Service Manual

i-SENSYS LBP5300 Series

Canon

Feb 27 2007

Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products. When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

The following paragraph does not apply to any countries where such provisions are inconsistent with local law.

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Copyright

Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
 Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
 REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:

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

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.
All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

Chapter 1 PRODUCT DESCRIPTION

Contents

1.1 Features

1.1.1 Feature

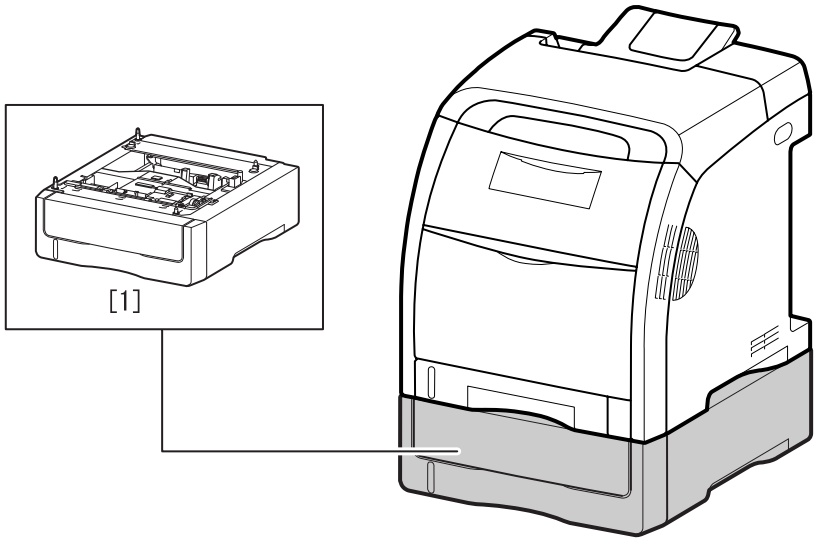
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1. High-speed printing and high image quality
   This printer realizes high-speed printing for both full-color and monochrome print. Regardless of this high-speed, the toner with fine particle enables to produce vivid image with the resolution of 600 dpi.
   Full color/Monochrome: 22 pages/min.
2. Electrostatic Transportation Belt (ETB)
   This printer adopts the "Electrostatic Transportation Belt" (hereafter ETB) method for image transfer and paper feed process. In order to realize the high-speed color printing, toner images of all four colors on the photosensitive drum are transferred onto paper directly.
3. Four consecutive drum method (Inline method)
   This printer adopts the four consecutive drum method. The toner cartridges are aligned vertically and all four colors are transferred on paper in one sequential operation. This realizes highspeed color printing, as this method needs less time to transfer compared to the rotary method where each color is transferred separately.
4. Color on-demand fixing method
   The machine uses an on-demand fixing method combined with a ceramic heater so far mostly used in a mono-color printer. The fact has led to a shorter warm-up period and lower energy consumption.
5. 500-sheet paper feeder
   This printer can be installed optional 500-sheet paper feeder in addition to the standard MPT (100 sheets available) and cassette (250 sheets available). This enables high-volume printing of maximum 850 sheets.
6. Automatic duplex printing
   There are simplex and duplex models for this printer. Automatic duplex printing is available with the duplex model.

1.2 System construction

1.2.1 System Construction

i-SENSYS LBP5300



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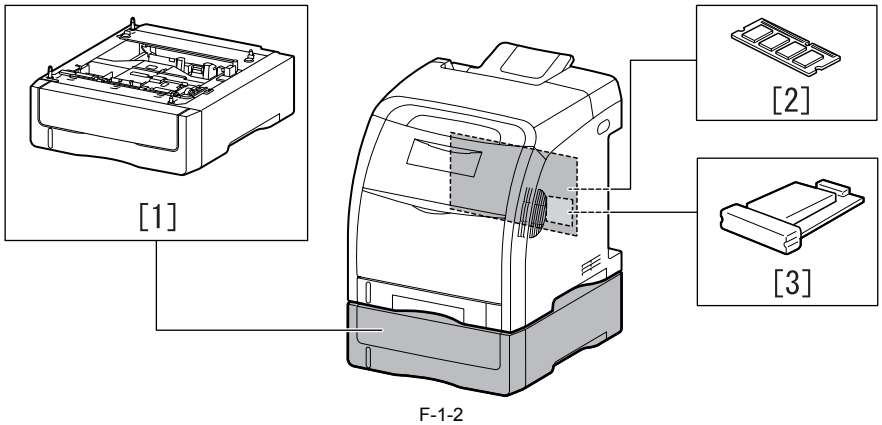
[1] Paper Feeder PF-93

1.2.2 System Cnstruction

i-SENSYS LBP5360



F-1-2

[1] Paper Feeder PF-93
[2] RAM
[3] Hard Disc HD-93

1.3 Product Specifications

1.3.1 Product Specifications

i-SENSYS LBP5300

Body installation method	Desktop page printer
Photosensitive medium	OPC drum
Charging method	Roller charging
Exposure method	Laser scanning
Development method	Contact development
Transfer method	By Electrostatic Transportation Belt
Separation method	Curvature
Pickup method	By cassette/manual feeder
Cassette pickup method	By separation pad
Drum cleaning method	By blade
Trasnsfer cleaning method	Drum static collection
Fixing method	On-demand
Delivery method	Face-down
Contrast adjustment function	Auto
Toner level detection function	Available
Toner type	non-magnetic, 1-component dry toner
Toner supply type	By EP cartridge (Printable pages: approx. 6,000 pages (Canon Genuine Cartridge, and for A4 or Letter size paper at 5 % page coverage with the default print density setting))
Warm-up time	0 second from standby mode (20°C (68°F) (40 seconds or less from power ON
Image margin (Leading edge)	5.0+1.5/-1.5mm
Image margin (Trailing edge)	5.0+1.5/-1.5mm
Image margin (Left/right)	5.0+1.0/-1.0mm
Number of gradations	16 gradations
Printing resolution	600dpi x 600dpi
First print time	10.1 sec or less (approx.; both mono- and full-color)
Print speed (A4)	21 impressions/min (approx.; both mono- and full color)
Cassette paper size	A4, B5, A5, LGL, LTR, Exective, Foolscap, 16K Custom sizes When loading paper in portrait orientation: Width 148.0 to 215.9 mm; Length 210.0 to 355.6 mm When loading paper in landscape orientation (Only when UFR II Printer Driver is used): Width 210.0 to 215.9 mm; Length 210.0 to 215.9 mm
Multifeeder paper size	A4, B5, A5, LGL, LTR, Exective, Stantmrnt, Foolscap, 16K, Envelope DL, Envelope COM10, Envelope C5, Envelope Monarch, Envelope B5, Index Card Custom sizes When loading paper in portrait orientation: Width 76.2 to 215.9 mm; Length 127.0 to 355.6 mm When loading paper in landscape orientation (Only when UFR II Printer Driver is used): Width 127.0 to 215.9 mm; Length 127.0 to 215.9 mm
Cassette paper type	Plain paper (60 to 105 g/m2)
Multifeeder tray paper type	Plain paper (60 to 105 g/m2), heavy paper (106 to 216 g/m2), Coated paper, Envelope, Label, Transparency
Cassette capacity	250 sheets (64 g/m2)
Multifeeder tray capacity	approx. 100 sheets (64 g/m2)
Delivery tray stack	200 sheets (64 g/m2)
Memory	8 MB (addition not possible)
Auto gradation correction	Available
Operating environment (Temperature range)	10 to 30 deg C
Operating environment (Humidity range)	10 to 80%RH
Operating environment (Atmospheric pressure)	810.6 to 1013.3 hpa (0.8 to 1.0 atm)
Noise	35 dB or less (standby); 53 dB or less (print)
Power supply rating	AC220V - 240V 50/60 Hz
Power consumption (Maximum)	1213W or less
Power consumption	Average during standby: approx. 45 W Average during operation: approx. 415 W
Dimensions	412mm(W) x 453mm(D) x 437.7mm(H)

Weight	22.0 kg (approx.; excluding cartridges)

1.3.2 Product Specifications

i-SENSYS LBP5360

Body installation method	Desktop page printer
Photosensitive medium	OPC drum
Charging method	Roller charging
Exposure method	Laser scanning
Development method	Contact development
Transfer method	By Electrostatic Transportation Belt
Separation method	Curvature
Pickup method	By cassette/manual feeder
Cassette pickup method	By separation pad
Drum cleaning method	By blade
Trasnsfer cleaning method	Drum static collection
Fixing method	On-demand
Delivery method	Face-down
Contrast adjustment function	Auto
Toner level detection function	Available
Toner type	non-magnetic, 1-component dry toner
Toner supply type	By EP cartridge (Printable pages: approx. 6,000 pages (Canon Genuine Cartridge, and for A4 or Letter size paper at 5 % page coverage with the default print density setting))
Warm-up time	0 second from standby mode (20°C (68°F) (40 seconds or less from power ON
Image margin (Leading edge)	5.0+1.5/-1.5mm
Image margin (Trailing edge)	5.0+1.5/-1.5mm
Image margin (Left/right)	5.0+1.0/-1.0mm
Number of gradations	16 gradations
Printing resolution	600dpi x 600dpi
First print time	10.1 sec or less (approx.; both mono- and full-color)
Print speed (A4)	21 impressions/min (approx.; both mono- and full color)
Cassette paper size	A4, B5, A5, LGL, LTR, Exective, Foolscap, 16K Custom sizes When loading paper in portrait orientation: Width 148.0 to 215.9 mm; Length 210.0 to 355.6 mm When loading paper in landscape orientation (Only when UFR II Printer Driver is used): Width 210.0 to 215.9 mm; Length 210.0 to 215.9 mm
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Cassette paper type	Plain paper (60 to 105 g/m2)
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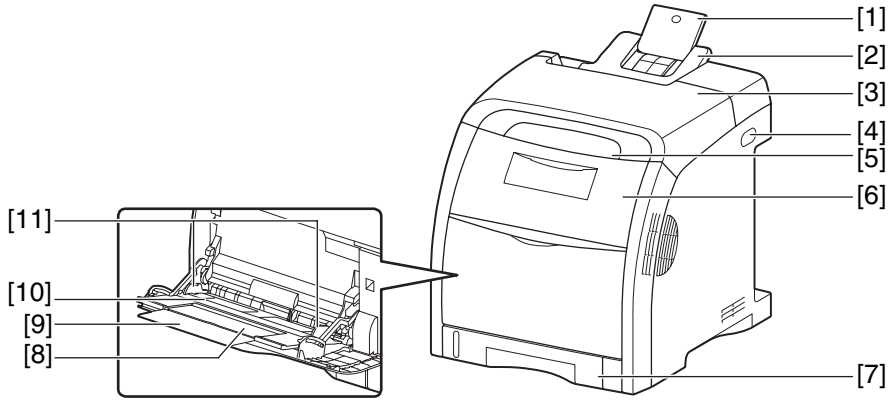
Cassette capacity	250 sheets (64 g/m2)
Multifeeder tray capacity	approx. 100 sheets (64 g/m2)
Delivery tray stack	200 sheets (64 g/m2)
Memory	128 MB (384 MB max.)
Auto gradation correction	Available
Operating environment (Temperature range)	10 to 30 deg C
Operating environment (Humidity range)	10 to 80%RH
Operating environment (Atmospheric pressure)	810.6 to 1013.3 hpa (0.8 to 1.0 atm)
Noise	35 dB or less (standby); 53 dB or less (print)
Power supply rating	AC220V - 240V 50/60 Hz
Power consumption (Maximum)	1257W or less
Power consumption	Average during standby: approx. 45W Average during operation: approx. 416W
Dimensions	412mm(W) x 453mm(D) x 437.7mm(H)
Weight	22.0 kg (approx.; excluding cartridges)

1.4 Name of Parts

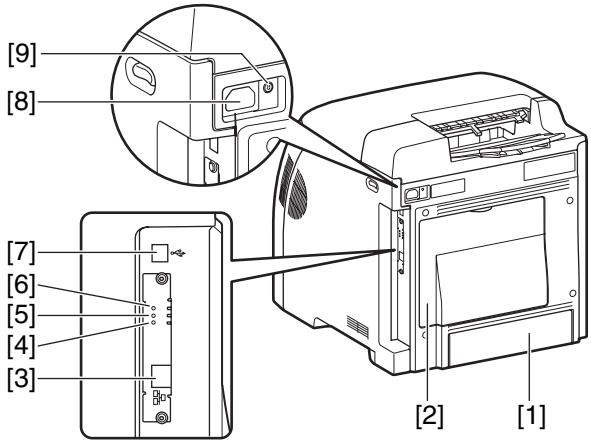
1.4.1 External View

i-SENSYS LBP5300



F-1-3

[1] Auxiliary Tray
[2] Output Tray
[3] Top Cover
[4] Power Switch
[5] Control Panel
[6] Front Cover
[7] Paper Cassette
[8] Tray Extension
[9] Auxiliary Tray
[10] Multi-purpose Tray
[11] Paper Guides

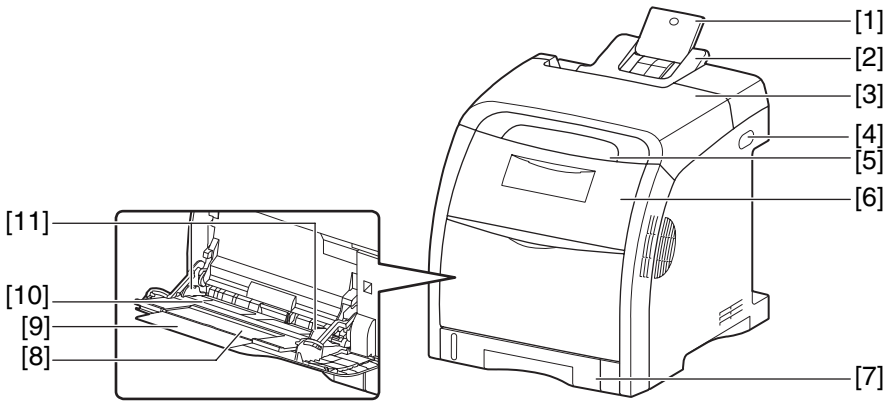


F-1-4

[1] Cassette Protective Cover
[2] Rear Cover
[3] LAN Connector
[4] 100 Indicator (Green)
[5] LNK Indicator (Green)
[6] ERR Indicator (Orange)
[7] USB Connector
[8] Power Socket

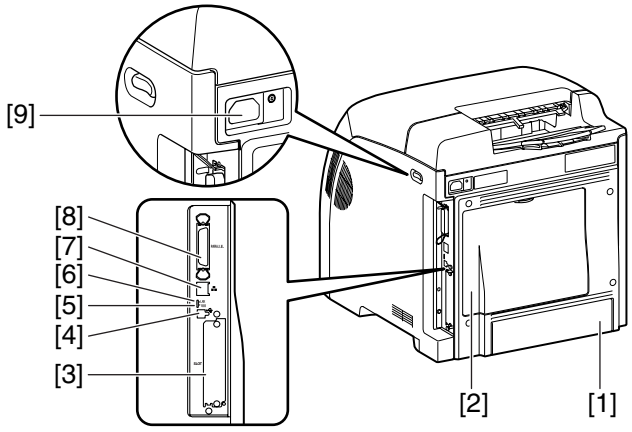
1.4.2 External View

/ i-SENSYS LBP5360



F-1-5

[1] Auxiliary Tray
[2] Output Tray
[3] Top Cover
[4] Power Switch
[5] Control Panel
[6] Front Cover
[7] Paper Cassette
[8] Tray Extension
[9] Auxiliary Tray
[10] Multi-purpose Tray
[11] Paper Guides

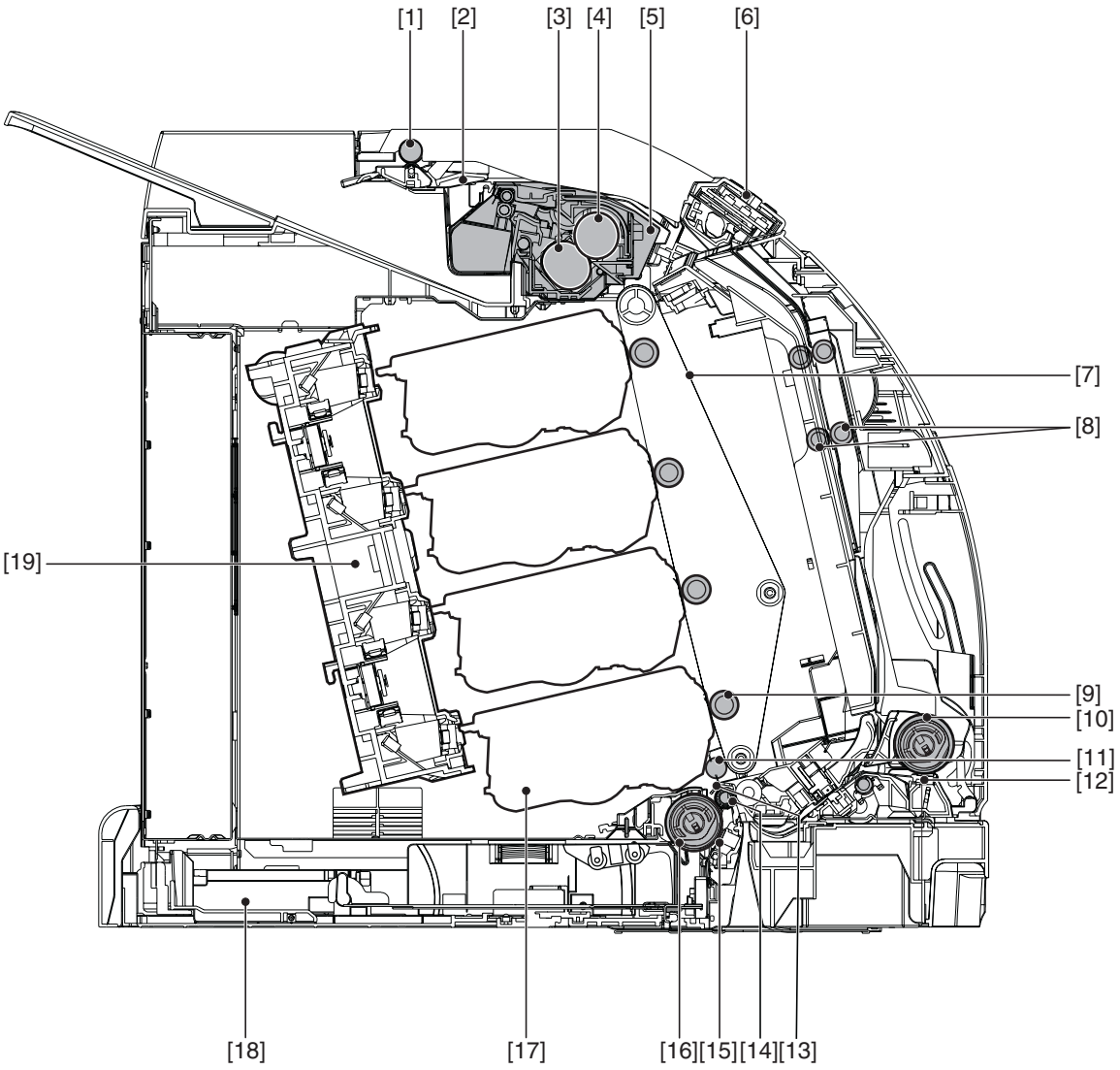


F-1-6

[1] Cassette Protective Cover
[2] Rear Cover
[3] Expansion Slot
[4] USB Connector
[5] 100 Indicator (Green)
[6] LNK Indicator (Green)
[7] LAN Connector
[8] Parallel Connector
[9] Power Socket

1.4.3 Cross Section View

/ i-SENSYS LBP5360 / i-SENSYS LBP5300



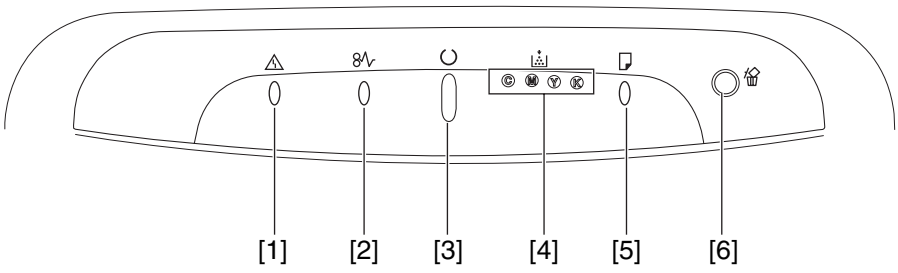
F-1-7

[1] Duplexing reverse roller
[2] Duplexing flapper
[3] Fixing sleeve
[4] Fixing pressure roller
[5] Fixing unit
[6] Control panel
[7] ETB
[8] Duplexing feed roller
[9] Transfer roller
[10] Multi-purpose tray pick-up roller
[11] Attraction roller
[12] Multi-purpose tray paper separation pad
[13] Registration shutter
[14] Registration roller
[15] Cassette paper separation pad
[16] Cassette pick-up roller
[17] EP cartridge
[18] Cassette
[19] Laser/Scanner unit

1.5 Using the Machine

1.5.1 Control Panel

i-SENSYS LBP5300



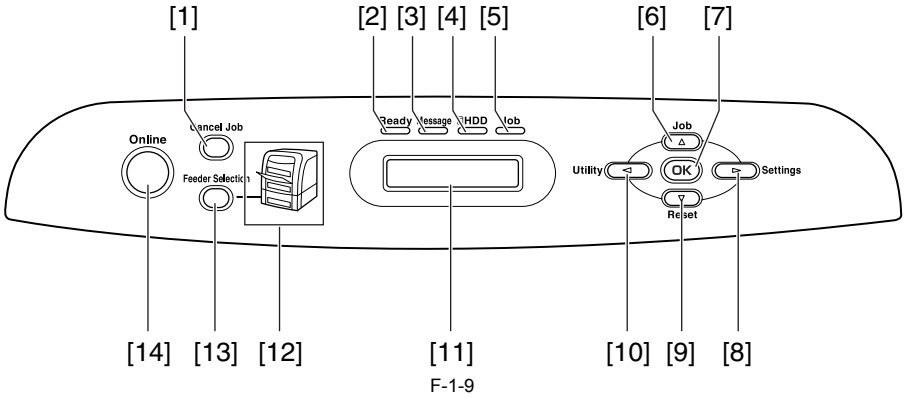
F-1-8

[1] Alarm Indicator (Orange)
On: Service call is occurring.
Blinking: An error is occurring, disabling printing.
[2] Paper Jam Indicator (Orange)
Blinking: A paper jam is occurring, disabling printing.
[3] Ready Indicator (Green)
On: The printer is in the sleep mode and ready to print.
Blinking: The printer is busy performing some kind of processing or operation, such as printing, warming up, calibrating, or pausing a job.
[4] Toner Indicator (Orange)
On: Toner cartridge replacement is required.
Blinking: Cannot print because toner cartridge replacement is required or any toner cartridge is not installed properly.
Indicator of the color that requires toner cartridge replacement comes on or blinks. "K", "Y", "C", and "M" indicate black, yellow, cyan, and magenta respectively.
[5] Load Paper Indicator (Orange)
On: There is no paper in any paper source.
Blinking: No paper or paper of an inappropriate size is loaded.
[6] Cancel Job Key/ Cancel Job Indicator (Orange)
Pressing this key cancels the job in which an error is occurring and that in a printing process. The indicator comes on while pressing the key. The indicator blinks while a job is in the cancellation process.

1.5.2 Control Panel

i-SENSYS LBP5360

The control panel consists of a status indication segment, control keys, and LEDs. The following shows the individual LEDs and the functions of the keys:



F-1-9

[1] [Cancel Job] Key
On offline:
Cancels the job when the Job indicator is on or blinking. Does not function when the Job indicator is off.
On online:
Cancels the job when the Job indicator is on or blinking. Does not function when the Job indicator is off.
[2] Ready Indicator (Green)
On:
The printer is ready to print. (If the printer has entered Power Save Mode when it is online, only the Ready indicator (green) is on, and all the other indicators are off.)
Blinking:
The printer is performing a self-diagnostic test. The printer is in a warm-up state.
Off:
The printer cannot print.
[3] Message Indicator (Orange)
On:
The printer cannot print because a problem has occurred in the printer. (If the printer has entered Power Save Mode when it is offline, only the Message indicator (orange) is on, and all the other indicators are off.)
Off:
The printer is in a normal state.
[4] HDD Indicator (Green)
On:
Data is being read from the hard disk or being written to the hard disk.
Off:
Data is not being read from the hard disk or being written to the hard disk.
[5] Job Indicator (Green)
On:
The printer is receiving print data, or any print data remains in the printer memory.
Blinking:
The printer is processing print data.
Off:
There is no print data in the printer memory.
[6] [Job] Key

On offline:
Does not function when the printer is offline.
On online:
Displays the JOB menu.
On menu operation:
Goes back to the previous menu (Goes back up the hierarchy).

[7] [OK] Key
On offline:
Does not function when the printer is offline.
On online:
Does not function when the printer is online.
On menu operation:
Goes to the next menu (Goes down the hierarchy). In a lowest menu level (When a setting value is displayed), determines the setting.

[8] [Settings] Key
On offline:
Displays the SETUP menu.
On online:
Displays the SETUP menu. However, the [User Maintenance Menu] options cannot be specified when the printer is online.
On menu operation:
Displays the next right item in the menu. Increases the setting value.

[9] [Reset] Key
On offline:
Displays the RESET menu.
On online:
Displays the RESET menu.
On menu operation:
Goes to the next menu (Goes down the hierarchy). In a lowest menu level (When a setting value is displayed), determines the setting.

[10] [Utility] Key
On offline:
Does not function when the printer is offline.
On online:
Displays the UTILITY menu.
On menu operation:
Displays the next left item in the menu. Decreases the setting value.

[11] Display
Displays the printer status, messages, the settings and setting values of the menu functions.

[12] Paper Source Indicators (Green)
On:
The indicator for the currently selected paper source comes on.
Blinking:
There is no paper in the currently selected paper source, or the paper cassette is not set. For the multi-purpose tray, the indicator comes on even when no paper is loaded.
Off:
No paper source is selected. No paper cassette including the optional one or paper feeder is set.

13] [Feeder Selection] Key
On offline:
Displays the SELECT FEEDER menu.
On online:
Displays the SELECT FEEDER menu.
On menu operation:
Does not function.

[14] [Online] Key/Online Indicator (Green)
Turns on (online)/off (offline) the connection to the computer. This key also has the function that, when an error has occurred, releases the printer from the error temporarily and continues the paused job. However, depending on the error, you may not be able to cancel it out.
The Online indicator under the Online key indicates the following printer status with its status.
On:
Online (The printer can receive print data from the computer.)
Off:
Offline (The printer cannot receive print data from the computer.)
However, if the printer has entered Power Save Mode, the Online indicator is off even when the printer is online.

1.5.3 Job Menu

i-SENSYS LBP5360

T-1-1

	Item	Setting
Job menu	ENCRYPTED PRINT	-
	SECURED PRINT	-
	STOREJOB LIST	-
	STOREJOB PRINT	-
	JOB LOG LIST	-
	STORE LOG LST	-
	REPORTLOG LST	-
	E-MAIL PRT LOG	-

1.5.4 Setup Menu (1)

i-SENSYS LBP5360

CONTROL MENU

T-1-2

Item	Setting	Notes
POWER SAVE MODE	PANEL OFF*, ON, OFF	
PWR SAVE IN ERR	ON*, OFF	

Item		Setting	Notes
POWER SAVE TIME		30 minutes*, 60 minutes, 180 minutes, 5 minutes, 15 minutes	
WARNING STEP			
	CHECK TONER	CONT.PRINTING*, STOP PRINTING	
AUTO ERROR SKIP		ON, OFF	
PANEL LANGUAGE		JAPANESE*, ENGLISH, FRENCH, GERMAN, ITALIAN, SPANISH	
ALARM		1 TIME*, CONTINUOUS	
SHOW WARNINGS			
	CHECK TONER	ON*, OFF	
	CASSETTE EMPTY	ON*, OFF	
	E-MAIL TRAN.ERR	ON*, OFF	This item is displayed only when an optional hard disk is installed.
DATE AND TIME			
	DATE SETTING	2001/01/01 to 2089/12/31	
	TIME SETTING	00:00:00 to 23:59:59	
TIMER SETTINGS			
	WAKE UP TIMER	ON*, OFF	
	WAKE UP TIME	00:00 to 23:59	
	POW. SAVE TIMER	ON*, OFF	
	POWER SAVE TIME	00:00 to 23:59	
	CALIBRATE TIMER	ON*, OFF	
	CALIBRATE TIME	00:00 to 23:59	
HARD DISK		ON*, OFF	This item is displayed only when an optional hard disk is installed.
INTERRUPT PRINT		ON*, OFF	This item is displayed only when an optional hard disk is installed.
SECURING TIME		1 hours*, 2 hours, 3 hours, 6 hours, 12 hours, 24 hours	This item is displayed only when an optional hard disk is installed.
SECURED TYPE		IMAGE*, PDL	This item is displayed only when an optional hard disk is installed.
RIP Once		ON*, OFF	This item is displayed only when an optional hard disk is installed.
ASSURE JOB LOG		ON*, OFF	This item is displayed only when an optional hard disk is installed.

FEEDER MENU

T-1-3

Item		Setting	Notes
TRAY PAPER SIZE		A4*, LTR, LGL, EXEC, MIXED SIZES, CUSTOM SIZE, CUSTOM SIZE R, ENV. ISO-C5, ENV. COM10, ENV. MONARCH, ENV. DL, ENV. ISO-B5, INDEX CARD, STMT, FLSC, 16K, A5, B5	
CASSETTE1 SIZE		A4*, LTR, LGL, EXEC, CUSTOM SIZE, CUSTOM SIZE R, A5, B5, FLSC, 16K	
CASSETTE2 SIZE		A4*, LTR, LGL, EXEC, CUSTOM SIZE, CUSTOM SIZE R, A5, B5, FLSC, 16K	CASSETTE2 SIZE is displayed only when the optional paper feeder is installed.
STD PAPER SIZE		A4*, LTR, LGL, EXEC, MIXED SIZES, CUSTOM SIZE, CUSTOM SIZE R, ENV. ISO-C5, ENV. COM10, ENV. MONARCH, ENV. DL, ENV. ISO-B5, INDEX CARD, STMT, FLSC, 16K, A5, B5	
TRAY PRIORITY		OFF*, ON	
INVLDPAPER TRAY		OFF*, ON	
AUTO SELECTION			
	TRAY	ON*, OFF	
	CASSETTE 1	ON*, OFF	
	CASSETTE 2	ON*, OFF	CASSETTE2 is displayed only when the optional paper feeder is installed.
STD PAPER TYPE		PLAIN PAPER*, PLAIN PAPER H, HEAVY PAPER 1, HEAVY PAPER 2, HEAVY PAPER 3, TRANSPARENCIES, ENVELOPE, COATED PAPER, LABEL, ROUGH PAPER	
TRAY PAPER TYPE		PLAIN PAPER*, PLAIN PAPER H, HEAVY PAPER 1, HEAVY PAPER 2, HEAVY PAPER 3, TRANSPARENCIES, ENVELOPE, COATED PAPER, LABEL, ROUGH PAPER, MIXED TYPES	
CASSETTE1 TYPE		PLAIN PAPER*, PLAIN PAPER H, ROUGH PAPER, MIXED TYPES	
CASSETTE2 TYPE		PLAIN PAPER*, PLAIN PAPER H, ROUGH PAPER, MIXED TYPES	CASSETTE2 TYPE is displayed only when the optional paper feeder is installed.
MANUAL 2-SIDED		1ST SIDE*, 2ND SIDE	
2-SIDED PRINT.		OFF*, ON	

1.5.5 Setup Menu (2)

i-SENSYS LBP5360

LAYOUT MENU

T-1-4

Item	Setting	Notes
COPIES	1* to 9999	
OFFSET Y	-50.0 mm to 0.0 mm* to +50.0 mm	
OFFSET X	-50.0 mm to 0.0 mm* to +50.0 mm	
BIND.LOCATION	LONG EDGE*, SHORT EDGE	
GUTTER	-50.0 mm to 0.0 mm* to +50.0 mm	
ALT.METHOD	ON*, OFF	

QUALITY MENU

T-1-5

Item			Setting	Notes
GRADATION LEVEL			HIGH 1*, HIGH 2	
TONER SAVE			ON, OFF*	
DENSITY:CYAN			1 to 15 (7*)	
DENSITY:MAGENTA			1 to 15 (7*)	
DENSITY:YELLOW			1 to 15 (7*)	
DENSITY:BLACK			1 to 15 (7*)	
COLOR MODE			AUTO*, COLOR, BLACK & WHITE	
HALFTONES				
	B & W HALFTONES			
		TEXT	HIGH RESOL.*, RESOLUTION, GRADATION, COLOR TONE	
		GRAPHICS	GRADATION*, COLOR TONE, HIGH RESOL., RESOLUTION	
		IMAGE	COLOR TONE*, HIGH RESOL., RESOLUTION, GRADATION	
	COLOR HALFTONES			
		TEXT	HIGH RESOL.*, RESOLUTION, GRADATION, COLOR TONE	
		GRAPHICS	GRADATION*, COLOR TONE, HIGH RESOL., RESOLUTION	
		IMAGE	GRADATION*, COLOR TONE, HIGH RESOL., RESOLUTION	
GRAY COMPENSATE				
	TEXT		ON*, OFF	
	GRAPHICS		ON*, OFF	
	IMAGE		ON, OFF*	
CMS				
	CMS SELECTION		PRINTER*, HOST	
	CMS/GAMMA			
		TEXT	CMS*, GAMMA	
		GRAPHICS	CMS*, GAMMA	
		IMAGE	CMS*, GAMMA	
	RGB SRCE PROF.			
		TEXT	sRGBv1.31*, HDTV gamma 1.5, HDTV gamma 1.8, HDTV gamma 2.4, DOWN LOAD FILE	Set CMS/GAMMA to CMS to enable this item.
		GRAPHICS	sRGBv1.31*, HDTV gamma 1.5, HDTV gamma 1.8, HDTV gamma 2.4, DOWN LOAD FILE	Set CMS/GAMMA to CMS to enable this item.
		IMAGE	sRGBv1.31*, HDTV gamma 1.5, HDTV gamma 1.8, HDTV gamma 2.4, DOWN LOAD FILE	Set CMS/GAMMA to CMS to enable this item.
	OUTPUT PROFILE			
		TEXT	Nomal*, Photo	Set CMS/GAMMA to CMS to enable this item.
		GRAPHICS	Nomal*, Photo	Set CMS/GAMMA to CMS to enable this item.
		IMAGE	Nomal*, Photo	Set CMS/GAMMA to CMS to enable this item.
	MATCHING METHOD			
		TEXT	SATURATION*, COLORIMETRIC, PERCEPTUAL	Set CMS/GAMMA to CMS to enable this item.
		GRAPHICS	PERCEPTUAL*, SATURATION, COLORIMETRIC	Set CMS/GAMMA to CMS to enable this item.
		IMAGE	PERCEPTUAL*, SATURATION, COLORIMETRIC	Set CMS/GAMMA to CMS to enable this item.
	GAMMA			
		TEXT	1.4*, 1.8, 2.2, 1.0	Set CMS/GAMMA to CMS to enable this item.
		GRAPHICS	1.4*, 1.8, 2.2, 1.0	Set CMS/GAMMA to CMS to enable this item.
		IMAGE	1.4*, 1.8, 2.2, 1.0	Set CMS/GAMMA to CMS to enable this item.
QUALITY CHANGE			CONT.PRINTING*, STOP PRINTING	

1.5.6 Setup Menu (3)

i-SENSYS LBP5360

INTERFACE MENU

T-1-6

Item		Setting	Notes
I/F CONNECTION			
	PARALLEL	ON*, OFF	
	USB	ON*, OFF	
	NETWORK	ON*, OFF	
MODE TIMEOUT		5 to 15* to 300 sec, OFF	
NETWORK MENU			

Item			Setting	Notes
TCP/IP SETTINGS				
	IP MODE		MANUAL*, AUTO	
	PROTOCOL			PROTOCOL is displayed only when IP MODE is set to AUTO.
		DHCP	OFF*, ON	
		BOOTP	OFF*, ON	
		RARP	OFF*, ON	
	IP SETTINGS			
		IP ADDRESS	0.0.0.0*	
		SUBNET MASK	0.0.0.0*	
		GATEWAY ADDRESS	0.0.0.0*	
	DNS			
		PRIMARY ADD.	0.0.0.0*	
		SECONDARY ADD.	0.0.0.0*	
	WINS		ON, OFF*	
	ARP/PING		ON*, OFF	
	FTP			
		FTP PRINT	ON*, OFF	
		FTP SETTINGS	ON*, OFF	
	LPD PRINT		ON*, OFF	
	RAW PRINT		ON*, OFF	
	BMLinkS		OFF*, ON	
	IPP PRINT		ON*, OFF	
	HTTP		ON*, OFF	
	SNTP		ON*, OFF	
	RESPONSE		ON*, OFF	
	IP ADD.RANGE			
		REJECT RX/PRT	OFF*, ON	
		REJECT ADD.SET.	reject IP address 1 through reject IP address 8	REJECT ADD.SET. and PERMIT ADD.SET. are displayed only when REJECT RX/PRT, PERMIT RX/PRT, REJ SET/BROWSE, PMT SET/BROWSE, or PERMIT RECEIVE is set to ON.
		PERMIT RX/PRT	OFF*, ON	
		PERMIT ADD.SET.	permit IP address 1 through permit IP address 8	REJECT ADD.SET. and PERMIT ADD.SET. are displayed only when REJECT RX/PRT, PERMIT RX/PRT, REJ SET/BROWSE, PMT SET/BROWSE, or PERMIT RECEIVE is set to ON.
		REJ SET/BROWSE	OFF*, ON	
		REJECT ADD.SET.	permit IP address 1 through permit IP address 8	REJECT ADD.SET. and PERMIT ADD.SET. are displayed only when REJECT RX/PRT, PERMIT RX/PRT, REJ SET/BROWSE, PMT SET/BROWSE, or PERMIT RECEIVE is set to ON.
		PMT SET/BROWSE	OFF*, ON	
		PERMIT ADD.SET.	permit IP address 1 through permit IP address 8	REJECT ADD.SET. and PERMIT ADD.SET. are displayed only when REJECT RX/PRT, PERMIT RX/PRT, REJ SET/BROWSE, PMT SET/BROWSE, or PERMIT RECEIVE is set to ON.
	MAC ADDRESS SET			
		PERMIT RECEIVE	OFF*, ON	
		PERMIT ADD.SET.	permit MAC address 1 through permit MAC address 50	REJECT ADD.SET. and PERMIT ADD.SET. are displayed only when REJECT RX/PRT, PERMIT RX/PRT, REJ SET/BROWSE, PMT SET/BROWSE, or PERMIT RECEIVE is set to ON.
AppleTalk			ON*, OFF	This item is displayed only when NETWORK in the I/F ONNECTION options is set to ON.
SMB				
	SMB SERVER		OFF*, ON	
	SMB		OFF*, ON	SMB is displayed only when an optional hard disk is installed, HARD DISK is set to ON, and SMB SERVER is set to ON.
SNMP			ON*, OFF	This item is displayed only when NETWORK in the I/F CONNECTION options is set to ON.
SPOOLER			OFF*, ON	This item is displayed only when NETWORK in the I/F CONNECTION options is set to ON, an optional hard disk is installed, and HARD DISK is set to ON.
START WAIT TIME			0 to 300 (0*)	This item is displayed only when NETWORK in the I/F CONNECTION options is set to ON.
REMOTE UI SET.				This item is displayed only when NETWORK in the I/F CONNECTION options is set to ON.
	REMOTE UI		ON*, OFF	

Item	Setting	Notes
CONNECT.RECOG.	ON*, OFF	
EXT.RX BUFFER	OFF*, ON	This item is displayed only when an optional RAM module is installed.

1.5.7 Setup Menu (4)

i-SENSYS LBP5360

USER MAIN.

