-0203)
90	0AV5130008000	AC		B	Terminal(TP00370-41)
91	0AV7100003000	AE		C	Insulator(M-30AD-D-3)
92	0AV6114125811	AF		C	Heatsink(LM41258)
93	0AV8117730414	AB		C	Screw(NACPEW-B3x8ZF)(B3x8)
94	0AV8117730514	AB		C	Screw(M3x10)
95	0AV7414138611	AD		D	Label(LV41386)
96	0AV5110012000	AB		C	Jumper wire(RJ-SKA-06)(6mm) [RJ702,RJ712,RJ723]
97	0AV5110001000	AA		C	Jumper wire(RJ-SCA-06)(M0.6 10mm) [RJ716,RJ719,RJ725]
98	0AV5110002000	AA		C	Jumper wire(RJ-SEA-06)(M0.6 15mm) [RJ703,RJ704,RJ706,RJ707]
	0AV5110002000	AA		C	Jumper wire(RJ-SEA-06)(M0.6 15mm) [RJ724,RJ727]
	0AV5110002000	AA		C	Jumper wire(RJ-SEA-06)(M0.6 15mm) [RJ739,RJ745]
99	0AV5110004000	AA		C	Jumper wire(M0.6 20mm) [RJ705,RJ708,RJ709,RJ711]
	0AV5110004000	AA		C	Jumper wire(M0.6 20mm) [RJ717,RJ718]
100	0AV5190024000	AK		B	Arrestor(RA-102M-C6-Y) [Z1,Z002]
	(Unit)				
901	RDENC0009QSZZ	BK		E	Low voltage power supply unit

27 ERDH OP PWB

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	DHAI-0116QSZZ	AC		C	Panel ERDH harness
2	QCNCW0022QSZZ	AE		C	Connector(25pin)
3	QSW-P0008QSZZ	AC		B	Switch(EVQ-23G-04K)
4	VHP1LHLE-002A	AC		B	LED (Red)(1LHLE-002A)
	(Unit)				
901	CPWBF0025QSE3	AH		E	ERDH operation PWB

28 1ST Tray interface PWB (AL-1622)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	QCNCM0877FCZZ	AF		C	Connector(20pin) [CN-C]
2	QCNCM0923FC16	AF		C	Connector(16pin) [CN-B]
3	QCNCM0923FC22	AF		C	Connector(22Pin) [CN-A]
4	VCEAGU1VW476M	AB		C	Capacitor(35WV 47μF) [C1,2,3]
5	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF) [C4,5,6,7,8,9,10]
6	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.10μF) [C11,15]
7	VHDDAN202K/-1	AB		B	Diode(DAN202K) [D1,2]
8	VHDDAP202K/-1	AB		B	Diode(DAP202K) [D3,4]
9	VHITC74HC151F	AG		B	IC(TC74H151F) [IC1]
10	VHULN2003AN1	AE		B	IC(ULN2003AN1) [IC2]
11	VHVICPN38/-1	AF		B	IC protector(ICPN38) [ICP1]
12	VRS-TP2BD000J	AA		C	Resistor(1/8W 0Ω ±5%) [J1-23]
13	VRS-TS2AD103J	AA		C	Resistor(1/10W 10KΩ ±5%) [R1,2,3,4]
15	VCKYPU1HB102K	AA		C	Capacitor(50WV 0.001μF) [C22-24]
	(Unit)				
901	CPWBF0019QSE3	AV		E	1ST tray interface PWB

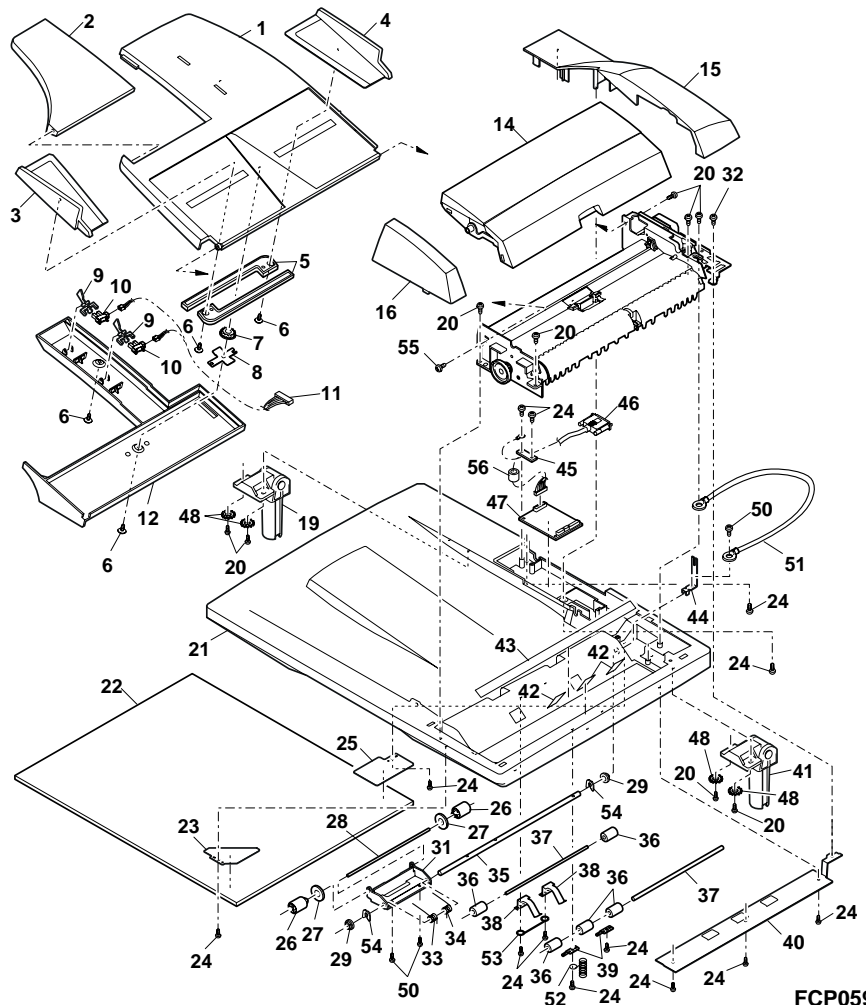
29 SPF Exteriors (AL-1622)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	LSOU-0015QSZZ	AV		D	Original tray
2	LSOU-0017QSZZ	AP		D	Original tray S
3	LPLTP0107QSZZ	AH		C	Control plate F
4	LPLTP0108QSZZ	AH		C	Control plate R
5	NGERR0377FCZZ	AD		C	Manual feed gear
6	XEP30P08X00	AA		C	Screw(3x8X)
7	NGERH0193FCZZ	AB		C	UC manual feed gear
8	MSPRP0059QSZZ	AD		C	Control plate spring
9	MLEVP0035QSZZ	AD		C	Original detect lever ACT
10	VHPGP1A71A1-1	AG		B	Photo sensor(GP1A71A1)
11	DHAI-0070QSZZ	AH		C	Original tray harness
12	PCOVP0039QSZZ	AQ		C	Rack cover
14	CFRM-0029RS51	BL		E	Pick up unit
15	G CAB-0023QSZZ	AP		D	Rear exterior
16	G CAB-0022QSZZ	AK		D	Front exterior

29 SPF Exteriors (AL-1622)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
19	MHNG-0009QSZ1	AV		C	SPF hinge L
20	XEBSE40P12000	AA		C	Screw(4x12)
21	LSOU-0018QSZ1	BF		D	Base tray R
22	PCUSS0013QSZ3	AZ		C	OC mat
23	PSHEZ0077QSZ1	AE		C	OC mat sheet F
24	XEBSE30P08000	AA		C	Screw(3x8)
25	PSHEZ0078QSZZ	AF		C	OC mat sheet R
26	NROLP0011QSZZ	AD		C	Delivery roller
27	PSP0-0001QSZZ	AB		C	Sponge
28	NSFTZ0013QSZZ	AF		C	Delivery shaft
29	NBRGM0501FCZZ	AB		C	Metal D
31	LPLTM0110QSZZ	AG		C	Release plate
32	XHBSE30P08000	AA		C	Screw(3x8)
33	MSPRD0124QSZZ	AC		C	Delivery spring F
34	MSPRD0125QSZZ	AC		C	Delivery spring R
35	NSFTZ0030QSZZ	AL		C	Pressure release shft
36	NROLP0010QSZZ	AD		C	Transport roller
37	NSFTZ0009QSZZ	AE		C	Transport shaft
38	MSPRP0123QSZZ	AD		C	Transport spring
39	MSPRP0060QSZZ	AD		C	Transport spring
40	LPLTM0109QSZZ	AG		C	Base tray reinforce plate
41	MHNG-0010QSZ1	AV		C	SPF hinge R
42	PSHEZ0068QSZZ	AC		C	PS sheet
43	PSHEZ0069QSZZ	AE		C	Base tray sheet
44	MLEVF0040QSZZ	AD		C	SPF pressure lever
45	LPLTM0111QSZZ	AC		C	Reinforce plate earth
46	DHAI-0076QSZ3	BA		C	Interface harness
47	CPWBF0022QSE3	AZ		E	SPF interface PWB P-S
48	XWVSD40-05000	AA		C	Washer
50	LX-BZ3008SC0M	AA		C	Screw(M3xL8)
51	DHAI-0154QSZZ	AD		C	SPF ground wire
52	MSPRC0149QSZZ	AC		C	SPF earth spring
53	MSPRD0154QSZZ	AD		C	Earth spring
54	XRESP20-04000	AA		C	E type ring
55	XEBSE40P14000	AA		C	Screw(4x14)
56	RCORF0026FCZZ	AL		C	Core(TFC-16813)