T-1-7

Item		Setting	Notes
ADJ.START POS.			
	OFFSET Y(TRAY)	-5.0 mm to +5.0 mm (0.0 mm*)	
	OFFSET X(TRAY)	-2.22 mm to +2.22 mm (0.0 mm*)	
	OFFSET Y(CASS1)	-5.0 mm to +5.0 mm (0.0 mm*)	
	OFFSET X(CASS1)	-2.22 mm to +2.22 mm (0.0 mm*)	
	OFFSET Y(CASS2)	-5.0 mm to +5.0 mm (0.0 mm*)	OFFSET Y (CASS2) and OFFSET X (CASS2) are displayed only when the optional paper feeder is installed.
	OFFSET X(CASS2)	-2.22 mm to +2.22 mm (0.0 mm*)	OFFSET Y (CASS2) and OFFSET X (CASS2) are displayed only when the optional paper feeder is installed.
	OFFSET Y(DUP.)	-5.0 mm to +5.0 mm (0.0 mm*)	
	OFFSET X(DUP.)	-2.22 mm to +2.22 mm (0.0 mm*)	
RECVRY PRINTING		ON*, OFF	
SPECIAL MODE J		OFF*, ON	
SUBSTITUTE SIZE		OFF*, ON	
SP.IMAGE MODE		OFF*, LEVEL1, LEVEL2	
HDD MAINTENANCE			
	HDD ALL ERASE	OFF*, ON	This item is displayed only when an optional hard disk is installed.
	QUICK FORMAT	-	This item is displayed only when an optional hard disk is installed, and HDD ALL ERASE is set to OFF.
	STD FORMAT	-	This item is displayed only when an optional hard disk is installed.
SP.PRINT MODE			
	COATED PAPER	OFF*, ON	
	CURL ADJUSTMENT	OFF*, ON	
UPDATE FIRMWARE			
	USB	-	
	NETWORK	-	

T-1-8

Item		Setting	Notes
ADJ.START POS.			
	OFFSET Y(TRAY)	-5.0 mm to +5.0 mm (0.0 mm*)	
	OFFSET X(TRAY)	-2.22 mm to +2.22 mm (0.0 mm*)	
	OFFSET Y(CASS1)	-5.0 mm to +5.0 mm (0.0 mm*)	
	OFFSET X(CASS1)	-2.22 mm to +2.22 mm (0.0 mm*)	
	OFFSET Y(CASS2)	-5.0 mm to +5.0 mm (0.0 mm*)	OFFSET Y (CASS2) and OFFSET X (CASS2) are displayed only when the optional paper feeder is installed.
	OFFSET X(CASS2)	-2.22 mm to +2.22 mm (0.0 mm*)	OFFSET Y (CASS2) and OFFSET X (CASS2) are displayed only when the optional paper feeder is installed.
	OFFSET Y(DUP.)	-5.0 mm to +5.0 mm (0.0 mm*)	
	OFFSET X(DUP.)	-2.22 mm to +2.22 mm (0.0 mm*)	
RECVRY PRINTING		ON*, OFF	
SPECIAL MODE J		OFF*, ON	
SUBSTITUTE SIZE		OFF*, ON	
SP.IMAGE MODE		OFF*, LEVEL1, LEVEL2	
HDD MAINTENANCE (Only when equipped with the hard disk)			
	HDD ALL ERASE	OFF*, ON	This item is displayed only when an optional hard disk is installed.
	QUICK FORMAT	-	This item is displayed only when an optional hard disk is installed, and HDD ALL ERASE is set to OFF.
	STD FORMAT	-	This item is displayed only when an optional hard disk is installed.
SP.ADMIN.MODE			

	MAINTENANCE C.		Indicated when no maintenance code is set.
	CNCL PAPER LMT	OFF*, ON	Indicated when the maintenance code is consistent.
	DOT COUNTER	OFF*, ON	
	SP.TRANS.MODE	OFF*, ON	
	CUSTOM S.VERT.	OFF*, ON	
	CNCL JOB SINGLY	ON*, OFF	
	SP.GLOSSY MODE	OFF*, ON	
	WHITE LINE ADJ	OFF*, ON	
	RED IMAGE ADJ	OFF*, ON	
	OHP IMAGE ADJ	OFF*, ON	
	COLOR PLACEMENT	OFF*, ON	
	BLUE IMAGE ADJ	OFF*, ON	
	AFTERIMAGE ADJ	OFF*, ON	
	OHP DARK ADJ	OFF*, ON	
	SP.B&W MODE	OFF*, ON	
	CLR/B&W SWITCH	DRUM PREF.*, SPEED PREF.	
	USB		
	NETWORK		
SP.PRINT MODE			
	COATED PAPER	OFF*, ON	
	CURL ADJUSTMENT	OFF*, ON	
UPDATE FIRMWARE			
	USB	-	
	NETWORK	-	

1.5.8 Setup Menu (5)

i-SENSYS LBP5360

SERVICE MODE

T-1-9

Item		Setting
PASSWORD		-
Adjust gr.		
	CALIBRATION	ON*, OFF
	CHARGE BIAS Y	-10 to 10 (0*)
	CHARGE BIAS M	-10 to 10 (0*)
	CHARGE BIAS C	-10 to 10 (0*)
	CHARGE BIAS K	-10 to 10 (0*)
	DEV BIAS Y	-10 to 10 (0*)
	DEV BIAS M	-10 to 10 (0*)
	DEV BIAS C	-10 to 10 (0*)
	DEV BIAS K	-10 to 10 (0*)
	FRONT TRANS Y	-30 to 40 (0*)
	FRONT TRANS M	-30 to 40 (0*)
	FRONT TRANS C	-30 to 40 (0*)
	FRONT TRANS K	-30 to 40 (0*)
	BACK TRANS Y	-30 to 40 (0*)
	BACK TRANS M	-40 to 30 (0*)
	BACK TRANS C	-40 to 30 (0*)
	BACK TRANS K	-40 to 30 (0*)
	PG TRANS YMCK	-20 to 50 (0*)
	FRONT ATTACH	-20 to 20 (0*)
	BACK ATTACH	-20 to 20 (0*)
	FRT FUSE TEMP	-4 to 4 (0*)
	BCK FUSE TEMP	-4 to 4 (0*)
FUNCTION GR.		
	RESTORE DCON	-
	CLEAR DCON	-
	COLOR MODE SLCT	ON, OFF*
LOG GR.		
	SYSTEM LOG	ON, OFF*
PANEL LOCK GR.		
	PANEL LOCK	ON, OFF*
F/W UPDATE GR.		
	USB	

Item		Setting
	NETWORK	
NETWORK GR.		
	FTP SYSLOG	ON, OFF*
	INITIALIZE MENU	ON, OFF*

UFR II SETUP

T-1-10

Item	Setting
PAPER SAVE	ON*, OFF

1.5.9 Utility Menu

i-SENSYS LBP5360

T-1-11

Item		Remarks
CONFIG.PAGE		
	TEST PRINT B*1 :grid pattern	continuous printing
	TEST PRINT D1*1 :counter reading for service	counter reading/service printing
	TEST PRINT D2*1 :color gradation pattern	image quality test printing
	TEST PRINT E*1 :color grid pattern	continuous test printing
	TEST PRINT I*1 :black pattern	image test printing
	TEST PRINT N*1 :patch pattern	image test printing
	TEST PRINT P*1 :	
	TEST PRINT AT*1 :gradation, registration displacement check chart	image fault troubleshooting printing
	TEST PRINT AU*1 :transfer check chart	image fault troubleshooting printing
	TEST PRINT AV*1 : Factory test pattern	Factory test pattern
PCL UTILITY		
	FONTS LIST	
CLEANING		
NW STATUS PRINT		
EXT.I/F PRINT		
E-MAIL UTILITY		
	RECEIVE E-MAILS	
	RX LOG LIST	
CALIBRATION		COLOR REGIS.ADJ, DENSITY CONTROL, DEN.MEDIAN CONT, FULL CALIBRATE
PRNTPOSNPRINT		

1.5.10 Reset Menu

i-SENSYS LBP5360

T-1-12

Item	Remarks
SOFT RESET HARD RESET	-
FORM FEED	-
SHUT DOWN	

1.5.11 Pickup Selection Menu

i-SENSYS LBP5360

T-1-13

Item	Setting
PAPER SOURCE	AUTO, CASSETTE 1, CASSETTE 2, TRAY
TRAY PAPER SIZE	A4*, LTR, LGL, EXEC, MIXED SIZES, CUSTOM SIZE, CUSTOM SIZE R, ENV. ISO-C5, ENV. COM10, ENV. MONARCH, ENV. DL, ENV. ISO-B5, INDEX CARD, STMT, FLSC, 16K, A5, B5
CASSETTE1 SIZE	A4*, LTR, LGL, EXEC, CUSTOM SIZE, CUSTOM SIZE R, A5, B5

Item	Setting
CASSETTE2 SIZE	A4*, LTR, LGL, EXEC, CUSTOM SIZE, CUSTOM SIZE R, A5, B5
TRAY PAPER TYPE	PLAIN PAPER*, PLAIN PAPER HHEAVY PAPER 1, HEAVY PAPER 2, HEAVY PAPER 3, TRANSPARENCIES, ENVELOPE, COATED PAPER, LABEL, ROUGH PAPER, MIXED TYPES
CASSETTE1 TYPE	PLAIN PAPER*, PLAIN PAPER H, ROUGH PAPER, MIXED TYPES
CASSETTE2 TYPE	PLAIN PAPER*, PLAIN PAPER H, ROUGH PAPER, MIXED TYPES
2-SIDED PRINT.	OFF*, ON

1.6 Safety

1.6.1 Safety of the Laser Light

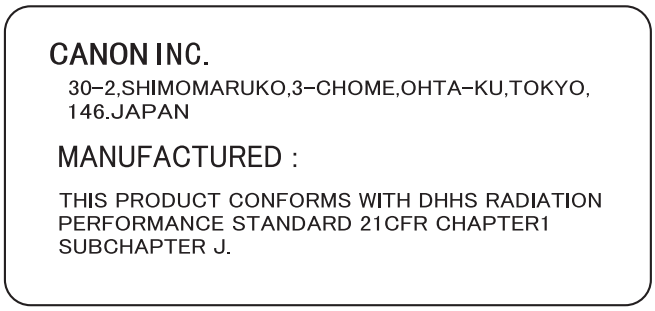
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Laser light can prove to be hazardous to the human body. The machine's laser unit is fully enclosed in a protective housing and external covers so that its light will not escape outside as long as the machine is used normally.

1.6.2 Regulations Under the Center for Devices and Radiological Health (CDRH)

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The CDRH of the US Food and Drug Administration put into effect regulations governing the sale of laser products in the US on August 2, 1976. These regulations apply to all laser products produced on and after August 1, 1976, and a laser product cannot be sold unless it has been certified to comply with the regulations. The following is the label used to indicate that the product has been certified under the regulations, and all laser products sold in the US must bear the label.



F-1-10

A different description may be used for a different product.

1.6.3 Safety of Toner

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine's toner is a non-toxic material composed of plastic, iron, and small amounts of dye.

Do not put the toner into fire. It may explode.

Toner on the Skin or Clothes
1. If your skin or clothes came into contact with toner, use dry tissue to remove the toner, and then wash with water.
2. Do not use warm or hot water, which will cause the toner to jell, permanently fusing it with the fibers of the clothes.
3. Do not bring toner into contact with vinyl material. They are likely to react with each other.

1.6.4 Handling the Laser Unit

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The laser/scanner unit emits invisible laser beam. DO NOT disassemble the unit as the laser beam can possibly damage your eyes. The unit cannot be adjusted in the field. The following label is attached to the cover of the unit:

F-1-11

Chapter 2 TECHNICAL REFERENCE

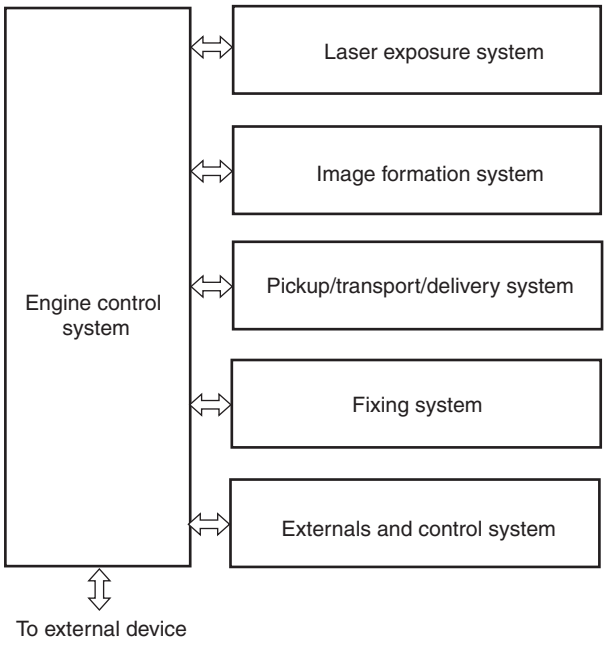
Contents

2.1 Functional Configuration

2.1.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine may be broadly divided into the following 6 functional blocks: engine control system, laser exposure system, image formation system, pickup/transport/delivery system, fixing system, and externals/auxiliary control system.



F-2-1

2.2 Basic Sequense

2.2.1 Basic Sequence of Operation

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The operational sequence of the printer is controlled by the microcomputer (CPU) on the DC controller in the engine control system. The purposes of each period, from power-ON until each motor stops after the completion of printing, are listed below. See the appendix for detailed timing chart.

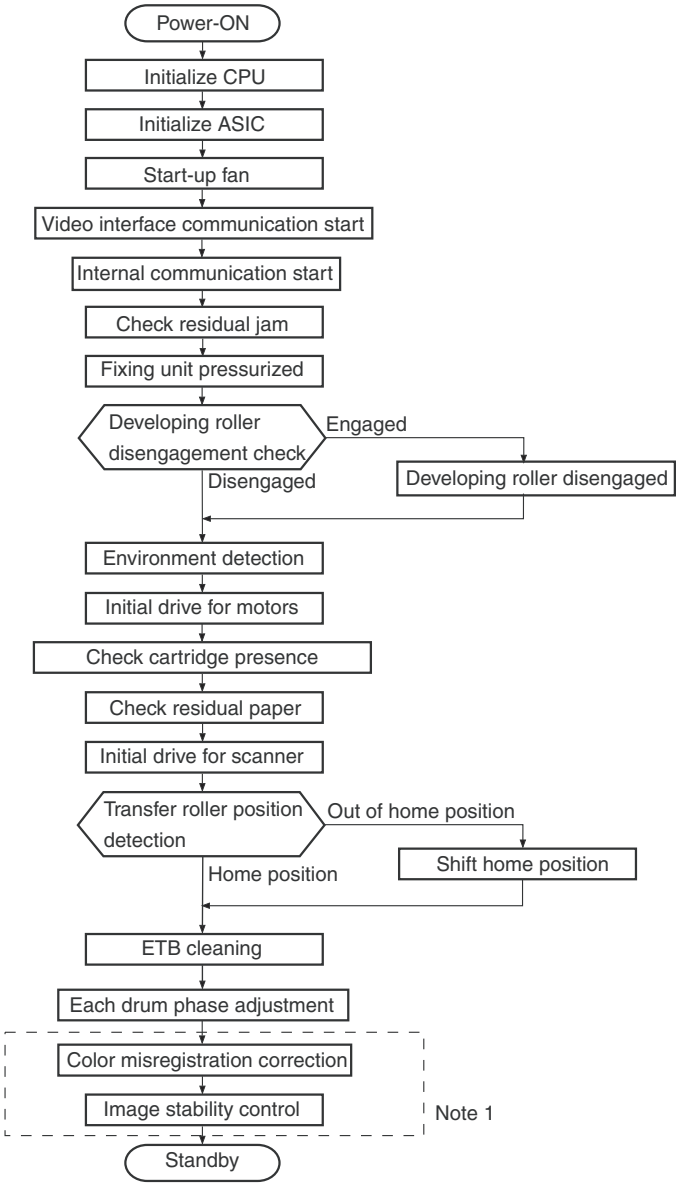
T-2-1

Interval		Description	Remarks
WAIT (Wait period)	From either power switch is turned ON or door is closed until each drum phase adjustment is completed.	To clear drum surface potential, to adjust each drum phase, and to clean the ETB.	The printer detect the toner level, cartridge presence, and environmental status during the period. Also execute the calibration (color misregistration control and image stability control) as required.
STBY (Standby period)	From end of WAIT or LSTR period until either the print command is input from the video controller or power switch is turned OFF.	To keep the printer ready to print.	The printer goes into sleep mode when a sleep command is sent from the video controller. Also execute the color misregistration control and the image stability control when each command is sent.
INTR (Initial rotation period)	From the print command is input from the video controller until paper is picked up.	To stabilize the photosensitive drum sensitivity in preparation for printing.	
PRINT (Print period)	From the /TOP signal is sent to the video controller after INTR period until the fixing paper sensor detects trailing edge of paper.	To form image on the photosensitive drum based on the VIDEO signals sent from the video controller and to transfer the toner image onto paper.	The printer executes the image stabilization control in every specified number of prints or time after the power is turned ON.
LSTR (Last rotation period)	From the end of PRINT period until the delivery motor stops.	To deliver the last paper out of the printer.	The ptinter returns to the INTR period as soon as another print command is sent from the video controller.

2.2.2 Power-On Sequence

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The power on sequence is for the purpose of the printer initialization and checking for possible malfunctions or paper jam.
The sequential diagram is shown below. This is described for printer status from the power-ON to STBY period.



F-2-2

*1 Items surrounding with dotted line are functioning only when needed.

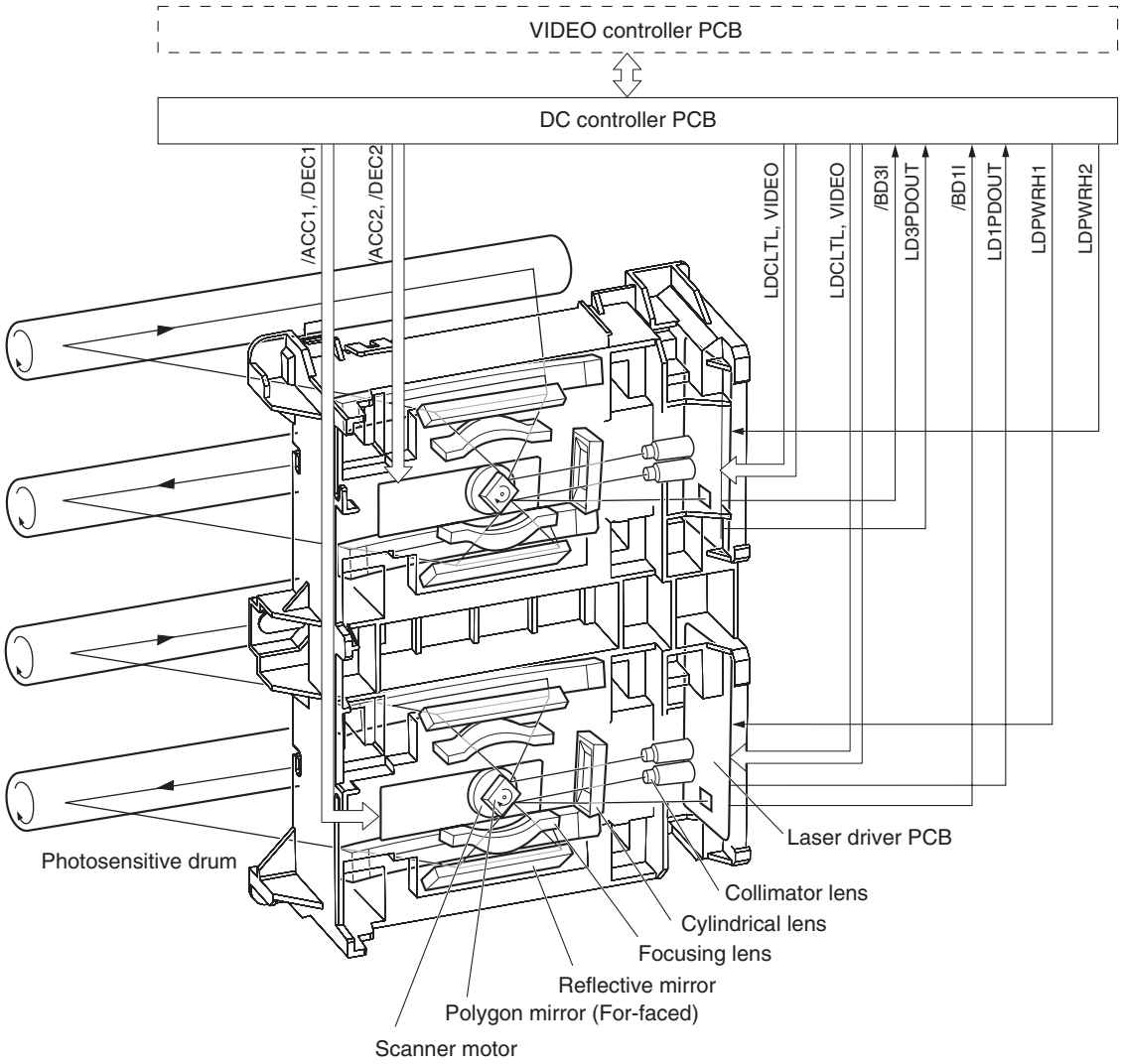
2.3 LASER EXPOSURE SYSTEM

2.3.1 Overview/Configuration

2.3.1.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The laser/scanner system forms latent images on the photosensitive drum according to the VIDEO signals sent from the video controller PCB. It consists of the laser driver PCB, scanner motor, and etc.



F-2-3

This printer has four laser units: two laser driver PCBs have two laser units each. Also there are two scanner motors and one Polygon mirror reflects laser lights of two colors. These parts are in one unit as the laser/scanner unit and are controlled by the DC controller. In addition, the rotational counts of the scanner motor is switched by the print mode. The function of switching the light intensity is adopted in order to obtain optimum laser light intensity for the rotational count.
The following is the operational sequence.

1) Upon reception of a print command from the video controller , the DC controller rotates the scanner motors in order to rotate two Polygon mirrors.
2) When the scanner motor starts to rotate, the DC controller allows the laser to emit light and inputs the /BD INPUT signals (/BD1I, /BD3I) from the BD sensor. The DC controller monitors the rotational speed of the scanner motor with the /BDI signals input timing to control the scanner motor to rotate at constant speed.
3) When the scanner motor rotates at constant speed, the video controller sends the VIDEO signals to the laser driver circuit through the DC controller. Then the laser driver PCB emits the laser diode depending on the VIDEO signals.
4) The laser beams are reflected by the Polygon mirror rotating at constant speed, and scan on the photosensitive drum at constant speed.
5) When the photosensitive drum rotates and the laser beams scan on the photosensitive drum both at constant speed, a latent image is formed on the drum.

memo

1. This printer has only two four-faced mirrors which are directly driven by the two scanner motors respectively. One mirror reflects two laser beams of M/C exposures, and the other does two laser beams of Y/Bk exposures.

There are only two BD sensors apparently generating two kinds of BDI signals, however, four kinds of BDI signals are required for the color scanning system in fact. Therefore, each BDI signal internally generates another additional BDI signal inside the CPU.

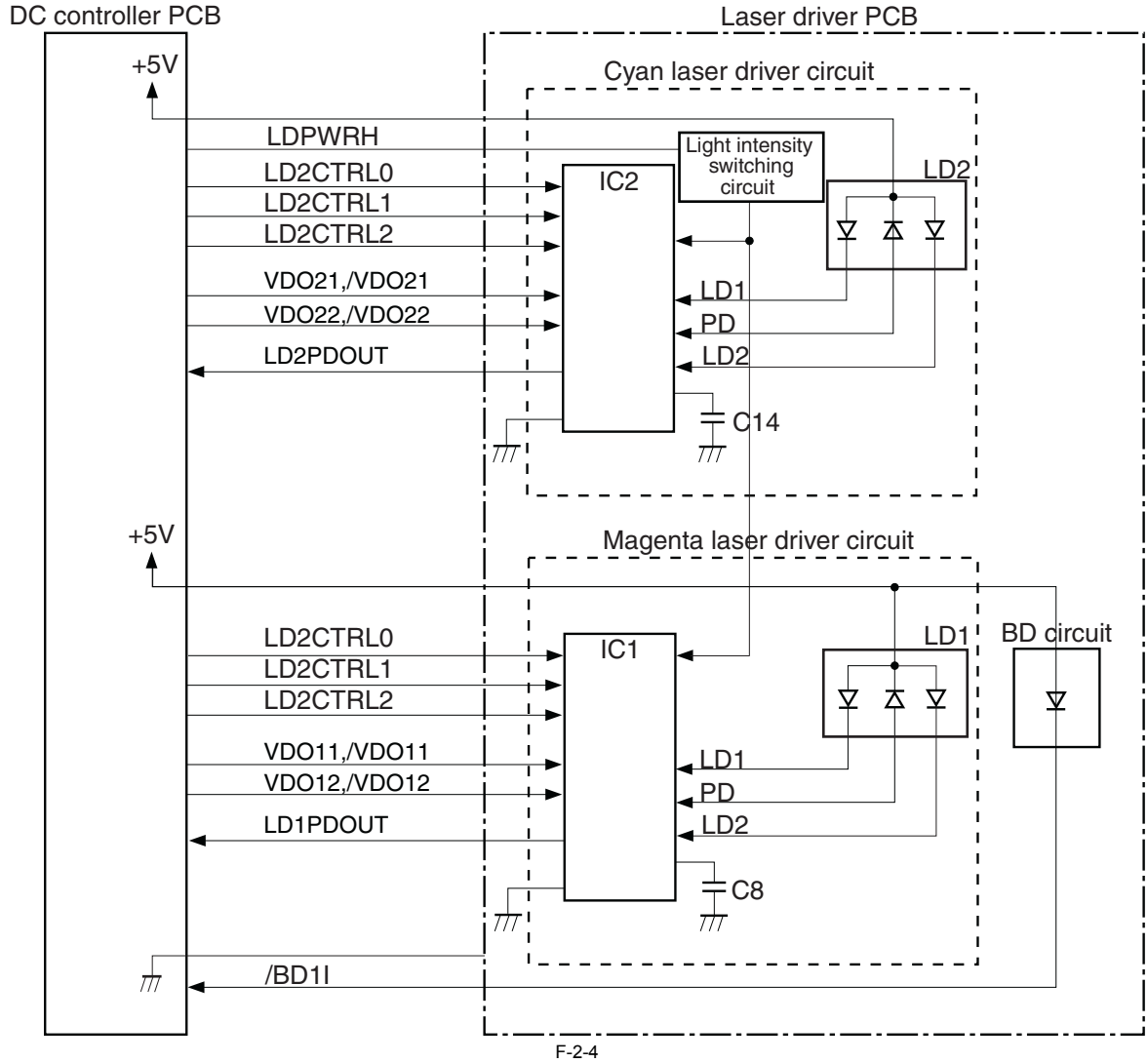
2. This printer scans two lines with one Polygon mirror. Therefore the scanning direction depends on the color. (The beam exposure direction for M/Y is opposite to that for C/Bk)

2.3.2 Laser Control

2.3.2.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The laser control is to allow the laser driver to turn the laser diode ON/OFF according to the LASER CONTROL signals sent from the DC controller.
There are two laser driver PCBs: one is for M/C and the other is for Y/Bk. The laser driver PCB for M/C is described here, as both are identical.
The circuit diagram of the M/C laser control is illustrated below.



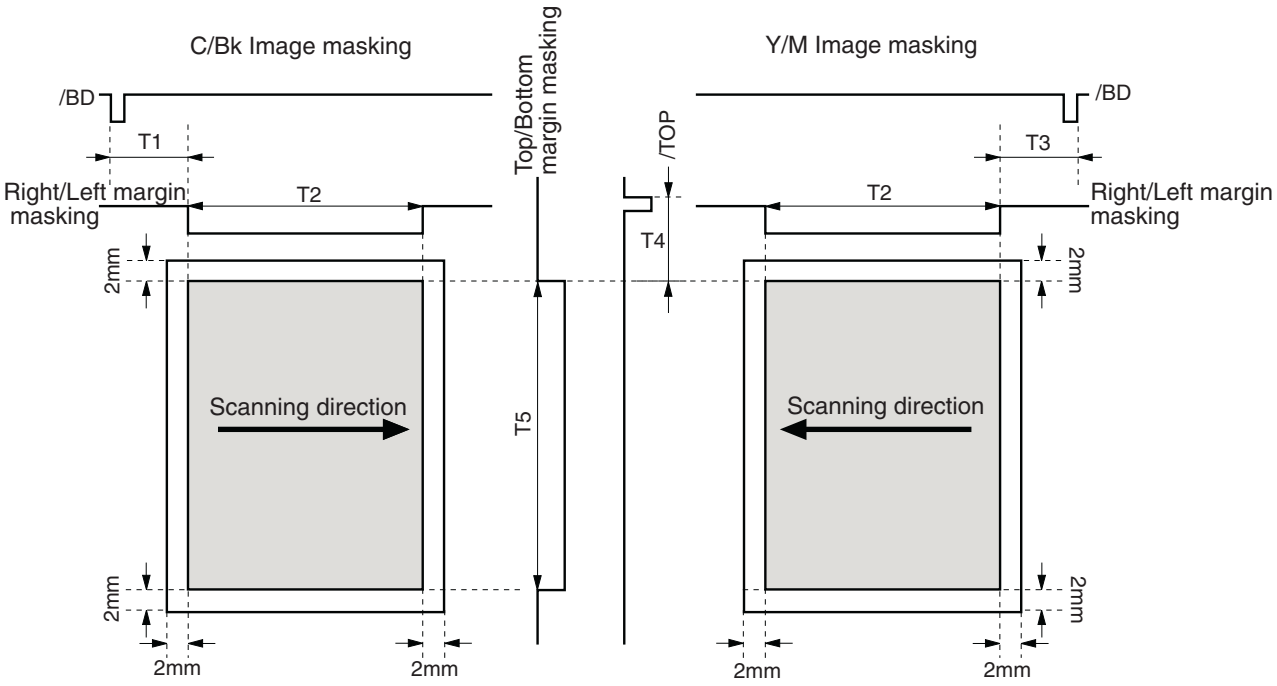
F-2-4

The DC controller sends the VIDEO signals (VDO, /VDO) for the image formation, the LASER CONTROL signals (CTRL0, CTRL1, CTRL2) for witching the operational mode of the laser driver circuit, and the LASER LIGHT INTENSITY SWITCH signal (LDPWRH) for switching the laser light intensity to each laser driver IC (IC1, IC2). The laser driver IC controls the laser according to the combination of each signal.

2.3.2.2 Image masking control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The image masking control is to regulate laser beam emission in non-image area except during the unblanking interval.
The DC controller puts the LASER CONTROL signal into LDOFF mode and turns the laser diodes OFF intentionally, while the laser beam scans the non-image area except during the unblanking interval. This is called the image masking status, and the laser diodes do not emit light during this status period even if the VIDEO signals are sent. The timing to start the image masking control depends on the paper size information sent from the video controller. (Note that this printer cannot detect the paper size in the cassette.)



F-2-5

1. The colored area indicates the area where an image can be scanned by the laser beam.
2. The times T1, T2, T3, T4 and T5 depend on the paper size.
3. If the video controller does not specify the paper size with a paper size command at pickup operation from the multi-purpose tray (MPT), the printer cannot detect the paper width. In such a case, the T1 and T3 are automatically set for letter size but T5 is set according to the paper length detected by the top of page sensor.

2.3.2.3 Failure detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

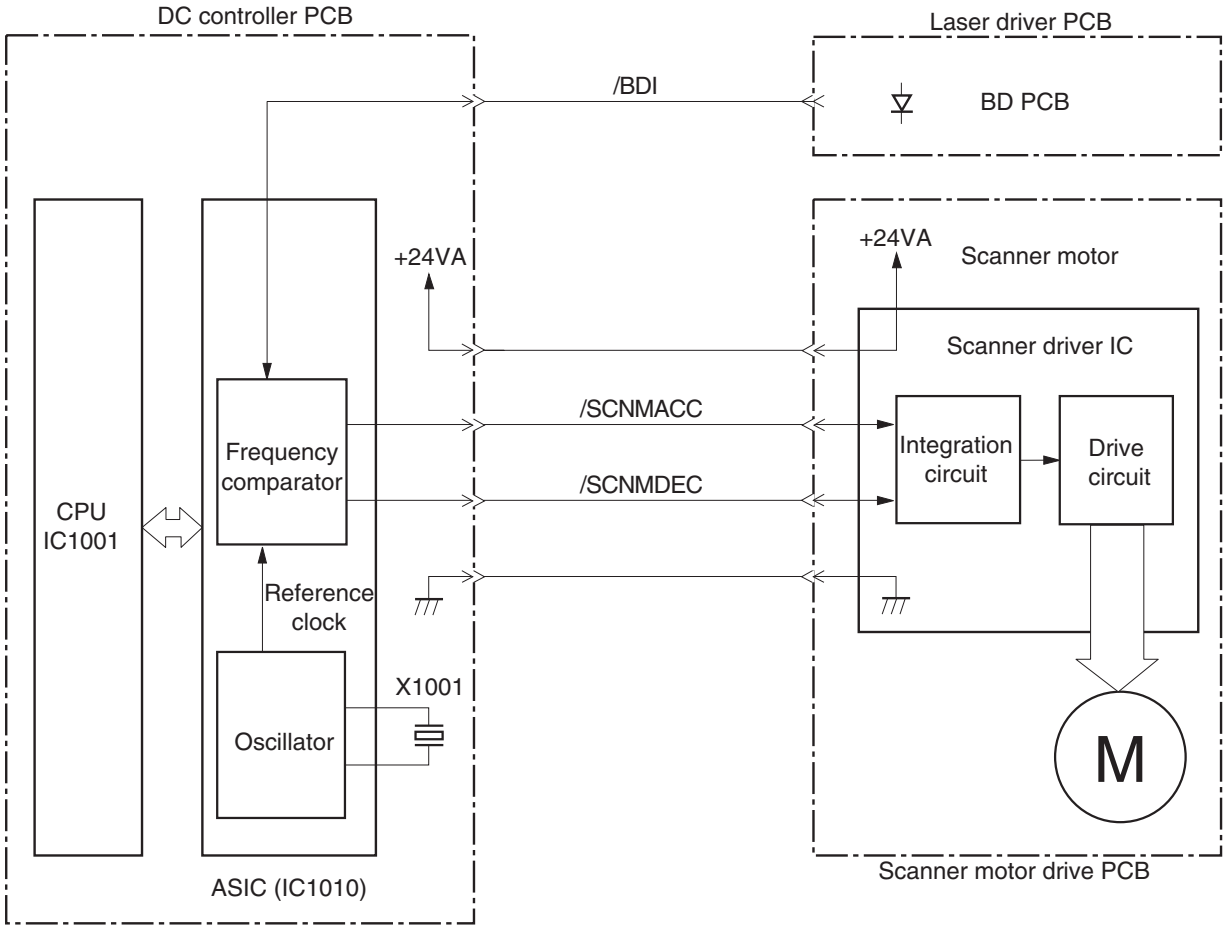
This control is to detect the failure in the laser diode.
The laser driver IC converts the laser current of the laser diodes into voltage value during the initial APC period and sends it to the DC controller in form of the LASER CURRENT OUTPUT signal.
If the voltage value equivalent to the LASER CURRENT OUTPUT signal is below its specified value, the DC controller presumes the laser unit failure, stops the printer engine, and notifies the video controller of "E100 (optical unit failure)".

2.3.3 Laser Scanner Motor Control

2.3.3.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The scanner motor control is to rotate the scanner motor at its specified speed.
There are two PCBs: one is for M/C and the other is for Y/Bk. The PCB for M/C is described here, as both are identical.
The circuit diagram of the scanner motor is illustrated below.



F-2-6

The DC controller performs this control. The DC controller divides the oscillation frequency of the oscillator (X1001) and generates the reference clock. It compares the intervals between the reference clock and the BD INPUT signal (/BD1I) with the frequency comparator, and monitors the rotational count of the scanner motor. The DC controller controls the rotational speed by sending the SCANNER MOTOR ACCELERATION signal (/SCNM1ACC) or the SCANNER MOTOR DECELERATION signal (/SCNM1DEC) to the scanner motor driver circuit based on the detected rotational speed.
The following are the two controls performed in this control.
1. Speed control: This control is to maintain the rotational speed of the scanner motor at constant speed.
2. Phase control with other scanner: This control is to prevent the color misregistration in sub-scanning (vertical) direction. It adjusts the phase difference between one Polygon mirror and the other during both scanner motors' rotation at low speed and eliminates the rotational difference between both scanner motors.

2.3.3.2 Failure detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The CPU monitors the frequency comparator in the ASIC and determines whether the scanner motor rotates at its specified rotational speed or not.
When the CPU encounters the following conditions, it determines the scanner motor failure, stops the printer engine, and notifies the video controller of "E100 (optical unit failure)".
1. Abnormal scanner motor
   The scanner motor does not enter scanner ready mode within 5 seconds of scanner motor start-up.
2. BD error
   - The /BDI signal cannot be detected within 1.5 seconds of once the scanner motor reached at its specified rotational speed.
   - The interval of the /BDI signal goes out of the tolerance for 0.5 second continuously after the scanner motor once reached at its specified rotational speed.

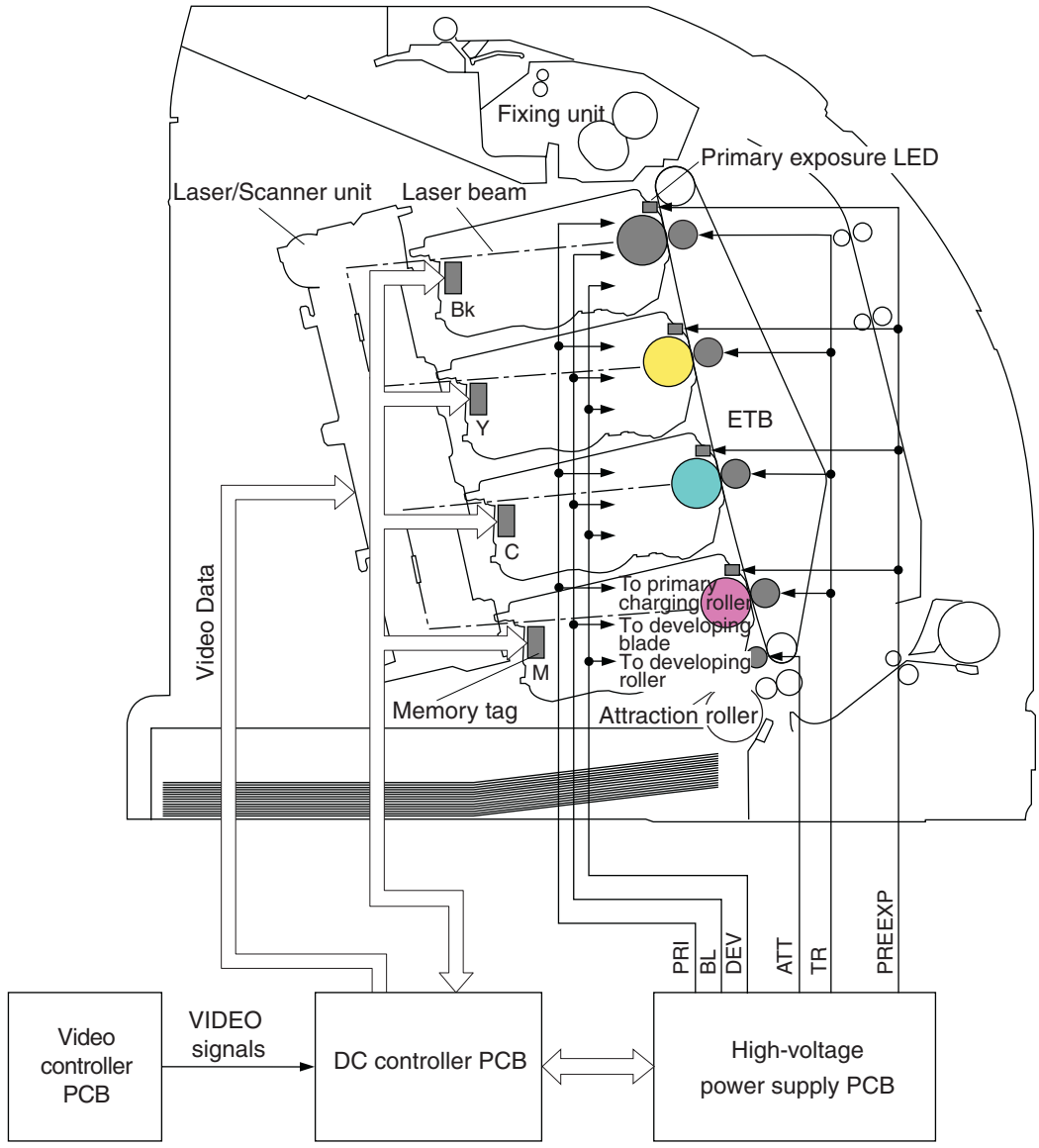
2.4 IMAGE FORMATION SYSTEM

2.4.1 Overview/Configuration

2.4.1.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The image formation system serves as an essential part of the printer and forms a toner image on paper.
It consists of the four cartridges, the ETB unit, the fixing unit, and etc, which are controlled by the DC controller. The DC controller controls the laser/scanner unit and the high-voltage power supply PCB to form an image on paper according to the VIDEO signals upon reception of the print command from the video controller.
There is a memory tag inside each cartridge. The memory tag reads and writes data according to the command from the DC controller.



F-2-7

2.4.1.2 Print Process

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The principle of the image formation is described here.
The print process can be broadly divided into 5 blocks with 10 steps. A toner image is formed on paper as it goes through each process.
The following is the blocks and the steps of print process and the diagrammatic sketch.

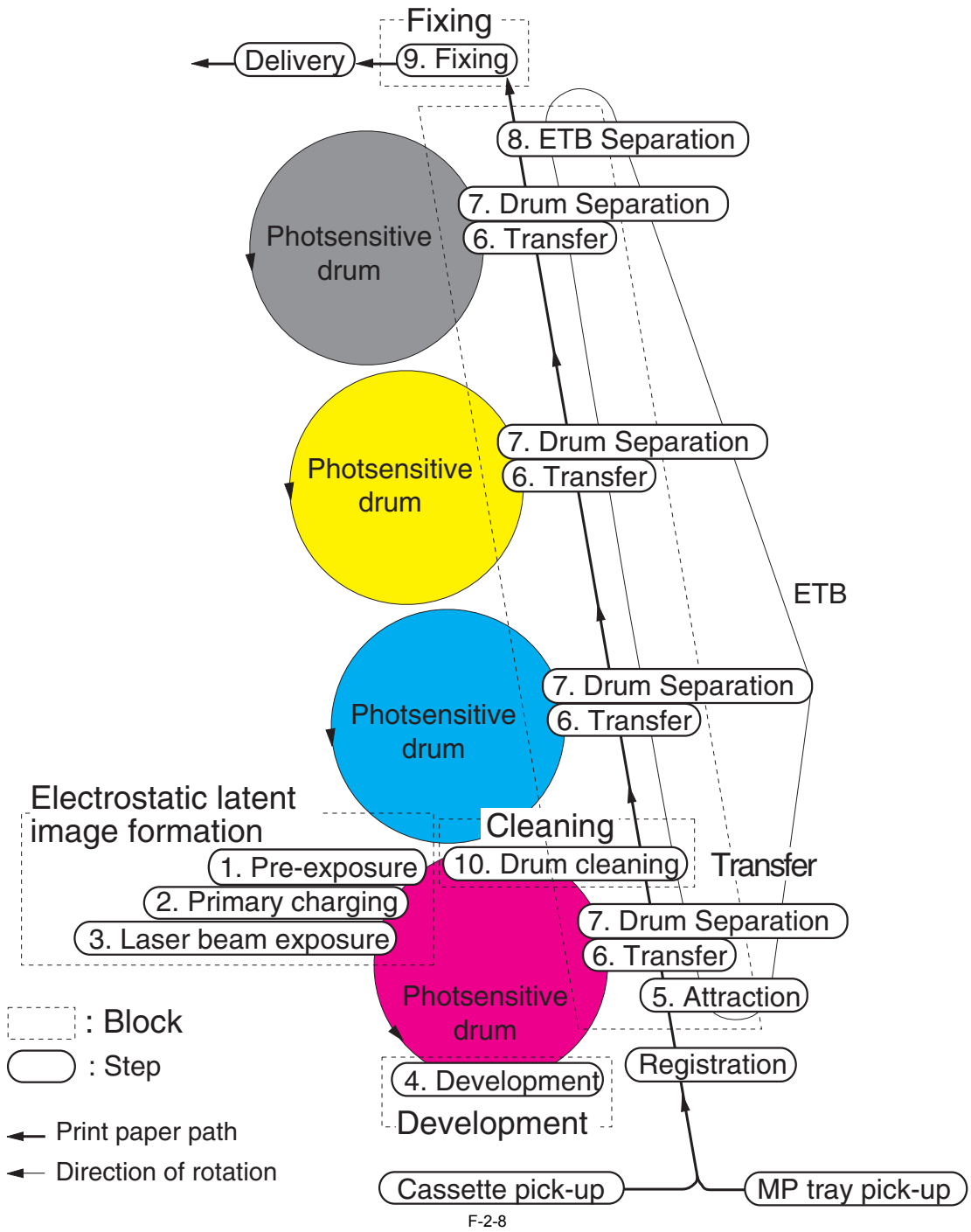
1. Electrostatic latent image formation block
To form an electrostatic latent image on the photosensitive drum.
Step 1: Pre-exposure
Step 2: Primary charging
Step 3: Laser beam exposure

2. Development block
To make the electrostatic latent image visible on the photosensitive drum surface with the contact development method.
Step 4: Development

3. Transfer block
To transfer toner image on the photosensitive drum onto paper.
Step 5: Attraction
Step 6: Transfer
Step 7: Drum separation
Step 8: ETB separation

4. Fixing block
To fix the toner image on paper.
Step 9: Fixing

5. Cleaning block
To clean the residual toner on the photosensitive drum.
Step 10: Drum cleaning

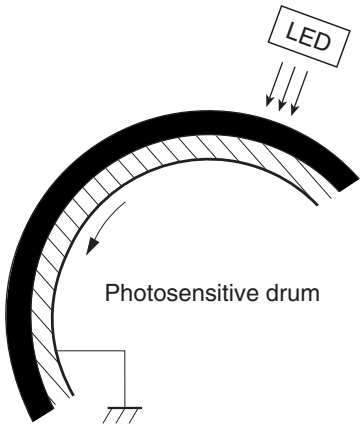


F-2-8

2.4.1.3 Electrostatic latent image formation block

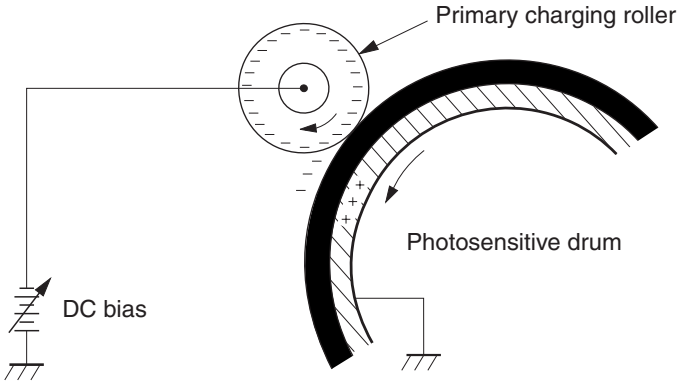
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This block consists of three steps and forms an electrostatic latent image on the photosensitive drum.
When the last step in this block is completed, a negative electrical charge is remained in the unexposed drum surface area by the laser beam and is removed from the exposed area.
The image with negative charge on the drum is called an "electrostatic latent image" as it is invisible to human eyes.
Step 1: Pre-exposure
Prior to the primary charging, the LED light of the pre-exposure LED is exposed on the photosensitive drum surface. This eliminates the residual charge on the drum surface in order to avoid image density unevenness.



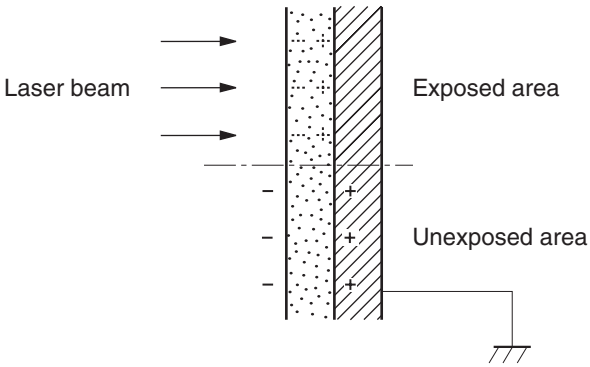
F-2-9

Step 2: Primary charging
As a preparation for the latent image formation, the surface of the photosensitive drum is charged with a uniform negative potential in this step.
The charging method of this printer is to charge directly to the photosensitive drum surface from the primary charging roller, which is interlocked with the drum.
The primary charging roller is made of a conductive rubber. To charge the drum surface negative, the high-voltage DC bias is applied to the primary charging roller.



F-2-10

Step 3: Laser beam exposure
The latent image is formed on the photosensitive drum by the laser beam in this step.
As the laser beam scans on the negative charged photosensitive drum, the potential on the exposed area is neutralized and the negative potential is removed from the drum surface. This area forms an electrostatic latent image.

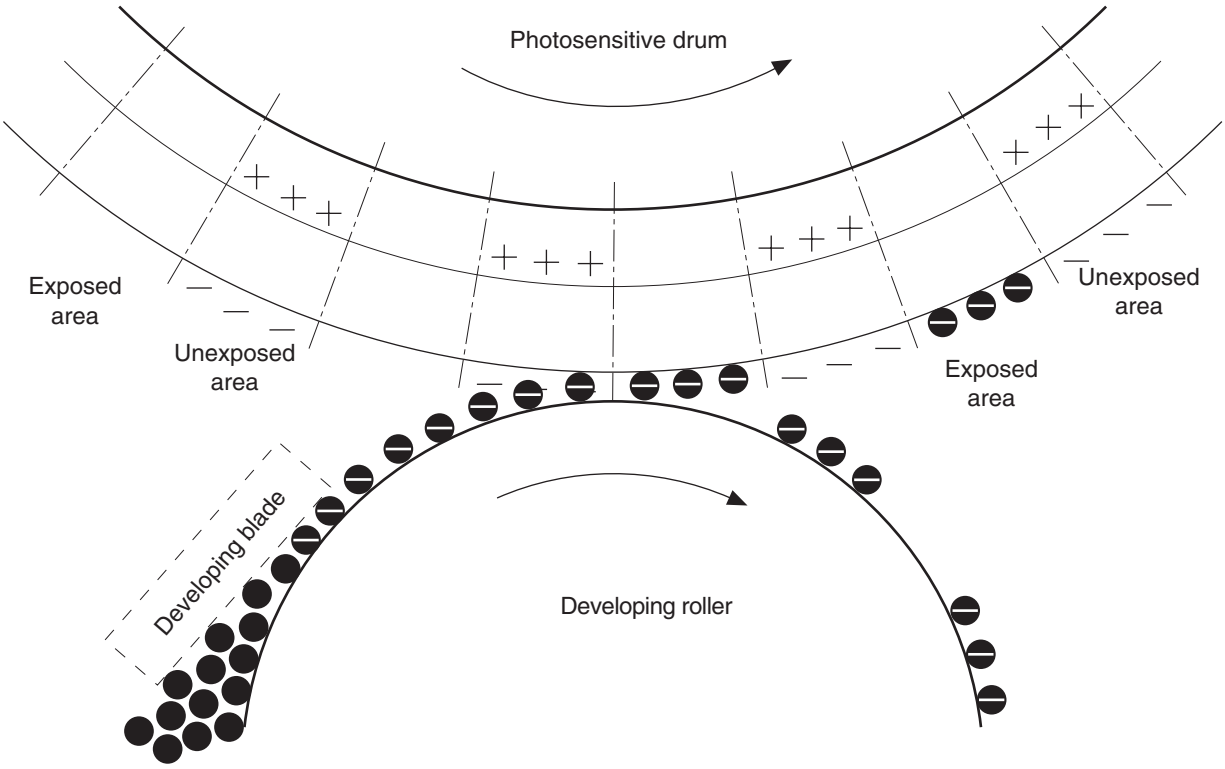


F-2-11

2.4.1.4 Development block

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The electrostatic latent image on the photosensitive drum surface is visualized by applying toner in this block. This printer utilizes the contact development method, that keeps the developing roller touching the photosensitive drum. On the other hand, there is a flexible developing blade that gently touches the developing roller surface where toner is uniformly sticking around the roller.
The toner (developing material) used in this printer is a non-magnetic single-component toner, composed of resins, etc.
Step 4: Development
The toner is adhered along the electrostatic latent image on the photosensitive drum surface by the contact development method in this step.
The toner (developing material) is non-magnetic single component type and is charged negative by the friction caused by the rotating developing roller against the developing blade.
This negative charged toner contacts with the photosensitive drum. As the area of the drum surface where the laser beam exposed has higher potential than the developing roller, the negative charged toner transfers to this higher potential area. Thus the latent image is finally visualized.

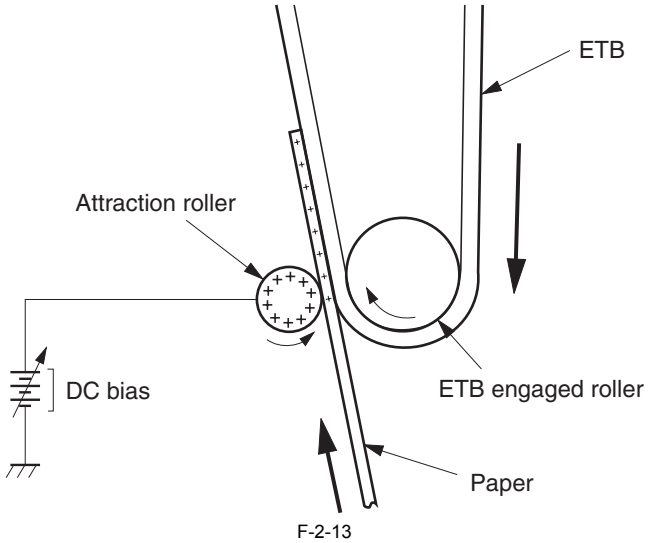


F-2-12

2.4.1.5 Transfer block

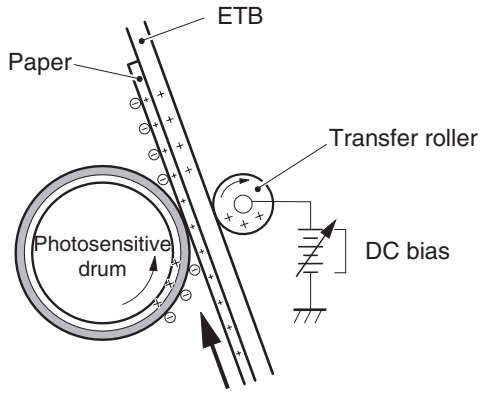
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This block consists of four steps and the toner image on the photosensitive drum surface is transferred onto paper.
Step 5: Attraction
Paper is adhered on the ETB by electrostatic force in this step.
It is necessary to adhere paper on the ETB in order to convey the paper upward. The picked up paper is fed as it is pushed against the ETB by the attraction roller.
The positive DC bias is applied to the attraction roller to charge the paper positive.



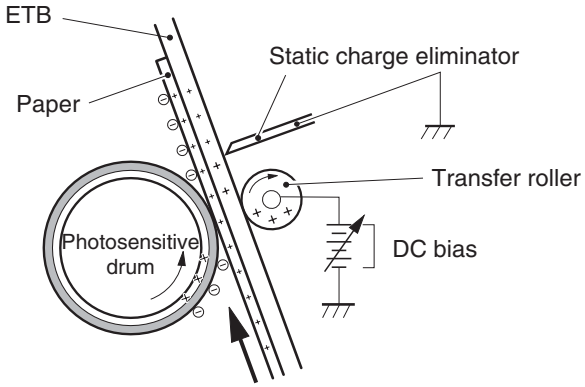
F-2-13

Step 6: Transfer
A toner image on the photosensitive drum is transferred onto paper in this step.
The positive DC bias is applied to the transfer roller facing to the photosensitive drum to charge the ETB positive. Then the negative charged toner on the drum surface is transferred onto the paper. This process is repeated for each color (M, C, Y and Bk).



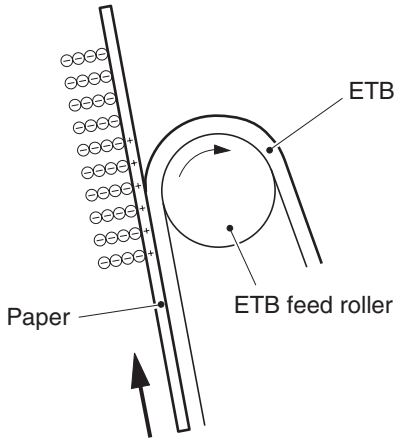
F-2-14

Step 7: Drum separation
The paper is separated from the photosensitive drum surface by its own elastic force with assistance of the static charge eliminator. (Curvature separation)
The static charge on the ETB surface is decreased with the eliminator after transfer operation in order to stabilize the paper feeding operation.



F-2-15

Step 8: ETB separation
The elasticity of paper and the curvature of the ETB feed roller (so-called "curvature separation") separate the paper from the ETB.

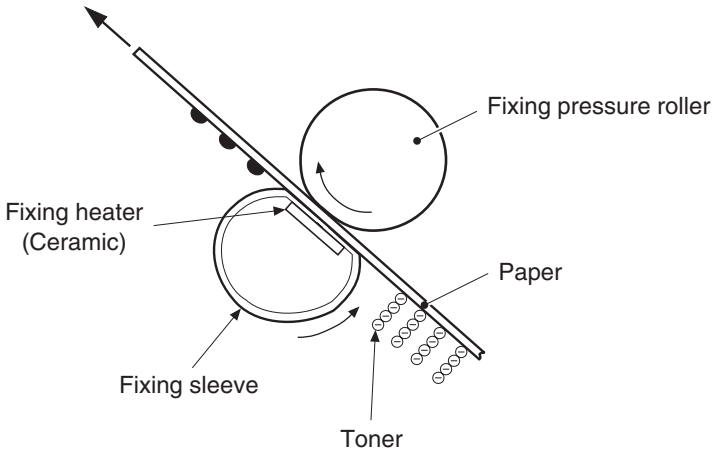


F-2-16

2.4.1.6 Fixing block

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The toner image is fixed on paper in this block.
The toner image transferred onto paper through the transfer block can be smeared easily by hands since it is only attracted to the paper by a static electricity.
As appropriate pressure and heat are provided, the toner image can be fixed on the paper as a permanent printed image.
Step 9: Fixing
The toner image on the paper is fixed on the paper by using the color on-demand fixing method in this step.
This printer utilizes the ceramic heater with lower heat capacity, which warms up quickly.
The feature of this method enables to shorten the wait time and thus energy-saving.

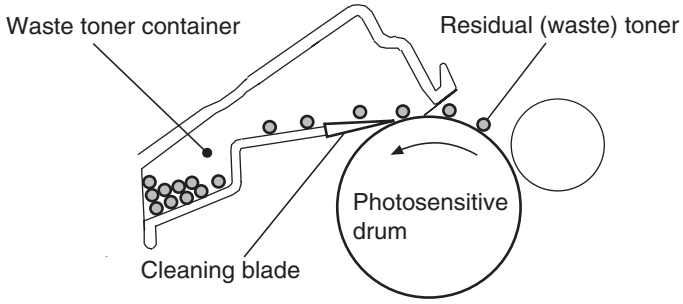


F-2-17

2.4.1.7 Cleaning block

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This block shows how to be cleaned for the residual toner on the photosensitive drum surface.
In the transfer block, not all the toner is transferred from the photosensitive drum onto paper but some remains on the drum surface. This remaining toner is called residual toner or waste toner.
The cleaning block is to clean the photosensitive drum surface in order to keep a clear image in the following print.
Step 10: Drum cleaning
In this step, the residual toner on the photosensitive drum is cleaned.
The cleaning blade scrapes off the leftover toner on the drum surface. The residual (waste) toner is collected in the waste toner container. Accordingly the drum surface is cleaned.



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2.4.2 Image Stabilizaton Control

2.4.2.1 Image Stabilization Control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This control is performed in order to reduce the image density variations caused by environmental changes, and property changes of the photosensitive drum and toner, etc.
There are following controls executed as necessary.
1) Environment change corrective control
This is to control the related biases according to the temperature/humidity with the environment sensor.
2) Image color gradation corrective control
This is to calibrate the color gradation data in the video controller with the color misregistration/image density sensor.

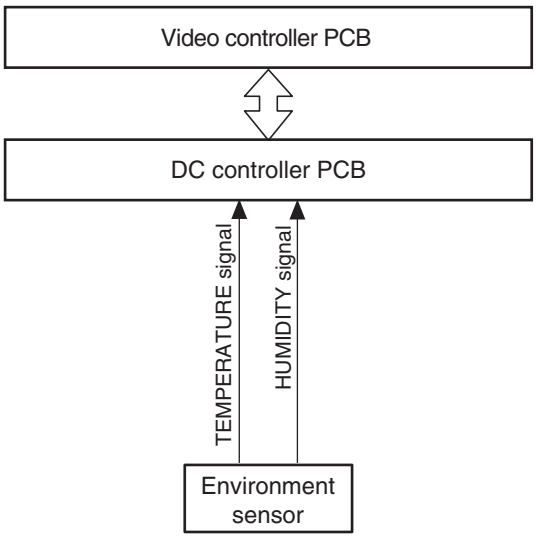
2.4.2.2 Environment related corrective control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This control is to adjust the high-voltage bias values to obtain an optimum image according to the environmental changes.
<Normal operation>
There is the environment sensor to detect temperature and humidity, and sends the detected information in form of the TEMPERATURE signal and the HUMIDITY signal to the DC controller.
The DC controller monitors these two signals and determines the environment where the printer is installed.
The DC controller requires command to execute this control to the video controller under the following conditions:
- After power-ON
- After cartridge replacement
- After prescribed interval of the control execution
- At the time the DC controller completes the prescribed number of printing after previous control execution
- At the time the DC controller completes the prescribed number of printing after the cartridge replacement
- At the time the environmental (temperature/humidity) relatively changes after the control execution
- At the time the DC controller receives the command of the corrective control execution from the video controller

The DC controller performs the following things in order to prevent image defects after this control.
1) Optimize the primary charging bias value
2) Optimize the developing bias value
3) Request the video controller for the "color gradation corrective control".

<Abnormal operation>
If the environment sensor failed to detect the temperature within the specified range, the DC controller determines the environment sensor faulty and notifies the video controller of "E066(warning: environment sensor abnormality)".



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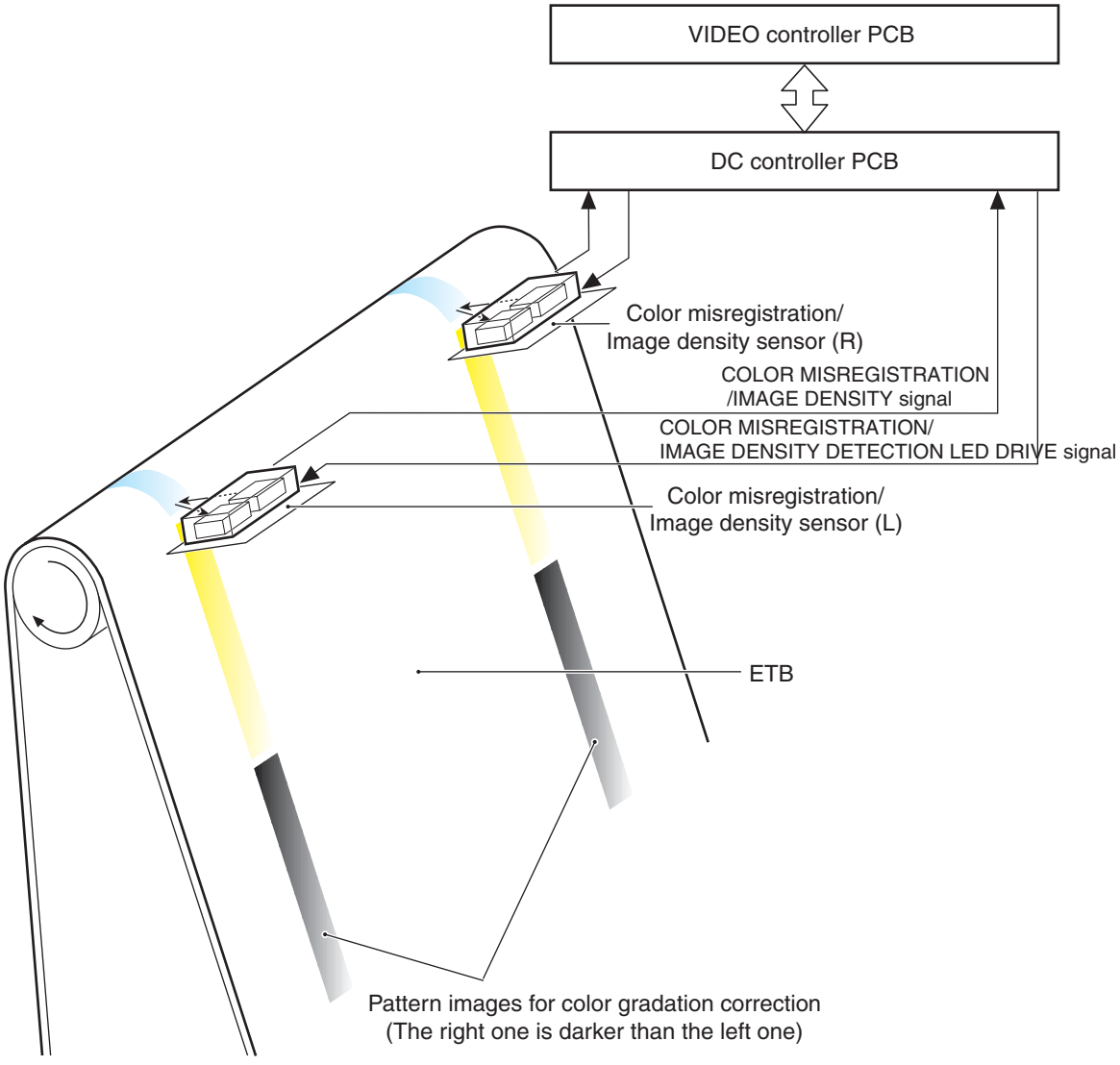
2.4.2.3 Color gradation corrective control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This control is utilized to measure the halftone image density and to send the measurement results to the video controller to calibrate the color gradation.
This printer detects the density of all four colors' pattern images for color gradation correction formed on the ETB in order to adjust the image density.
This density detection is performed by the DC controller controlling the color misregistration/image density sensor during the environment related corrective control and measuring image density. The color misregistration/image density sensor which is light emitter (LED) and light receiver (PD) pairing. A pair of the sensors are equipped above the ETB.



F-2-20

<Normal operation>

The DC controller performs this control according to the command from the video controller as following sequence.
1) The DC controller forms pattern images on the ETB with the optimized developing bias determined in the environment related corrective control, when the density measurement execution command is sent from the video controller.
2) The DC controller allows the light emitter (LED) to emit light by sending the COLOR MISREGISTRATION/IMAGE DENSITY DETECTION LED DRIVE signal.
3) The pattern image for the color gradation correction on the ETB reflects the light from the LED and the light receiver (PD) in the density sensor receives the light.
4) The PD converts the received light into voltage value and sends it to the DC controller in analog signal of the IMAGE DENSITY.
5) The DC controller converts the IMAGE DENSITY signal into the digital density data and sends it back to the video controller.
6) The video controller performs the color gradation calibration based on the density data in order to obtain an color gradation, when it receives the density data from the DC controller.

<Abnormal operation>
The DC controller notifies the video controller of each error if the following warnings are given after the image density measurement. The density data is reset and the initial data is set whenever an error occurs.
- The image density sensor abnormality warning: No density data is obtained.
- Image density measurement out of range warning: The measurement value is out of specified range.

2.4.2.4 Color Misregistration Corrective Control

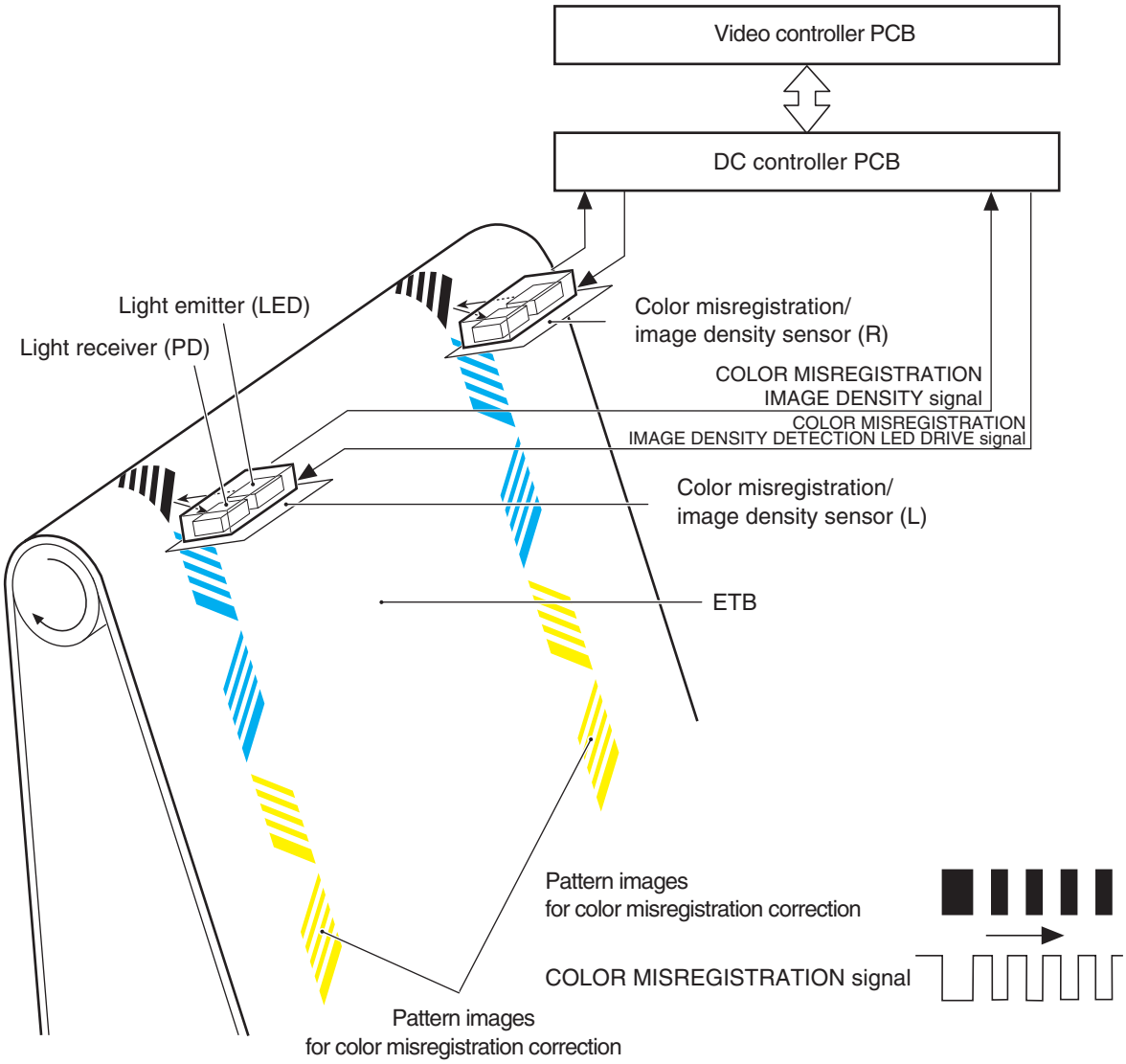
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This is to correct a color misregistration caused by the variation inherent in the laser/scanner units and cartridges.
This control corrects the followings.
- Main (horizontal) scanning start position
- Main (horizontal) scanning magnification (see Note)
- Sub (vertical) scanning start position

Main (horizontal) magnification
This is the size of image in the main-scanning (horizontal) direction.
Every color has its own photosensitive drum in each cartridge in this printer. The positions of each drum differ and the laser beam lengths vary because of the variations among the cartridges, that is, the horizontal scanning area depends on the color. This causes a color misregistration at the edge of image.

The color misregistration detective system to measure the four colors' misregistration level is applied to this printer.
This system is performed by detecting the positions of each color's misregistration pattern images transferred onto the ETB with a pair of sensors for the color misregistration/image density.
The color misregistration/image density sensor is a reflection type with each of the light emitter (LED) and the light receiver (PD) placed on top of the ETB.
Each color's pattern image is formed on the ETB under the following conditions according to the command from the DC controller.
- At power-ON or door close after cartridge replacement
- After job completion every specified number of printings
- When execution command is sent from the video controller

The following is the operational sequence of this control.



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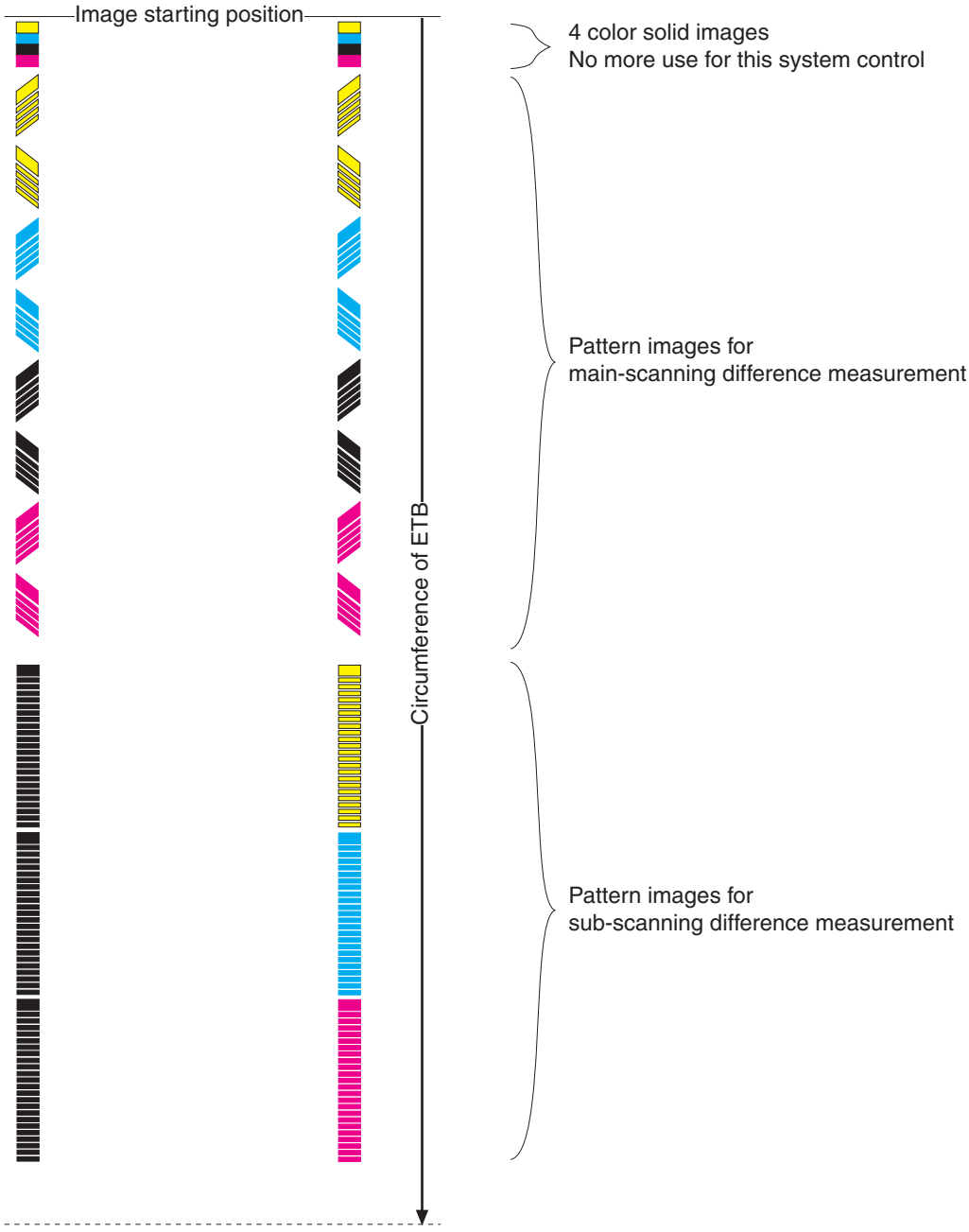
<Normal operation>
1) The DC controller forms a pair of pattern images for every color (Bk, Y, M, C) on the ETB to detect color misregistration when the corrective control is started. A pair of pattern images are formed on the ETB surface; one is on the left side and the other is on the right side.
2) The DC controller allows the light emitter (LED) to emit light by sending the COLOR MISREGISTRATION/IMAGE DENSITY DETECTION LED DRIVE signal, upon the color misregistration detection is started.
3) The ETB reflects the light from the LED and the light receiver (PD) in the color misregistration sensor receives the light. This reflected light intensity differs depending on the toner image density on the ETB.
4) The PD converts the received light intensity into voltage and sends it in form of the COLOR MISREGISTRATION signal to the DC controller.
5) The DC controller measures the position of each pattern image by detecting when the timing of the COLOR MISREGISTRATION signal varies and calculates the misregistration difference on each color.
6) The calculated misregistration information of each color is sent to the video controller.
7) The video controller controls each color's VIDEO signals according to this information and optimizes the main-scanning start position, the main-scanning magnification, and the sub-scanning start position.

<Abnormal operation>
The DC controller notifies the video controller of each error when the following errors are found during the color misregistration detection. The misregistration correction value is initialized whenever an error occurs.
- Color misregistration sensor abnormality warning: The light receiver does not receive light at all.
- Color misregistration measurement out of range warning: The measurement value is out of specified range.

Pattern image for color misregistration correction
The whole pattern image for the color misregistration correction. The pattern images are formed on both sides of the ETB certain distance away from the center.
The pattern image for sensor light calibration, the pattern image with four colors slant bars for main-scanning difference measurement, and the pattern image with horizontal lines (Bk on left side and Y/C/M on right side) for sub-scanning difference measurement are formed on the ETB sequentially.
The pattern image with horizontal lines for sensor light calibration are formed in order of yellow, cyan, black, and magenta.
The pattern image with four colors slant bars for main-scanning difference measurement are formed in order of yellow, cyan, black, and magenta.
The pattern image of horizontal bars for sub-scanning difference measurement are formed black on left side and yellow, cyan, and magenta in order on right side. This is for the comparison of each color registration based on the black position.
Each pattern image is described in the following.



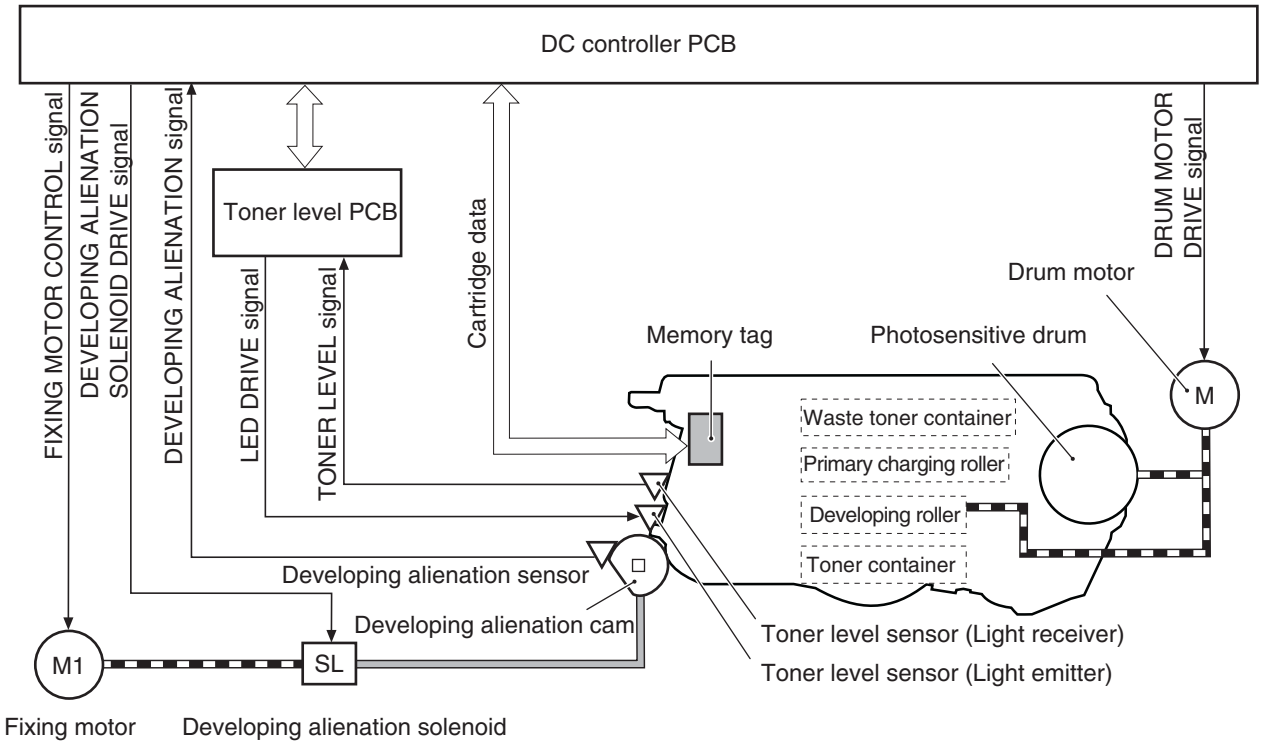
F-2-22

2.4.3 Toner Cartridge

2.4.3.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The print cartridge (hereafter "cartridge") enables to form a visible toner image on the photosensitive drum surface.
There are four kinds of print cartridges: Magenta (M), Cyan (C), Yellow (Y), and Black (Bk), having nearly identical structure. The diagrammatic sketch is illustrated below.



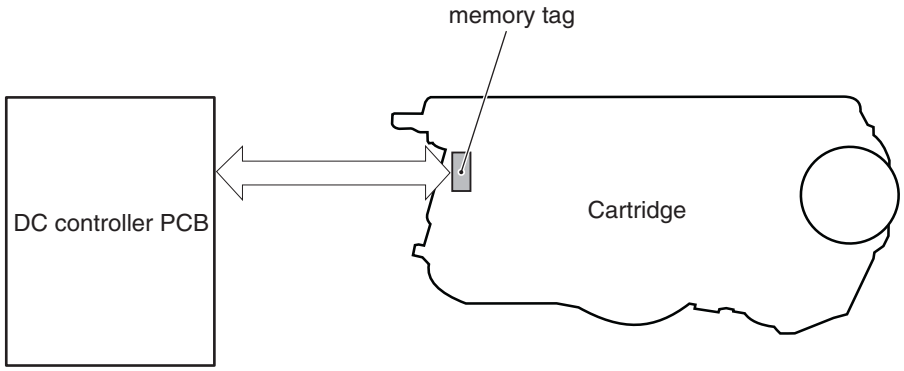
F-2-23

The cartridges used in this printer consists of photosensitive drum, primary charging roller, developing roller, and etc.
Each cartridge has the following functions.
- Memory tag control
- Cartridge presence detection
- Developing roller engagement/disengagement control

2.4.3.2 Memory tag

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The memory tag is a nonvolatile memory built in the cartridge. The usage condition of the cartridge is monitored and memorized by reading the data stored in the memory tag and writing (update) data to the memory tag.
When the DC controller encounters the following statuses, it determines the memory tag communication error and notifies the video conrtoller of "Warning: cartridge memory abnormality".
- Access abnormality: When reading/writing failed
- Data abnormality: When wrong data is read/written



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2.4.3.3 Cartridge presence detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This is to detect the presence of a cartridge.
When the power is turned ON or the door is closed, the DC controller performs this detection as follows.
The DC controller detects the cartridge presence by monitoring the difference of the drive motor operation.
When the DC controller determines the cartridge absence in the procedure , it stops the printer engine and notifies the video controller of "cartridge absence".

2.4.3.4 Developing roller engagement/disengagement control

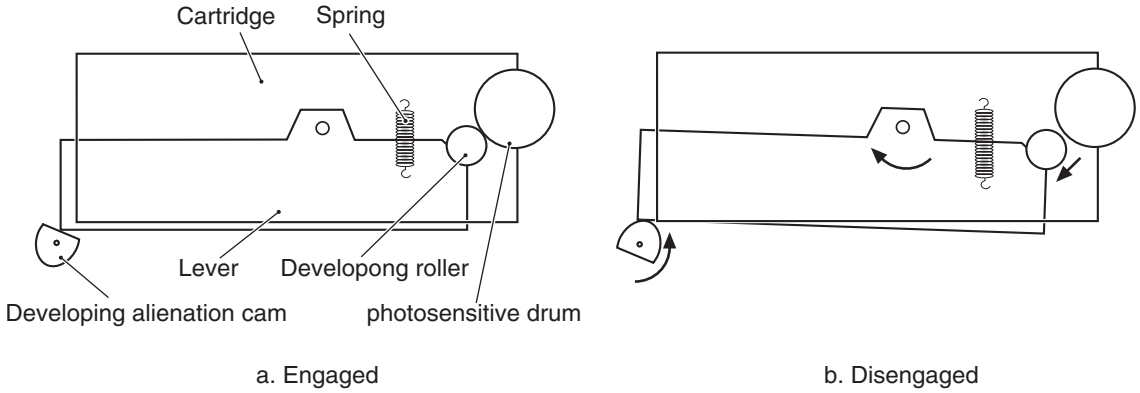
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The purpose of this control is to engage the developing roller with the photosensitive drum only during the developing operation.
The developing roller engagement/disengagement is controlled according to changing the direction of the developing estrangement cam. The DC controller drives the developing estrangement solenoid during the fixing motor (M1) rotates clockwise in order to change the direction.
This raises or lowers the rear part of cartridge and the developing roller is engaged with or disengaged from the photosensitive drum with a principle of leverage.
The developing estrangement sensor detects the direction of the developing estrangement cam, and the DC controller determines the developing roller is engaged or disengaged.

The cartridges of Magenta (M), Cyan (C), and Yellow (Y) are controlled at the same time, and the cartridge of Black (Bk) is controlled separately.

<Normal operation>

All four colors' developing rollers are disengaged from the photosensitive drum when power is turned ON or print operation is stopped.
Only the black developing roller is engaged under the monochrome printing.
All four colors' developing rollers are engaged under the full-color printing.



F-2-25

<Abnormal operation>

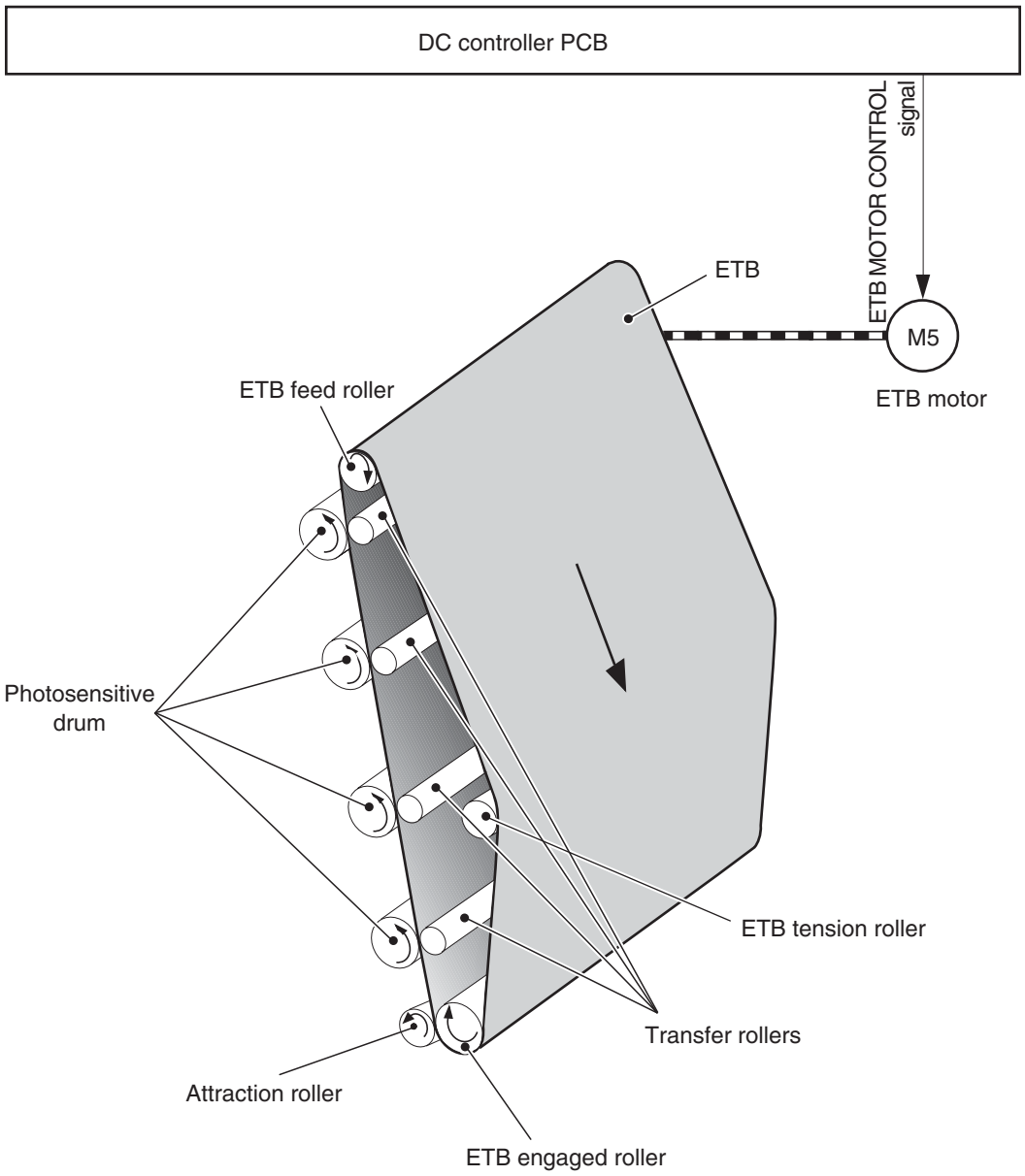
If the cam stays at its home position for the prescribed period of time or longer during the developing roller disengagement operation, or it does not return to the home position within the prescribed period of time after estrangement is completed, the DC controller determines the developing estrangement motor abnormality, stops the printer engine, and notifies the video controller of "E015 (developing estrangement motor abnormality)".

2.4.4 Transfer Unit

2.4.4.1 ETB Unit

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The ETB unit functions as conveying paper as well as transferring toner onto automatic image control function to correct four colors misregistration by transferring on the ETB directly.
The following is the diagrammatic sketch of the ETB unit.