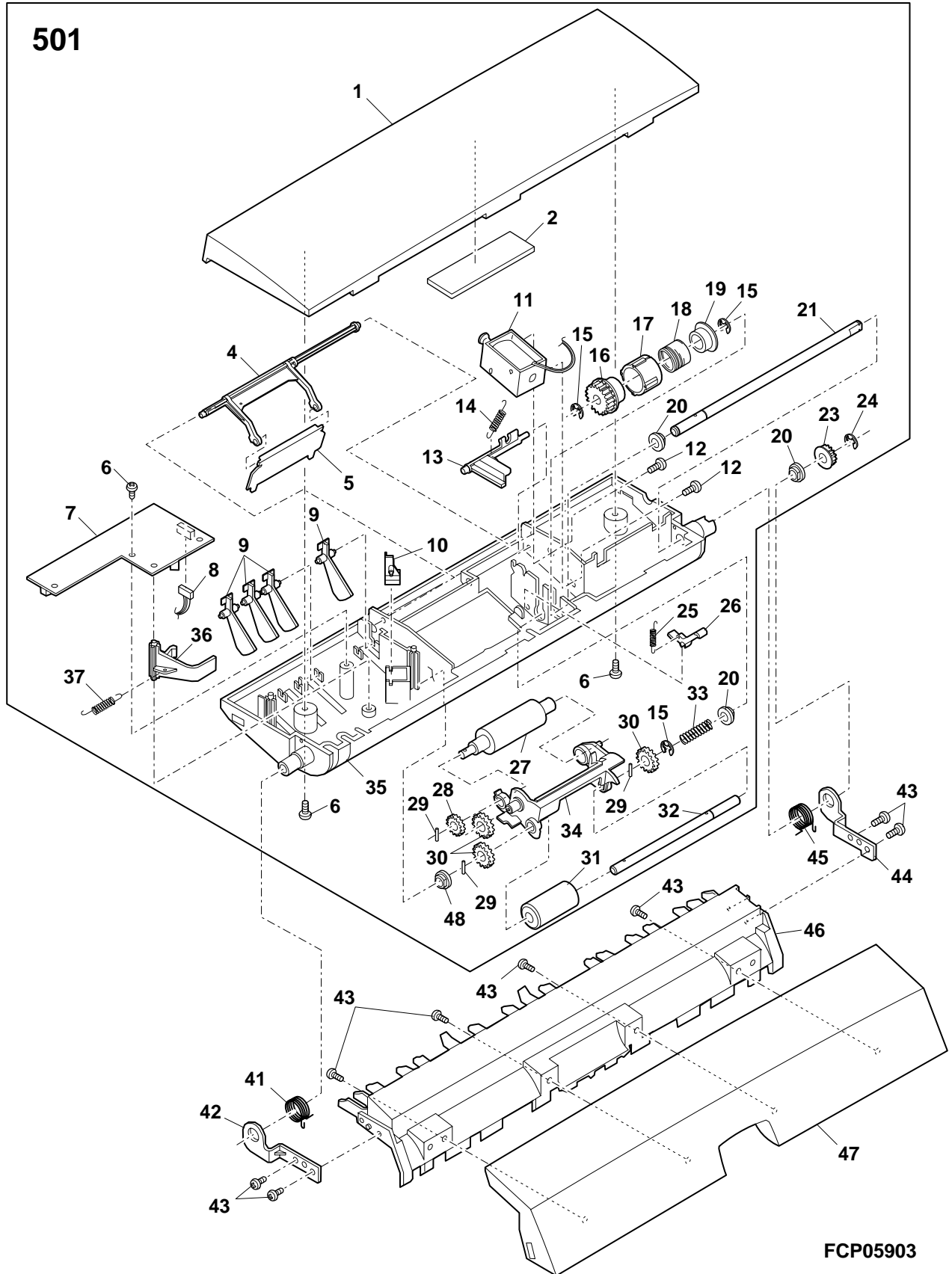
29 SPF Exteriors (AL-1622)



FCP05902



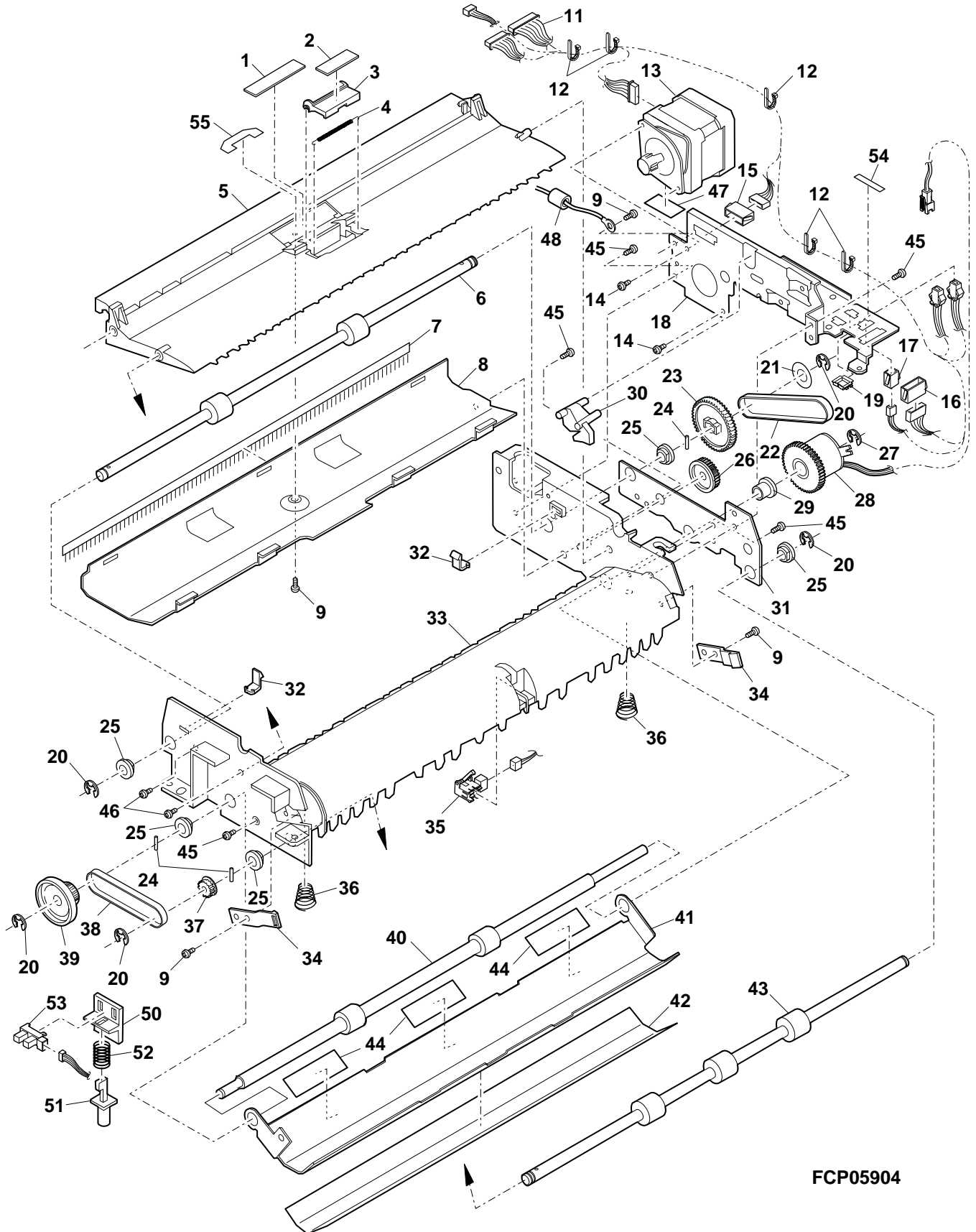
30 SPF Pick up unit (AL-1622)



FCP05903



31 SPF Transport unit (AL-1622)



32 SPF interface PWB (AL-1622)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	QCNCM0923FC22	AF		C	Connector(22Pin) [CN2]
2	QCNCM0923FC24	AF		C	Connector(24pin) [CN1]
3	QCNCM7014SC0B	AD		C	Connector(2pin) [CN4]
4	QCNCM7014SC0C	AA		C	Connector(3pin) [CN5]
5	QCNCM7014SC0G	AB		C	Connector(7pin) [CN3]
6	VCEAGA1VW106M	AA		C	Capacitor(35WV 10μF) [C2,18]
7	VCEAGU1VW476M	AB		C	Capacitor(35WV 47μF) [C1]
8	VCKYTV1HB102K	AA		C	Capacitor(50WV 1000PF) [C9-14,15,16,17]
9	VCKYTV1HB222K	AA		C	Capacitor(50WV 2200PF) [C7,8]
10	VCKYTV1HB471K	AA		C	Capacitor(50WV 470PF) [C5,6]
11	VCKYTV1HF104Z	AA		C	Capacitor(50WV 0.10μF) [C3,4,19-22]
12	VHDDSS133// -1	AA		B	Diode(DSS133) [D1-8]
13	VHISLA7027MUL	AQ		B	IC(SLA7027MUL) [IC2]
14	VHITC74HC151F	AG		B	IC(TC74HC151F) [IC1]
15	VHULN2003AN1	AE		B	IC(ULN2003AN1) [IC3]
16	VHVICPN38// -1	AF		B	Varistor(ICPN38) [ICP1]
17	VRS-HT3AA1R5J	AB		C	Resistor(1W 1.5Ω ±5%) [R1,2]
18	VRS-TP2BD000J	AA		C	Resistor(1/8W 0Ω ±5%) [J1-26]
19	VRS-TP2BD221J	AB		C	Resistor(1/8W 220Ω ±5%) [R4]
20	VRS-TS2AD103J	AA		C	Resistor(1/10W 10KΩ ±5%) [R10-16]
21	VRS-TS2AD152J	AA		C	Resistor(1/10W 1.5KΩ ±5%) [R3]
22	VRS-TS2AD242J	AA		C	Resistor(1/10W 2.4KΩ ±5%) [R6,7]
23	VRS-TS2AD473J	AA		C	Resistor(1/10W 47KΩ ±5%) [R8,9]
24	VRS-TS2AD912J	AA		C	Resistor(1/10W 9.1KΩ ±5%) [R5]
	(Unit)				
901	CPWBF0022QSE3	AZ		E	SPF interface PWB P-S

33 SPF sensor PWB (AL-1622)

NO.	PARTS CODE	PRICE RANK	NEW MARK	PART RANK	DESCRIPTION
1	QCNCM7014SC0G	AB		C	Connector(7pin) [CN101]
2	VCKYPU1HF223Z	AA		C	Capacitor(50WV 0.022μF) [C101]
3	VHPGP1S58V// -1	AE		B	Photo sensor(GP1S58V) [PT101-105]
4	VRD-HT2EY121J	AA		C	Resistor(1/4W 120Ω ±5%) [R101,102]
5	VRD-HT2EY241J	AA		C	Resistor(1/4W 240Ω ±5%) [R103]
	(Unit)				
901	CPWBF0017RS51	AU		E	SPF sensor PWB