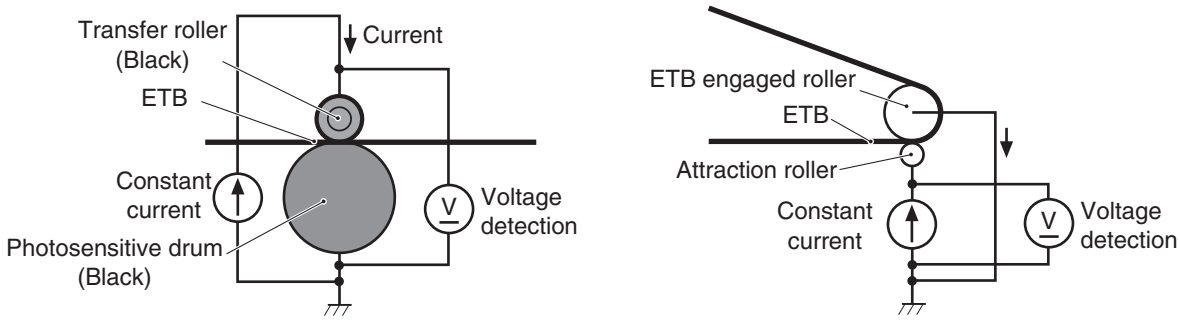
F-2-26

The ETB unit consists of the ETB, ETB tension roller, ETB feed roller, ETB engaged roller, attraction roller and transfer roller. The ETB motor (M5) drives the ETB feed roller, and as the feed roller rotates, the ETB rotates. Other rollers than the ETB feed roller rotate together with the ETB movement. The ETB running is controlled with extreme stability and precision without any slight meandering, ruffling, or vibration.
During the printing operation, the picked up paper is attracted to the ETB and fed while the toner image is transferred onto it. In addition, the ETB is also used for the controls of color misregistration as well as image stabilization. The pattern images for the color misregistration or image density determination is formed on the ETB. Especially in full-color printing, the image is formed by piling up four colors' toner, therefore extreme precision is required for ETB running.
The controls performed in the ETB unit are the following.
- Automatic bias control
- ETB cleaning
- Transfer roller engagement/disengagement control

2.4.4.2 Automatic bias control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This control is to monitor the resistance of transfer roller, attraction roller, and ETB in order to prevent poor transfer caused by the aged deterioration or variation inherent.
When the printing operation is started, the DC controller electrifies constant value of current to the transfer roller (for Black) and the attraction roller, and detects the voltage value of the current flow. Accordingly the DC controller obtains resistance information on the transfer roller, attraction roller, and ETB. The DC controller applies the appropriate bias to the roller for transfer and attraction depending on the detected voltage. Thus, the steady image quality is obtained.



a. Transfer roller voltage detection

b. Attraction roller voltage detection

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2.4.4.3 ETB cleaning

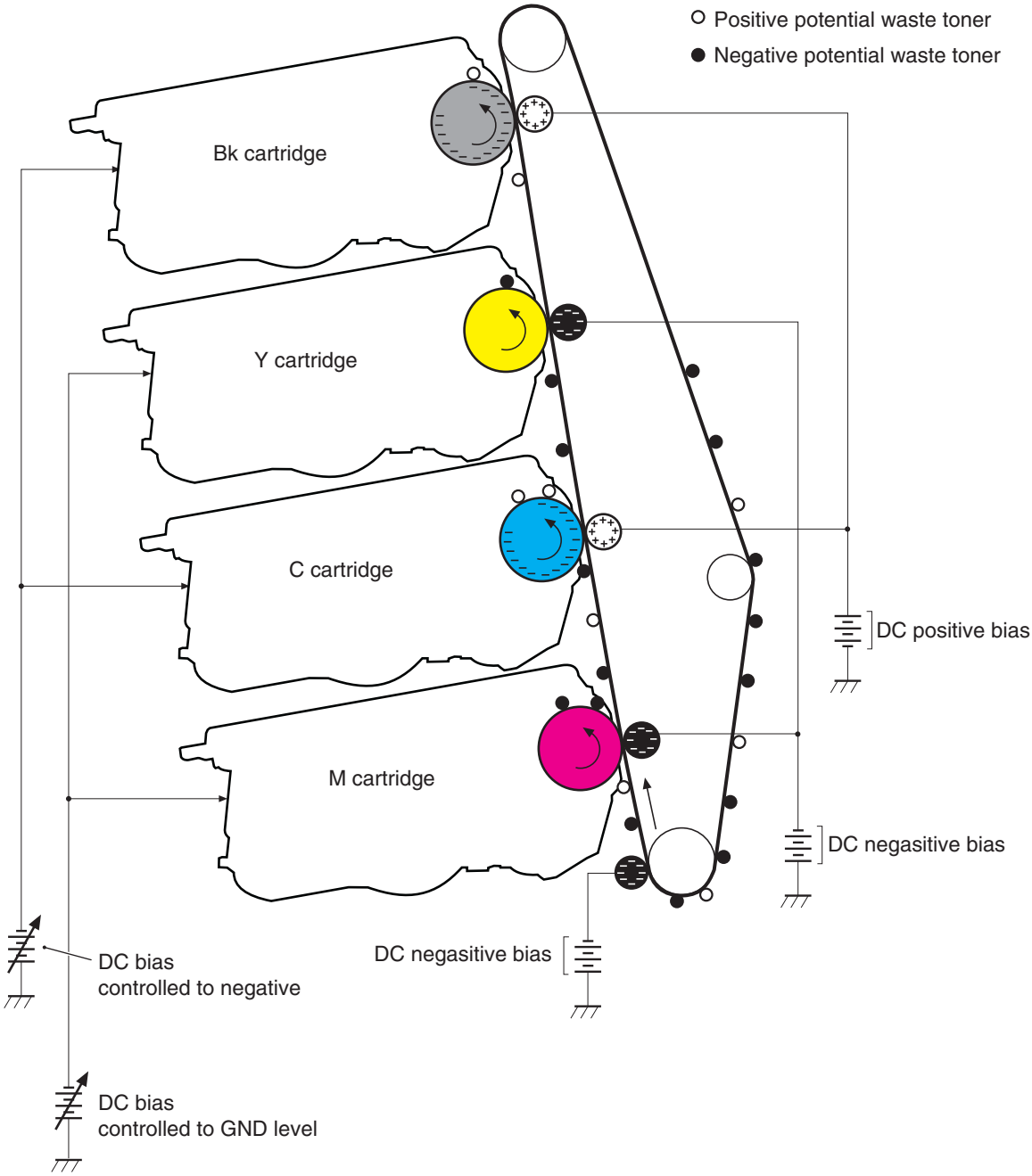
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

For the purpose of preventing stain on the back of paper, the ETB cleaning is required by returning the residual toner on the ETB to the photosensitive drum. This control is performed by the DC controller under the following conditions.

- Power is turned ON
- Before and after operation of the color misregistration corrective control
- Before and after operation of the image stabilization control
- Door is closed
- After completion of printing on specified the universal size of paper

<Detailed cleaning operation>

There are negative and positive potential residual toner on the ETB during printing. Upon start of the ETB cleaning, the DC controller makes the drum voltage zero [V] for magenta (M) and yellow (Y), but makes that negative [V] for cyan (C) and black (Bk). This transaction is done by each primary charging roller of four color cartridges. On the other hand, the negative bias is applied to the M/Y transfer rollers and the positive bias to the C/Bk rollers. This brings a greater potential difference between the photosensitive drum and the ETB. In a reverse way of the image transfer process, both positive and negative charged residual toner on the ETB are returned to the photosensitive drum at once; the negative potential residual toner is returned by the negative biases, and the positive potential residual toner is returned by the positive biases.



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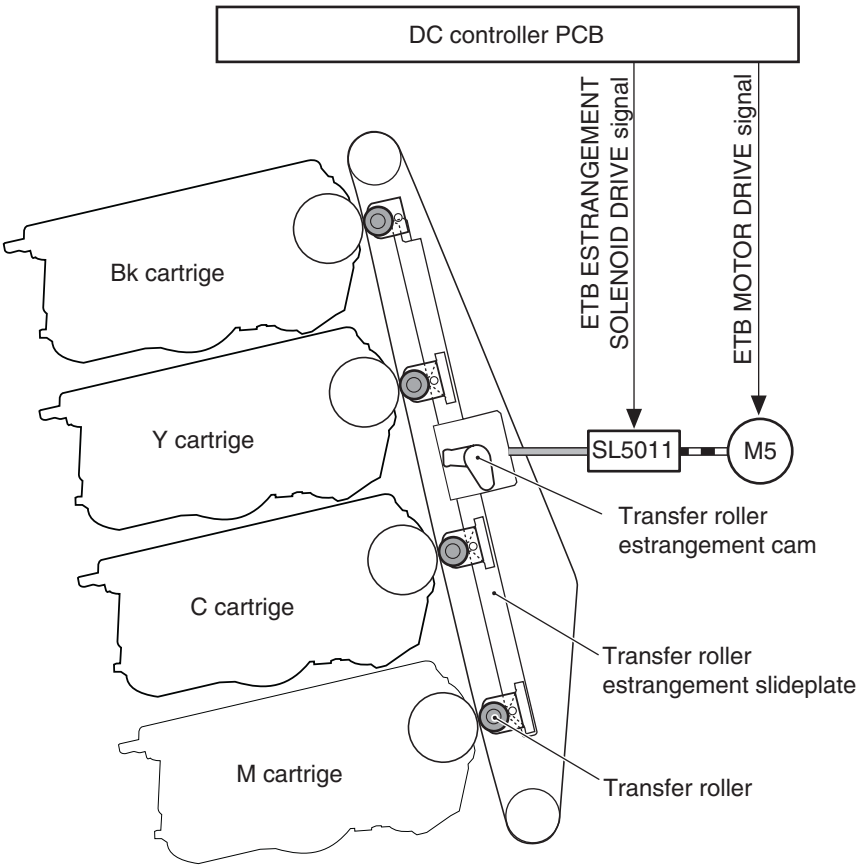
2.4.4.4 Transfer roller engagement/disengagement control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This is to engage/disengage the transfer roller with/from the ETB required by each printing operation. There are two conditions of transfer roller engagement/disengagement depending on the purposes.
The following describes the engagement/disengagement operation.

There are two major parts in the ETB unit to move the transfer rollers on/off the drum. One is an estrangement slide plate (hereafter ESP) and the other is a cam. These two parts are related to the four transfer rollers' movement as follows. The cam is rotated for every drive of the ETB estrangement solenoid (SL5011) while the ETB motor (M5) rotates according to the command from the DC controller. This brings the positions that the transfer roller ESP respectively stays in; the standard position, the downward position, standard position, and upward position.



F-2-29

The movement of the transfer roller ESP and the each color's transfer rollers. The transfer roller engagement/disengagement mechanism in yellow is described here, as the mechanism in cyan and magenta is identical. The ETB is not shown in the figure, however in fact, the ETB is placed in between the transfer roller and the photosensitive drum.

When the transfer rollers' ESP moves rightward/leftward, the transfer roller holders will move upward/downward. Thus the transfer rollers are linked to move according to the ESP movement.

The transfer roller ESP has three slopes; slope 1, slope 2, and slope 3. The pin on the transfer roller holder moves up and down along one of the slope, when the transfer roller ESP moves.

Consequently, the transfer roller put in the transfer roller holder engages with or disengages from the photosensitive drum.

(a) Standard position/All four colors' transfer rollers are engaged (See "a" illustration below)

The transfer roller holders of all four colors do not move up and all four colors' transfer rollers are engaged with the photosensitive drums, as the transfer roller ESP is at the standard position.

At full-color printing and monochrome printing with prescribed thick paper, the transfer roller ESP stays in the standard position and all four colors' transfer rollers are engaged with the ETB.

(b) Downward position/Only black's transfer roller is engaged (See "b" illustration below)

The transfer roller holder of yellow moves up along the slope 1 and the transfer roller disengages from the photosensitive drum, as the transfer roller ESP moves down. The same applies to cyan and magenta.

On the other hand, the black does not have the slope corresponding to the slope 1 in yellow.

Therefore the transfer roller holder does not move up and the transfer roller engages with the photosensitive drum.

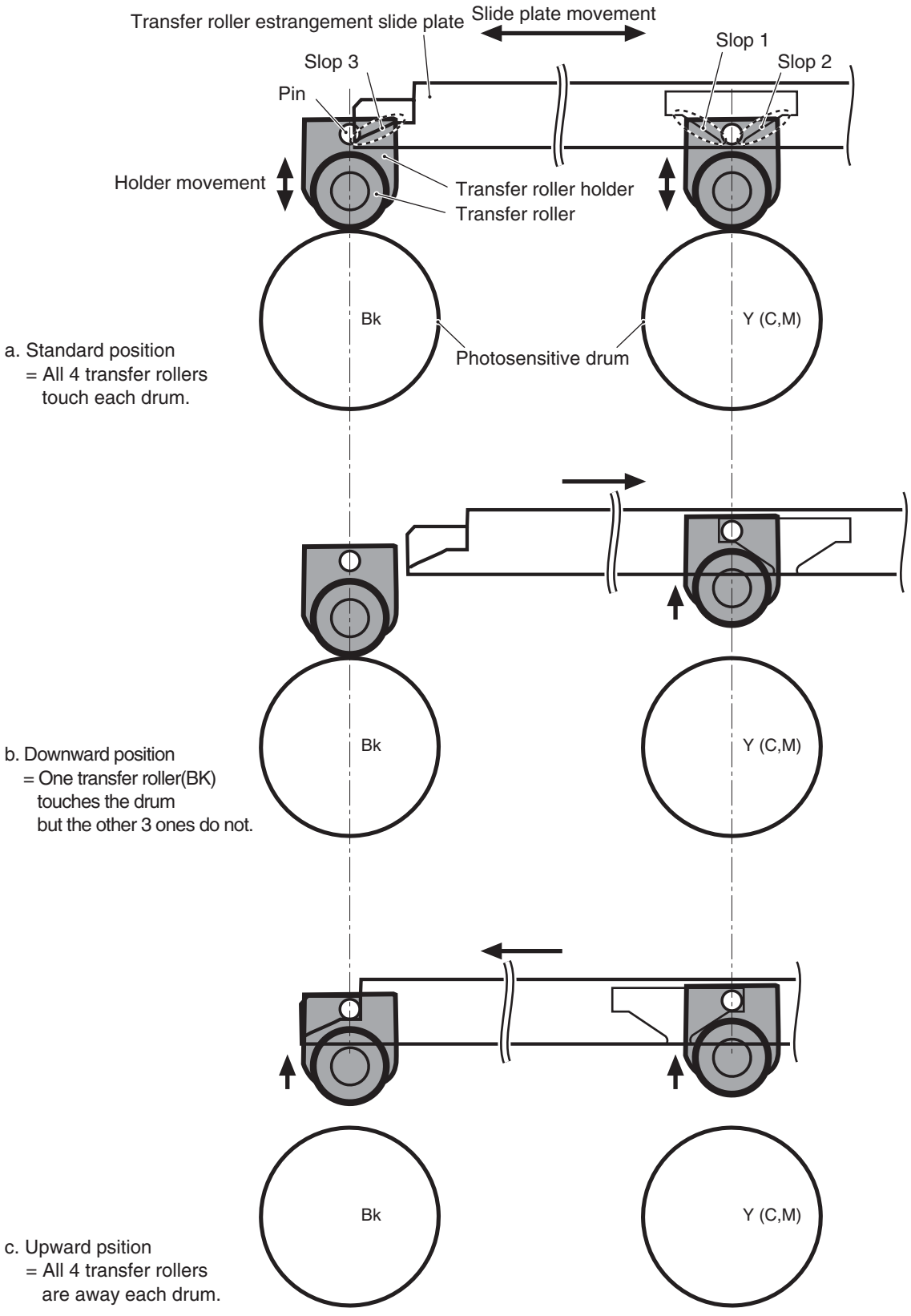
At monochrome printing, the transfer roller ESP stays in the downward position and only black's transfer roller is engaged with the ETB.

(c) Upward position/All four colors' transfer rollers are disengaged (See "c" illustration below)

The yellow transfer roller holder moves up along the slope 2 and the transfer roller disengages from the photosensitive drum, as the transfer roller ESP moves up. The same applies to cyan and magenta.

On the other hand, the black also moves up along the slope 3 and the transfer roller disengages from the photosensitive drum.

All 4 colors' transfer rollers can be disengaged from the ETB by controlling the transfer ESP stays in the upward position.



F-2-30

<Detection of transfer rollers' position>

The position of the four transfer rollers can be detected in the same manner as description in the "Automatic bias control".
When the voltage is applied to Magenta and Black and the voltage value varied depending on the position of the M/Bk transfer rollers. There are only three states available in the combinations;
(M, Bk) = (ON, ON), (OFF, ON), (OFF, OFF)

Note:
ON: engaged, OFF: disengaged
When the voltage value is obtained, the state out of above three can be hit since the values for the combinations are known in advance.

<Abnormal operation>

(1) Retry movement

If the condition of the magenta's transfer roller position is not changed, or a conflict of operation occurs, such as shifting to all four colors disengaged from

only black engaged condition, the sequential operation for engagement/disengagement is repeated again.

(2) Abnormality detection

If a conflict of operation still occurs, the error message "E078 (abnormal transfer roller charging estrangement mechanism)" is notified to the video controller. When the position of the transfer roller ESP is shifted normally, the slide plate is placed to the standard position and all four colors' transfer rollers are returned to be engaged for the "ETB cleaning "

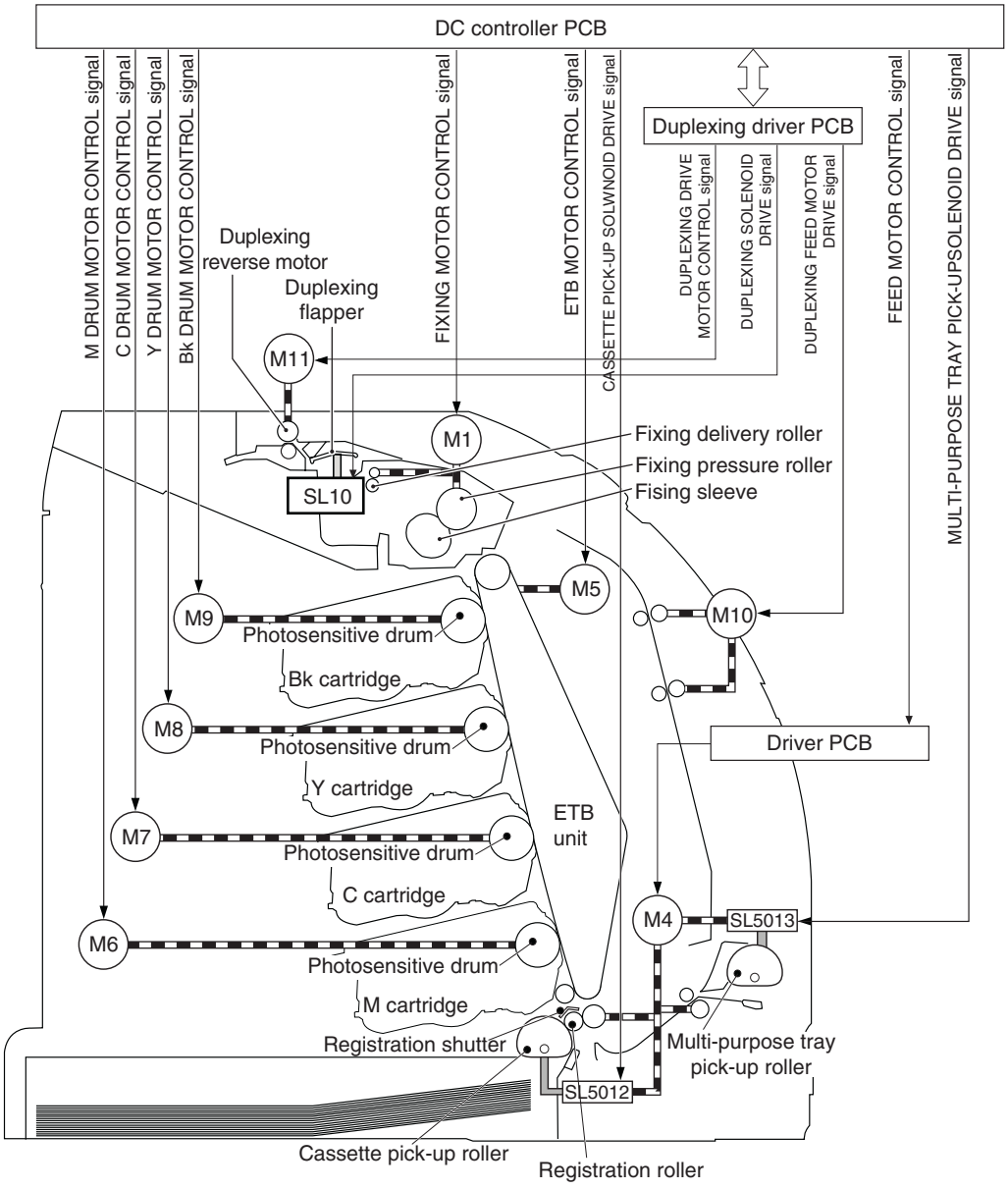
2.5 Pickup/Feeding/Delivery System

2.5.1 Overview/Configuration

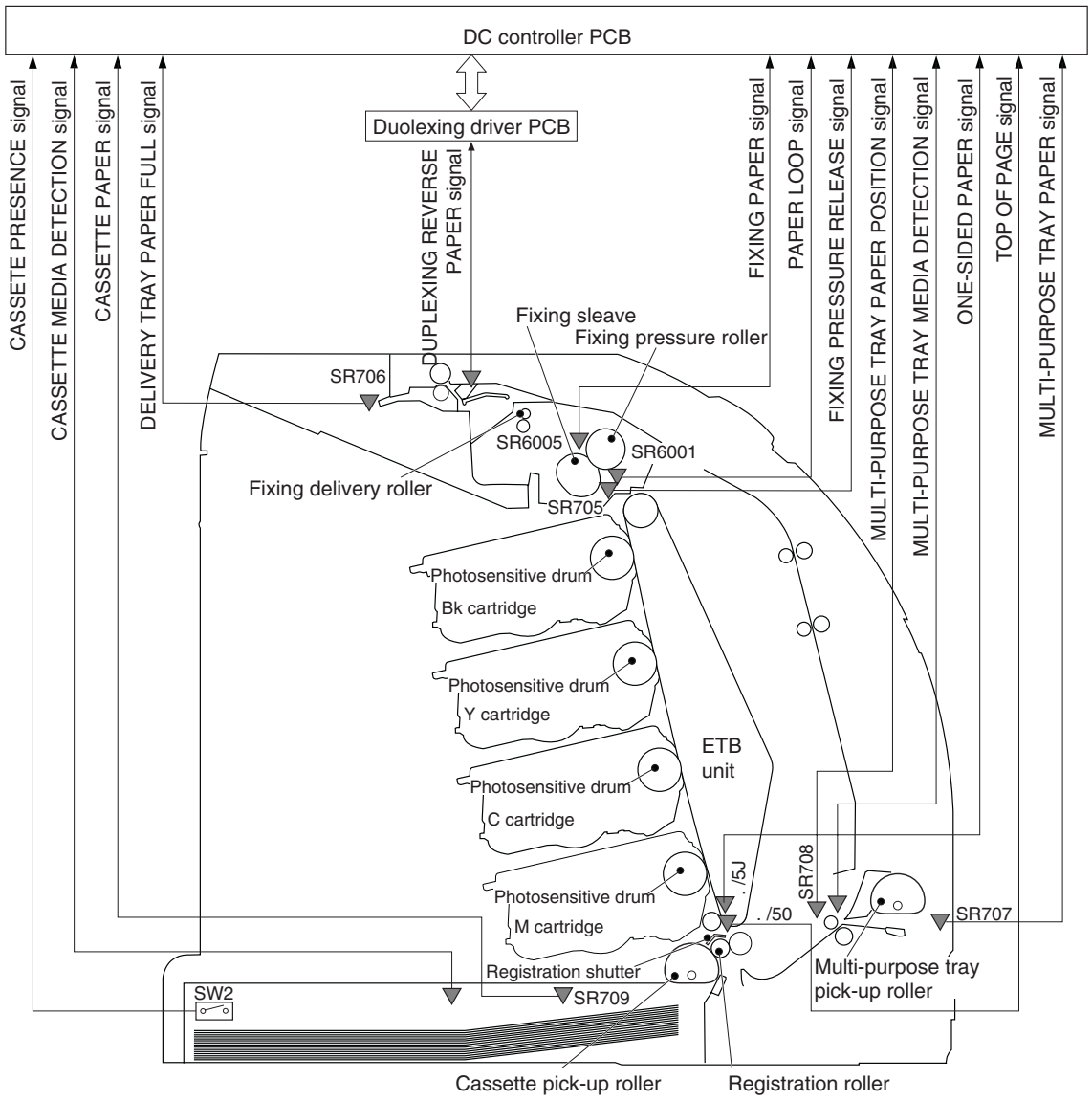
2.5.1.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The pick-up/feed system is to pick up and feed paper and it consists of various feed rollers and the driving system.
This printer has pick-up sources: the cassette and the multipurpose tray (hereafter MPT), and delivery sources: the face-down tray and the duplexing unit.
The MPT paper sensor (SR707) detects the paper presence in the MPT, and the cassette paper sensor (SR709) detects the paper presence in the cassette.
The feed rollers in this printer are driven according as the DC controller controls the feed motor (M4), ETB motor (M5), drum motors (M6, M7, M8, and M9), and pick-up solenoids for MPT and cassette (SL5012, SL5013).
There are the MPT paper position sensor (SR708), top of page sensor (SR710), paper warp sensor (SR6001), and fixing paper sensor (SR6005) on the paper transport path to detect arrival and passage of paper.
There are other sensors, such as fixing pressure release sensor (SR705), one-sided paper sensor (SR714), and cassette presence switch (SW2).
The duplexing solenoid (SL10) is controlled and the top of page sensor (SR710) is used for duplexing reverse operation of second side printing under the duplexing print.
The outline diagram about each motor, the solenoid, and the sensor is shown below.



F-2-31



F-2-32

SR705	Fixing pressure release sensor	SR706	Delivery tray paper full sensor
SR707	Multi-purpose tray (MPT) paper sensor	SR708	Multi-purpose tray (MPT) paper position sensor
SR709	Cassette paper sensor	SR710	Top of page sensor
SR714	One-sided paper sensor	SR6001	Paper warp sensor
SR6005	Fixing paper sensor	M1	Fixing motor
M4	Feed motor	M5	ETB motor
M6-M9	Drum motor (Magenta, Cyan, Yellow, Brack)	M10	Duplexing feed motor
M11	Duplexing reverse motor	SL10	Duplexing solenoid
SL5012	Cassette pick-up solenoid	SL5013	Multi-purpose tray (MPT) pick-up solenoid

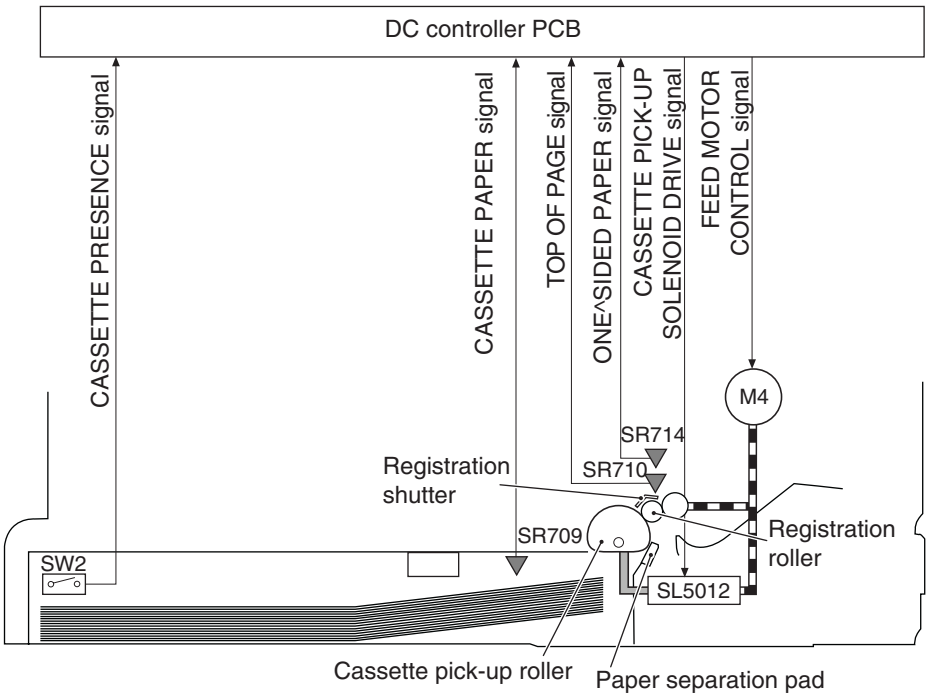
2.5.2 Other Control

2.5.2.1 Cassette pick-up mechanism

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine picks up sheets of paper from inside the cassette one by one. The machine uses the cassette paper sensor to check the presence/absence of paper inside the cassette.
The cassette presence switch (SW2) detects the cassette presence.
The cassette paper sensor (SR709) detects paper presence in the cassette.
The cassette pick-up mechanism is to pick up paper in the cassette into the printer one by one. The inclined plane separation and the pad separation are equipped for the multiple-feed prevention.

The following is the operational sequence of the cassette pick-up.
1) Upon reception of the print command from the video controller, the DC controller drives the motors in the feeding system.
2) The cassette pick-up solenoid(SL5012) is turned ON and the driving force of the feed motor (M4) is transmitted to the cassette pick-up roller to rotate.
3) The paper is at the position to be picked up by the lifting plate, which is pushed up according to the spring force. Then one sheet of paper is picked up by the pick-up roller rotation and fed into the printer. At that time, the multiple-fed paper is removed by the incline plane and separation pad.



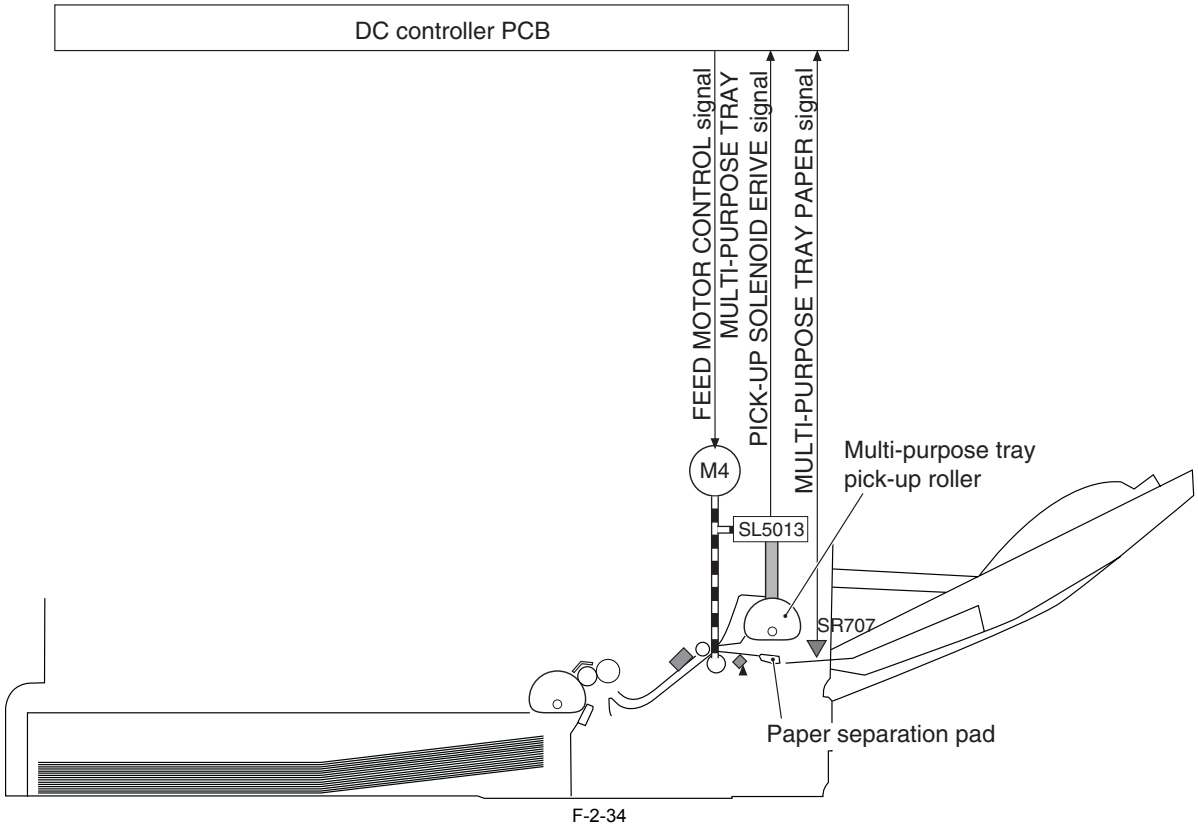
F-2-33

2.5.2.2 Multi-purpose tray (MPT) pick-up

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine picks up the sheet of paper from the manual feeder. The machine uses the manual feeder paper sensor to check the presence/absence of paper in the manual feeder, and uses the registration roller to move the paper inside the machine.
The cassette presence switch (SR2) detects cassette presence, since the MPT uses the cassette partially for its paper path so that the cassette is necessary for MPT printing operation.
The MPT paper sensor (SR707) detects paper presence on the MPT.
The MPT pick-up mechanism is to pick up paper on the MPT into the printer one by one. The pad separation is equipped for the multiple-fed prevention.

The following is the operational sequence of the Multi-purpose tray (MPT) pick-up.
1) Upon reception of the print command from the video controller, the DC controller drives the motors in the feeding system.
2) The MPT pick-up solenoid (SL5013) is turned ON and the driving force of the feed motor (M4) is transmitted to the MPT pick-up roller to rotate.
3) The paper is at the position to be picked up by the separation pad, which is pushed up according to the spring force. Then one sheet of paper is picked up by the pick-up roller rotation and then it is fed into the printer. Thus, the multiple-fed paper is prevented by the separation pad.



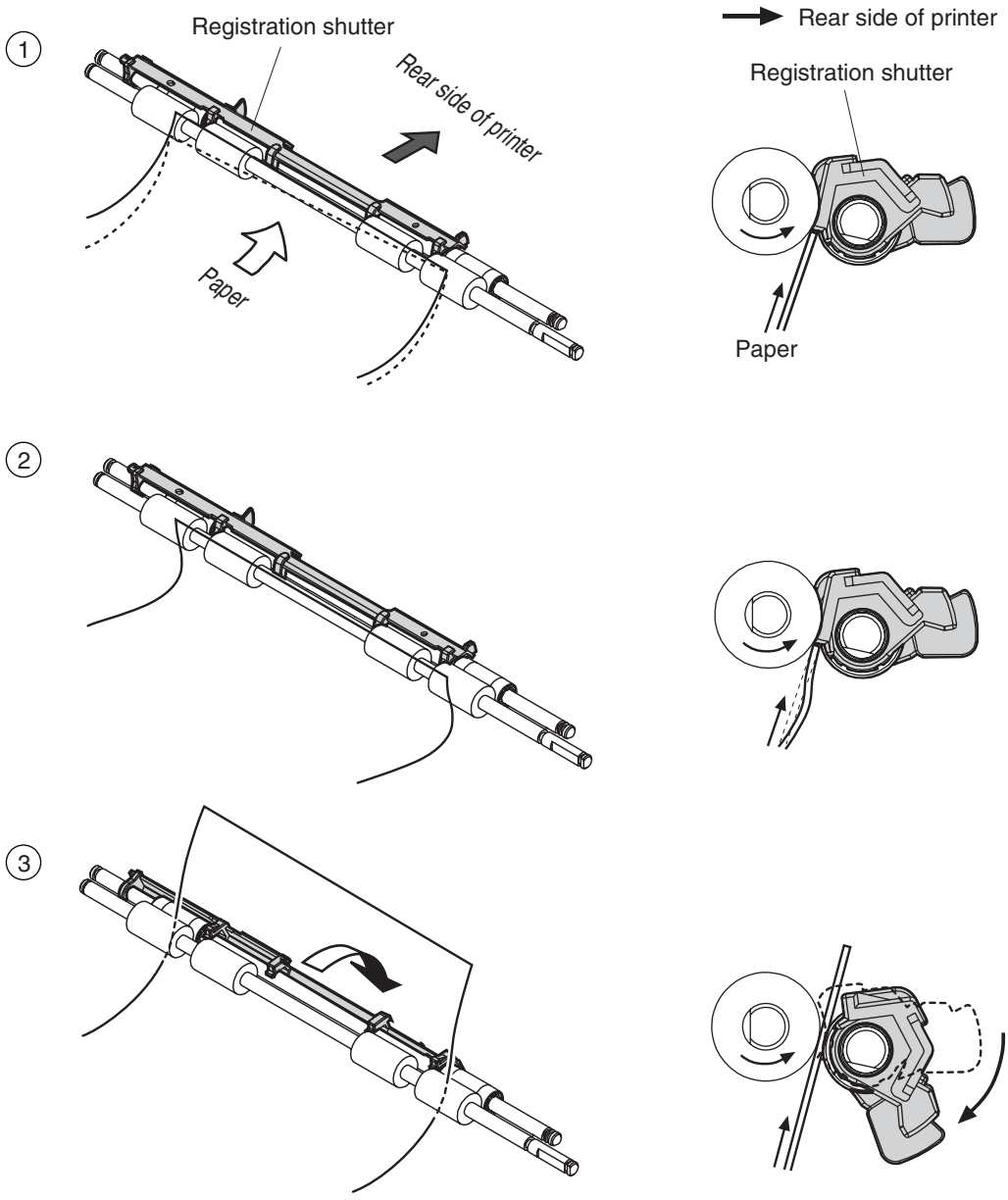
F-2-34

2.5.2.3 Skew correction by the registration shutter

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine picks up the sheet of paper from the manual feeder. The machine uses the manual feeder paper sensor to check the presence/absence of paper in the manual feeder, and uses the registration roller to move the paper inside the machine.

1) When the paper is fed to the registration unit, the leading edge of paper hits the registration shutter to be corrected for the skew feeding.
2) The paper is warped, as the registration shutter is held with the springs and not opened unless some forces are exerted.
3) The stiffness of paper being warped lifts up the registration shutter and the paper goes through the shutter. Accordingly the skew-fed is corrected.



F-2-35

2.5.2.4 Transport Speed Control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine is designed to switch the speed at which paper is moved according to type so as to prevent fixing faults.
Specifically, the DC controller switches the speed over 4 settings in response to the media selection command coming from the video controller. The particulars of speed control are as follows:

T-2-2

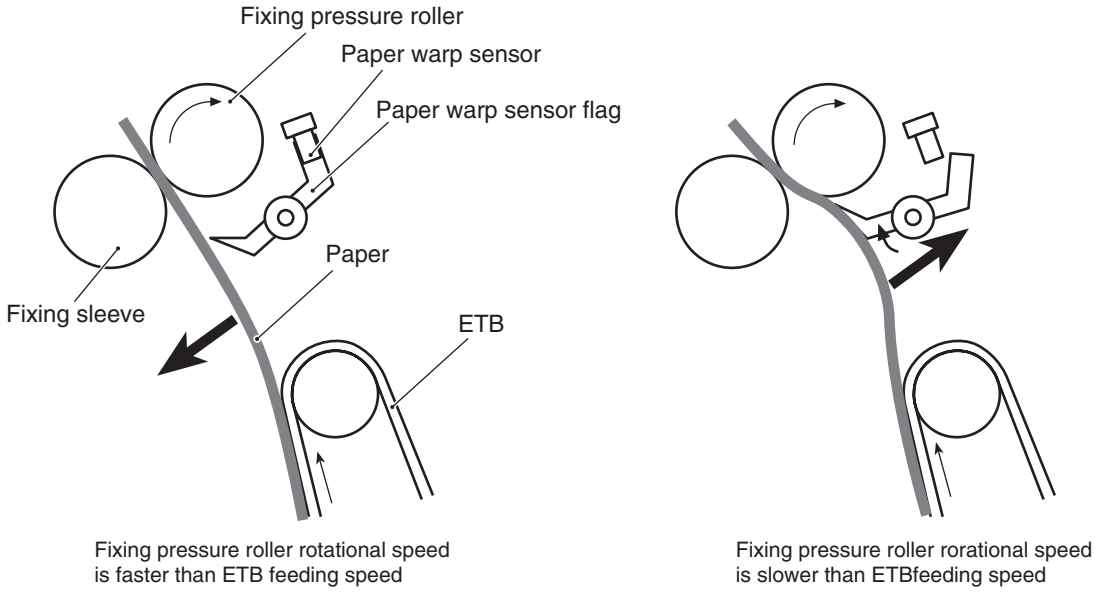
Paper type	Weight	Paper type	Speed
Plain paper	60-105g/m2	Plain paper	1/1
Heavy paper	105-120g/m2	Heavy paper 1	4/5
	120-176g/m2	Heavy paper 2	4/5
	176-216g/m2	Heavy paper 3	1/2
Coated paper	105-120g/m2	Coated paper 1	4/5
	120-160g/m2	Coated paper2	1/2
Label sheet		Label sheet	4/5
Envelope		Envelope	4/5

Paper type	Weight	Paper type	Speed
Transparency		Transparency	1/2

2.5.2.5 Warp control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The purpose of the warp control is to prevent an image defect and paper transport defect by keeping with specified paper warp before fixing unit.
If the rotational speed of the fixing pressure roller is slower than that of the ETB, the paper warp is increased and image defect or paper crease possibly occurs. Conversely, if the rotational speed of the fixing pressure roller is faster than that of the ETB, the paper warp is decreased and color misregistration in sub-scanning direction occurs, as the fixing pressure roller pull the paper running.
In order to solve above problems, the paper warp sensor (SR6001) is equipped in the fixing/delivery unit in order to keep the fixing motor (M1) speed properly depending on the output signals from the SR6001.
The DC controller determines the paper warp is small, when the paper warp sensor (SR6001) is OFF, and it slows the rotational speed of the fixing motor (M1). Conversely, it rotates the M1 at regular speed, when the SR6001 is ON in order to speed up the the fixing pressure roller.
Accordingly it maintains the paper warp at specified amount by changing the feeding speed of the fixing pressure roller.



F-2-36

2.5.2.6 Fixing roller pressurizing/release control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

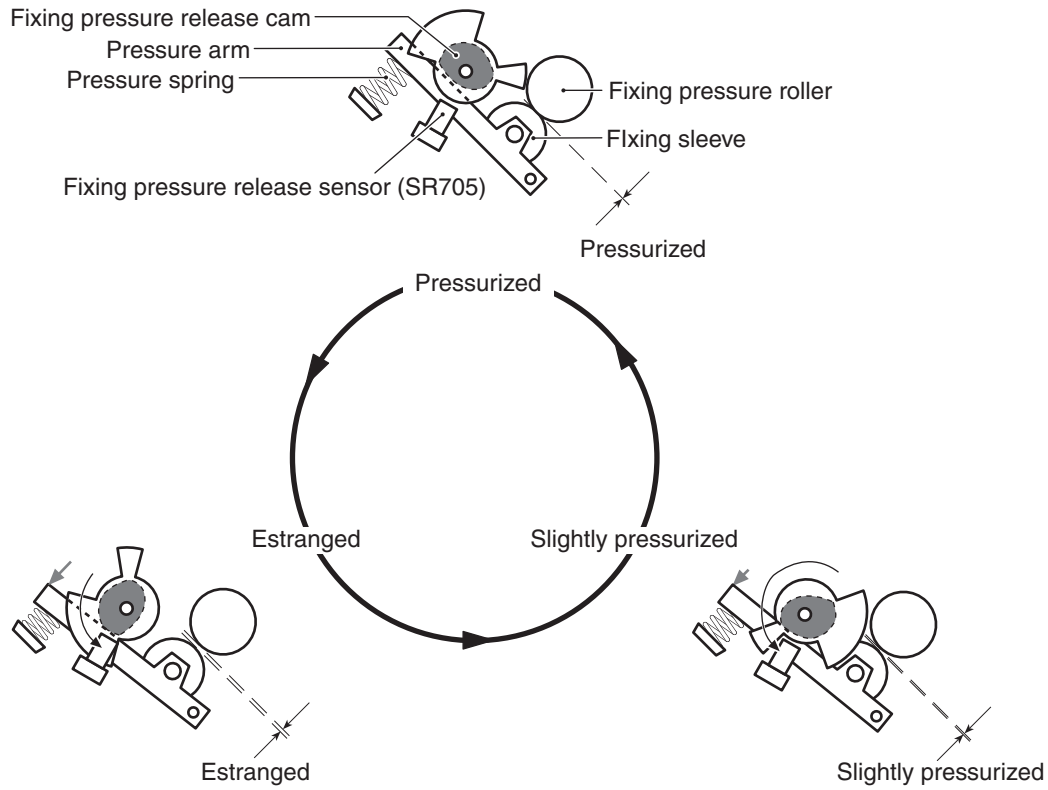
This printer controls the pressure between the fixing sleeve and the fixing pressure roller in three stages: "pressurized", "released", and "slightly pressurized".
The "pressurized" condition is for during normal printing operation.
The "released" condition is for the purpose of preventing the fixing sleeve damage in case of jammed paper is pulled out forcibly as well as preventing deformation of the fixing sleeve and the fixing pressure roller in case of leaving them for a while. When a jam occurred in the fixing unit, the DC controller switches the condition to the "released" before it stops the printer under jam status. It also switches to the "estranged", when going into the SLEEP mode and turning OFF the power switch.
The "slightly pressurized" is the intermediate condition between pressurized and released, and used for printing envelopes.
The fixing motor can rotate clockwise and can also reverse. It drives the fixing pressure roller when rotating clockwise, conversely, it drives the pressure release mechanism of the fixing pressure roller when rotating counter clockwise.