■ Index

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
[C]				
CARMP0010QS01	1- 12	AD		C
CARMP0011QS01	1- 13	AD		C
CBTN-0016QS01	2- 12	AN		C
CBTN-0019QS02	2- 10	AF		C
CBTN-0021QS01	2- 9	AF		C
CBTN-0022QS01	2- 8	AF		C
CCAB-0012QS1G	1- 10	BB		D
CCAB-0012QS1H	1- 10	BB		D
CCASP0003RS52	14-901	BG		E
CCLEZ0005RS51	15- 12	AQ		E
CCOVH0010RS51	1-501	BG		E
CDAiU0012QS06	5- 48	BL		D
CFiX-0008QS02	1- 7	AQ		D
CFRM-0017QS01	7- 10	AH		C
CFRM-0018QS01	7- 12	AH		C
CFRM-0020RS51	11-501	BK		E
CFRM-0029RS51	29- 14	BL		E
"	30-501	BL		E
CFRM-0031QS55	17-901	BS		E
CGERH0011RS51	8-501	AE		E
CHAi-0107RS51	6- 11	AG		E
CHAi-0109RS51	6- 10	AN		E
CHLDZ0030RS51	13-901	BA		E
"	3- 18	BA		E
CHNG-0007QS01	1- 3	AM		C
CLNS-0003RS53	5- 8	BR		E
CMiR-0008QS32	4-901	BB		E
"	5- 2	BB		E
CPAKA0084RS01	15- 15	AF		B
CPLTM0047QS02	8- 18	BA		C
CPLTM0055QS01	11- 25	AF		C
CPLTM0084QS01	5- 32	AL		C
CPLTM0114QS01	9- 46	AG		B
CPLTM0155QS02	4- 13	AH		C
CPLTM0156QS02	4- 9	AH		C
CPLTP0060RS52	7-501	BU		E
CPWBF0017RS51	30- 7	AU		E
"	33-901	AU		E
CPWBF0019QSE3	16- 16	AV		E
"	28-901	AV		E
CPWBF0022QSE3	29- 47	AZ		E
"	32-901	AZ		E
CPWBF0024QSE7	19-901	BH	N	E
"	2- 19	BH	N	E
CPWBF0025QSE3	2- 17	AH		E
"	27-901	AH		E
CPWBF0033QSE1	10- 43	AP		E
"	25-901	AP		E
CPWBF1177DS63	21-901	AR		E
"	5- 22	AR		E
CPWBF1177DS64	12- 3	AS		E
"	20-901	AS		E
CPWBF1177DS65	22-901	AR		E
"	9- 34	AR		E
CPWBF1177DS66	23-901	AR		E
"	9- 24	AR		E
CPWBF1177DS67	24-901	AR		E
"	9- 40	AR		E
CPWBX0096QSG7	10- 37	CB	N	E
"	18-901	CB	N	E
CREFL0004QS33	5-501	BL		E
CROLP1115FC01	11- 17	AN		C
CSFTZ0066RS71	9- 20	AU		C
CSFTZ0067RS51	17- 37	AU		C
CSOU-0009QS32	11-502	AZ		E
CSW-M0007RS51	6- 2	AQ		E
[D]				
DHAi-0070QSZZ	29- 11	AH		C
DHAi-0071QSZZ	30- 8	AH		C
DHAi-0073QSZ1	31- 11	AV		C
DHAi-0075QSZZ	17- 10	AR		C
DHAi-0076QSZ3	29- 46	BA		C
DHAi-0085QSZ3	16- 15	BA		C
DHAi-0089QSZ1	8- 4	AL		C
DHAi-0090QSZZ	6- 45	AF		C
DHAi-0091QSZ1	9- 2	AK		C
DHAi-0092QSZZ	22- 1	AF		C
DHAi-0093QSZZ	23- 1	AF		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
DHAi-0094QSZZ	24- 1	AF		C
DHAi-0096QSZZ	21- 1	AF		C
DHAi-0100QSZZ	20- 1	AG		C
DHAi-0101QSZ1	10- 44	AL		C
DHAi-0106QSZZ	6- 24	AL		C
DHAi-0108QSZZ	6- 25	AK		C
DHAi-0110QSZZ	8- 3	AP		C
DHAi-0115QSZZ	2- 21	AF		C
DHAi-0116QSZZ	2- 20	AC		C
"	27- 1	AC		C
DHAi-0120QSZZ	5- 9	AG		C
DHAi-0124QSZZ	10- 78	AY		C
DHAi-0133QSZZ	25- 1	AH		C
DHAi-0140QSZZ	10- 50	AP		C
DHAi-0141QSZZ	6- 8	AP		C
DHAi-0142QSZ1	10- 18	AQ		C
DHAi-0143QSZ1	10- 18	AS		C
DHAi-0149QSZZ	2- 22	AE		C
DHAi-0154QSZZ	29- 51	AD		C
DHAi-0184QSZZ	7- 3	AF		C
DHAi-0200QSZZ	5- 81	AS		C
DHAi-0254QSZZ	6- 57	AP		C
DHAi-0309QSZZ	8- 5	AF		C
DUNTK0034QSZZ	5- 82	BC		E
DUNTK0041RS14	6- 7	BG		E
DUNTK0049RS19	10- 9	BH		E
DUNTK0050RS31	10-501	CC		E
DUNTW0037RS24	7-901	BV		E
DWiR-0466CSZZ	13- 7	BG		B
[G]				
GCAB-0013QSZ1	1- 18	BA		D
GCAB-0014QSZZ	1- 15	AY		D
GCAB-0015QSZZ	1- 23	AV		D
GCAB-0017QSZ1	2- 5	AV		D
GCAB-0022QSZZ	29- 16	AK		D
GCAB-0023QSZ1	29- 15	AP		D
GCAB-0024QSZZ	30- 47	AN		D
GCAB-0025QSZZ	30- 1	AP		D
GCASP0003QSZZ	14- 18	AZ		D
GCOV-0019QSZ1	16- 8	AR		D
GCOV-0020QSZZ	16- 1	AQ		D
GCOV-0021QSZ1	16- 24	AM		D
GCOVH0010QSZ4	1- 1	BC		D
GCOVH0011QSZZ	1- 22	AP		D
GCOVH0012QSZZ	10- 2	AS		C
GCOVH0013QSZ1	1- 22	AL		D
GCOVH0014QSZZ	10- 1	AR		C
GCOVH0015QSZZ	2- 1	AG		D
GCOVH0016QSZZ	2- 2	AH		D
GDAi-0002QSZZ	10- 22	BH		C
"	9- 12	BH		C
GDOR-0001QSZZ	3- 1	AW		D
GFTA-0001QSZZ	1- 11	AW		D
GFTA-0002QSZZ	1- 6	AD		D
GFTA-0007QSZZ	9- 31	AE		C
GGAD-0001QSZZ	16- 2	AE		C
GGAD-0002QSZZ	16- 3	AE		C
GLEGG0064FCZZ	16- 19	AC		C
"	9- 41	AC		C
[H]				
HPNLH0022QSZ3	2- 4	AK		D
HPNLH0022QSZ4	2- 4	AK		D
HPNLH0024QSZ2	2- 3	AT		D
HPNLH0024QSZ3	2- 3	AT		D
HPNLH0024QSZ4	2- 3	AT		D
HPNLH0024QSZ5	2- 3	AT		D
[J]				
JBTN-0018QSZZ	2- 6	AE		C
JBTN-0020QSZZ	2- 11	AC		C
JBTN-0023QSZZ	2- 16	AG		C
JBTN-0026QSZZ	2- 13	AE		C
JBTN-0027QSZZ	2- 15	AD		C
JBTN-0029QSZZ	2- 7	AE		C
JBTN-0030QSZZ	2- 14	AD		C
JKNBZ0003QSZZ	6- 41	AD		C
JKNBZ0005QSZZ	31- 39	AE		C
[L]				
LBNDJ0013FCZ1	6- 54	AA		C
LBNDJ0037FCZ1	20- 2	AA		C
"	21- 2	AA		C
"	22- 2	AA		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
LBNDJ0037FCZ1	23- 2	AA		C	
"	24- 2	AA		C	
LBNDJ0043FCZ1	10- 42	AA		C	
"	5- 24	AA		C	
LBNDJ2003SCZZ	10- 20	AA		C	
"	31- 12	AA		C	
LBOSZ1031FCZZ	17- 5	AC		C	
"	9- 14	AC		C	
LBOSZ1508FCZZ	11- 9	AG		C	
"	17- 23	AG		C	
"	30- 19	AG		C	
"	6- 33	AG		C	
LBOSZ1510FCZZ	11- 5	AF		C	
"	17- 19	AF		C	
LBSHZ0006QSZZ	30- 48	AC		C	
LBSHZ0303FCZZ	11- 10	AC		C	
"	30- 20	AC		C	
LDAIU0011QSZZ	9- 33	AF		C	
LFIX-0009QSZZ	5- 83	AF		C	
LFIX-0016FCZZ	10- 53	AD		C	
LFIX-0284FCZZ	4- 11	AC		C	
LFRM-0016QSZZ	3- 10	AQ		C	
LFRM-0020QSZZ	11- 33	AV		C	
LFRM-0022QSZZ	10- 14	AP		C	
LFRM-0023QSZZ	10- 16	AQ		C	
LFRM-0024QSZZ	6- 46	BC		C	
LFRM-0025QSZZ	10- 23	AH		C	
LFRM-0026QSZZ	10- 25	AN		C	
LFRM-0028QSZZ	31- 31	AD		C	
LFRM-0029QSZZ	30- 35	AQ		C	
LFRM-0030QSZZ	31- 18	AH		C	
LFRM-0031QSZZ	17- 38	AU		C	
LFRM-0032QSZZ	10- 21	AL		C	
LFRM-0036QSZZ	7- 40	AT		D	
LFRM-0065QSZZ	12- 7	AT		C	
LFRM-0066QSZZ	12- 20	AT		C	
LHLDW1226FCZZ	14- 3	AB		C	
"	15- 10	AB		C	
LHLDW1263FCZZ	31- 19	AC		C	
LHLDZ0013QSZZ	4- 5	AD		C	
LHLDZ0017QSZZ	9- 29	AD		C	
LHLDZ0030QSZZ	13- 6	AD		C	
LHLDZ0031QSZZ	13- 13	AH		C	
LHLDZ0032QSZZ	13- 10	AD		C	
LHLDZ0033QSZZ	3- 15	AF		C	
LHLDZ0034QSZZ	7- 14	AF		C	
LHLDZ0038QSC1	6- 15	AH		C	
LHLDZ0039QSZZ	6- 21	AE		C	
LHLDZ0043QSZZ	5- 25	AE		C	
LHLDZ0044QSZZ	4- 1	AP		C	
LHLDZ0047QSZZ	5- 84	AW		C	
LHLDZ0056QSZZ	5- 4	AC		C	
LHLDZ7021XCZZ	5- 68	AD		C	
LPI NS0007QSZZ	6- 47	AC		C	
LPI NS0181FCZZ	17- 22	AA		C	
LPLTM0048QSZZ	8- 11	AF		C	
LPLTM0050QSZZ	7- 17	AM		C	
LPLTM0053QSZZ	14- 1	AS		C	
LPLTM0059QSZZ	13- 4	AC		C	
LPLTM0063QSZZ	10- 38	AS		C	
LPLTM0064QSZZ	10- 40	AN		C	
LPLTM0065QSZZ	9- 6	AL		C	
LPLTM0067QSZZ	6- 22	AC		C	
LPLTM0070QSZZ	6- 43	AD		C	
LPLTM0082QSZZ	10- 12	AF		C	
LPLTM0090QSZZ	3- 8	AE		C	
LPLTM0091QSZZ	3- 6	AE		C	
LPLTM0092QSZZ	3- 4	AF		C	
LPLTM0099QSZZ	10- 24	AK		C	
LPLTM0109QSZZ	29- 40	AG		C	
LPLTM0110QSZZ	29- 31	AG		C	
LPLTM0111QSZZ	29- 45	AC		C	
LPLTM0112QSZZ	9- 48	AE		C	
LPLTM0113QSZZ	16- 25	AH		C	
LPLTM0116QSZZ	16- 5	AQ		C	
LPLTM0125QSZZ	9- 52	AD		C	
LPLTM0134QSZZ	10- 62	AD		C	
LPLTM0135QSZZ	16- 30	AF		C	
LPLTM0136QSZZ	9- 50	AD		C	
LPLTM0137QSZZ	17- 41	AD		C	
LPLTM0138QSZZ	16- 31	AD		C	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK	
LPLTM0302QSZZ	6- 55	AC		C	
LPLTM2642FCGZ	14- 4	AD		C	
LPLTP0051QSZZ	7- 23	AD		C	
LPLTP0056QSZZ	11- 3	AD		C	
LPLTP0060QSZZ	7- 41	AM		C	
LPLTP0107QSZZ	29- 3	AH		C	
LPLTP0108QSZZ	29- 4	AH		C	
LPLTP0131QSZZ	31- 50	AD		C	
LPLTP0235QSZZ	31- 3	AD		C	
LRALM0006QSZZ	5- 47	AG		C	
LRALM0007QSZZ	5- 27	AG		C	
LRALP0004QSZZ	3- 2	AH		C	
LRALP0005QSZZ	9- 27	AN		C	
LSOU-0009QSZZ	11- 45	AR		D	
LSOU-0010QSZZ	11- 48	AU		D	
LSOU-0011QSZZ	11- 47	AL		D	
LSOU-0013QSZZ	10- 3	BA		D	
LSOU-0015QSZZ	29- 1	AV		D	
LSOU-0017QSZZ	29- 2	AP		D	
LSOU-0018QSZZ	29- 21	BF		D	
LSTPP0001QSZZ	30- 5	AD		C	
LSTPP0116FCZZ	7- 7	AA		C	
LSTPP0161FCZZ	14- 17	AB		C	
LSUPP0083FCZZ	16- 4	AB		C	
LX-BZ0004QSZZ	5- 26	AB		C	
"	5- 55	AB		C	
LX-BZ0013QSZZ	7- 30	AC		C	
LX-BZ0015QSZZ	15- 9	AF		C	
LX-BZ0018QSZZ	9- 51	AB		C	
LX-BZ0019QSZZ	10- 79	AD		C	
LX-BZ0020QSZZ	6- 56	AB		C	
LX-BZ0049FCZZ	5- 42	AB		C	
LX-BZ0324FCZZ	5- 41	AA		C	
LX-BZ0335FCZZ	4- 8	AA		C	
LX-BZ3008SC0M	29- 50	AA		C	
LX-WZ0001QSZZ	7- 55	AC		C	
LX-WZ0002QSZZ	8- 13	AB		C	
LX-WZ0119FCZZ	5- 35	AA		C	
LX-WZ0144FCZZ	10- 58	AA		C	
LX-WZ0313FCZZ	7- 48	AA		C	
LX-WZ0314FCZZ	17- 42	AA		C	
"	8- 37	AA		C	
[M]					
MARMM0013QSZZ	30- 42	AF		C	
MARMM0014QSZZ	30- 44	AE		C	
MARMP0002QSZZ	30- 13	AD		C	
MARMP0003QSZZ	30- 4	AD		C	
MARMP0004QSZZ	30- 34	AF		C	
MARMP0005QSZZ	11- 51	AE		C	
MARMP0006QSZZ	11- 20	AD		C	
MARMP0007QSZZ	11- 19	AE		C	
MARMP0008QSZZ	11- 2	AH		C	
MARMP0009QSZZ	11- 16	AF		C	
MARMP0015QSZZ	16- 21	AD		C	
MARMP0229FCZZ	17- 2	AE		C	
MCAMP0001QSZZ	11- 22	AF		C	
MHNG-0009QSZZ	29- 19	AV		C	
MHNG-0010QSZZ	29- 41	AV		C	
MLEVF0040QSZZ	29- 44	AD		C	
MLEVP0010QSZZ	30- 10	AE		C	
MLEVP0017QSZZ	7- 36	AF		C	
MLEVP0018QSZZ	7- 33	AF		C	
MLEVP0019QSZZ	7- 34	AE		C	
MLEVP0020QSZZ	7- 35	AE		C	
MLEVP0021QSZZ	9- 39	AD		C	
MLEVP0022QSZZ	9- 5	AE		C	
MLEVP0023QSZZ	9- 25	AE		C	
MLEVP0024QSZZ	9- 32	AF		C	
MLEVP0025QSZZ	12- 5	AD		C	
MLEVP0026QSZZ	7- 42	AE		C	
MLEVP0035QSZZ	29- 9	AD		C	
MLEVP0037QSZZ	30- 36	AD		C	
MLEVP0038QSZZ	31- 30	AD		C	
MLEVP0039QSZZ	17- 35	AE		C	
MLEVP0044QSZZ	9- 42	AE		C	
MLEVP0046QSZZ	17- 36	AD		C	
MLEVP0047QSZZ	31- 51	AD		C	
MLEVP0090QSZZ	30- 9	AC		C	
MLÖKZ0001QSZZ	16- 12	AC		C	
MSLi-0138FCZZ	4- 7	AC		E	
"	5- 85	AC		E	

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
MSPRC0024QSZZ	6- 4	AA		C
MSPRC0040QSZZ	5- 28	AB		C
MSPRC0062QSZZ	31- 4	AC		C
MSPRC0063QSZZ	31- 36	AB		C
MSPRC0081QSZZ	8- 34	AB		C
MSPRC0082QSZZ	3- 16	AC		C
MSPRC0083QSZZ	3- 14	AD		C
MSPRC0084QSZZ	3- 13	AD		C
MSPRC0085QSZZ	3- 9	AE		C
MSPRC0090QSZZ	14- 11	AD		C
MSPRC0099QSZZ	9- 38	AC		C
MSPRC0101QSZZ	9- 30	AB		C
MSPRC0105QSZZ	6- 26	AB		C
MSPRC0106QSZZ	6- 35	AF		C
MSPRC0115QSZZ	30- 33	AB		C
MSPRC0141QSZZ	16- 11	AB		C
MSPRC0149QSZZ	29- 52	AC		C
MSPRC0152QSZZ	14- 15	AB		C
MSPRC0153QSZZ	31- 52	AB		C
MSPRC0157QSZZ	17- 43	AC		C
MSPRC0161QSZZ	17- 6	AF		C
"	9- 15	AF		C
MSPRC1145FCZZ	14- 16	AA		C
MSPRC1315FCZ1	11- 7	AD		C
"	17- 21	AD		C
MSPRC1316FCZ1	11- 23	AE		C
"	30- 18	AE		C
MSPRC1318FCZ1	11- 29	AA		C
"	8- 9	AA		C
MSPRC2132FCZ1	8- 23	AA		C
MSPRC2175FCZZ	11- 32	AA		C
MSPRD0092QSZZ	11- 26	AE		C
MSPRD0102QSZZ	6- 14	AC		C
MSPRD0103QSZZ	6- 13	AC		C
MSPRD0104QSZZ	6- 12	AC		C
MSPRD0117QSZZ	7- 43	AB		C
MSPRD0118QSZZ	7- 44	AB		C
MSPRD0121QSZZ	7- 53	AB		C
MSPRD0122QSZZ	7- 52	AB		C
MSPRD0124QSZZ	29- 33	AC		C
MSPRD0125QSZZ	29- 34	AC		C
MSPRD0132QSZZ	30- 41	AC		C
MSPRD0133QSZZ	30- 37	AC		C
MSPRD0134QSZZ	17- 27	AC		C
MSPRD0135QSZZ	16- 18	AD		C
MSPRD0139QSZZ	6- 30	AB		C
MSPRD0140QSZZ	30- 45	AC		C
MSPRD0148QSZZ	9- 35	AB		C
MSPRD0154QSZZ	29- 53	AD		C
MSPRD0156QSZZ	17- 52	AB		C
MSPRD0297QSZZ	12- 11	AG		C
MSPRP0059QSZZ	29- 8	AD		C
MSPRP0060QSZZ	29- 39	AD		C
MSPRP0065QSZZ	31- 32	AD		C
MSPRP0087QSZZ	7- 31	AC		C
MSPRP0123QSZZ	29- 38	AD		C
MSPRP0145QSZZ	5- 86	AF		C
MSPRP0299QSZZ	6- 59	AC	N	C
MSPRT0066QSZZ	30- 25	AC		C
MSPRT0067QSZZ	30- 14	AB		C
MSPRT0086QSZZ	7- 18	AB		C
MSPRT0089QSZZ	7- 32	AC		C
MSPRT0091QSZZ	11- 12	AC		C
MSPRT0100QSZZ	9- 4	AB		C
MSPRT0128QSZZ	17- 3	AB		C
MSPRT0129QSZZ	16- 23	AC		C
MSPRT0130QSZZ	17- 31	AB		C
MSPRT0147QSZZ	11- 36	AC		C
MSPRT0229GCAZ	12- 17	AC		C
MSPRT0513FCZ1	13- 8	AA		C
{N}				
NBLTT0002QSZZ	5- 37	AH		B
NBLTT0010QSZZ	31- 38	AG		B
NBLTT0011QSZZ	31- 22	AG		B
NBRGC0017QSZZ	31- 29	AC		C
NBRGC0018QSZZ	6- 38	AD		C
NBRGC0133FCZ1	5- 46	AC		C
NBRGC0188FCZZ	17- 17	AB		C
NBRGC0387FCZ1	5- 39	AC		C
NBRGC0529FCZZ	17- 44	AD		C
NBRGM0501FCZZ	17- 9	AB		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
NBRGM0501FCZZ	29- 29	AB		C
"	31- 25	AB		C
NBRGM5006BCZZ	12- 8	AB		C
NBRGP0007QSZZ	9- 19	AD		C
NBRGP0260FCZ1	7- 28	AD		C
NBRGP0567FCZZ	7- 8	AG		C
NCPL-0002QSZZ	6- 3	AC		C
NCPL-0004FCZZ	8- 24	AB		C
NFANP0002QSZZ	12- 12	AX		B
NFANP0003QSZZ	10- 6	AY		C
NGERH0007QSZZ	8- 26	AH		C
NGERH0008QSZZ	8- 28	AL		C
NGERH0009QSZZ	8- 20	AD		C
NGERH0010QSZZ	8- 19	AD		C
NGERH0011QSZZ	8- 22	AD		C
NGERH0012QSZZ	8- 30	AE		C
NGERH0013QSZZ	8- 32	AG		C
NGERH0014QSZZ	8- 21	AD		C
NGERH0016QSZZ	8- 33	AD		C
NGERH0027QSZZ	5- 34	AH		C
NGERH0041QSZZ	17- 28	AF		C
NGERH0047QSZZ	31- 23	AF		C
NGERH0052QSZZ	8- 25	AE		C
NGERH0053QSZZ	8- 14	AD		C
NGERH0054QSZZ	8- 38	AD		C
NGERH0055QSZZ	8- 35	AE		C
NGERH0056QSZZ	8- 36	AE		C
NGERH0057QSZZ	8- 27	AE		C
NGERH0058QSZZ	8- 31	AF		C
NGERH0059QSZZ	8- 29	AD		C
NGERH0060QSZZ	9- 17	AH		C
NGERH0061QSZZ	11- 15	AD		C
NGERH0062QSZZ	6- 37	AK		C
NGERH0073QSZZ	30- 16	AE		C
NGERH0078QSZZ	9- 44	AE		C
NGERH0079QSZZ	31- 26	AD		C
NGERH0193FCZZ	11- 46	AB		C
"	14- 14	AB		C
"	29- 7	AB		C
NGERH0495FCZZ	11- 14	AC		C
NGERH0540FCZZ	7- 13	AD		C
NGERH0972FCZZ	11- 27	AB		C
NGERH0990FCZZ	17- 29	AB		C
"	30- 28	AB		C
NGERH0992FCZZ	30- 30	AB		C
NGERH1132FCZZ	17- 8	AH		C
NGERH1169FCZZ	16- 13	AF		C
"	9- 45	AF		C
NGERH1207FCZZ	17- 1	AF		C
NGERR0377FCZZ	29- 5	AD		C
NKOM-0001QSZZ	6- 29	AD		C
NKOM-0002QSZZ	12- 19	AC		C
NPLYZ0004QSZZ	5- 40	AG		C
NPLYZ0006QSZZ	5- 19	AD		C
NPLYZ0010QSZZ	30- 23	AE		C
NPLYZ0013QSZZ	5- 43	AL		C
NPLYZ0016QSZZ	5- 18	AF		C
NPLYZ0017QSZZ	4- 4	AE		C
NPLYZ0029QSZZ	12- 9	AD		C
NPLYZ0146FCZZ	31- 37	AB		C
NRÖL i 0030QSZZ	7- 11	BC		C
NRÖLM0040QSZZ	31- 40	AS		C
NRÖLM0041QSZZ	31- 6	AR		C
NRÖLM0042QSZZ	31- 43	AR		C
NRÖLP0010QSZZ	29- 36	AD		C
NRÖLP0011QSZZ	29- 26	AD		C
NRÖLP0024QSZZ	30- 27	AL		C
NRÖLP0032QSZZ	6- 40	AT		C
NRÖLP0034QSZZ	12- 18	AD		C
NRÖLP0044QSZZ	17- 13	AQ		C
NRÖLP1060FCZZ	16- 22	AF		C
NRÖLR0031QSZZ	7- 27	BC		C
NRÖLR0092QSZZ	12- 4	AM		C
NRÖLR0922FCZZ	11- 13	AR		C
"	30- 31	AR		C
NSFTZ0009QSZZ	29- 37	AE		C
NSFTZ0011QSZZ	30- 32	AG		C
NSFTZ0013QSZZ	29- 28	AF		C
NSFTZ0017QSZZ	11- 21	AG		C
NSFTZ0018QSZZ	11- 11	AL		C
NSFTZ0021QSZZ	6- 28	AL		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
NSFTZ0028QSZZ	5- 44	AM		C
NSFTZ0030QSZZ	29- 35	AL		C
NSFTZ0032QSZZ	30- 21	AH		C
[P]				
PBRSR0004QSZ1	7- 50	AD		C
PBRSS0008QSZ1	31- 7	AH		B
PBRSS0026QSZZ	12- 1	AF		B
PCAPH0011QSZZ	1- 29	AC		C
PCASZ0006QSZZ	13- 12	AM		C
PCASZ0008QSZZ	5- 7	AM		C
PCLC-0016QSZZ	31- 28	AU		B
PCOVP0029QSZZ	7- 5	AT		C
PCOVP0030QSZZ	11- 1	AN		C
PCOVP0032QSZZ	9- 37	AD		C
PCOVP0033QSZZ	9- 26	AF		C
PCOVP0039QSZZ	29- 12	AQ		C
PCUSF0334FCZZ	5- 87	AP		C
PCUSG0018QSZZ	2- 31	AD		C
PCUSG0019QSZZ	2- 32	AC		C
PCUSS0009QSZZ	4- 10	AA		C
PCUSS0011QSZZ	1- 50	AB		C
PCUSS0013QSZZ	29- 22	AZ		C
PCUSS0201FCZZ	4- 14	AA		C
PCUSU0203FCZZ	5- 88	AE		C
PFILZ0004QSZZ	12- 14	AM		B
PGIDH0031QSZZ	13- 2	AH		C
PGIDH0033QSZ1	7- 25	AK		C
PGIDH0044QSZZ	31- 41	AK		C
PGIDH0046QSZ1	31- 8	AK		C
PGIDM0030QSZZ	8- 1	AL		C
PGIDM0032QSZZ	13- 16	AE		C
PGIDM0034QSZZ	7- 20	AL		C
PGIDM0035QSZZ	14- 5	AP		C
PGIDM0036QSZZ	14- 9	AP		C
PGIDM0037QSZZ	11- 41	AG		C
PGIDM0038QSZZ	11- 42	AG		C
PGIDM0043QSZ1	31- 33	AQ		C
PGIDM0045QSZZ	31- 5	AN		C
PGIDM0047QSZZ	30- 46	AP		C
PGIDM0048QSZ1	16- 10	AW		C
PGIDM0049QSZ1	16- 9	AV		C
PGIDM0050QSZ1	16- 20	AN		C
PGIDM0054QSZ1	1- 19	AG		C
PGIDM0055QSZZ	1- 21	AG		C
PGIDM0062QSZZ	12- 16	AP		C
PGLSP0003QSZZ	1- 8	BA		B
PGLSP0004QSZZ	1- 51	AX		B
PGUMS0002QSZZ	5- 33	AL		C
PGUMS0004QSZZ	5- 21	AA		C
PMIR-0008QSZZ	4- 12	AP		B
PMIR-0009QSZZ	5- 89	AS		B
PMLT-0027QSZZ	12- 15	AC		C
PMLT-0032QSZZ	1- 41	AC		C
PMLT-0033QSZZ	5- 56	AC		C
PMLT-0034QSZZ	5- 57	AC		C
PMLT-0035QSZZ	5- 63	AB		C
PPIPP0006QSZZ	9- 16	AD		C
PPIPP0007QSZZ	17- 7	AD		C
PPIPP0008QSZZ	30- 17	AD		C
PPIPP0009QSZZ	11- 24	AD		C
PPIPP0011QSZZ	17- 45	AC		C
PPIPP0109FCZZ	11- 6	AB		C
"	17- 20	AB		C
PPIPP0174FCZZ	6- 34	AC		C
PREFL0004QSZZ	5- 90	AP		C
PRNGP0019FCZZ	16- 14	AA		C
PSHEP0050QSZ1	13- 3	AD		C
PSHEP0051QSZZ	13- 5	AB		C
PSHEP0052QSZZ	13- 9	AB		C
PSHEP0053QSZZ	7- 24	AH		C
PSHEP0085QSZZ	10- 66	AC		C
"	5- 51	AC		C
PSHEP3029FCZZ	31- 21	AA		C
PSHEZ0054QSZ1	14- 2	AC		C
PSHEZ0056QSZZ	6- 49	AC		C
PSHEZ0058QSZ1	1- 2	AU		C
PSHEZ0059QSZZ	1- 9	AF		C
PSHEZ0068QSZZ	29- 42	AC		C
PSHEZ0069QSZZ	29- 43	AE		C
PSHEZ0070QSZZ	31- 42	AG		C
PSHEZ0071QSZZ	31- 44	AE		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
PSHEZ0077QSZ1	29- 23	AE		C
PSHEZ0078QSZZ	29- 25	AF		C
PSHEZ0089QSZZ	1- 28	AF		C
PSHEZ0099QSZZ	11- 35	AC		C
PSHEZ0100QSZZ	11- 37	AC		C
PSHEZ0105QSZZ	7- 46	AC		C
PSHEZ0108QSZZ	5- 52	AC		C
PSHEZ0109QSZZ	10- 67	AC		C
"	5- 53	AC		C
PSHEZ0122QSZZ	1- 52	AB		C
PSHEZ0123QSZZ	1- 57	AA		C
PSHEZ0124QSZ1	1- 56	AB		C
PSHEZ0125QSZZ	13- 19	AE		C
PSHEZ0131QSZZ	2- 29	AG		C
PSHEZ0133QSZZ	9- 23	AD		C
PSHEZ0135QSZZ	10- 64	AC		C
PSHEZ0136QSZZ	10- 61	AC		C
PSHEZ0137QSZZ	2- 28	AH		C
PSHEZ0140QSZZ	10- 97	AE		C
PSHEZ0152QSZZ	5- 58	AD		C
PSHEZ0160QSZZ	5- 71	AE		C
PSHEZ0162QSZZ	31- 54	AB		C
PSHEZ0171QSZZ	16- 40	AD		C
PSHEZ0172QSZZ	16- 33	AB		C
PSHEZ0173QSZZ	16- 34	AB		C
PSHEZ0196QSZ1	9- 54	AD		C
PSHEZ0238QSZZ	7- 56	AC		C
PSHEZ0252QSZZ	31- 55	AF		C
PSHEZ0399QSZZ	2- 34	AB		C
PSHEZ2026FCZZ	9- 28	AB		C
PSHEZ2174FCZZ	31- 1	AB		C
PSHEZ7242XCZZ	31- 2	AE		C
PSPAZ0011QSZZ	4- 15	AD		C
PSPAZ0018QSZZ	5- 72	AE		C
PSPAZ0022QSZZ	14- 20	AC		C
PSPAZ0024QSZZ	9- 55	AB		C
PSPO-0001QSZZ	29- 27	AB		C
PSPO-0002QSZZ	30- 2	AC		C
PSPO-0005QSZZ	17- 53	AA		C
PSPO-0007QSZZ	17- 54	AB		C
PSPO-0008QSZZ	16- 35	AC		C
PSPO-0009QSZZ	16- 36	AD		C
PSPO-0010QSZZ	16- 37	AD		C
PSPO-0011QSZZ	16- 38	AD		C
PSPO-0014QSZZ	16- 39	AG		C
PTME-0003QSZ1	8- 8	AD		C
PTME-0012QSZZ	8- 15	AC		C
PTME-0013QSZZ	9- 3	AL		C
PTME-0014QSZZ	7- 51	AK		C
PTME-0015QSZZ	31- 34	AD		C
PTME-0016QSZZ	17- 32	AD		C
PTME-0017QSZZ	17- 30	AD		C
PTME-0019QSZZ	30- 26	AD		C
PTME-0020GCZ1	7- 19	AF		C
"	7- 37	AF		C
PTME-0022QSZ1	14- 6	AL		C
PTME-0023QSZ1	14- 10	AL		C
PTME-0178FCZZ	11- 31	AC		C
PTME-0179FCZZ	11- 30	AC		C
PTPE-0010QSZZ	1- 53	AC		C
PTPE-0015QSZZ	1- 54	AC		C
PTPE-0017QSZZ	6- 50	AA		C
PTPE-0018QSZZ	31- 47	AC		C
PWiR-0005QSZ1	5- 1	AQ		C
PWiR-0006QSZZ	5- 12	AQ		C
[Q]				
QCNCM0017QSZZ	18- 2	AC		C
QCNCM0019QSZZ	18- 9	AB		C
QCNCM0029QSZZ	25- 2	AK		C
QCNCM0060QS06	18-106	AB		C
QCNCM0877FCZZ	18- 3	AF		C
"	28- 1	AF		C
QCNCM0923FC16	28- 2	AF		C
QCNCM0923FC22	18- 11	AF		C
"	28- 3	AF		C
"	32- 1	AF		C
QCNCM0923FC24	18- 4	AF		C
"	32- 2	AF		C
QCNCM0999FCZZ	31- 17	AC		C
QCNCM1003FCZZ	31- 15	AD		C
QCNCM1004FCZZ	31- 16	AD		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
QCNCM1005MCZZ	18- 12	AB		C
QCNCM1006MCZZ	18- 13	AB		C
QCNCM1119LC0C	18- 14	AC		C
QCNCM1119LC0D	18- 15	AC		C
QCNCM2401SC0C	18- 16	AB		C
QCNCM2401SC0D	18- 5	AC		C
QCNCM2401SC0E	18- 17	AC		C
QCNCM7014SC0B	18- 18	AD		C
/"	32- 3	AD		C
QCNCM7014SC0C	18- 19	AA		C
/"	32- 4	AA		C
QCNCM7014SC0D	18- 20	AB		C
QCNCM7014SC0F	18- 21	AB		C
QCNCM7014SC0G	18- 22	AB		C
/"	32- 5	AB		C
/"	33- 1	AB		C
QCNCM7014SC1B	18- 23	AD		C
QCNCP0240QCZZ	18- 24	AA		C
QCNCP0242QCZZ	18-107	AA		C
QCNCP0341QCZZ	18- 25	AC		C
QCNCW0015QSZZ	18- 26	AE		C
QCNCW0020QSZZ	19- 1	AG		C
QCNCW0022QSZZ	19- 2	AE		C
/"	27- 2	AE		C
QCNCW0024QSZZ	18- 27	AF		C
QCNCW0885FCZZ	18- 6	AG		C
QCNCW0948FCZ3	18- 28	AC		C
QCNCW1124LC0D	18- 29	AB		C
QCNCW1124LC0H	18- 30	AC		C
QCNCW7191RC1B	18- 10	AG		C
QSLP-0008QSZZ	13- 14	AD		C
QSLP-0009QSZZ	13- 11	AD		C
QS0CZ0002QSZZ	18-108	AD		C
QSW-B0003QSZZ	17- 26	AF		B
/"	6- 44	AF		B
/"	9- 1	AF		B
QSW-P0008QSZZ	19- 3	AC		B
/"	27- 3	AC		B
QTANN0015FCZZ	10- 49	AG		C
{R}				
RCORF0002QSZZ	5- 59	AE		C
/"	5- 79	AE		C
RCORF0005QSZZ	2- 33	AH		C
RCORF0006QSZZ	10- 96	AL		C
/"	16- 32	AL		C
/"	17- 49	AL		C
RCORF0026FCZZ	29- 56	AL		C
RCORF2037SCZZ	10- 80	AH		C
RCORF6661RCZZ	31- 48	AK		C
RCRMZ0001QSZZ	19- 4	AE		B
RCRSP0016QSZZ	18- 31	AD		B
RCRUB0009QSZZ	18- 32	AP		B
RCRUB0010QSZZ	18- 33	AP		B
RDENC0008QSZZ	10- 11	BN		E
RDENC0009QSZZ	10- 8	BK		E
/"	26-901	BK		E
RDTCT0005QSZZ	7- 16	AN		B
RDTCT0006QSZZ	31- 35	AL		B
RFiLN0019GCZZ	18- 34	AC		C
RH-iX0009QSZZ	18- 74	AP		B
RH-iX0013QSZZ	18-109	AU		B
RLMPU0012QSZZ	5- 91	BG		B
RLMPU0016QSZZ	7- 6	BA		B
RMOTD0016QSZ1	6- 5	AZ		B
RMOTP0020QSZZ	31- 13	BC		B
RMOTP0021QSZ1	5- 30	BC		B
RMOTP0039QSZZ	8- 7	BF		B
RMP4000QCJJ	18- 35	AB		B
RMPTW4103QCJJ	18- 36	AB		B
RMPTW4203QCJJ	18- 37	AA		B
RMPTW4222QCJJ	18- 38	AB		B
RMPTW4330QCJJ	18- 39	AB		B
RPLU-0004QSZ1	30- 11	AQ		B
RPLU-0007QSZZ	11- 28	AN		B
RPLU-0008QSZZ	8- 16	AN		B
RPLU-0009QSZZ	8- 10	AN		B
RPLU-0012QSZZ	17- 16	AN		B
RPLU-0013QSZZ	17- 33	AN		B
RTHM-0001QSZZ	7- 2	AM		B
{S}				
SPAKA0083RSZZ	15- 4	AD		D