Fixing roller pressurized/estranged mechanism

The pressurized condition of the fixing pressure roller is controlled by the mechanism described above and the characteristic shape of the fixing pressure release cam.

- Pressurized condition
  The minimum radius position of the fixing pressure release cam does not engage with the pressure arm, so that the fixing sleeve is pressurized to the fixing pressure roller at maximum force by the pressure spring.
- Estranged condition
  The maximum radius position of the fixing pressure release cam is engaged with the pressure arm, so that the fixing sleeve is pushed down by the pressure cam and estranged from the fixing sleeve.
- Slightly pressurized condition
  The intermediate radius position of the fixing pressure release cam is engaged with the pressure arm, so that the fixing sleeve is slightly pressurized to the fixing pressure roller.

The driving force of the fixing motor transmits to the fixing pressure release cam by the oneway mechanism. Therefore the rotational direction of the cam is one-way and the pressurized condition is switched in order of "pressurized", "estranged", and "slightly pressurized".



F-2-37

Home position control
The pressurized condition is detected by ON/OFF of the fixing pressure release sensor (SR705) and rotational period of the fixing motor (M1).
During initial sequence after power is turned ON or door is closed, the pressurized condition is controlled to "pressurized" as its home position.
- Abnormal pressure release condition
  If the above control does not finish within 2.5 seconds when the fixing unit is installed, "pressure release mechanism abnormality" is notified to the video controller.
- No fixing unit
  If the fixing pressure release sensor does not turn ON during the above control when the fixing unit is not installed, "fixing unit absence" is notified to the video controller.

If the "pressure release mechanism abnormality" or the "fixing unit absence" is detected, it is notified to the video controller.

2.5.3 Detecting Jams

2.5.3.1 Jam Detection Outline

2.5.3.1.1 Outline

0013-8288

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This printer is provided with several paper detection sensors on the paper transport path to detect the presence of paper and whether the paper feed is operated normally or not.
If the DC controller determines the jam occurrence, it stops the printing operation and notifies it to the video controller of jam occurrence.

2.5.3.2 Delay Jams

2.5.3.2.1 Pick-up delay jam

0013-8290

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This printer performs the retry control, which executes the pick-up operation up to three times, in order to retrieve the pick-up delay jam caused by the pick-up error.
The DC controller determines the pick-up delay jam, when the top of page sensor (SR710) does not detect the leading edge of paper within the specified period of time (T) after the pick-up solenoid (SL5012, SL5013) is turned ON for the third pick-up operation.

T-2-3

	Paper source		
	Cassette	Multi-purpose tray	Paper feeder
Time (T)	Approx. 1.3 sec.	Approx. 2.2 sec.	Approx. 2.3 sec.

2.5.3.2.2 Delivery delay jam

0013-8294

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the delivery delay jam, when the fixing paper sensor (SR6005) does not detect the leading edge of paper within the Approx. 3.0 seconds after the top of page sensor (SR710) once detected the leading edge of paper.

2.5.3.2.3 Duplexing pick-up delay jam

0013-8299

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the duplexing pick-up delay jam, when the top of page sensor (SR710) does not detect the leading edge of second side of paper within the prescribed time (Approx. 2.0 seconds) after the duplexing feed motor (M10) started rotation from duplexing pick-up position to feed paper.

2.5.3.2.4 Duplexing reverse unit delay jam

0013-8301

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The CPU (IC1001) determines the duplexing reverse unit delay jam, when the duplexing reverse paper sensor does not detect paper absence at all during the period of the duplexing reverse start to the duplexing pick-up delay jam detection.

2.5.3.3 Stationary Jams

2.5.3.3.1 Pick-up stationary jam

0013-8292

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the pick-up stationary jam, when the top of page sensor (SR710) does not detect the trailing edge of paper within the Approx. 3.2 seconds after it once detected the leading edge of paper.

2.5.3.3.2 Delivery stationary jam

0013-8295

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller executes the delivery stationary jam detection after it assessed no wrapping jam.
The DC controller determines the delivery stationary jam, when the fixing paper sensor (SR6005) detects the paper presence after the time equivalent to theoretical time plus 45mm (Approx. 3.1 seconds) from when the top of page sensor (SR710) detected the trailing edge of paper.

2.5.3.4 Other Jams

2.5.3.4.1 Wrapping jam

0013-8296

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller executes the wrapping jam detection after it assessed no delivery delay jam.
The DC controller determines the wrapping jam, when the fixing paper sensor (SR6005) detects the paper absence before the time equivalent to paper passage of its length minus 50mm (Approx. 1.9 seconds) after the SR6005 once detected the leading edge of paper. The paper length is detected by the top of page sensor (SR710).

2.5.3.4.2 Residual paper jam

0013-8297

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the residual paper jam, when either the following sensor detects paper during initial sequence period.
Top of page sensor (SR710)
Paper warp sensor (SR6001)
Fixing paper sensor (SR6005)
Duplexing reverse sensor (SR823)
MPT paper position sensor (SR708)

2.5.3.4.3 Door open jam

0013-8298

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the door open jam, when door open is detected during the paper feeding operation.

2.5.3.4.4 Automatic delivery function

0013-8302

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

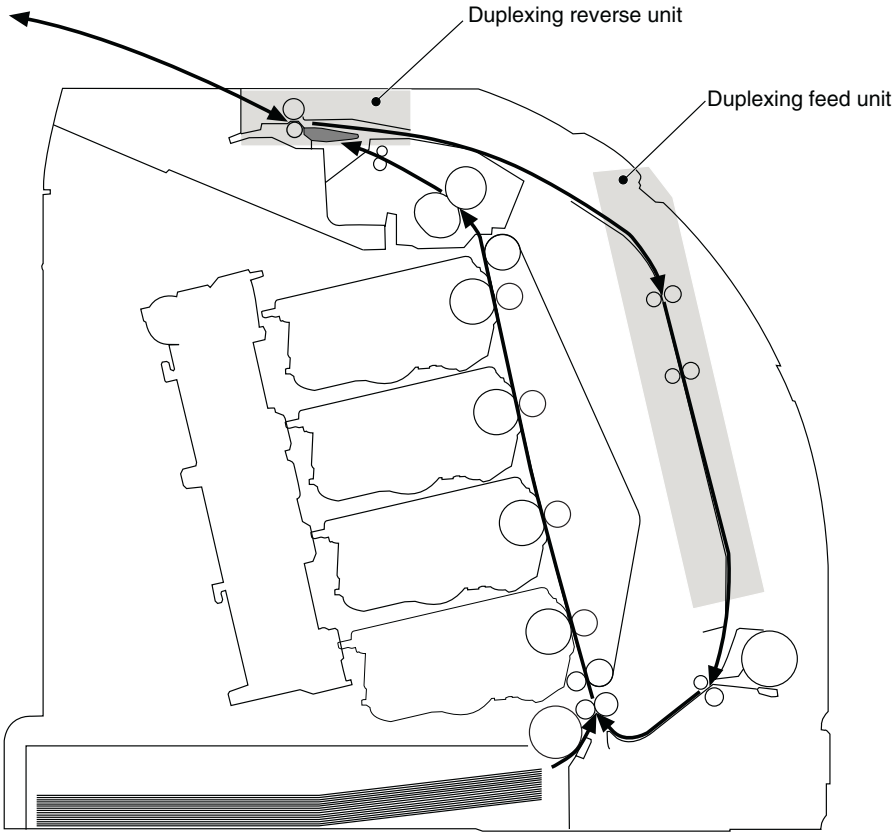
If the condition of either top of page sensor (SR710) or MPT paper position sensor (SR708) changed to ON from OFF status, during the initial sequence period after the power is turned ON or the door is closed, the DC controller stops the initial sequence and notifies the residual paper presence to the video controller.
Then the DC controller drives the motors and solenoids in the feeding system and delivers the residual paper out of the printer upon reception of the automatic delivery command from the video controller.

2.5.4 Duplex Feeding

2.5.4.1 Outline

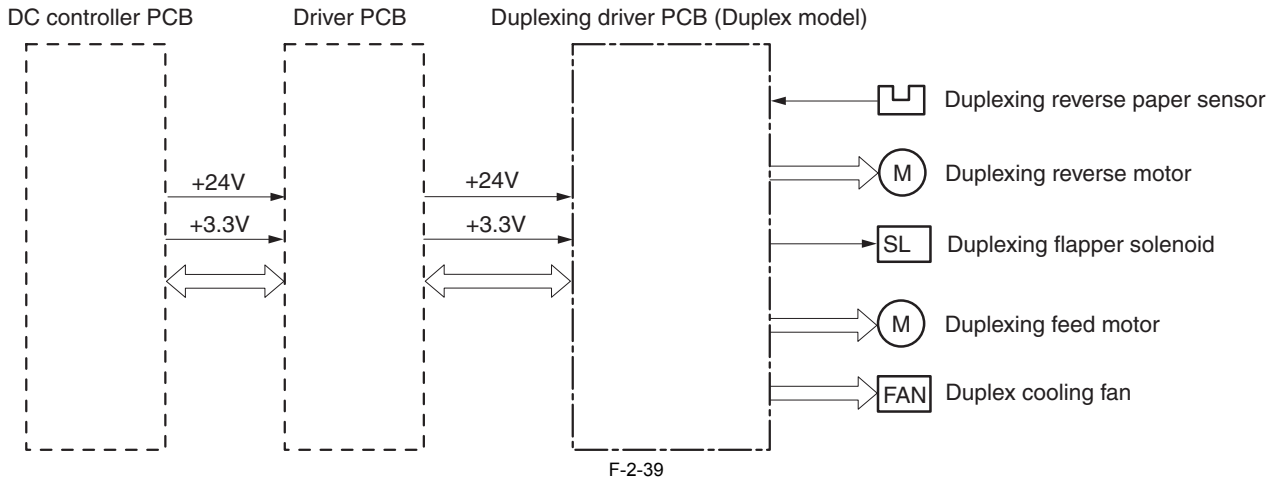
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The duplexing unit is divided into two units. One is the duplexing reverse unit installed on the top of the printer. Other one is the duplexing feed unit installed on the printer front part. It has some sorts of functions such as paper reversing, paper feeding, skew feed correction and leading side edge registration preparing for the other side printing.
The paper path is illustrated below.



F-2-38

The duplexing unit is controlled by the duplexing driver PCB. An 8-bit CPU is used in the duplexing driver PCB, which controls the sequences of the duplexing unit as well as the serial communication with the DC controller of the printer. The DC controller commands to the duplexing driver PCB at necessary timing. The duplexing driver PCB drives each load, such as motors and solenoids, depending on these commands.
The signal flow in the duplexing driver PCB.

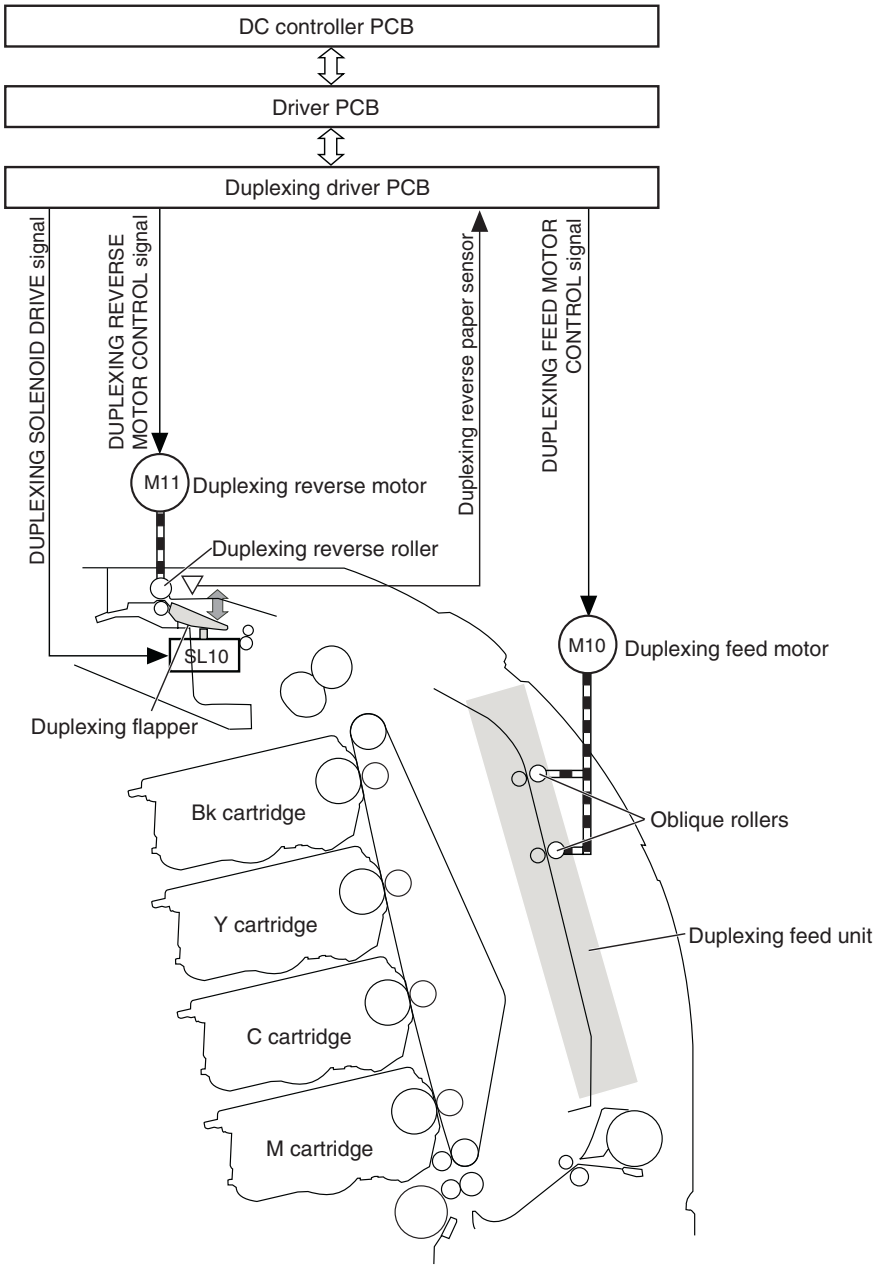


F-2-39

2.5.4.2 Duplexing reverse/feed operation

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

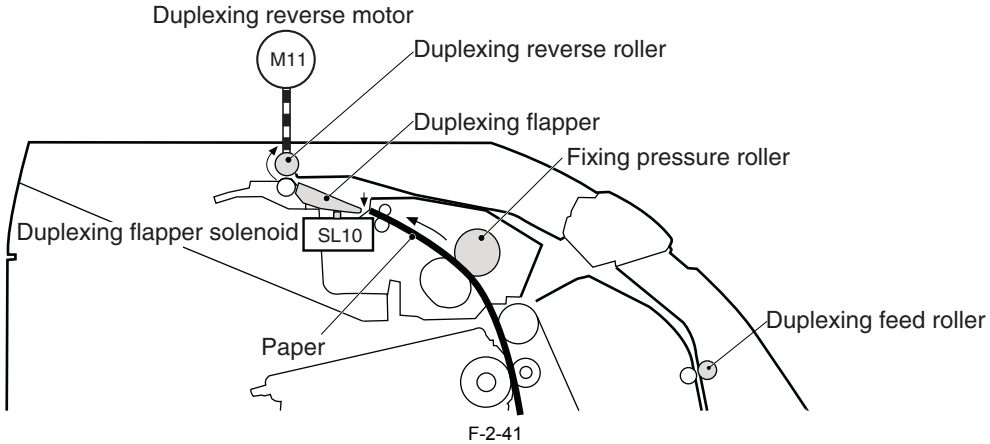
In this control, the paper printed on the one side is reversed its feeding direction in order to operate the duplex print.
The operational sequence of the duplexing feed is described below.



F-2-40

The duplexing driver PCB monitors the status of the top of page sensor (SR710) sent from the DC controller and controls the duplexing reverse motor (M11) and the duplexing flapper solenoid (SL10) in order to reverse the paper.

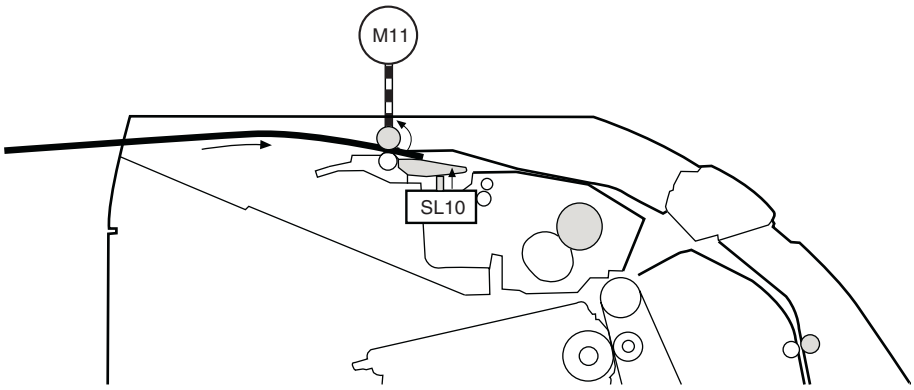
1) The duplexing driver PCB rotates the duplexing reverse motor clockwise after Approx. 2.5 seconds from when the top of page sensor detected the leading edge of first side of paper. Then after Approx. 0.25 second, it turns ON the duplexing flapper solenoid to make a paper path to the duplexing reverse unit.



F-2-41

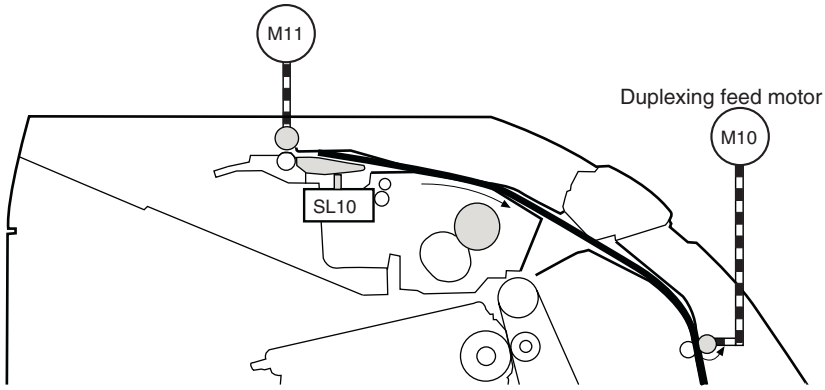
2) The duplexing driver PCB turns OFF the duplexing flapper solenoid after Approx. 2.5 seconds from when the trailing edge of first side of paper passed through the top of page sensor.

Accordingly a paper path to the duplexing feed unit is made. At the same timing, it rotates the duplexing reverse motor counter clockwise.



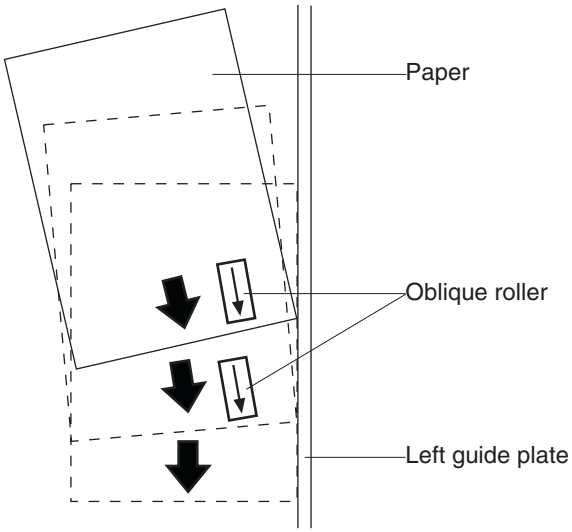
F-2-42

3) After the prescribed time of the duplexing reverse motor rotation, the duplexing feed motor rotates to feed the paper to the duplexing feed unit.



F-2-43

4) The paper is fed while hitting its edge to the left guide by the oblique roller in the duplexing feed unit. Consequently, the paper skew is corrected and the starting position of the second side image in main-scanning is determined.



F-2-44

5) The paper is positioned at duplexing pick-up position by stopping the duplexing feed motor rotation after the prescribed time rotation of the duplexing feed motor.
6) The DC controller sends the duplexing feed motor rotation command to the duplexing driver PCB, when the duplexing pick-up is available after the print command for another side is sent from the video controller. Accordingly the paper is fed to the printer.
7) The paper skew is corrected by the registration shutter again. Then the paper is printed on the other side and fed to the delivery tray.

2.5.4.3 Duplexing pick-up operation

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This printer can operate following three types of duplexing printings depending on the paper size and the print mode.
1) Single sheet mode: Duplexing print operation of a sheet at one by one
2) Dual sheet mode: Duplexing print operation of two sheets movable at once.
3) Alternating complex mode: Duplexing print operation of three sheets movable at once.

The table below shows each duplexing print operation.

T-2-4

Paper size	Duplexing print operation
A4/LTR	Single sheet operation Dual sheet operation Alternating complex operation
Legal	Single sheet operation

The video controller specifies the each duplexing print operation. However, it cannot specify the operation other than the printable paper size (A4, LTR, and legal) and the print mode (normal, thin paper, thick paper, gloss paper) for the duplexing print.

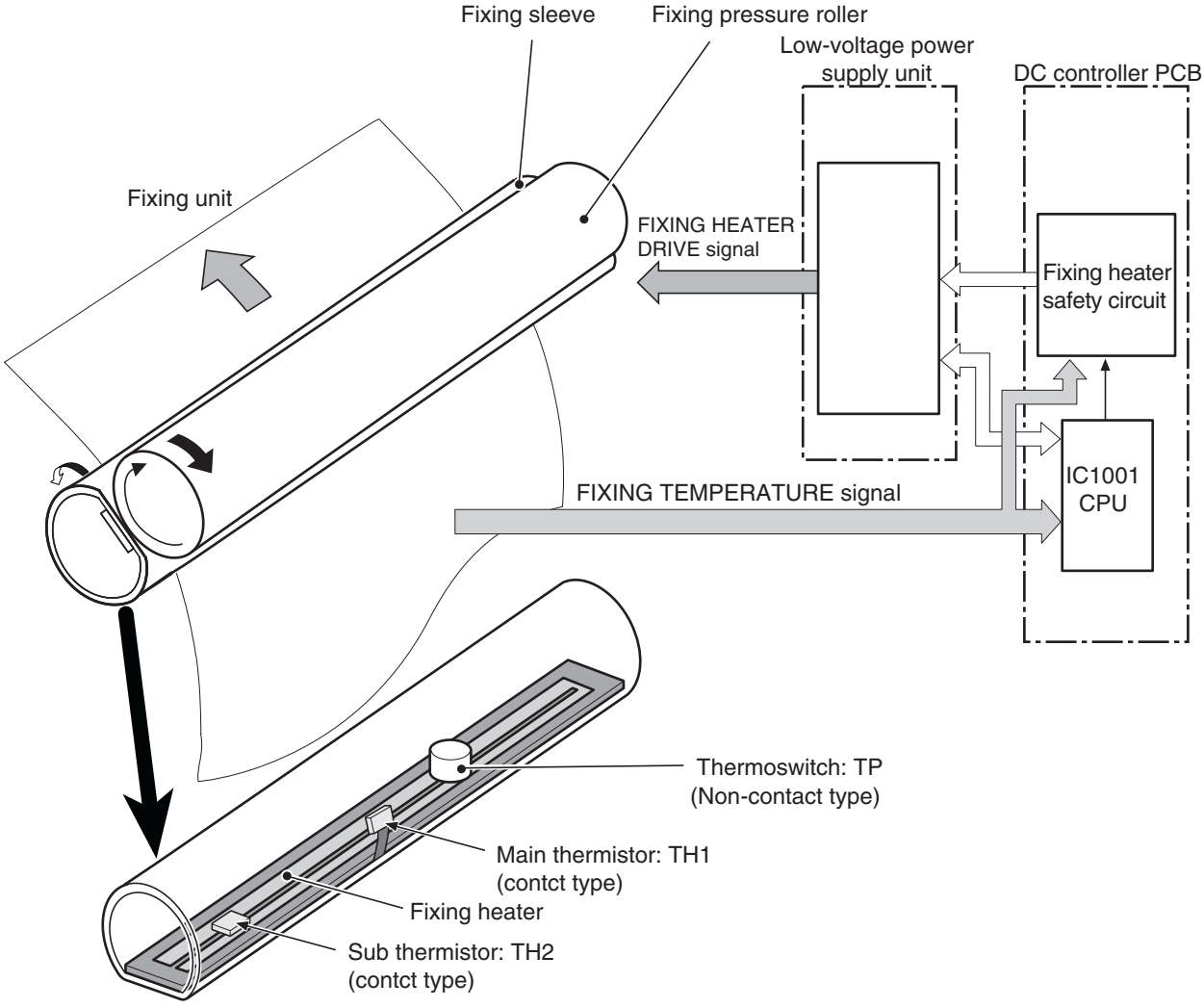
2.6 FIXING UNIT SYSTEM

2.6.1 Overview/Configuration

2.6.1.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The fixing control circuit is to control the fixing heater temperature in the fixing unit.
This printer utilizes the ceramic heater fixing method and the fixing unit is constituted as shown below.



F-2-45

- Fixing heater (H1):
A ceramic heater for heating the fixing sleeve.
The heater has one piece of U-shaped heating element on the back of heating surface.
- Thermistors (TH1, TH2):
The fixing unit of this printer incorporates two thermistors for the fixing temperature detection.
- Main thermistor (TH1): Contact type
The TH1 is for the print temperature control and the between-sheets temperature control. It touches the inside surface of the fixing sleeve at the center and detects the fixing sleeve temperature.
- Sub thermistor (TH2): Contact type
The TH2 is for detecting abnormal temperature rise at both ends of fixing heater, the initial rotation temperature control, and the start-up temperature control. It is in contact with the one-end of the fixing heater and detects the fixing heater temperature.

- Thermoswitch (TP): Non-contact type
The thermoswitch is for preventing the fixing heater from rising temperature abnormally high.
The thermoswitch is equipped above the center of the fixing heater.
If the fixing heater temperature rises abnormally high, the contact gets open to cut off the power supply to the heater.

These temperature controls of the fixing unit are performed by the fixing control circuit and the fixing heater safety circuit according to the commands from the CPU (IC1001) in the DC controller.

Each temperature control circuit and function of the fixing unit is described in the following pages.

2.6.2 Various Control Mechanisms

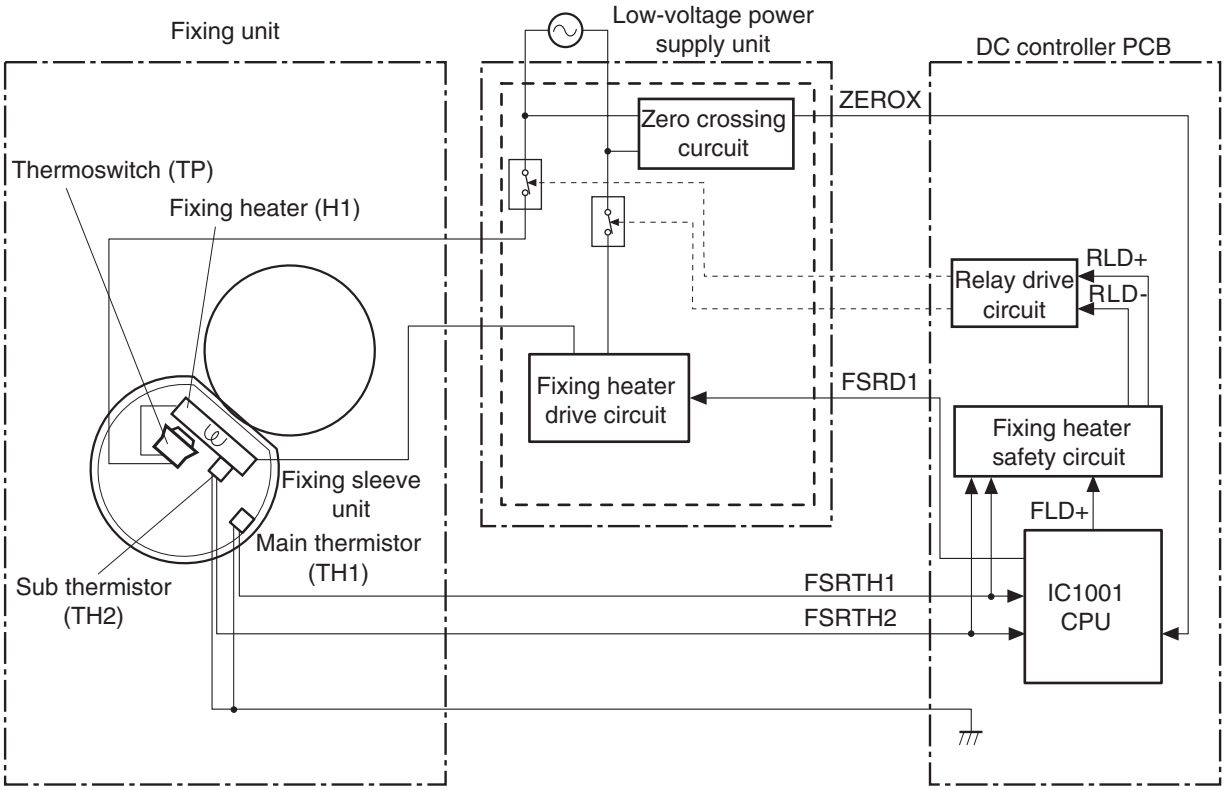
2.6.2.1 Fixing Temperature Control

2.6.2.1.1 Heater temperature control

0013-8368

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The heater temperature control is to sense the surface temperature of the fixing sleeve and the fixing heater, and to control the DRIVE signals of the fixing heater in order to maintain the temperature at targeted temperature.
The control circuit is illustrated below.



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The fixing heater temperature is monitored by two thermistors, the main thermistor (TH1) and the sub thermistor (TH2).
The TH1 is for the print temperature control and the between-sheets temperature control.
The TH2 is for the initial rotation temperature control, for the start-up temperature control, and for detecting abnormal temperature rise at both ends of fixing heater.
The CPU (IC1001) in the DC controller monitors the input voltage of the FIXING HEATER TEMPERATURE signals (FSRTH1, FSRTH2), and outputs the FIXING HEATER DRIVE signal (FSRD) based on the voltage value. The fixing heater control circuit controls the fixing temperature so that the heater can be maintained at the targeted temperature.
This fixing temperature control is divided into the following six fixing sequences.

1) Initial rotation temperature control
   This control is to melt the grease, inside the fixing sleeve and to lubricate the sleeve, as soon as the power is turned ON. This prevents the fixing sleeve damage.
   The CPU temporarily turns ON the fixing heater for short time period just before the fixing motor starts, then it drives the fixing motor.
2) Stand-by temperature control
   This control is to shorten the print operation time from the STBY period until print completion The CPU controls the fixing heater to maintain the temperature at 115 deg C to 120 deg C. This control can be canceled according to the command to the CPU from the video controller.
3) Start-up temperature control
   This control is to determine the start-up power providing to the fixing heater according to the temperature detected by the sub thermistor at heater energization.
   The start-up temperature varies depending on the elapsed time since previous print completion, paper types, and environment.
4) Print temperature control
   This control is to maintain the temperature of the fixing sleeve at its targeted temperature during print operation.
   The CPU gradually switches the target temperature in one printing process depending on the number of print.
   The targeted temperature varies depending on the paper types.
5) Between-sheets temperature control
   This control is to maintain the temperature of fixing heater below its normally targeted temperature during continuous printing in order to prevent the excessive temperature rise of the fixing pressure roller at uncovering paper portion of between-sheets with low-speed mode.
   The targeted temperature varies according to the between-sheets intervals and the paper types.
6) Throughput down control
   This control is to prevent an overheating at both ends of the fixing heater during continuous printing with smaller than A4 size paper.
   If the paper width specified by the video controller is narrower than 210mm (A4 size) and detected temperature by the sub thermistor exceeds the specified temperature during continuous printing, the CPU makes the between-sheets interval longer to slow down the printing speed.
   If the sub-thermistor detects the temperatures shown in the table below while small size paper is being fed, an additional (1st) interval is added to the default pickup interval, according to the detected temperature, in order to lower the throughput. If, after having added the 1st additional interval, the sub-thermistor again detects temperature of 250 deg C or higher and there is no change in the paper interval after five sheets, an additional (2nd) interval is added, according to the detected temperature in order to lower the throughput further. The 3rd and 4th intervals are added similarly.

T-2-5

Sub-thermistor temperature	Additional intervals			
	1st	2nd	3rd	4th

250 deg C	+2 sec.	+6 sec.	+10 sec.	+14 sec.
260 deg C	+6 sec.	+10 sec.	+14 sec.	+18 sec.
270 deg C	+10 sec.	+14 sec.	+18 sec.	+22 sec.

2.6.3 Protective Functions

2.6.3.1 outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This function is to detect an abnormal temperature rise of the fixing heater and to interrupt power supply to the fixing heater.
To prevent an abnormal temperature rise of the fixing heater, the protective function is operated by the following three:
1) CPU
2) Fixing heater safety circuit
3) Thermoswitch
Each function is explained in the following.

1) Protective function by CPU
   The CPU always monitors the output voltage of the main/sub thermistors (FSRTH1, FSRTH2).
   If the voltage of the FSRTH1 is approx. 1.26V and lower (equivalent to 240 deg C and higher), or the voltage of the FSRTH2 is approx. 0.48V and lower (equivalent to 280 deg C and higher), the CPU determines the fixing unit failure and the program runs along the following sequence.
   1. The CPU makes the FIXING HEATER DRIVE signal (FSRD1) inactive and turns the heater OFF.
   2. The CPU makes the RELAY DRIVE signal (RLD+) inactive.
   3. The relay drive circuit releases the relays (RL3901 and RL3902) to interrupt power supply to the fixing heater.
2) Protective function by fixing heater safety circuit
   The fixing heater safety circuit always monitors the output voltage of the main/sub thermistors (FSRTH1, FSRTH2). If the voltage of the FSRTH1 is approx. 1.15V and lower (equivalent to 250 deg C and higher), or the voltage of the FSRTH2 is approx. 0.44V and lower (equivalent to 290 deg C and higher), the circuit determines the fixing unit failure and the program runs along the following sequence.
   1. The fixing heater safety circuit makes the MAIN THERMISTOR RELAY DRIVE signal (RLD-) inactive.
   2. The fixing heater safety circuit makes the SUB THERMISTOR RELAY DRIVE signal (RLD+) inactive.
   3. The relay drive circuit releases the relays (RL3901 and RL3902) to interrupt power supply to the fixing heater.
3) Protective function by thermoswitch
   When the temperature of the fixing heater rises abnormally high and the detected temperature of the thermoswitch (TP) exceeds approx. 250 deg C (see Note), the thermoswitch breaks contact of the line and the power supply to the fixing heater is immediately cut off.

The actual temperature of the fixing heater is about 40 degrees higher than that of the thermoswitch, as the thermoswitch does not make direct contact with the fixing heater with the spacer.

2.6.3.2 Failure detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The CPU determines the fixing unit failure, stops the printer engine, and notifies the video controller of "fixing unit failure", when it encounters the following conditions, 1) to 6).
1) Start-up failure (Warm-up failure)
   The CPU determines the start-up failure:
   1. If the detected temperature of the sub thermistor does not reach 130 deg C within 40 seconds of heater energization during WAIT period.
   2. If the fixing unit does not enter READY within 40 seconds of heater energization at print operation start.
2) Abnormal low temperature of main thermistor
   The CPU presumes the main thermistor has no conduction:
   1. If the detected temperature of the main thermistor is kept below 40°C for 4 seconds continuously, from heater energization until residual paper detection is completed during WAIT period.
   2. If the detected temperature of the main thermistor is kept below 70 degC for 4 seconds continuously, from heater energization until paper reaches the fixing unit at the start of print operation.
   3. If the detected temperature of the main thermistor is kept below 130 deg C for 0.5 second continuously, from paper reaches the fixing unit until heater is turned OFF during PRINT period.
3) Abnormal high temperature of main thermistor
   The CPU determines the abnormal high temperature of main thermistor, if the detected temperature of the main thermistor is kept higher than 240 deg C and over for 0.1 second.
4) Abnormal low temperature of sub thermistor
   The CPU presumes the sub thermistor has no conduction at following conditions
   1. If the detected temperature of the sub thermistor is kept below 60 deg C for 4 seconds continuously, from heater energization until residual paper detection is completed during WAIT period.
   2. If the detected temperature of the sub thermistor is kept below 90 deg C for 2.5 seconds continuously, from heater energization until paper reaches the fixing unit at the start of print operation.
   3. If the detected temperature of the sub thermistor is kept below 120 deg C for 0.5 second continuously, from paper reaches the fixing unit until heater is turned OFF during PRINT period.
   4. If the detected temperature of sub thermistor is kept below 50 deg C for 5 seconds continuously during STBY period.
5) Abnormal high temperature of sub thermistor
   The CPU determines the abnormal high temperature of sub thermistor, if the detected temperature of the sub thermistor is kept higher than 280 deg C and over for 0.5 second.
6) Drive circuit abnormality
   The CPU determines the drive circuit abnormality, if the ZERO CROSSING signal (ZEROX) is kept on being out of frequency range 40Hz to 70Hz for 5 seconds.

2.7 EXTERNAL AND CONTROLS SYSTEM

2.7.1 Power Supply

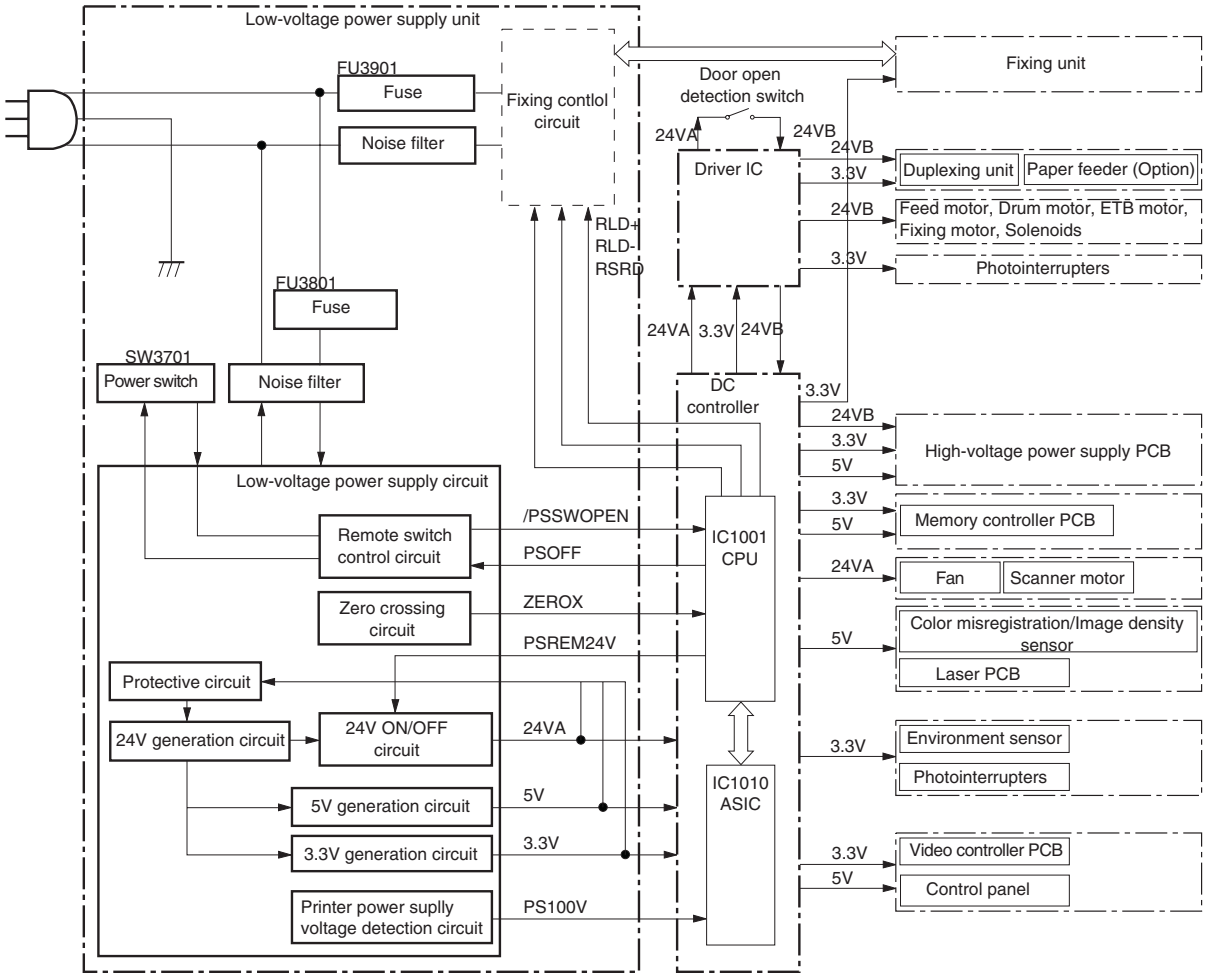
2.7.1.1 Power Supply

2.7.1.1.1 Low-voltage Power Supply Unit

0013-8410

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The low-voltage power supply circuit is to convert AC into DC covering the DC loads.
The block diagram of this circuit is illustrated below.



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The low-voltage power supply circuit is partially activated as soon as plugged in the electrical outlet. When turning ON the power switch (SW3701), whole low-voltage power supply works.
The AC power is then converted into +24V, +5V and +3.3V covering each of printer DC loads.
The following are the main loads for +24V, +5V and +3.3V power.
+24V: Motors, solenoids, high-voltage power supply PCB, and 500-sheet paper feeder
+5VÅF +5V: Laser driver PCB, high-voltage power supply PCB, color misregistration/image density sensor, control panel, and memory controller PCB
+3.3V: Sensor (photo interrupter), media sensor, environment sensor, video controller, control panel, DC controller, and high-voltage power supply PCB

2.7.1.2 Other Function

2.7.1.2.1 Protective function

0013-8413

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The low-voltage power supply circuit has protective function against overcurrent and overvoltage to prevent failures in the power supply circuit. Once there flows an excessive current accidentally to the load side for some trouble such as a short-circuit problem, or overvoltage occurs, it automatically cuts off the output voltage. In case that no DC voltage is supplied from the low-voltage power supply circuit, turn off the power switch (SW3701) anyway. Do not turn on the power again as far as the root cause is not found at the load side since the protective function may still work. (see Note) There are two fuses, FU3801 and FU3901, in the circuit for other protective function. The fuses blow and cut off the AC power, once AC overcurrent flows into the AC line.

To recover the low-voltage power supply in case of functioning the protection, turn the power OFF (by switching off or unplugging) and leave the printer off for 15 seconds or longer, then turn the printer ON again.

2.7.1.2.2 Safety

0013-8415

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

For the safety reason for the users and the service technicians, the +24V DC line is intentionally divided into two ways, +24VA and +24VB.
The +24VA is supplied from the DC controller all the time, whereas the power supply of the +24VB stops when the door switch (SW1) is cut off. The high-voltage power supply PCB and motors are supplied with the +24VB. They stop when the front cover or upper cover is opened.
This is to protect the users and the service technicians from an electric shock or injury to their hands.
The +24VB also functions as the DOOR OPEN signal. The CPU determines the door open when the +24VB supply stops.