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
SPAKA0120RSZZ	15- 4	BS	N	D
SPAKA0134QSZZ	15- 7	AE		D
SPAKA0150RSZZ	15- 17	AA		D
SPAKA0167RSZZ	15- 21	AA		D
SPAKC0145RS23	15- 1	BU	N	D
SPAKC0416RS11	15- 1	BU	N	D
SSAKA2343QCZZ	15- 19	AA		D
SSAKZ0003QSZZ	15- 5	AF		D
{T}				
TCADZ0010QSZZ	15- 8	AC		D
TCAUA0770FCZZ	1- 46	AB		D
TCAUH0007QSZZ	6- 53	AD		D
TiNSE0854QSZZ	15- 18	AY		D
TiNSG0847QSZZ	15- 18	AY		D
TLABH0062QSZZ	7- 39	AE		D
TLABH0064QSZ1	14- 8	AC		D
TLABH0065QSZ1	15- 13	AG		D
TLABH0065QSZZ	15- 13	AN		D
TLABH0068QSZ1	15- 18	AF		D
TLABH0124QSZZ	3- 20	AC		D
TLABH0138QSZZ	15- 18	AD		D
TLABH0388QSZ1	1- 44	AG		D
TLABS3760FCZZ	15- 22	AC		D
TLABZ0058QSZZ	1- 49	AD		D
TTAG-0004QSZZ	14- 19	AC		D
/"	15- 11	AC		D
{U}				
UBAGF0018YSZ1	15- 6	AF		D
{V}				
VCCCCY1HH101J	18- 40	AA		C
VCCCCY1HH120J	18- 41	AA		C
VCCCCY1HH300J	19- 5	AB		C
VCCCCY1HH7R0D	18- 42	AA		C
VCCUCY1AJ105Z	18- 43	AC		C
/"	19- 9	AC		C
VCEAGA1HW107M	18- 48	AA		C
VCEAGA1VW106M	18- 49	AA		C
/"	32- 6	AA		C
VCEAGU1CW106M	18- 44	AA		C
VCEAGU1CW107M	18- 45	AB		C
VCEAGU1CW226M	18- 46	AA		C
VCEAGU1CW476M	18- 47	AB		C
VCEAGU1VW476M	18- 50	AB		C
/"	28- 4	AB		C
/"	32- 7	AB		C
VCEAJU1CW476M	19- 6	AB		C
VCKYCY1EB223K	18- 51	AA		C
VCKYCY1EF104Z	18- 52	AA		C
/"	19- 26	AA		C
VCKYCY1HB102K	18- 53	AA		C
/"	19- 7	AA		C
VCKYCY1HB222K	18- 54	AA		C
VCKYCY1HB471K	18- 55	AB		C
VCKYCY1HF103Z	19- 8	AA		C
VCKYCY1HF223Z	19- 10	AA		C
VCKYPU1HB102K	20- 3	AA		C
/"	21- 3	AA		C
/"	22- 3	AA		C
/"	23- 3	AA		C
/"	24- 3	AA		C
/"	28- 15	AA		C
VCKYPU1HF223Z	33- 2	AA		C
VCKYTV1HB102K	32- 8	AA		C
VCKYTV1HB222K	28- 5	AA		C
/"	32- 9	AA		C
VCKYTV1HB471K	32- 10	AA		C
VCKYTV1HF104Z	28- 6	AA		C
/"	32- 11	AA		C
VHD1N4005E/-1	18- 57	AB		B
VHDDAN202K/-1	28- 7	AB		B
VHDDAP202K/-1	28- 8	AB		B
VHDDSS133///-1	18- 56	AA		B
/"	19- 11	AA		B
/"	32- 12	AA		B
VHERD20EB3/-1	18- 58	AB		B
VHEUDZS5.6B-1	18- 59	AC		B
VHi27C00401QS	18- 64	AM		B
VHi29F04027QS	18- 1	AW	N	B
VHi65808GN146	18- 76	BF		B
VHi74HCT244MF	18- 77	AH		B
VHi74LS244NS1	18- 78	AH		B