2.7.1.2.3 Sleep function

0013-8417

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

This function is to save the power consumption of the printer and is controlled by the DC controller.
The sequential operation of this function is described below.
1) The DC controller receives a sleep command from the video controller.
2) The DC controller outputs the POWER SAVE MODE signal (PSREM24V) to the low-voltage power supply circuit upon receipt of the command.
3) The low-voltage power supply circuit stops 24VA power supply from the 24V generation circuit upon receiving the PSREM24V signal.
The printer returns to the WAIT period, once it receives the command releasing the POWER SAVE mode from the video controller.

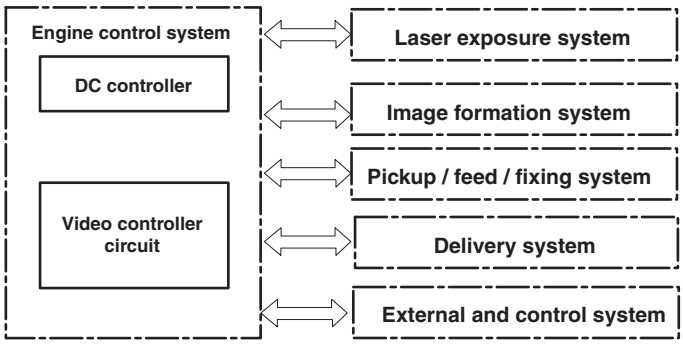
2.8 ENGINE CONTROL SYSTEM

2.8.1 Construction

2.8.1.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The engine control system is the "brain" of the machine, and has control over its laser exposure system, image formation system, pickup/delivery system, fixing system, and externals/auxiliary control system. The following is a block diagram of the engine control system, followed by descriptions of individual circuits:



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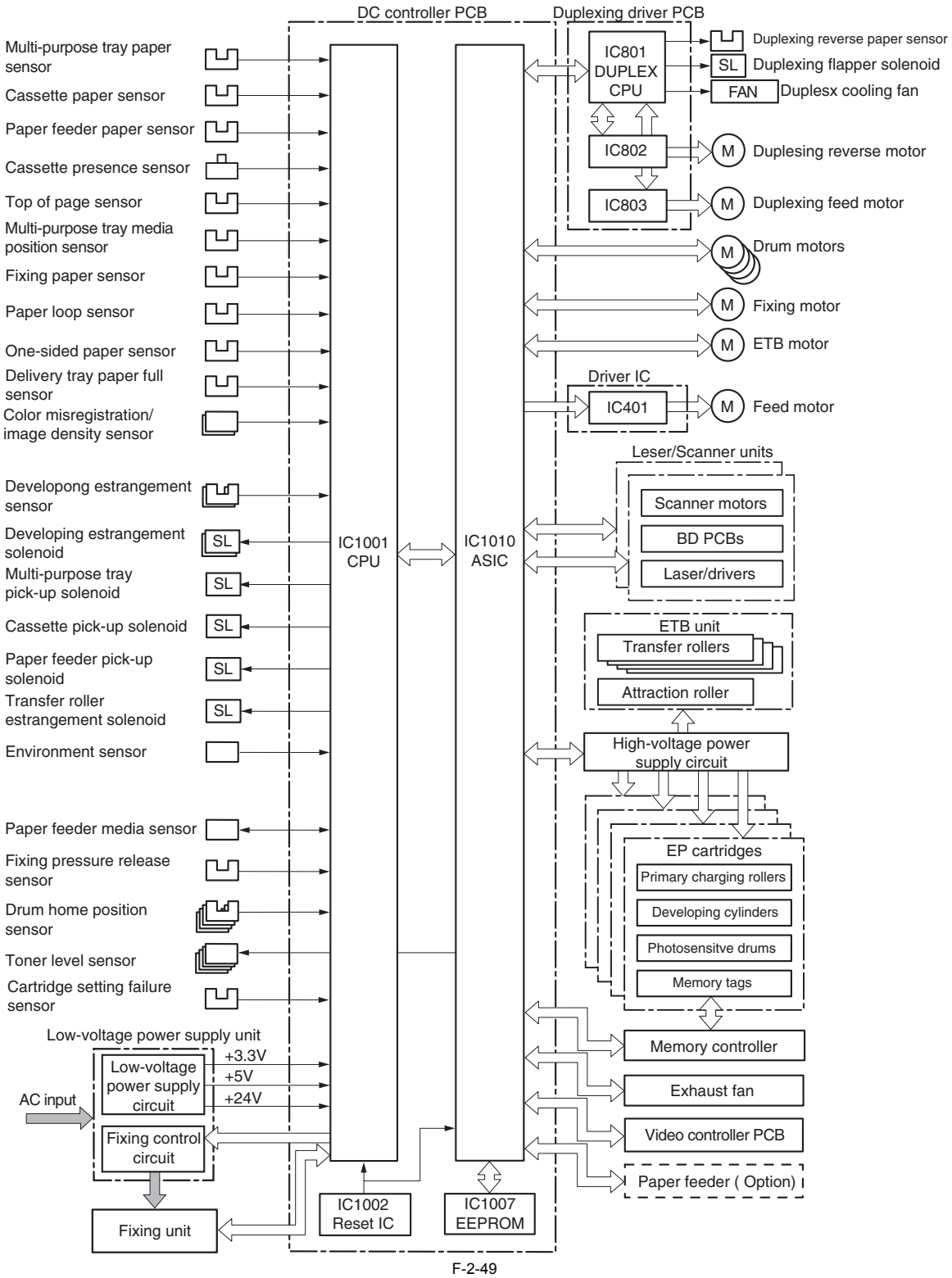
2.8.2 DC Controller

2.8.2.1 Outline

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller is to control the operational sequence of the printer, and is controlled by the CPU in the DC controller.
The operation of the DC controller is described below.
1) When the power switch is turned ON, the DC controller is supplied with DC power from the low-voltage power supply unit.
2) The CPU in the DC controller starts to control the printer operation.
3) When the printer enters STBY period, the CPU sends signals to drive each load, such as laser diode, motors, solenoids, and etc. according to the print command and the image data sent from the video controller.



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2.8.2.2 Operation of each block

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

a. CPU(IC1001)

The CPU, which is composed of 16-bit single-chip microcomputer with built-in ROM and RAM, is utilized in the printer. It controls the following printer operations which are totally programmed in the built-in ROM of CPU.

1) Printer engine sequence
2) ASIC
3) Fixing unit
4) Solenoids
5) Sensors and switches
6) Fixing control circuit (Relay drive)

b. ASIC (IC1010)

The ASIC (Application Specific IC) is used to interface to the IC, memory, external device, and etc. It controls the following printer operations in response to the commands from the CPU.

1) Communication with video controller

2) Laser/Scanner unit
3) Motors
4) High-voltage power supply PCB
5) Fan motor
6) Memory controller
7) Write/Read EEPROM

c. Motor driver IC (IC401/IC802/IC803)
The motor driver ICs control each motor in response to the commands from the CPU or the ASIC.

d. Reset IC (IC1002)
The reset IC monitors +3.3V voltage and resets the CPU and the ASIC when the power is turned ON.

d. EEPROM(IC1007)
The EEPROM stores various backup data.

2.8.2.3 Fan/Motor Control

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller PCB serves to control 49 motors.
The following shows the specifications of the various motors used in the machine:

T-2-6

Name		Purpose	Type	Failure Detection
Motor	Feed motor (M4)	To drive printer feed roller	Stepping motor	No
	M drum motor (M6)	To drive developing roller, Photosensitive drum, and stirrer plate	DC motor	Yes
	C drum motor (M7)			
	Y drum motor (M8)			
	Bk drum motor (M9)			
	ETB motor(M5)	To drive ETB and transfer roller engagement/ disengagement	DC motor	Yes
	Fixing motor(M1)	To drive fixing pressure roller, delivery roller, developing roller, engagement/disengagement, and pressure roller alienation	DC motor	Yes
	Duplexing reverse motor (M11)	To drive duplexing reverse roller	Stepping motor	No
	Duplexing feed motor (M10)	To drive duplexing feed roller	Stepping motor	No
Fan	Exhaust fan (FM1)	To exhaust heat from printer inside	DC motor	Yes
	Duplex cooling fan (FM2)	To exhaust heat duplexing unit	DC motor	Yes

2.8.2.4 Drum motor failure detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the drum motor failure and notifies the video controller of "E012 (The drum motor is faulty)", when it encounters the following conditions.
1) Drum motor start-up abnormality
The interval of the DRUM MOTOR SPEED signal does not settle the specified interval after 2.5 seconds of the drum motor drive start.
2) Drum motor rotation abnormality
The interval of the DRUM MOTOR SPEED signal stays irregular interval for 2 seconds and longer after once it has settle the specified interval.

2.8.2.5 ETB motor failure detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the ETB motor failure and notifies the video controller of "E012 (The ETB motor is faulty)", when it encounters the following conditions.
1) ETB motor start-up abnormality
The interval of the ETB MOTOR SPEED signal does not settle the specified interval after 3.5 seconds of the ETB motor drive start.
2) ETB motor rotation abnormality
The interval of the ETB MOTOR SPEED signal stays irregular interval for 2 seconds and longer after once it has settle the specified interval.

2.8.2.6 Fixing motor failure detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the fixing motor failure and notifies the video controller of "E014 (The fixing motor is faulty)", when it encounters the following conditions.
1) Fixing motor start-up abnormality
The interval of the FIXING MOTOR SPEED signal does not settle the specified interval after 2.5 seconds of the fixing motor drive start.
2) Fixing motor rotation abnormality
The interval of the FIXING MOTOR SPEED signal stays irregular interval for 2 seconds and longer after once it has settle the specified interval.

2.8.2.7 Exhaust fan failure detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The DC controller determines the exhaust fan failure and notifies the video controller of "E804 (The exhaust fan is faulty)", when the FAN LOCK signal is kept for 10 seconds continuously.

2.8.2.8 Duplexing cooling fan failure detection

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

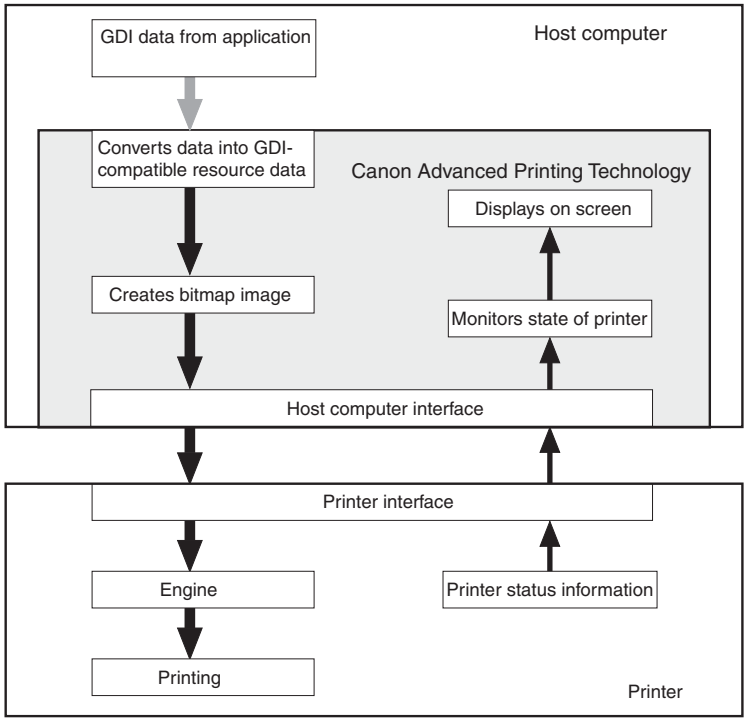
The DC controller determines the duplexing cooling fan failure and notifies the video controller of "E805 (The duplexing cooling fan is faulty)", when the DUPLEXING FAN LOCK signal is kept for 10 seconds continuously.

2.8.3 Video Controller PCB

2.8.3.1 Outline

i-SENSYS LBP5300

The video controller receives print information from external devices (e.g., host computer) by way of interface cables. The information contains a CAPT command used to communicate printer status and printer-specific characteristics and dot data, which is the result of conversion of print data by the host computer.
The data is sent to the DC controller circuit for control of laser diode activation.
If properly connected with a bi-directional interface, an external device may be used to check the printer status.
When printing is executed in a Microsoft Windows or Macintosh environment, CAPT (Canon Advanced Printing Technology) serves to reduce processing speed and enhance the ease of operation to provide a user-friendly printing environment. To that end, CPU is designed for the following:
- The print data from the application is turned into dot data and sent to the printer without conversion into the printer's page description language (PDL).
- The printing environment may be checked and set on the host computer display by responding to dialog boxes.
- The printer status is indicated on the host computer screen: print end time, print paper movement, error status.



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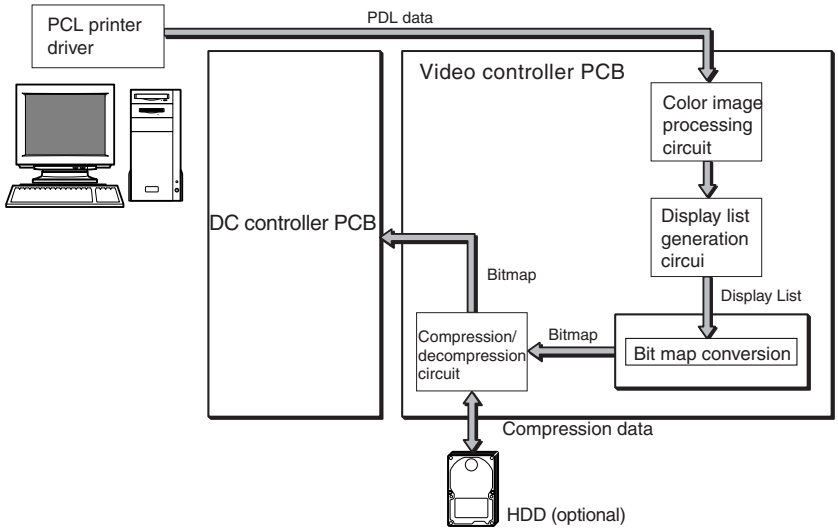
2.8.3.2 Overview

/ i-SENSYS LBP5360

The video controller receives print information from external devices (e.g., host computer) through interface cables.
Such print information contains commands used to exchange printer status and unique information as well as PDL data.
The PDL data is converted into a display list by the display list generation circuit, and turned into bitmap data for output to the DC controller. A check may be made on the printer status using an external device.



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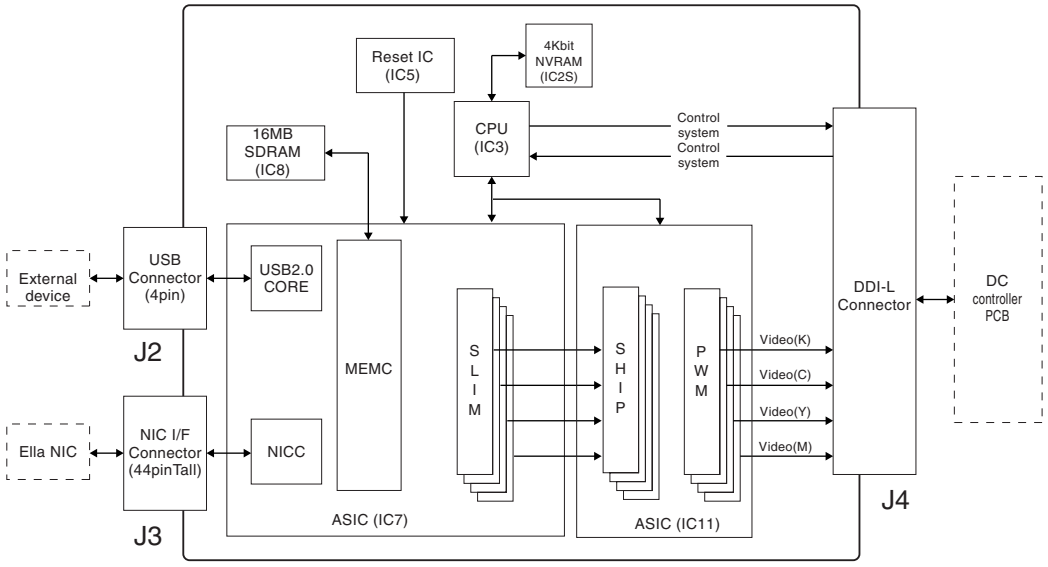
2.8.3.3 Outline of the Block

i-SENSYS LBP5300



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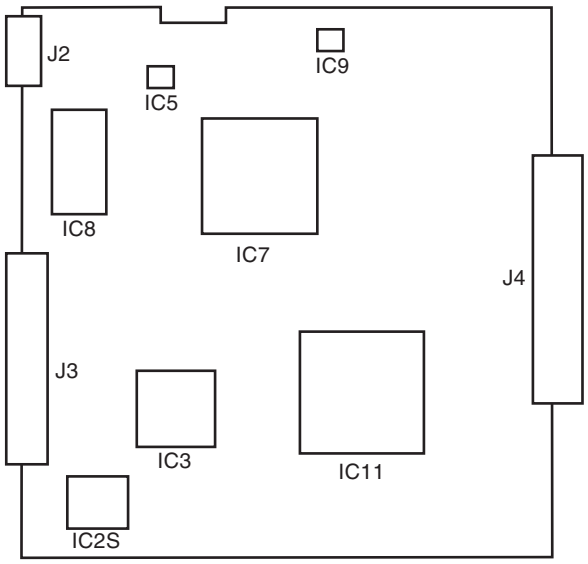
No.	Name	Description
IC3	CPU	Controls the board.
IC5	Reset IC	Resets the board.
IC7	ASIC	Serves as an IC for USB device controller, memory controller, video controller, and NIC interface controller.
IC8	SDRAM	Retains image data.
IC9	SSCG	Performs clock modulation. Generates modulation clock signals used by the system clock.
IC11	ASIC	Converts image data from the ASIC into data by pulse width modulation.
IC2S	NVRAM	Serves to store various parameters.



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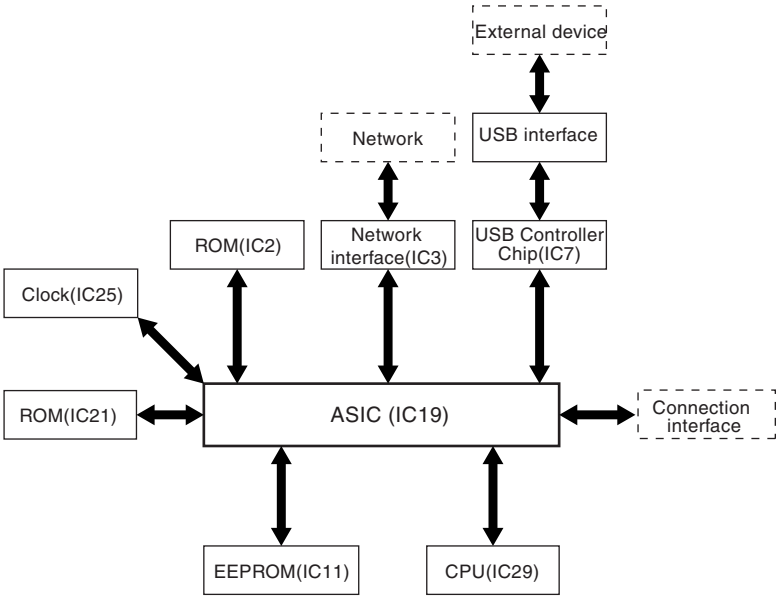
2.8.3.4 Outline of the Block

/ i-SENSYS LBP5360



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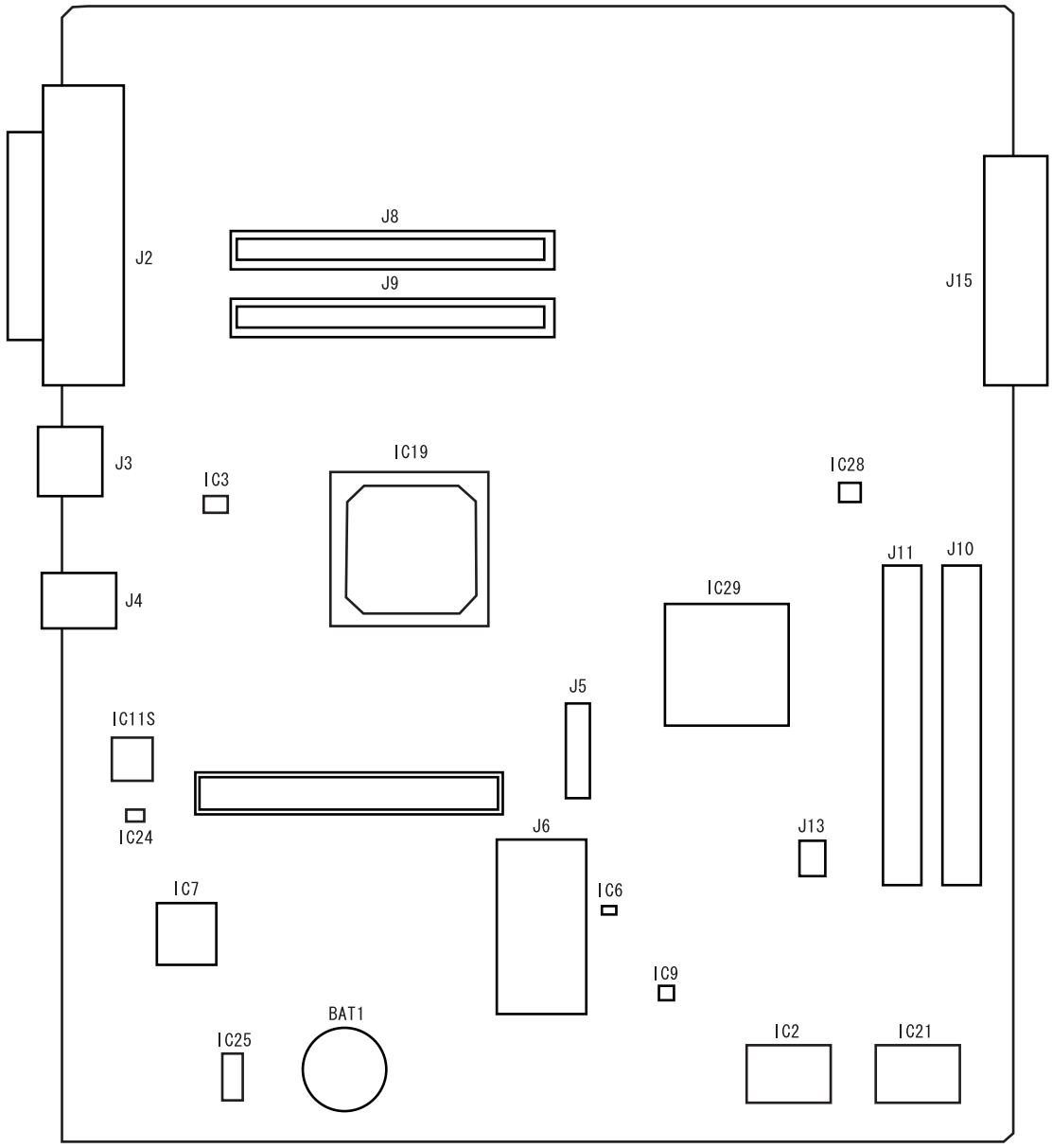
No.	ñºèÃ	ñšäÑ
IC2	Flash ROM	ROM for storage of programs
IC3	transceiver IC	drive for Ethernet signal
IC6	reset IC	system reset
IC7	USB controller	USB interface control
IC9	power supply IC	CPU, DC-DC converter for ASIC core power supply
IC11S	EEPROM	EEPROM for storage of panel settings
IC19	ASIC	system control
IC21	mask ROM	mask ROM for fonts
IC24	EEPROM	EEPROM for MAC address
IC25	RTC	circuit for clock
IC28	voltage regulator	CPU, ASIC I/O power supply
IC29	CPU	system control
IC40	voltage regulator	power supply for Centronics
J2	connector for Centronics (IEEE1284)	-
J3	RJ-45k connector (100/10Base-T)	-
J4	USB connector	-
J5	connector for optional HDD	-
J6	slot for LIO2 slot (HDD board)	-

No.	ñºèÃ	ñšäÑ
J8	slot 1 for RAM DIMM	standard 128SDRAM connection
J9	slot 1 for expansion RAM DIMM	slot for expansion RAM 128/256MB
J10	slot 2 for expansion ROM*	connection for control ROM/hard disk expansion
J11	slot 1 for expansion ROM*	connection for control ROM/hard disk expansion
J15	slot for DC controller connection	-

*: When the ROM slots for the expansion 1 and 2 are equipped with ROMDIMM at the same time, the slot 1 operates preferentially.



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Chapter 3 DISASSEMBLY AND ASSEMBLY

Contents

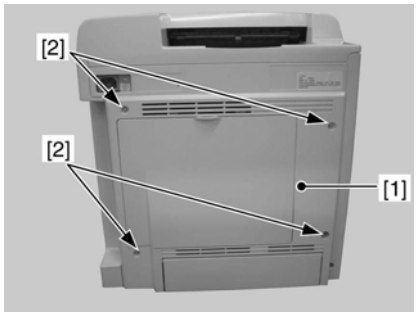
3.1 EXTERNAL AND CONTROLS SYSTEM

3.1.1 Rear Cover

3.1.1.1 Removing the Rear Cover

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover [1].
   - 4 screws [2]



F-3-1

3.1.2 Right Cover

3.1.2.1 Preparation for Removing the Right Cover

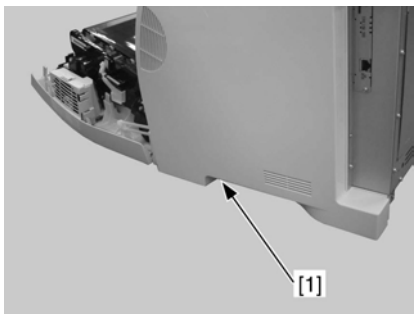
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]

3.1.2.2 Removing the Right Cover

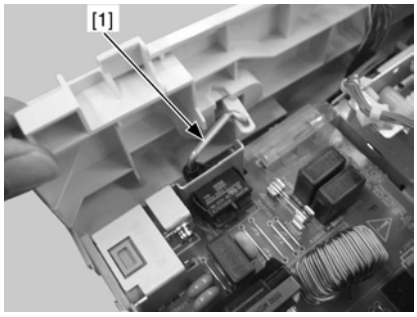
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Open the front cover.
2) Remove the screw [1].



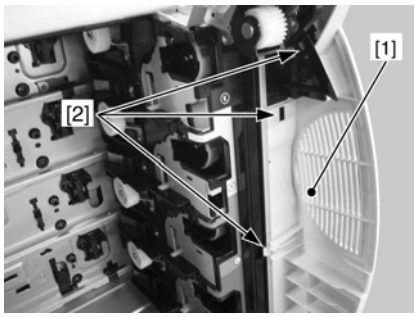
F-3-2

3) Remove the switch link [1].

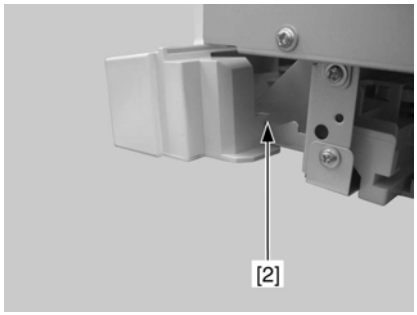


F-3-3

4) Detach the right cover [1].
   - 4 claws [2]



F-3-4



F-3-5

3.1.3 Left Cover

3.1.3.1 Preparation for Removing the Left Cover

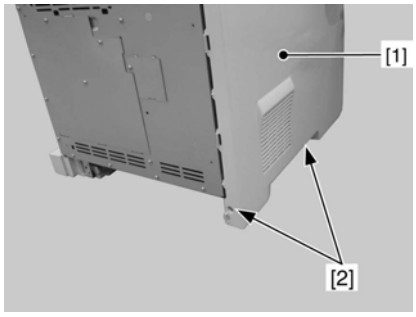
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]

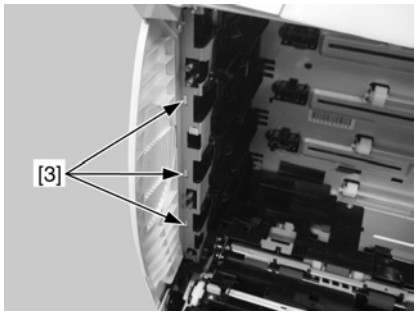
3.1.3.2 Removing the Left Cover

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

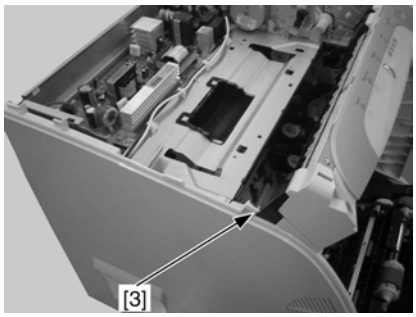
1) Open the front cover.
2) Detach the left cover [1].
   - 2 screws [2]
   - 4 claws [3]



F-3-6



F-3-7



F-3-8

3.1.4 Upper Cover

3.1.4.1 Preparation for Removing the Upper Cover

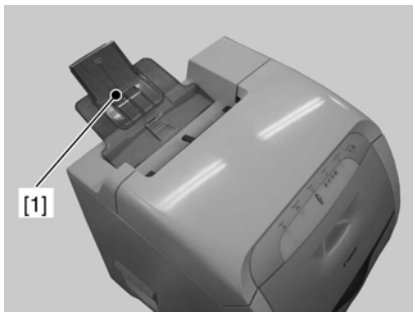
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]

3.1.4.2 Removing the Upper Cover

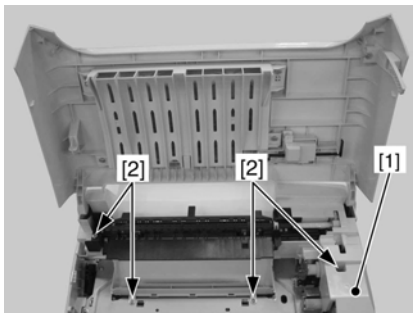
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the delivery tray [1].

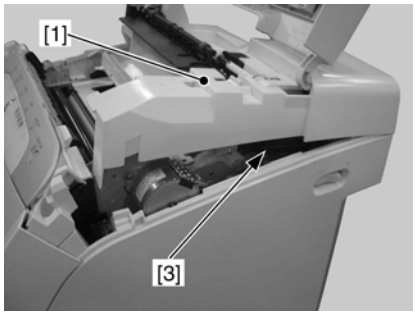


F-3-9

2) Detach the upper cover [1].
- 4 screws [2]
- 1 connector [3]



F-3-10



F-3-11

3.1.5 Front Cover

3.1.5.1 Preparation for Removing the Front Cover

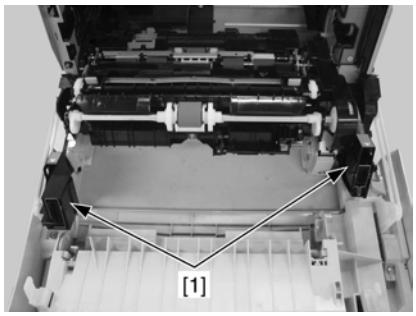
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the left cover. (page 3-1)[Removing the Left Cover]
5) Remove the ETB unit. (page 3-15)[Removing the ETB Unit]
6) Remove the duplexing fan. (page 3-12)[Removing the Duplexing Fan]

3.1.5.2 Removing the Front Cover

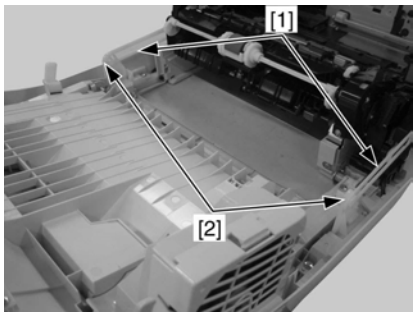
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Lift the 2 connectors [1] upward.



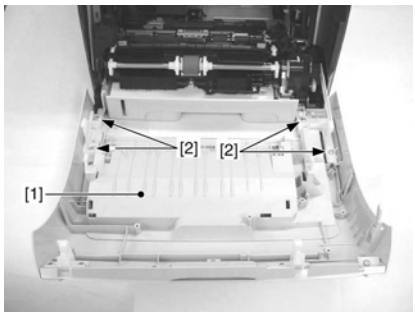
F-3-12

2) Free the shaft [2] from the links [1].



F-3-13

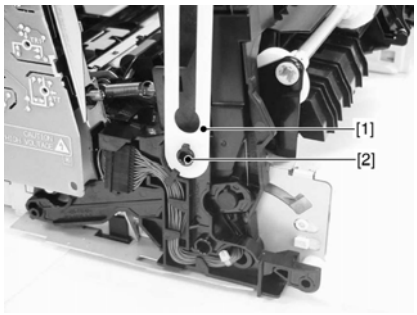
3) Detach the front cover [1].
- 4 screws [2]



F-3-14

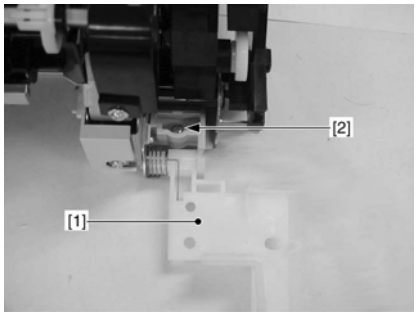
4) Match the position of the link [1] against that of the cut-off in the shaft [2], and remove the left and right links.

F-3-15



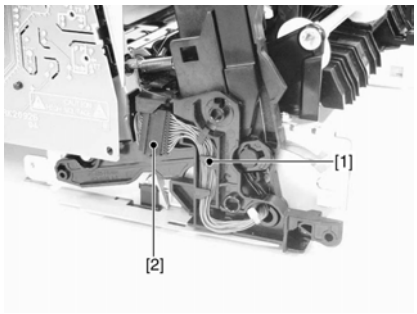
F-3-16

5) Remove the right hinge [1].
- 1 screw [2]



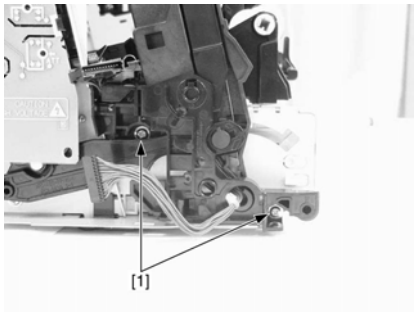
F-3-17

6) Remove the cable from the cable guide [1].
- 1 connector [2]



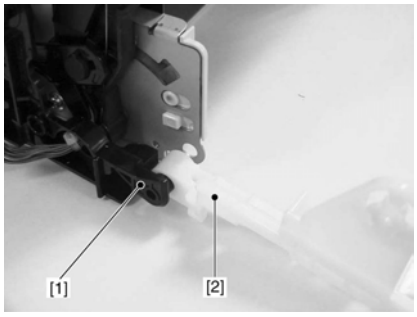
F-3-18

7) Remove the 2 screws [1].



F-3-19

8) Move the mount [1], and remove the left hinge [2].



F-3-20

3.1.6 Main Drive Unit

3.1.6.1 Preparation for Removing the Main Drive Unit

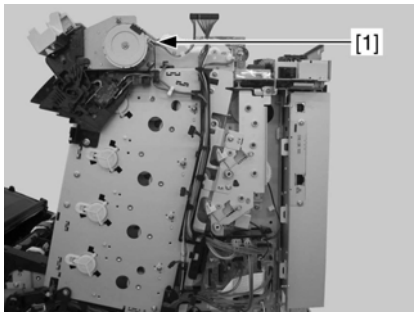
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the right cover. (page 3-1) [Removing the Right Cover]
5) Remove the toner cartridge motor. (page 3-17) [Removing the Toner Cartridge Motor]

3.1.6.2 Removing the Main Drive Unit

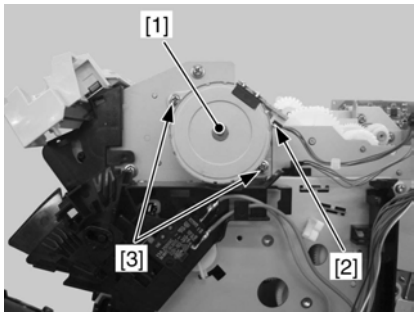
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect the connector [1].



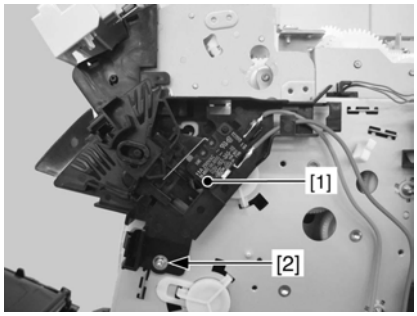
F-3-21

2) Remove the duplexing feeding motor [1].
- 1 connector [2]
- 2 screws [3]



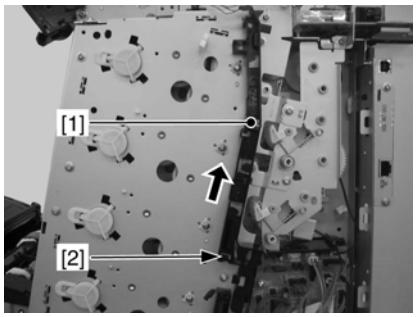
F-3-22

3) Remove the interlock switch [1].
- 1 screw [2]



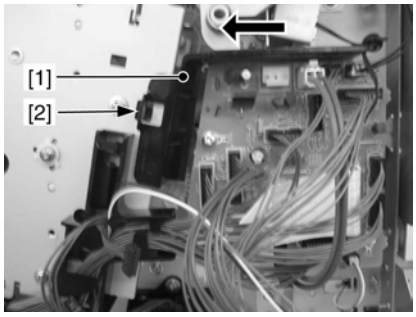
F-3-23

4) Slide off the cable guide [1].
- 1 claw [2]



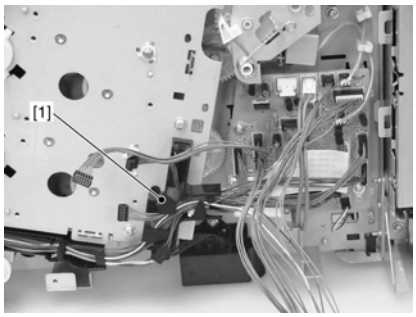
F-3-24

5) Slide off the guide [1].
- 1 claw [2]



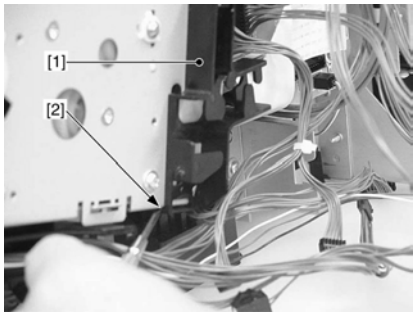
F-3-25

6) Remove the cable from the cable guide [1].



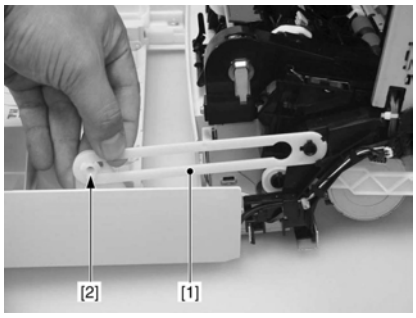
F-3-26

7) Remove the cable guide [1].
- 1 claw [2]



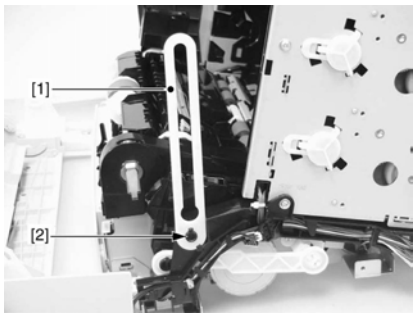
F-3-27

8) Remove the rod [1] from the shaft [2].



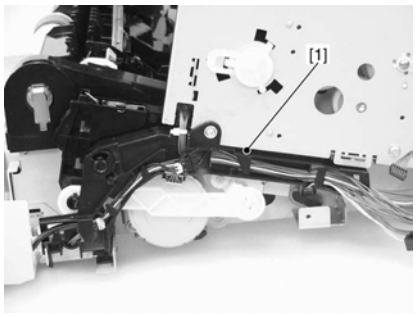
F-3-28

9) Remove the link after aligning the link [1] with the cut-off in the shaft [2].



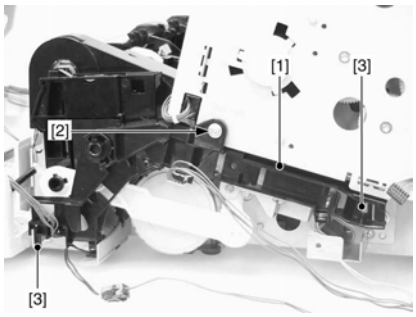
F-3-29

10) Remove the cable from the cable guide [1].



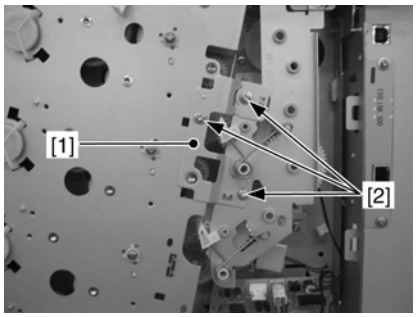
F-3-30

11) Remove the cable guide [1].
- 1 screw [2]
- 2 claws [3]



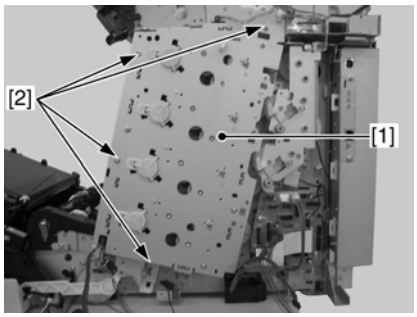
F-3-31

12) Remove the plate [1].
- 3 screws [2]



F-3-32

13) Remove the main drive unit [1].
- 4 screws [2]



F-3-33

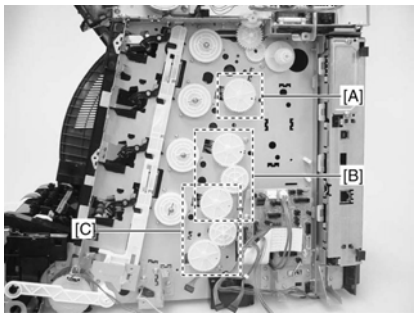
Do not disassemble the main drive unit. Once disassembled, the unit requires adjustments in order to function properly.

3.1.6.3 Points to Note When Mounting Main Drive Unit

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1. Alignment of the Gears in the Main Drive Unit

When mounting the main drive unit, the gears [A], [B], and [C] at the host machine should be interlocked with their mating gears.

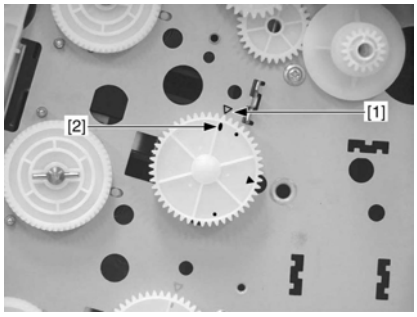


F-3-34

The procedure for gear alignment is as follow:

1-1. How to Align the Gear [A] at the Host Machine Side

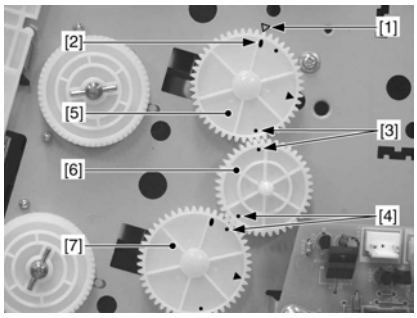
1) Align the elongate hole [2] of the gear with the triangle [1].



F-3-35

1-2. How to Align the Gear [B] at the Host Machine Side

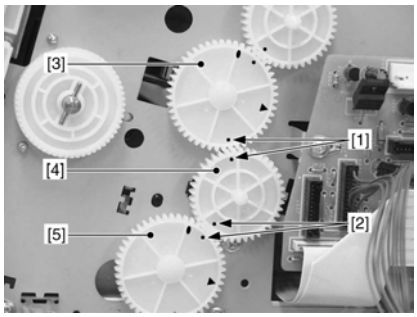
1) Align the elongate hole [2] of the gear [5] with the triangle [1].
2) Interlock the teeth of the gears [5] and [6] so that the holes [3] of the gears will lie right next to each other.
3) Interlock the teeth of the gears [6] and [7] so that the holes [4] of the gears will lie right next to each other.



F-3-36

1-3. How to Align the Gear [C] at the Host Machine Side

1) Interlock the teeth of the gears [3] and [4] so that the holes [1] of the gears will lie right next to each other.
2) Interlock the teeth of the gears [4] and [5] so that the holes [2] of the gears will lie right next to each other.



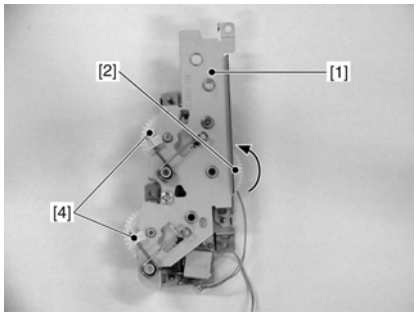
F-3-37

In the alignment procedure from 1-1 to 1-3, the teeth of the gears must be aligned exactly as is shown in the pictures.

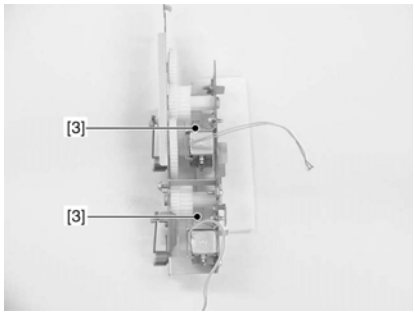
2. Alignment of Developing Estrangement Drive Unit

2-1 Alignment of Developing Estrangement Drive Unit in Assembling

Rotate the gear [2] of the developing estrangement drive unit[1] to the direction of the arrow, and align the solenoid claw [3] with the position of the cut-off in the gear (home position).



F-3-38

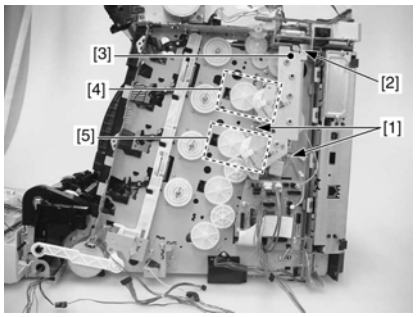


F-3-39

When the developing estrangement drive unit is properly set to its home position, rotating the gear [2] does not make the gears [4] rotate and also there will be no sense of resistance when rotating the gear [2].

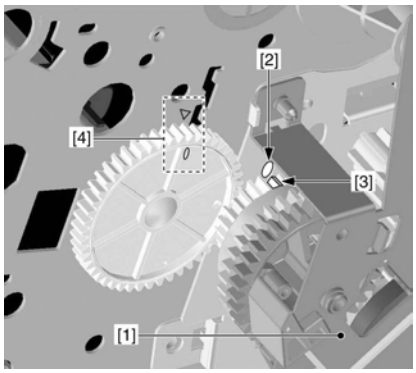
2-2 Alignment of Developing Estrangement Drive Unit in Mounting

Tighten the 2 screws [1] to the developing estrangement drive unit[3] and tighten the screw [2] halfway, then confirm the alignment of the gears [4] and [5].



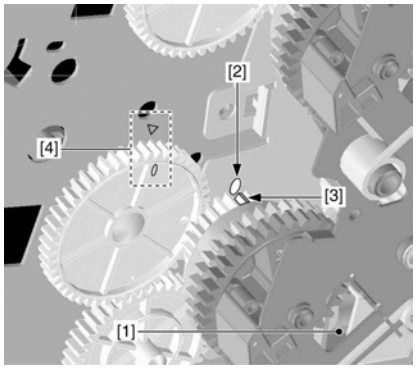
F-3-40

How to Confirm the Alignment of the Gear [4]
The gear [3] in the developing estrangement drive unit [1] has a tooth that is smaller than the others. Make sure the smaller tooth is aligned with the elongate hole [2] (home position). Also, as shown in [4] in the picture, make sure the triangle and the elongate hole of the gear lie right next to each other.



F-3-41

How to Confirm the Alignment of the Gear [5]
The gear [3] in the developing estrangement drive unit [1] has a tooth that is smaller than the others. Make sure the smaller tooth is aligned with the elongate hole [2] (home position). Also, as shown in [4] in the picture, make sure the triangle and the elongate hole of the gear lie right next to each other.

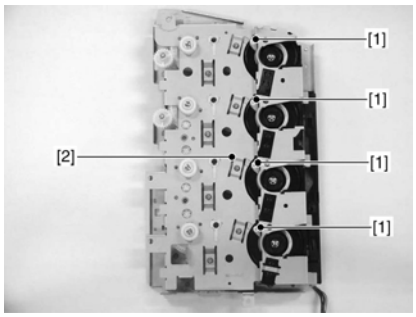


F-3-42

3. Alignment of the Main Drive Unit (Service Parts)

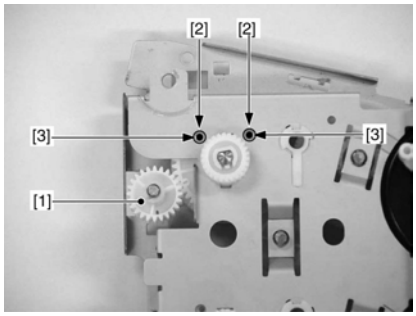
When the shipping lock to which the main drive unit (a service parts) is attached is removed or when the main drive unit is removed while providing services, the main drive unit requires adjustments Preparation for it is mounted back to the host machine.

1) Move the 4 levers [1] in the main drive unit [2] up.



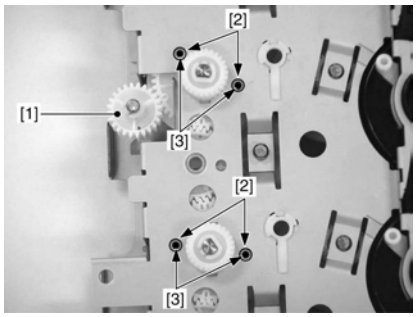
F-3-43

2) Rotate the gear [1] and align the holes [2] with the circles [3] each in the 2 locations.



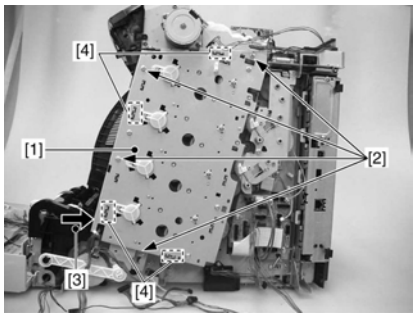
F-3-44

3) Rotate the gear [1] and align the holes [2] with the circles [3] each in the 2 locations.



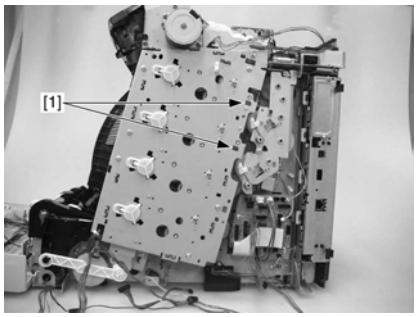
F-3-45

4) Make sure that the alignment of the host machine side is properly adjusted.
5) Move the ETB lock [3] in the direction of the arrow.
6) Mount the main drive unit [1] upright, so the 4 positioning parts [4] are properly fit.
- 4 screws [2]



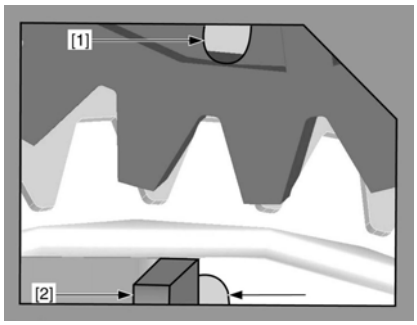
F-3-46

7) Confirm that the gear positions are properly aligned with looking from the 2 windows [1].



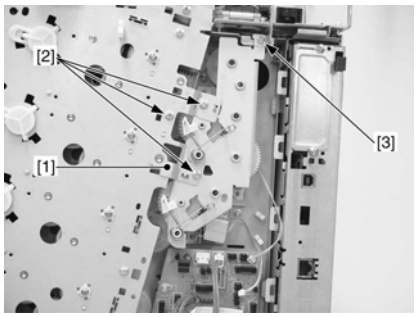
F-3-47

Proper alignment appears as shown in the picture below where the elongate holes of the gear [1] and [2] and the plate are aligned in a straight line.



F-3-48

8) Attach the plate [1].
   - 3 screws [2]
9) Tighten all the way the screw [3] that has been tightened halfway.



F-3-49

3.1.7 Operation Panel Unit

3.1.7.1 Preparation for Removing the Control Panel

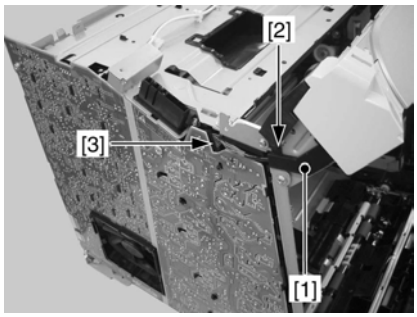
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the left cover. (page 3-1) [Removing the Left Cover]

3.1.7.2 Removing the Control Panel

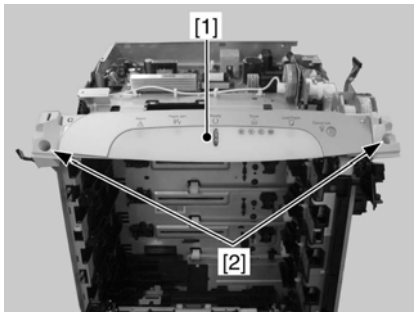
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the cable guide [1].
   - 1 claw [2]
2) Disconnect the connector [3].



F-3-50

3) Remove the control panel [1].
   - 2 screws [2]



F-3-51

3.1.8 DC Controller PCB

3.1.8.1 Before Removing the DC Controller PCB

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the fixing unit. (page 3-25) [Removing the Fixing unit]
2) Remove the network board. (page 3-10) [Removing the Network Interface Board]
3) Remove the rear cover. (page 3-1) [Removing the Rear Cover]
4) Remove the upper cover. (page 3-2) [Removing the Upper Cover]
5) Remove the right cover. (page 3-1) [Removing the Right Cover]
6) Remove the left cover. (page 3-1) [Removing the Left Cover]
7) Remove the video controller PCB. (page 3-8) [Removing the Video Controller PCB]

3.1.8.2 Preparation for Removing the DC Controller PCB

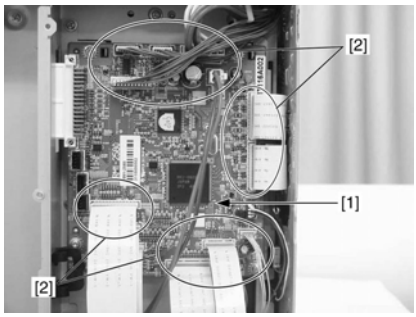
/ i-SENSYS LBP5360

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the right cover. (page 3-1) [Removing the Right Cover]
5) Remove the video controller PCB. (page 3-8) [Removing the Video Controller PCB]

3.1.8.3 Removing the DC Controller PCB

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect all the connectors and flat cables [2] from the DC Controller PCB [1].



F-3-52

2) Remove the test print button guide [1].
   - 4 claws [2]

F-3-53

3) Remove the DC controller PCB [1].
- 4 screws [2]

F-3-54

3.1.9 Video Controller PCB

3.1.9.1 Preparation for Removing the Video Controller PCB

i-SENSYS LBP5300

1) Remove the network board. (page 3-10)[Removing the Network Interface Board]
2) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
3) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
4) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
5) Detach the right cover. (page 3-1)[Removing the Right Cover]

3.1.9.2 Preparation for Removing the Video Controller PCB

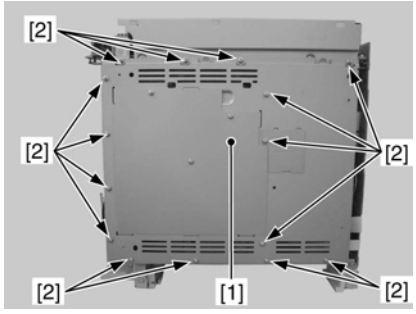
/ i-SENSYS LBP5360

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the right cover. (page 3-1)[Removing the Right Cover]

3.1.9.3 Removing the Video Controller PCB

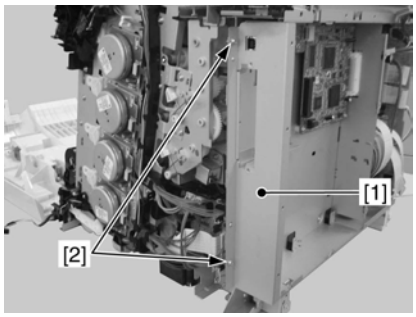
i-SENSYS LBP5300

1) Remove the rear plate [1].
- 15 screws [2]



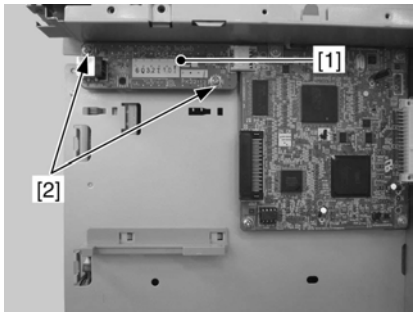
F-3-55

2) Remove the right rear plate [1].
- 2 screws [2]



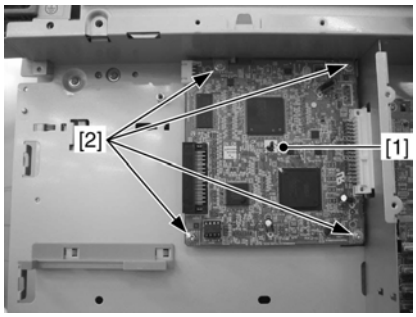
F-3-56

3) Remove the USB board [1].
- 2 screws [2]



F-3-57

4) Move the video controller PCB [1] to the left and then remove it.
- 4 screws [2]

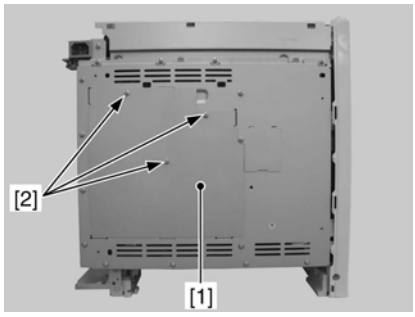


F-3-58

3.1.9.4 Removing the Video Controller PCB

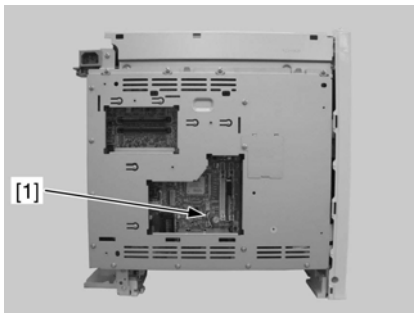
/ i-SENSYS LBP5360

1) Detach the rear sheet metal (small) [1].
- 3 screws [2]



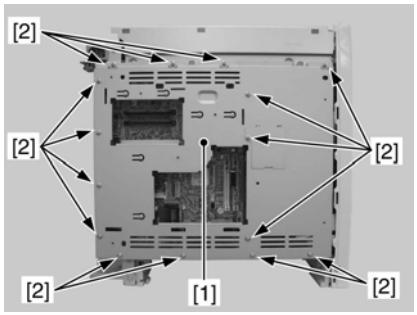
F-3-59

2) Disconnect the connector [1] of the CPU fan.



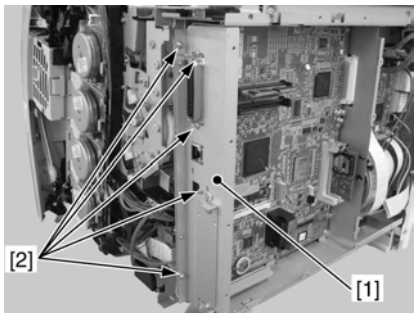
F-3-60

3) Detach the rear sheet metal [1].
- 15 screws [2]



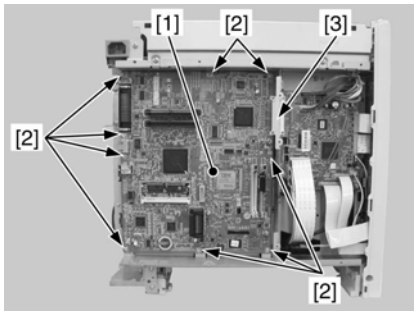
F-3-61

4) Detach the right rear sheet metal [1].
- 5 screws [2]



F-3-62

5) Move the video controller PCB [1] to the left, and then remove it.
- 9 screws [2]
- 1 connector [3]



F-3-63

3.1.10 Memory Controller PCB

3.1.10.1 Before Removing the Memory Controller PCB

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the fixing unit. (page 3-25) [Removing the Fixing unit]
2) Remove the network board. (page 3-10) [Removing the Network Interface Board]
3) Remove the rear cover. (page 3-1) [Removing the Rear Cover]
4) Remove the upper cover. (page 3-2) [Removing the Upper Cover]
5) Remove the right cover. (page 3-1) [Removing the Right Cover]
6) Remove the left cover. (page 3-1) [Removing the Left Cover]
7) Remove the video controller PCB. (page 3-8) [Removing the Video Controller PCB]
8) Remove the high voltage power supply PCB. (page 3-11) [Removing High-Voltage Power Supply PCB]
9) Remove the low voltage power supply PCB. (page 3-10) [Removing Low-Voltage Power Supply Assembly]

3.1.10.2 Preparation for Removing the Memory Controller PCB

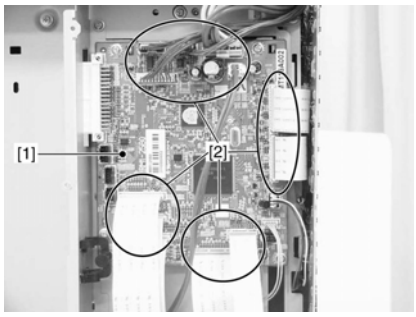
/ i-SENSYS LBP5360

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the left cover. (page 3-1) [Removing the Left Cover]
5) Detach the right cover. (page 3-1) [Removing the Right Cover]
6) Remove the video controller PCB. (page 3-8) [Removing the Video Controller PCB]
7) Remove the high-voltage power supply PCB. (page 3-11) [Removing the High-Voltage Power Supply PCB]
8) Remove the low-voltage power supply PCB. (page 3-10) [Removing the Low-Voltage Power Supply PCB]

3.1.10.3 Removing the Memory Controller PCB

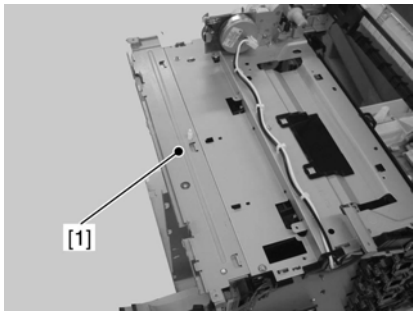
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect all the connectors and the flat cables [2] from the DC controller PCB [1].

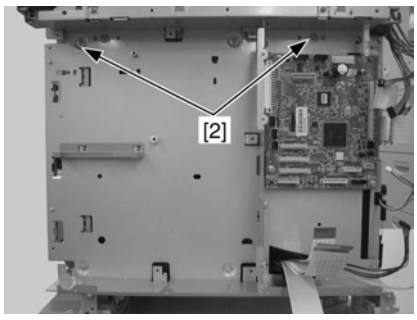


F-3-64

2) Detach the sheet metal [1].
- 2 screws [2]

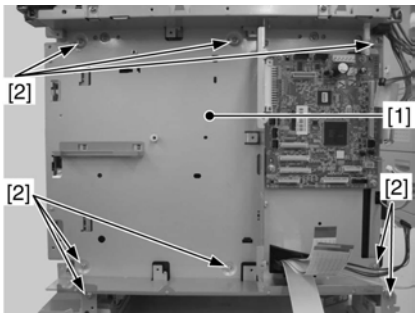


F-3-65



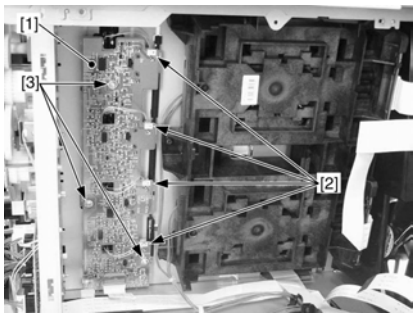
F-3-66

3) Detach the laser / scanner cover [1].
- 8 screws [2]



F-3-67

4) Remove the memory controller PCB [1].
- 4 connectors [2]
- 3 screws [3]



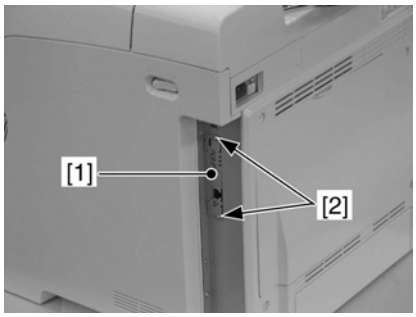
F-3-68

3.1.11 Interface Controller PCB

3.1.11.1 Removing the Network Interface Board

i-SENSYS LBP5300

1) Remove the network interface board [1].
- 2 screws [2]



F-3-69

3.1.12 Duplexing Driver PCB

3.1.12.1 Preparation for Removing the Duplexing Driver PCB

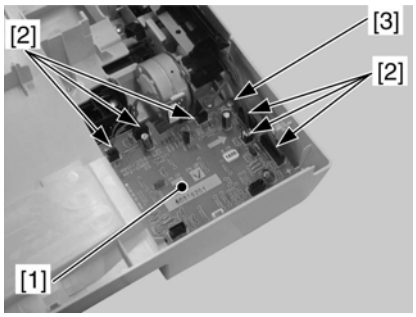
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]

3.1.12.2 Removing the Duplexing Driver PCB

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the duplexing driver PCB [1].
- 6 connectors [2]
- 1 screw [3]



F-3-70

3.1.13 Low-Voltage Power Supply Assembly

3.1.13.1 Preparation for Removing the Low-Voltage Power Supply PCB

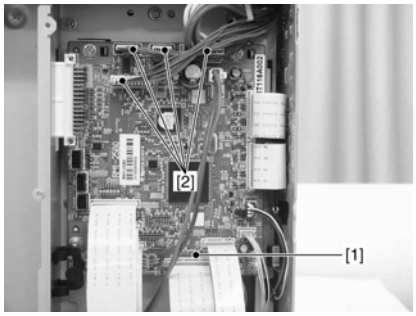
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the right cover. (page 3-1)[Removing the Right Cover]
5) Detach the left cover. (page 3-1)[Removing the Left Cover]
6) Remove the high-voltage power supply PCB. (page 3-11)[Removing the High-Voltage Power Supply PCB]

3.1.13.2 Removing the Low-Voltage Power Supply PCB

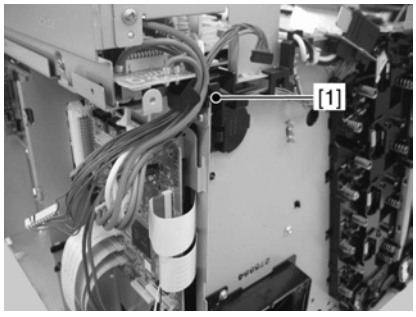
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect the 4 connectors [2] from the DC controller PCB [1].



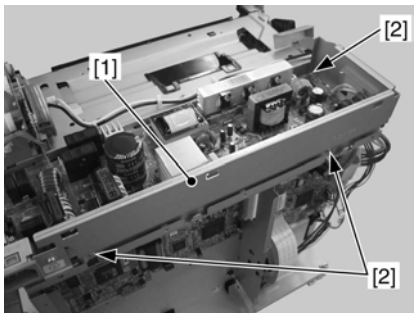
F-3-71

2) Free the cable from the cable guide [1].



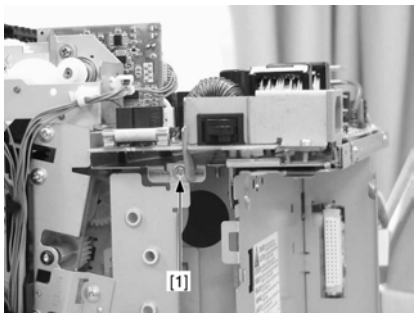
F-3-72

3) Detach the upper rear sheet metal [1].
- 3 screws [2]



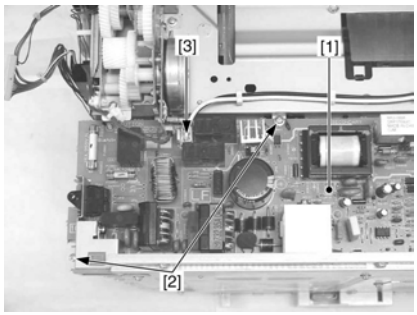
F-3-73

4) Remove the 1 screw [1].

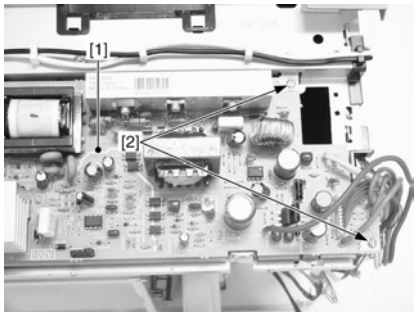


F-3-74

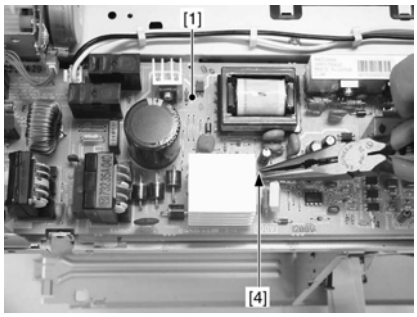
5) Remove the low-voltage power supply PCB [1].
- 4 screws [2]
- 1 connector [3]
- 1 boss [4]



F-3-75



F-3-76



F-3-77

3.1.14 High-voltage PCB

3.1.14.1 Preparation for Removing the High-Voltage Power Supply PCB

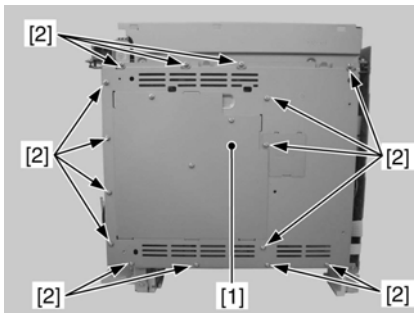
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the left cover. (page 3-1) [Removing the Left Cover]

3.1.14.2 Removing the High-Voltage Power Supply PCB

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear sheet metal [1].
- 15 screws [2]

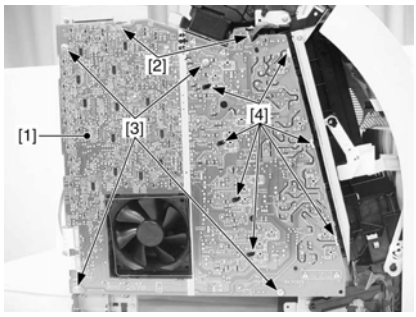


F-3-78

2) Disconnect the 2 connectors [2] from the DC controller PCB [1].

F-3-79

3) Remove the high-voltage power supply PCB [1].
- 2 connectors [2]
- 4 screws [3]
- 7 claws [4]



F-3-80

3.1.15 Cooling Fan

3.1.15.1 Preparation for Removing the Cooling Fan

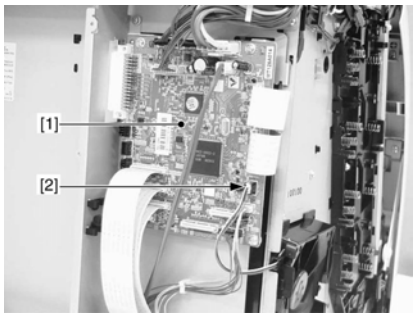
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the left cover. (page 3-1) [Removing the Left Cover]
5) Remove the high-voltage power supply PCB. (page 3-11) [Removing the High-Voltage Power Supply PCB]

3.1.15.2 Removing the Cooling Fan

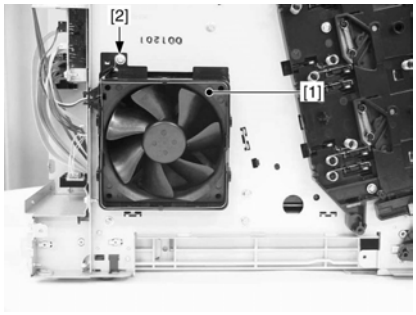
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect the connector [2] from the DC controller PCB [1].



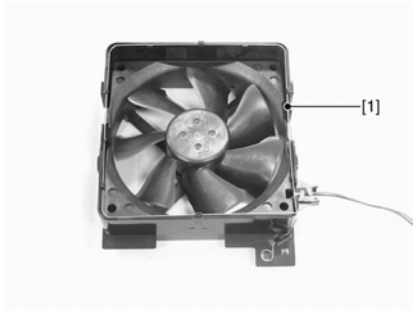
F-3-81

2) Remove the cooling fan unit [1].
- 1 screw [2]



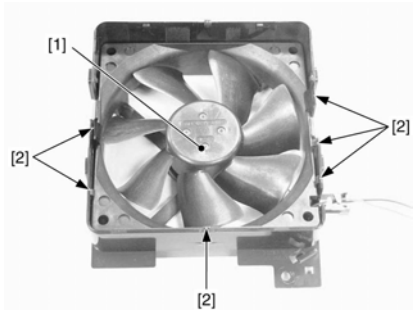
F-3-82

3) Remove the grounding spring [1].



F-3-83

4) Remove the exhaust fan [1].
- 6 claws [2]



F-3-84

3.1.16 Duplex Fan

3.1.16.1 Preparation for Removing the Duplexing Fan

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

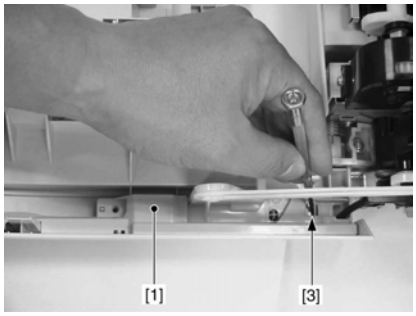
1) Remove the ETB unit. (page 3-15)[Removing the ETB Unit]

3.1.16.2 Removing the Duplexing Fan

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

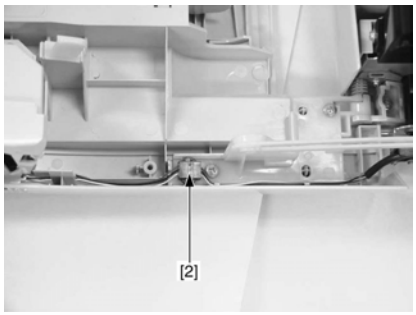
1) Detach the cable cover [1].
- 1 screw [2]
- 1 claw [3]

F-3-85

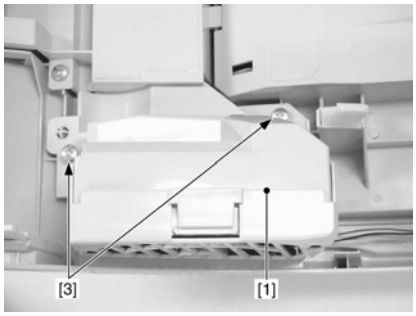


F-3-86

2) Remove the duplexing fan unit [1].
- 1 connector [2]
- 2 screws [3]

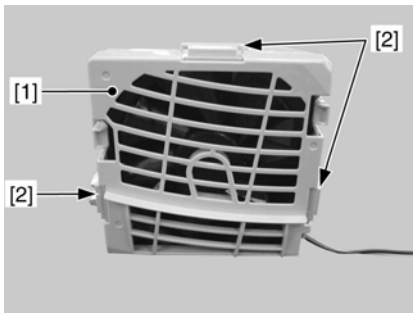


F-3-87



F-3-88

3) Detach the fan cover [1] and remove the duplexing fan.
- 3 claws [2]



F-3-89

3.2 LASER EXPOSURE SYSTEM

3.2.1 Laser Scanner Unit

3.2.1.1 Preparation for Removing the Laser / Scanner Unit

i-SENSYS LBP5300

1) Remove the network board. (page 3-10) [Removing the Network Interface Board]
2) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
3) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
4) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
5) Detach the left cover. (page 3-1) [Removing the Left Cover]
6) Detach the right cover. (page 3-1) [Removing the Right Cover]
7) Remove the video controller PCB. (page 3-8) [Removing the Video Controller PCB]
8) Remove the high-voltage power supply PCB. (page 3-11) [Removing the High-Voltage Power Supply PCB]
9) Remove the low-voltage power supply PCB. (page 3-10) [Removing the Low-Voltage Power Supply PCB]

3.2.1.2 Preparation for Removing the Laser / Scanner Unit

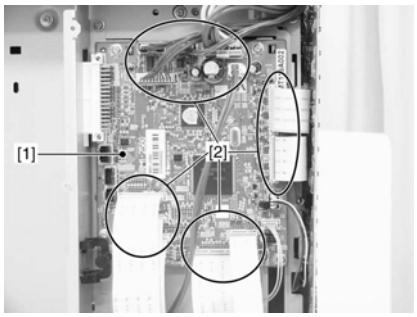
/ i-SENSYS LBP5360

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the left cover. (page 3-1) [Removing the Left Cover]
5) Detach the right cover. (page 3-1) [Removing the Right Cover]
6) Remove the video controller PCB. (page 3-8) [Removing the Video Controller PCB]
7) Remove the high-voltage power supply PCB. (page 3-11) [Removing the High-Voltage Power Supply PCB]
8) Remove the low-voltage power supply PCB. (page 3-10) [Removing the Low-Voltage Power Supply PCB]

3.2.1.3 Removing the Laser / Scanner Unit

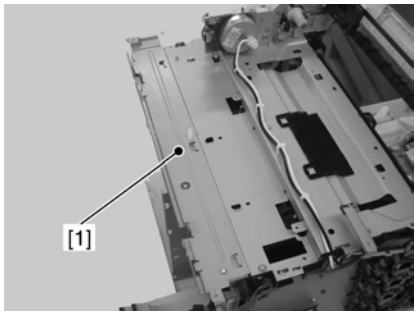
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect all the connectors and the flat cables [2] from the DC controller PCB [1].

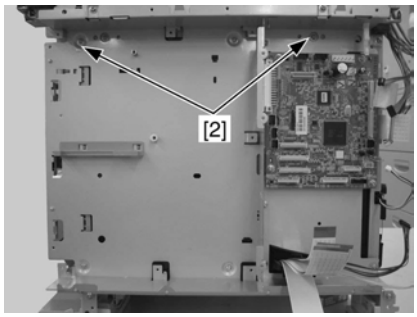


F-3-90

2) Detach the sheet metal [1].
- 2 screws [2]

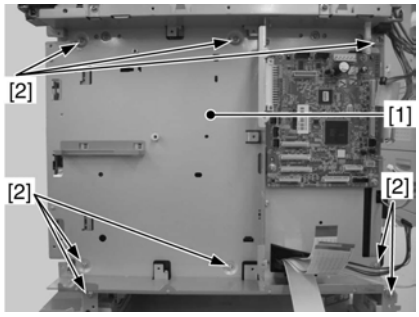


F-3-91



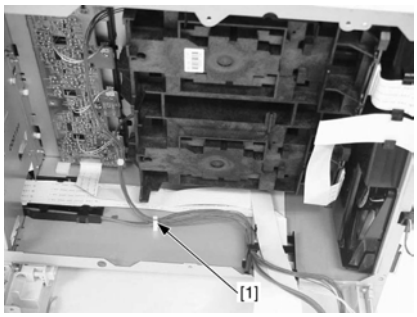
F-3-92

3) Detach the laser / scanner cover [1].
- 8 screws [2]



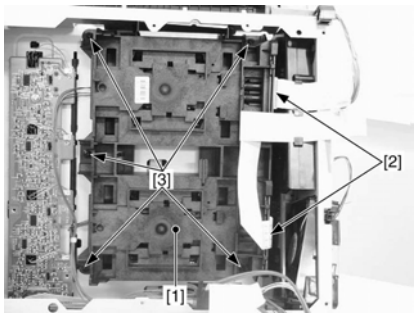
F-3-93

4) Free the cable from the wire saddle [1].



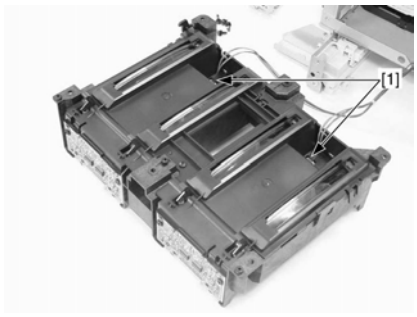
F-3-94

5) Remove the laser / scanner unit [1].
- 2 flat cables [2]
- 5 screws [3]



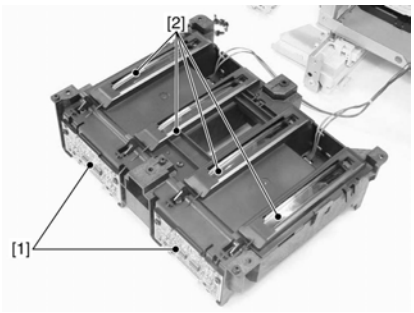
F-3-95

6) Disconnect the 2 connectors [1].



F-3-96

⚠
- Be sure not to disassemble the laser / scanner unit as it needs adjustment.
- When holding the laser / scanner unit, be sure not to touch the laser mount block [1] and the lens block [2].



F-3-97

3.3 IMAGE FORMATION SYSTEM

3.3.1 Developing Estrangement Solenoid

3.3.1.1 Preparation for Removing the Developing Estrangement Solenoid

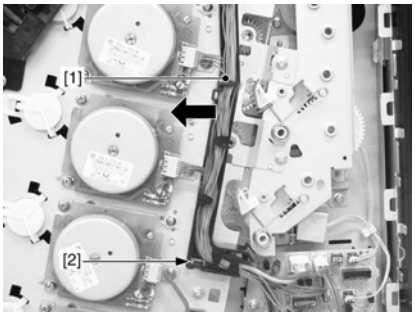
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the right cover. (page 3-1)[Removing the Right Cover]

3.3.1.2 Removing the Developing Estrangement Solenoid

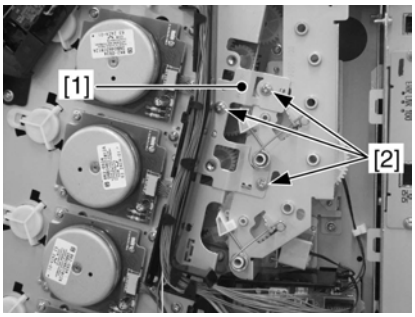
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the claw [2] and move the cable guide [1] to the left.



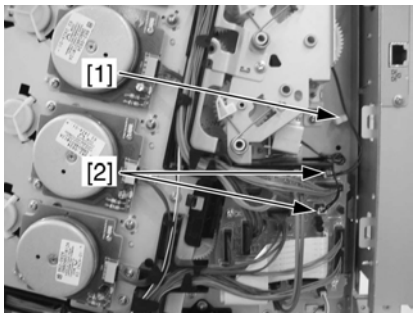
F-3-98

2) Remove the plate [1].
- 3 screws [2]



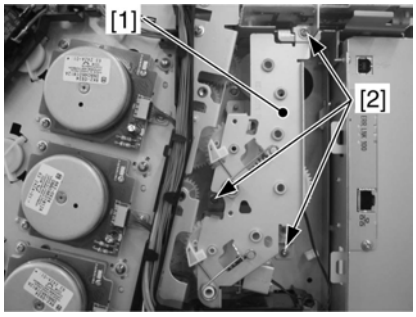
F-3-99

3) Disconnect the 2 connectors and free the cable from the wire saddle [1].



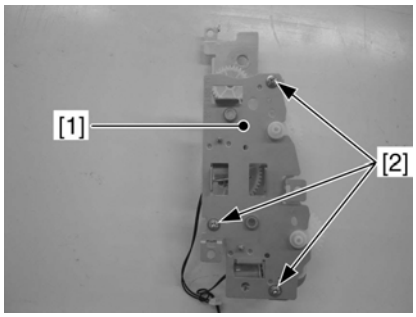
F-3-100

4) Remove the developing estrangement drive unit [1].
- 3 screws [2]



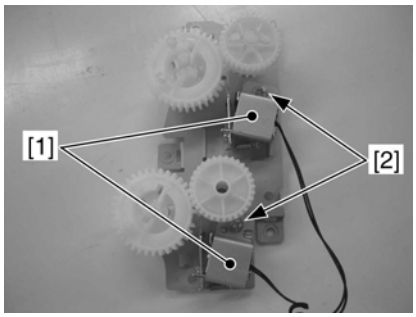
F-3-101

5) Detach the sheet metal [1].
- 3 screws [2]



F-3-102

6) Remove the developing estrangement solenoid [1].
- 2 screws [2]



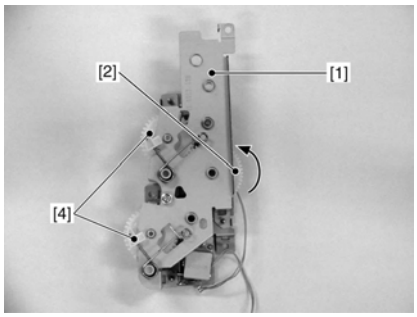
F-3-103

3.3.1.3 Points to Note when Attaching the Developing Estrangement Solenoid

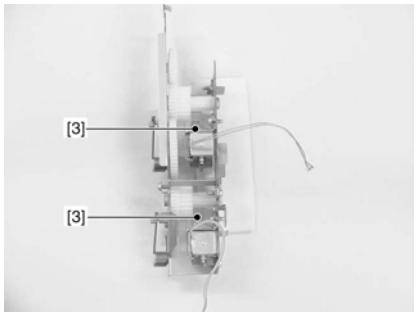
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Alignment of Developing Estrangement Drive Unit

1. Alignment of Developing Estrangement Drive Unit in Assembling
Rotate the gear [2] of the developing estrangement drive unit[1] to the direction of the arrow, and align the solenoid claw [3] with the position of the cut-off in the gear (home position).



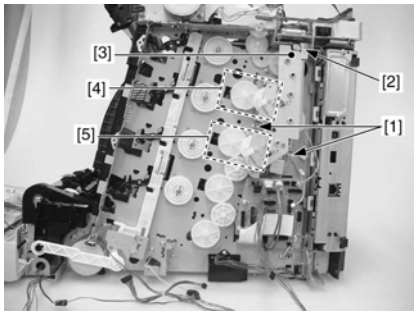
F-3-104



F-3-105

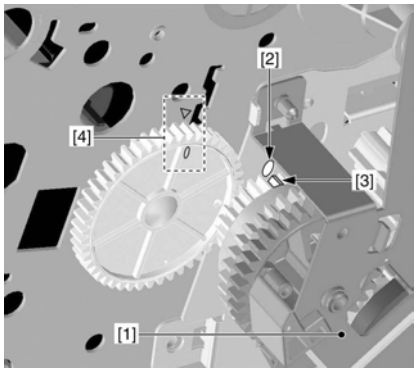
When the developing estrangement drive unit is properly set to its home position, rotating the gear [2] does not make the gears [4] rotate and also there will be no sense of resistance when rotating the gear [2].

2. Alignment of Developing Estrangement Drive Unit in Mounting
Tighten the 2 screws [1] to the developing estrangement drive unit[3] and tighten the screw [2] halfway, then confirm the alignment of the gears [4] and [5].