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
VH174VHC08/-1	18- 79	AE		B
VH1H8/3643/-1	19- 12	AU		B
VH1H8S/2350FP	18- 61	AY		B
VH1HG73C025FD	18- 60	BE		B
VH1LM358PS/-S	18- 62	AC		B
VH1M66236FP-1	18- 66	AT		B
VH1MC7805CT-1	18- 63	AD		B
VH1NJM2103M-1	18- 65	AH		B
VH1NJM2903M/-	18- 67	AD		B
VH1NJM3414M-1	18- 68	AF		B
VH1SC65165V6T	18- 7	BW		B
VH1SLA7027MUL	18- 69	AQ		B
"	32- 13	AQ		B
VH1TA7291S/-1	18- 70	AF		B
VH1TB62706AN/	19- 13	AS		B
VH1TC74ACT32F	18- 71	AF		B
VH1TC74HC151F	28- 9	AG		B
"	32- 14	AG		B
VH1TD62503F/-	18- 72	AG		B
VH1TD62785F//	19- 14	AN		B
VH1ULN2003AN1	18- 73	AE		B
"	28- 10	AE		B
"	32- 15	AE		B
VH1W42C3103G/	18- 75	AU		B
VHP1LHEE-002A	19- 17	AC		B
VHP1LHLE-002A	19- 16	AC		B
"	27- 4	AC		B
VHPGP1A71A1-1	17- 15	AG		B
"	29- 10	AG		B
"	31- 53	AG		B
VHPGP1S53V/-1	20- 4	AE		B
"	21- 4	AE		B
"	22- 4	AE		B
"	23- 4	AE		B
"	24- 4	AE		B
VHPGP1S58V/-1	33- 3	AE		B
VHPLTC3650G01	19- 15	AQ		B
VHV1CPN38//-1	18- 8	AF		B
"	28- 11	AF		B
"	32- 16	AF		B
VRD-HT2EY121J	33- 4	AA		C
VRD-HT2EY241J	33- 5	AA		C
VRD-RC2EY161J	19- 18	AA		C
VRH-ST2HB157K	7- 49	AD		C
VRS-CY1JD000J	18- 80	AA		C
"	19- 19	AA		C
VRS-CY1JD100J	18- 81	AA		C
VRS-CY1JD101J	18- 82	AA		C
VRS-CY1JD102J	18- 83	AA		C
VRS-CY1JD103F	18- 84	AB		C
VRS-CY1JD103J	18- 85	AA		C
"	19- 20	AA		C
VRS-CY1JD105J	19- 21	AA		C
VRS-CY1JD123J	19- 22	AA		C
VRS-CY1JD203J	18- 86	AA		C
VRS-CY1JD205J	18- 87	AA		C
VRS-CY1JD220F	18- 88	AA		C
VRS-CY1JD221J	18- 89	AA		C
VRS-CY1JD242F	18- 90	AA		C
VRS-CY1JD242J	18- 91	AA		C
VRS-CY1JD301J	18-110	AA		C
VRS-CY1JD330J	18- 92	AA		C
VRS-CY1JD331J	18- 93	AA		C
VRS-CY1JD471J	19- 23	AA		C
VRS-CY1JD472J	18- 94	AA		C
VRS-CY1JD473J	18- 95	AA		C
VRS-CY1JD511J	18- 96	AA		C
VRS-CY1JD680J	18- 97	AA		C
VRS-HT3AA1R5J	32- 17	AB		C
VRS-RE3DA131J	18- 99	AC		C
VRS-RE3DA1R0J	18- 98	AB		C
VRS-TP2BD000J	28- 12	AA		C
"	32- 18	AA		C
VRS-TP2BD221J	18-100	AB		C
"	32- 19	AB		C
VRS-TP2BD472J	18-101	AA		C
VRS-TP2BD473J	18-102	AA		C
VRS-TP2BD6R8J	19- 24	AA		C
VRS-TS2AD101J	18-103	AA		C
VRS-TS2AD103J	28- 13	AA		C
"	32- 20	AA		C

PARTS CODE	NO.	PRICE RANK	NEW MARK	PART RANK
VRS-TS2AD152J	32- 21	AA		C
VRS-TS2AD242J	32- 22	AA		C
VRS-TS2AD473J	32- 23	AA		C
VRS-TS2AD912J	32- 24	AA		C
VS2SA1036KQRC	18-105	AB		B
VS2SA1162-Y-1	19- 25	AB		B
VSDTC114EK/-1	18-104	AB		B
[X]				
XBBS30P04000	8- 17	AA		C
XBBS30P05000	17- 34	AA		C
"	31- 14	AA		C
XBBS30P06000	6- 58	AA		C
"	7- 22	AA		C
XBBS30P08000	5- 23	AA		C
XBBS30P10000	11- 34	AA		C
XBBS40P10000	8- 6	AA		C
XBBSE30P06000	10- 39	AA		C
"	1- 16	AA		C
"	17- 46	AA		C
XBPS30P06ES0	6- 9	AA		C
XBPSD30P05K00	5- 29	AA		C
XBPSD30P05KS0	30- 12	AA		C
"	7- 1	AA		C
XBPSD30P08KS0	10- 10	AA		C
"	7- 9	AA		C
XBPSD30P10KS0	6- 42	AB		C
"	7- 15	AB		C
XBPSD30P30KS0	10- 7	AA		C
XBPSD40P06K00	5- 5	AA		C
XBPSD40P06KS0	4- 3	AA		C
XBPSD40P16KS0	5- 31	AA		C
XBPSN40P06K00	10- 17	AA		C
XEBSD20P06000	12- 13	AA		C
XEBSD30P06000	13- 17	AA		C
"	5- 93	AA		C
"	6- 23	AA		C
"	6- 31	AA		C
"	7- 21	AA		C
XEBSD30P08000	11- 18	AA		C
"	11- 52	AA		C
"	12- 2	AA		C
"	14- 12	AA		C
"	2- 18	AA		C
"	5- 94	AA		C
"	6- 16	AA		C
"	9- 11	AA		C
XEBSD30P10000	10- 27	AA		C
"	31- 46	AA		C
"	3- 7	AA		C
"	6- 18	AA		C
"	6- 6	AA		C
XEBSD30P18000	10- 46	AA		C
XEBSD40P06000	4- 6	AA		C
"	5- 95	AA		C
XEBSD40P12000	10- 15	AA		C
"	10- 55	AA		C
"	9- 22	AA		C
XEBSE30P08000	10- 4	AA		C
"	11- 43	AA		C
"	13- 1	AA		C
"	29- 24	AA		C
"	30- 43	AA		C
"	30- 6	AA		C
"	31- 45	AA		C
"	31- 9	AA		C
XEBSE40P10000	1- 14	AA		C
"	1- 24	AA		C
"	1- 4	AA		C
XEBSE40P12000	16- 7	AA		C
"	29- 20	AA		C
"	9- 47	AA		C
XEBSE40P14000	29- 55	AA		C
"	9- 49	AA		C
XEPSD23P12000	6- 1	AA		C
XEPSD30P08X00	1- 26	AA		C
"	16- 27	AA		C
"	29- 6	AA		C
XEPSD40P12000	9- 7	AA		C
XEPSD40P30000	10- 54	AA		C
XHBSD30P04000	5- 54	AA		C
XHBSD30P06000	10- 13	AA		C







#### CAUTION FOR BATTERY REPLACEMENT

- (Danish)                   ADVARSEL !  
Lithiumbatteri -Eksplodingsfare ved fejlagtig håndtering.  
Udskiftning må kun ske med batteri  
af samme fabrikat og type.  
Levér det brugte batteri tilbage til leverandoren.
- (English)                   Caution !  
Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type  
recommended by the manufacturer.  
Dispose of used batteries according to manufacturer's instructions.
- (Finnish)                   VAROITUS  
Paristo voi räjähtää, jos se on virheellisesti asennettu.  
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan  
tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden  
mukaisesti.
- (French)                   ATTENTION  
Il y a danger d'explosion s' il y a remplacement incorrect  
de la batterie. Remplacer uniquement avec une batterie du  
même type ou d'un type équivalent recommandé par  
le constructeur.  
Mettre au rebut les batteries usagées conformément aux  
instructions du fabricant.
- (Swedish)                   WARNING  
Explosionsfare vid felaktigt batteribyte.  
Använd samma batterityp eller en ekvivalent  
typ som rekommenderas av apparattillverkaren.  
Kassera använt batteri enligt fabrikantens  
instruktion.
- (German)                   Achtung  
Explosionsgefahr bei Verwendung inkorrektter Batterien.  
Als Ersatzbatterien dürfen nur Batterien vom gleichen Typ oder  
vom Hersteller empfohlene Batterien verwendet werden.  
Entsorgung der gebrauchten Batterien nur nach den vom  
Hersteller angegebenen Anweisungen.

#### CAUTION FOR BATTERY DISPOSAL

- (For USA,CANADA)  
Contains lithium-ion battery. Must be disposed of properly.  
Remove the battery from the product and contact  
federal or state environmental  
agencies for information on recycling and disposal options.

# SHARP

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