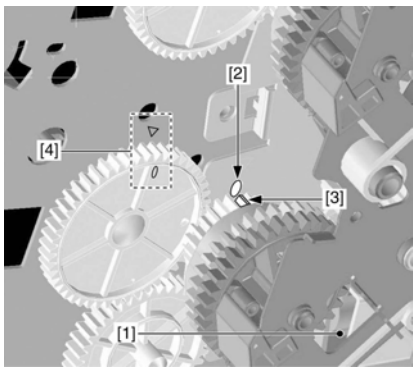
F-3-106

How to Confirm the Alignment of the Gear [4]
The gear [3] in the developing estrangement drive unit [1] has a tooth that is smaller than the others. Make sure the smaller tooth is aligned with the elongate hole [2] (home position). Also, as shown in [4] in the picture, make sure the triangle and the elongate hole of the gear lie right next to each other.



F-3-107

How to Confirm the Alignment of the Gear [5]
The gear [3] in the developing estrangement drive unit [1] has a tooth that is smaller than the others. Make sure the smaller tooth is aligned with the elongate hole [2] (home position). Also, as shown in [4] in the picture, make sure the triangle and the elongate hole of the gear lie right next to each other.



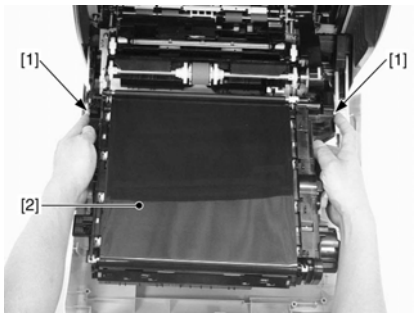
F-3-108

3.3.2 ETB Unit

3.3.2.1 Removing the ETB Unit

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Open the front cover.
2) While pressing the ETB lock lever [1], remove the ETB unit [2].



F-3-109

3.3.3 ETB Motor

3.3.3.1 Preparation for Removing the ETB Motor

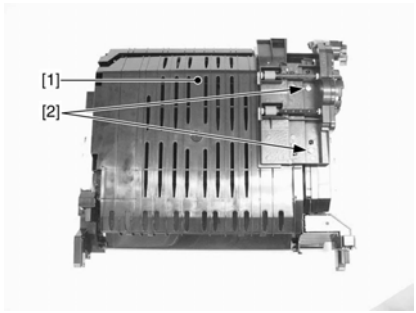
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the ETB unit. (page 3-15)[Removing the ETB Unit]

3.3.3.2 Removing the ETB Motor

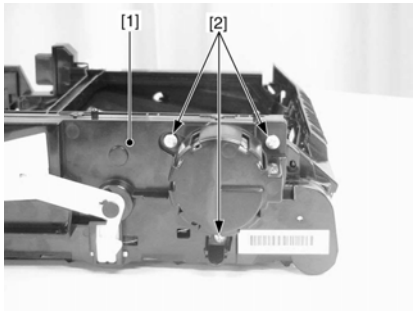
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the duplexing delivery assembly [1].
- 2 screws [2]

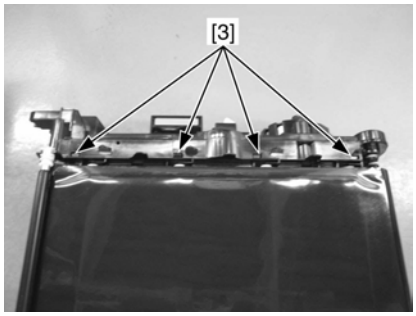


F-3-110

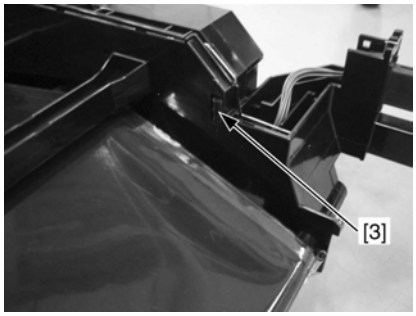
2) Remove the ETB right cover [1].
- 3 screws [2]
- 5 claws [3]



F-3-111

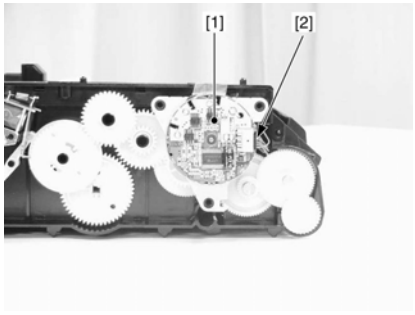


F-3-112



F-3-113

3) Remove the ETB motor [1].
- 1 connector [2]



F-3-114

3.3.4 ETB Estrangement Solenoid

3.3.4.1 Preparation for Removing the ETB Estrangement Solenoid

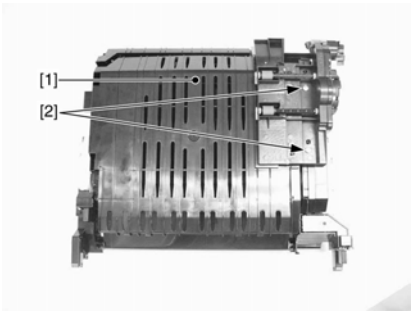
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the ETB unit. (page 3-15)[Removing the ETB Unit]

3.3.4.2 Removing the ETB Estrangement Solenoid

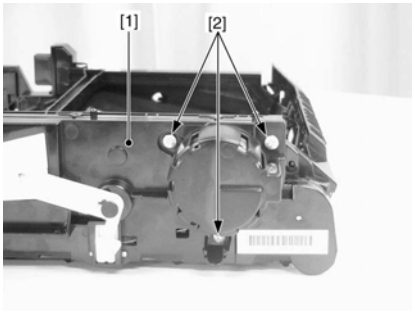
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the duplexing delivery assembly [1].
- 2 screws [2]

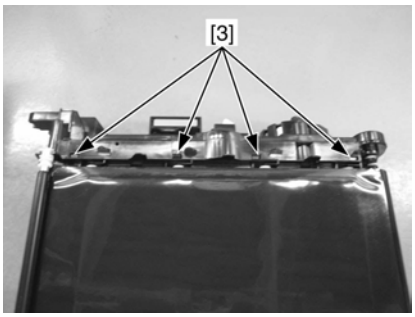


F-3-115

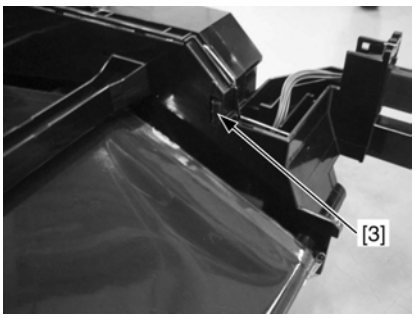
2) Remove the ETB right cover [1].
- 3 screws [2]
- 5 claws [3]



F-3-116

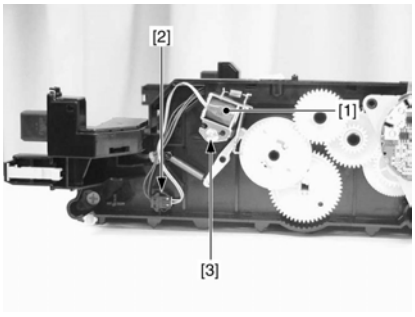


F-3-117



F-3-118

3) Remove the ETB estrangement solenoid [1].
- 1 connector [2]
- 1 screw [3]



F-3-119

3.3.5 Toner Cartridge Motor

3.3.5.1 Preparation for Removing the Toner Cartridge Motor

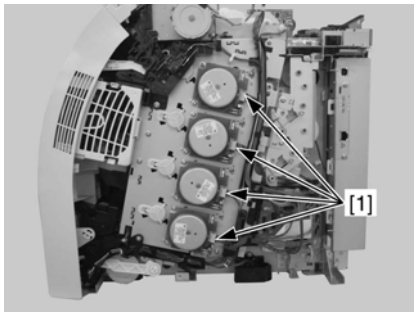
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the right cover. (page 3-1) [Removing the Right Cover]

3.3.5.2 Removing the Toner Cartridge Motor

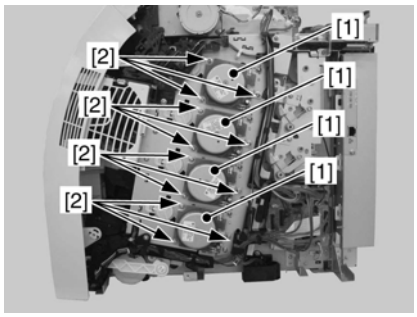
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect the 4 connectors [1].



F-3-120

2) Remove each motor [1].
- 12 screws [2]



F-3-121

3.3.6 Color Misregistration/Image Density Sensor

3.3.6.1 Preparation for Removing the Color Displacement / Density Sensor

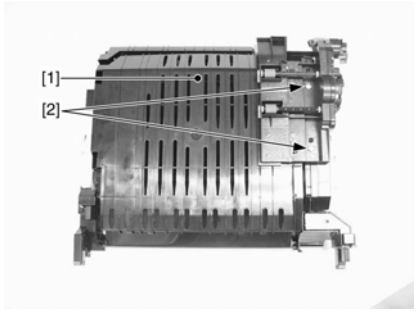
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the ETB unit. (page 3-15) [Removing the ETB Unit]

3.3.6.2 Removing the Color Displacement / Density Sensor

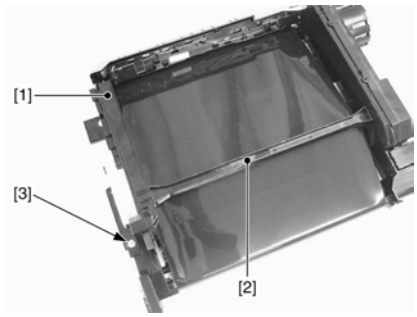
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the duplexing delivery assembly [1].
- 2 screws [2]



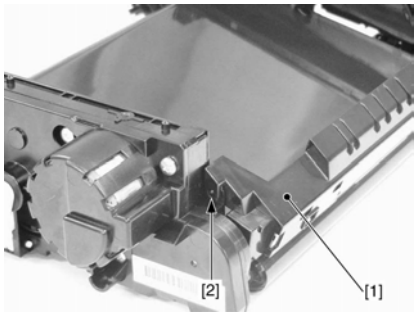
F-3-122

2) Remove the cover [1] and the crossmember [2].
- 1 screw [3]



F-3-123

3) Remove the color displacement / density sensor [1].
- 1 claw [2]



F-3-124

3.4 PICKUP/FEEDING/DELIVERY SYSTEM

3.4.1 Paper Pick-up Feeder Unit

3.4.1.1 Preparation for Removing the Pick-Up / Feed Assembly

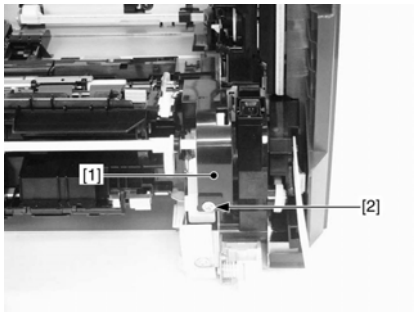
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the left cover. (page 3-1) [Removing the Left Cover]
5) Remove the ETB unit. (page 3-15) [Removing the ETB Unit]
6) Remove the front cover assembly. (page 3-2) [Removing the Front Cover]

3.4.1.2 Removing the Pick-Up / Feed Assembly

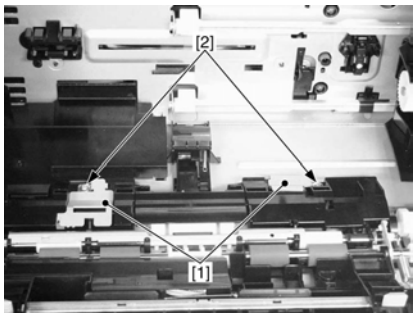
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the cover [1].
- 1 screw [2]



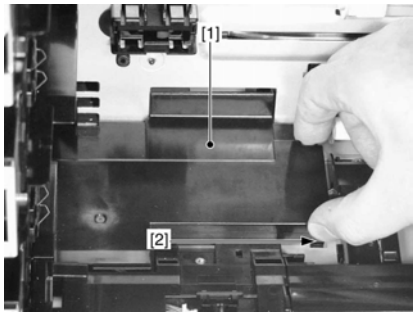
F-3-125

2) Remove the 2 plates [1].
- 2 screws [2]



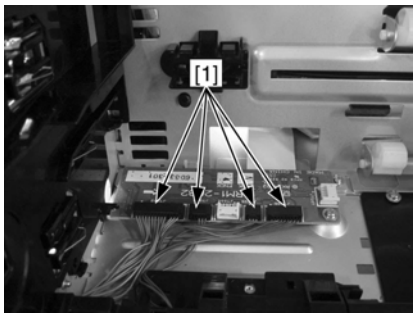
F-3-126

3) Remove the PCB cover [1].
- 1 claw [1]



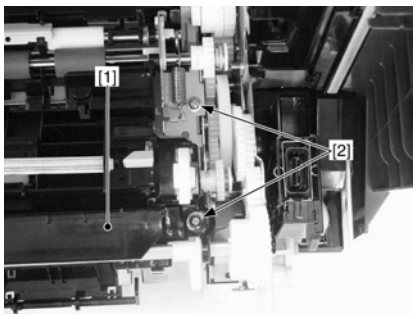
F-3-127

4) Disconnect the 4 connectors [1].

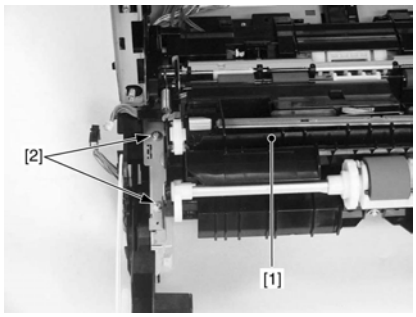


F-3-128

5) Remove the pick-up / feed assembly [1].
- 4 screws [2]



F-3-129



F-3-130

3.4.2 Pickup Motor

3.4.2.1 Preparation for Removing the Pick-Up Motor

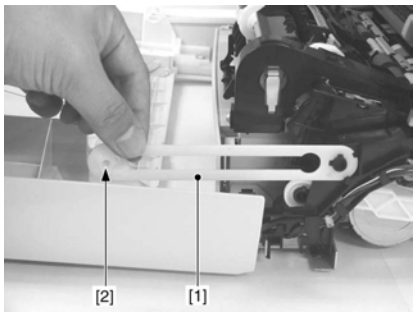
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the left cover. (page 3-1)[Removing the Left Cover]
5) Detach the right cover. (page 3-1)[Removing the Right Cover]
6) Remove the ETB unit. (page 3-15)[Removing the ETB Unit]

3.4.2.2 Removing the Pick-Up Motor

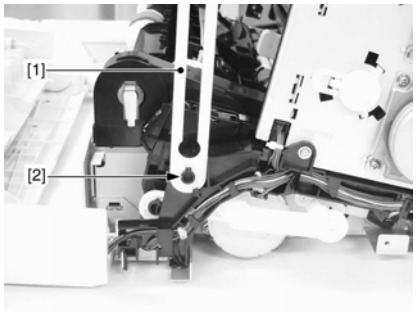
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the link [1] from the shaft [2].



F-3-131

2) In order to remove the link, match the link [1] against the cut-off of the shaft [2].

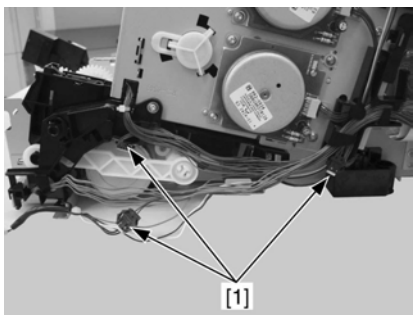


F-3-132

3) Release the cables from the cable guide [1].

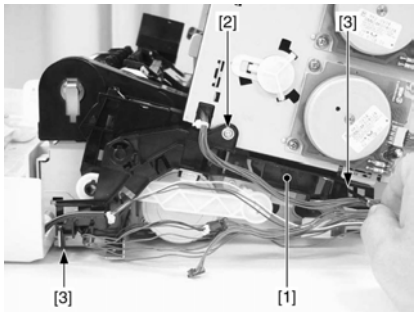
F-3-133

4) Disconnect 3 connectors [1].



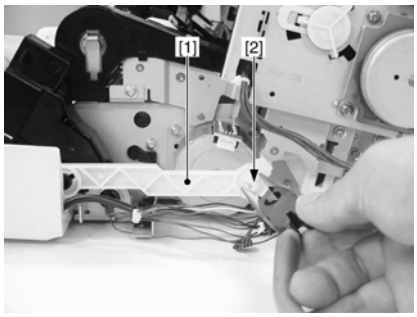
F-3-134

5) Remove the cable guide [1].
- 1 screw [2]
- 2 claws [3]



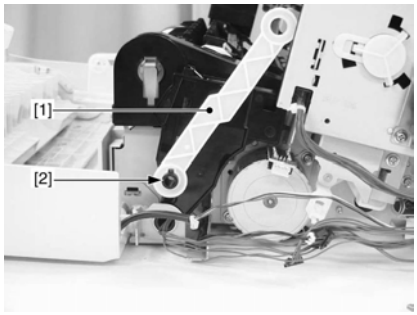
F-3-135

6) Remove the rod [1].
- 1 claw [2]



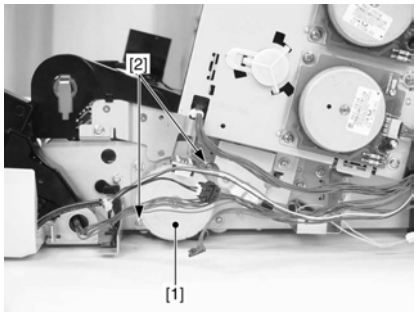
F-3-136

7) In order to remove the rod, match the rod [1] against the cut-off of the shaft [2].



F-3-137

8) Remove the pick-up motor [1].
- 2 screws [2]



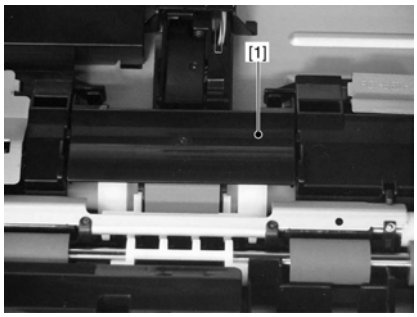
F-3-138

3.4.3 Cassette Pickup Roller

3.4.3.1 Removing the Cassette Pick-Up Roller

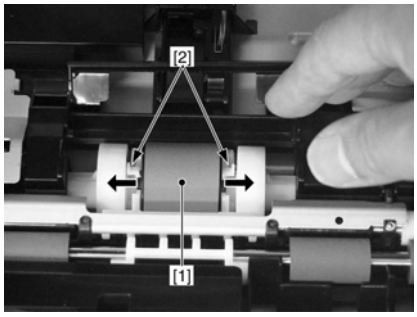
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Open the cover [1].



F-3-139

2) Remove the cassette pick-up roller [1].
- 2 claws [2]



F-3-140

3.4.4 Cassette Pick-up Solenoid

3.4.4.1 Preparation for Removing the Cassette Pick-Up Solenoid

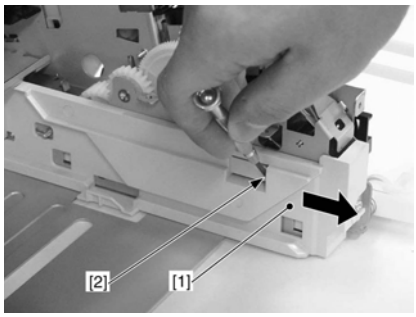
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the left cover. (page 3-1) [Removing the Left Cover]
5) Remove the right cover. (page 3-1) [Removing the Right Cover]
6) Remove the ETB unit. (page 3-15) [Removing the ETB Unit]
7) Remove the front cover unit. (page 3-2) [Removing the Front Cover]
8) Remove the pick-up / feed assembly. (page 3-17) [Removing the Pick-Up / Feed Assembly]

3.4.4.2 Removing the Cassette Pick-Up Solenoid

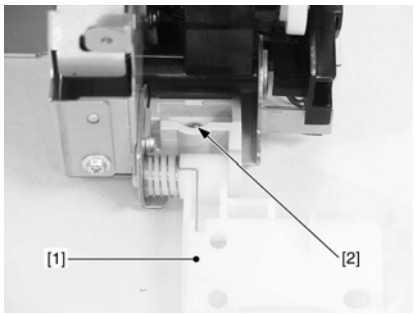
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the cassette guide [1].
- 1 claw [2]



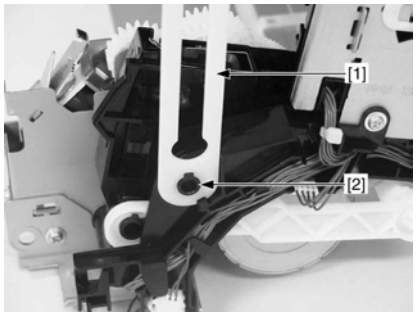
F-3-141

2) Remove the right hinge [1].
- 1 screw [2]



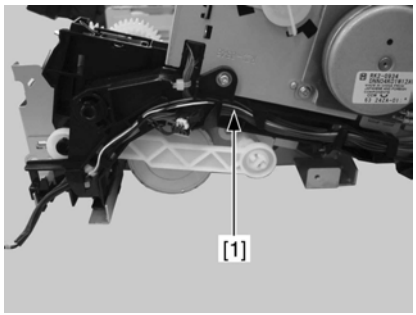
F-3-142

3) In order to remove the link, match the link [1] against the cut-off of the shaft [2].



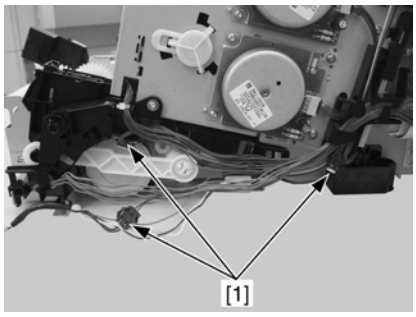
F-3-143

4) Release the cables from the cable guide [1].



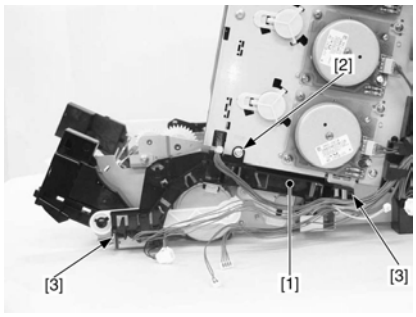
F-3-144

5) Disconnect 3 connectors [1].



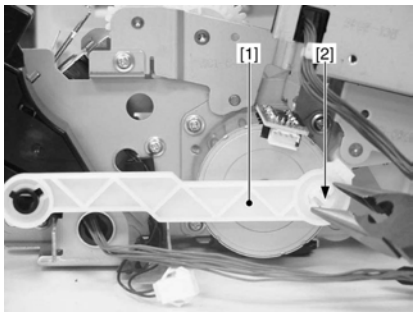
F-3-145

6) Remove the cable guide [1].
- 1 screw [2]
- 2 claws [3]



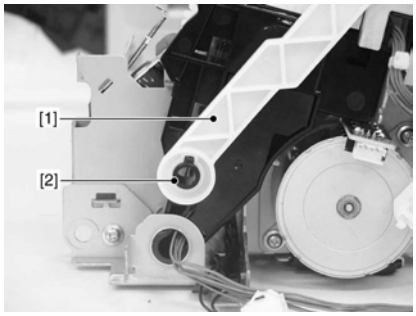
F-3-146

7) Remove the rod [1].
- 1 claw [2]



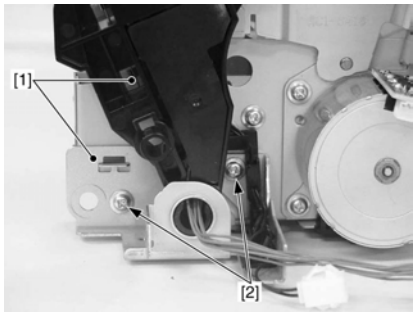
F-3-147

8) In order to remove the rod, match the rod [1] against the cut-off in the shaft [2].



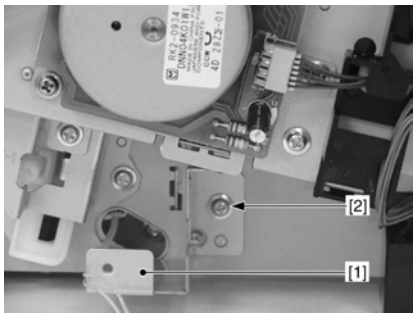
F-3-148

9) Remove the holder [1].
- 2 screws [2]



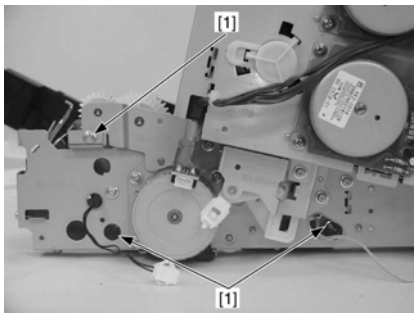
F-3-149

10) Remove the plate [1].
- 1 screw [2]



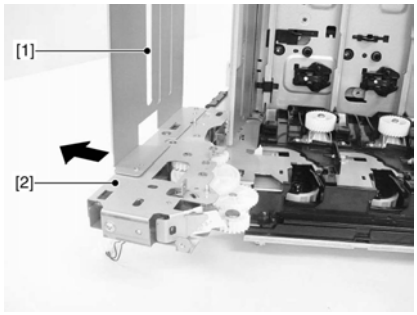
F-3-150

11) Remove the 3 screws [1].



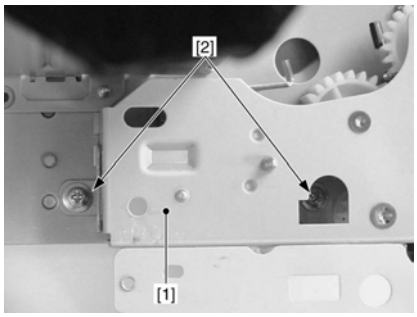
F-3-151

12) Lay the host machine with its right side down and shift the base plate [1] by approximately 30 mm away from the pick-up drive assembly [2].



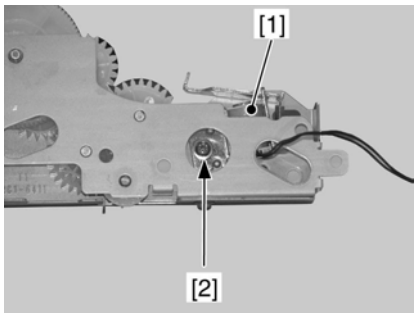
F-3-152

13) Remove the pick-up drive assembly [1].
- 2 screws [2]



F-3-153

14) Remove the cassette pick-up solenoid [1].
- 1 screw [2]



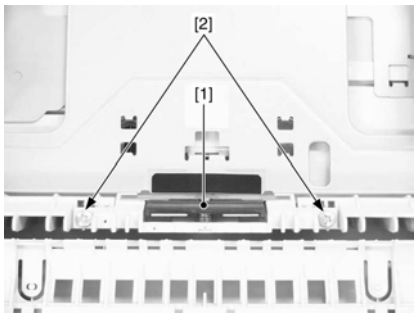
F-3-154

3.4.5 Cassette Separation Pad

3.4.5.1 Removing the Cassette Separation Pad

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the cassette separation pad [1].
- 2 screws [2]



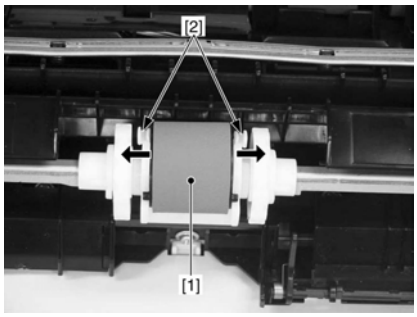
F-3-155

3.4.6 Manual Pickup Roller

3.4.6.1 Removing the Manual Feed Pick-Up Roller

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the manual feed pick-up roller [1].
- 2 claws [2]



F-3-156

3.4.7 Multi-purpose Pickup Solenoid

3.4.7.1 Preparation for Removing the Manual Feed Pick-Up Solenoid

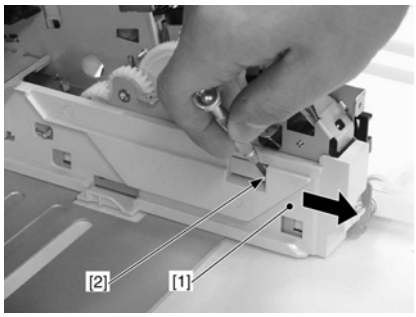
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the left cover. (page 3-1)[Removing the Left Cover]
5) Remove the right cover. (page 3-1)[Removing the Right Cover]
6) Remove the ETB unit. (page 3-15)[Removing the ETB Unit]
7) Remove the front cover unit. (page 3-2)[Removing the Front Cover]
8) Remove the pick-up / feed assembly. (page 3-17)[Removing the Pick-Up / Feed Assembly]

3.4.7.2 Removing the Manual Feed Pick-Up Solenoid

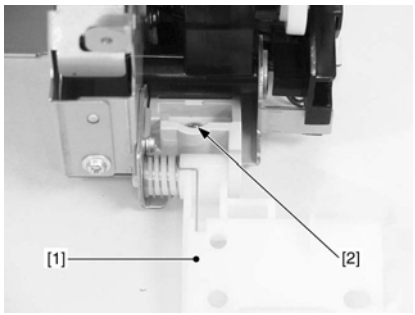
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the cassette guide [1].
- 1 claw [2]



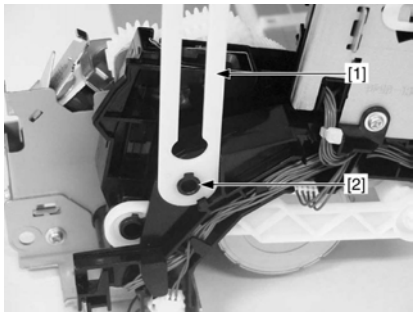
F-3-157

2) Remove the right hinge [1].
- 1 screw [2]



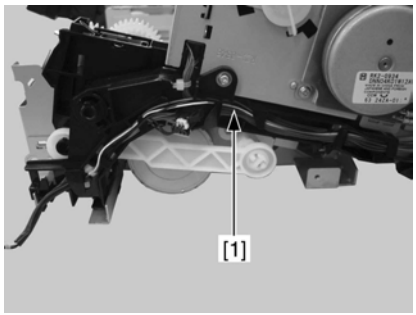
F-3-158

3) In order to remove the link, match the link [1] against the cut-off of the shaft [2].



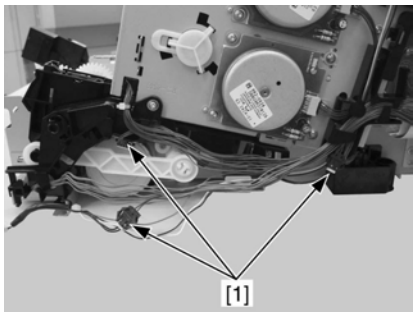
F-3-159

4) Release the cables from the cable guide [1].



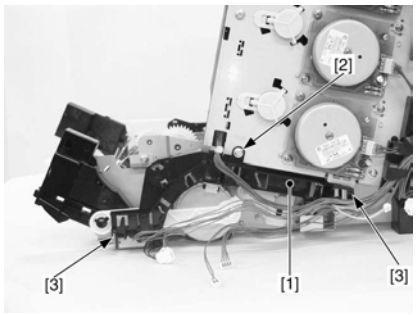
F-3-160

5) Disconnect the 3 connectors [1].



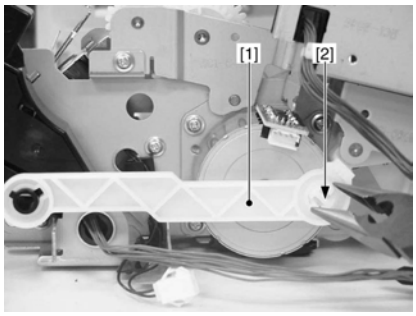
F-3-161

6) Remove the cable guide [1].
- 1 screw [2]
- 2 claws [3]



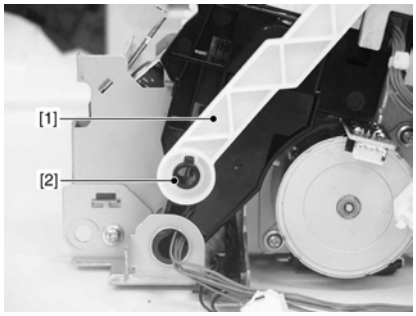
F-3-162

7) Remove the rod [1].
- 1 claw [2]



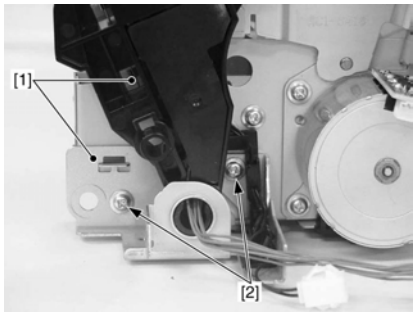
F-3-163

8) In order to remove the rod, match the rod [1] against the cut-off of the shaft [2].



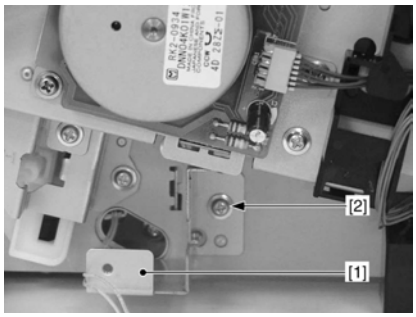
F-3-164

9) Remove the holder [1].
- 2 screws [2]



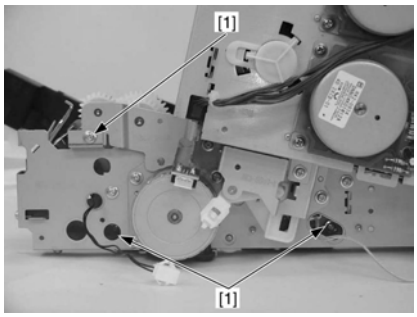
F-3-165

10) Remove the plate [1].
- 1 screw [2]



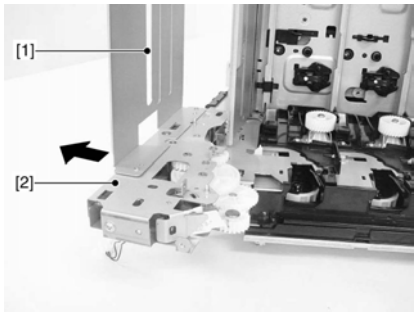
F-3-166

11) Remove the 3 screws [1].



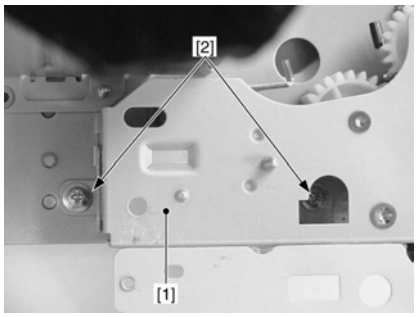
F-3-167

12) Place the right side of the host machine downward, move the base plate [1] approx. 30 mm from the pick-up drive assembly [2].



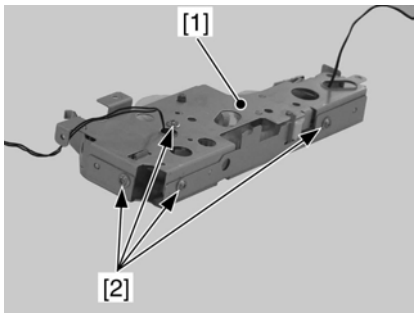
F-3-168

13) Remove the pick-up drive assembly [1].
- 2 screws [2]



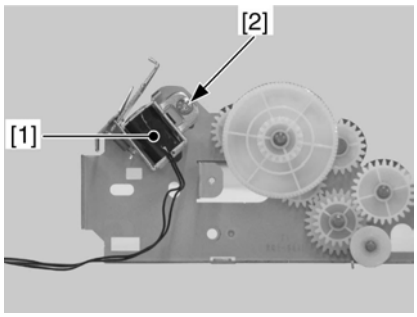
F-3-169

14) Detach the plate [1].
- 4 screws [2]



F-3-170

15) Remove the manual feed pick-up solenoid [1].
- 1 screw [2]



F-3-171

3.4.8 Manual Separation Pad

3.4.8.1 Preparation for Removing the Manual Feed Separation Pad

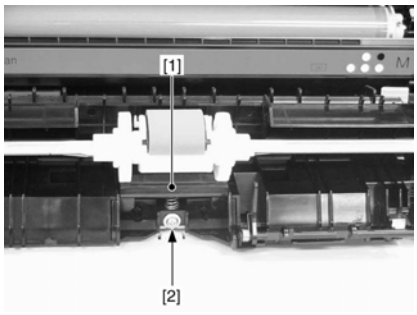
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the ETB unit. (page 3-15) [Removing the ETB Unit]

3.4.8.2 Removing the Manual Feed Separation Pad

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the manual feed separation pad [1].
- 1 screw [2]



F-3-172

3.4.9 Duplexing Reverse Motor

3.4.9.1 Preparation for Removing the Duplexing Reversing Motor

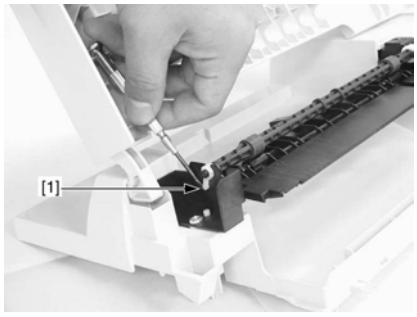
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1) [Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25) [Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2) [Removing the Upper Cover]
4) Detach the duplexing driver PCB. (page 3-10) [Removing the Duplexing Driver PCB]

3.4.9.2 Removing the Duplexing Reversing Motor

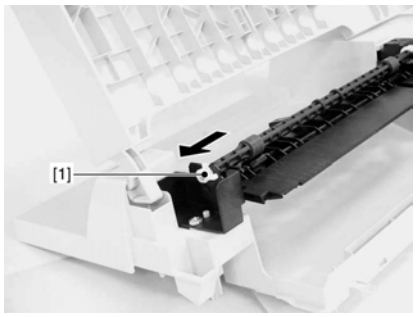
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Free the claw [1] of the bushing.



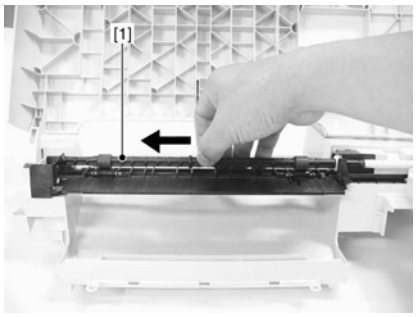
F-3-173

2) Turn the bushing [1] to pull it out in the direction of the arrow.



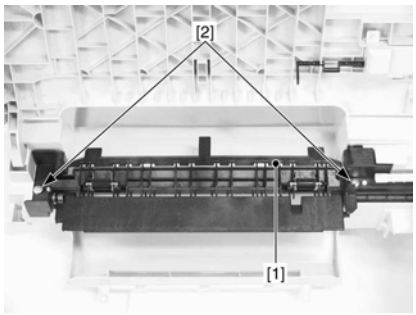
F-3-174

3) Remove the duplexing feed roller [1] in the direction of the arrow.



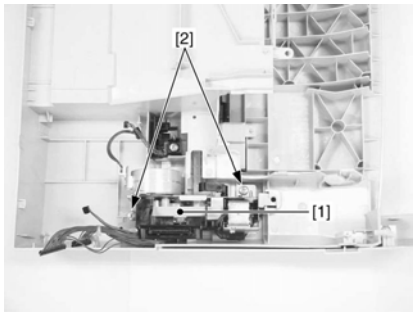
F-3-175

4) Remove the duplexing reversing assembly [1].
- 2 screws [2]



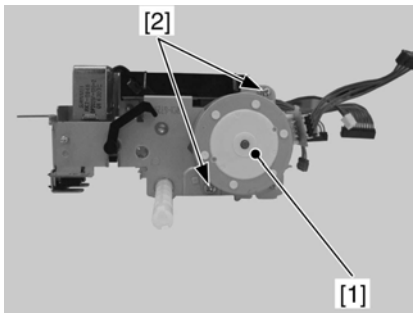
F-3-176

5) Remove the duplexing reversing drive assembly [1].
- 2 screws [2]



F-3-177

6) Remove the duplexing reversing motor [1].
- 2 screws [2]



F-3-178

3.4.10 Duplexing Feed Motor

3.4.10.1 Preparation for Removing the Duplexing Feed Motor

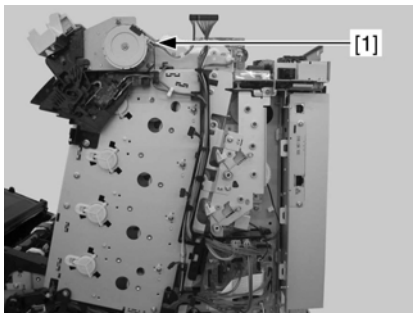
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the right cover. (page 3-1)[Removing the Right Cover]
5) Detach the left cover. (page 3-1)[Removing the Left Cover]
6) Remove the control panel. (page 3-7)[Removing the Control Panel]

3.4.10.2 Removing the Duplexing Feed Motor

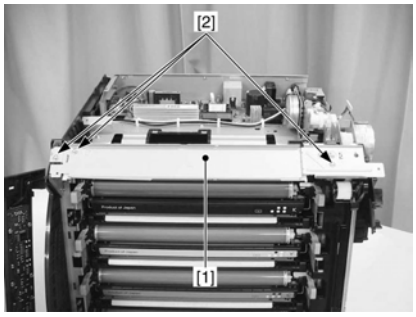
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect the connector [1].



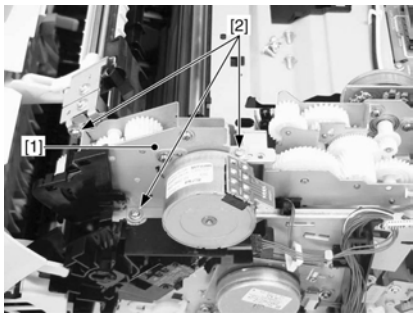
F-3-179

2) Detach the plate [1].
- 3 screws [2]



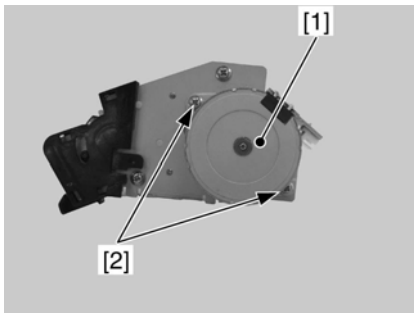
F-3-180

3) Remove the duplexing delivery drive assembly [1].
- 3 screws [2]



F-3-181

4) Remove the duplexing feed motor [1].
- 2 screws [2]



F-3-182

3.4.11 Duplexing Flapper Solenoid

3.4.11.1 Preparation for Removing the Duplexing Flapper Solenoid

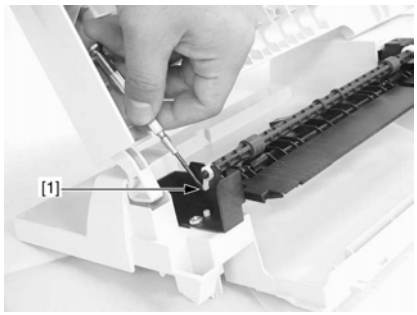
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the duplexing driver PCB. (page 3-10)[Removing the Duplexing Driver PCB]

3.4.11.2 Removing the Duplexing Flapper Solenoid

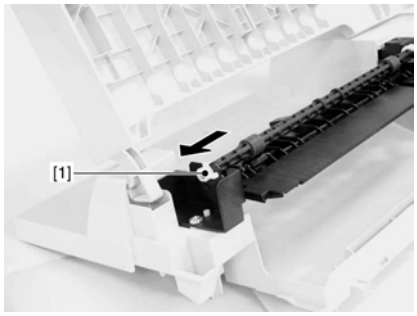
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Free the claw [1] of the bushing.



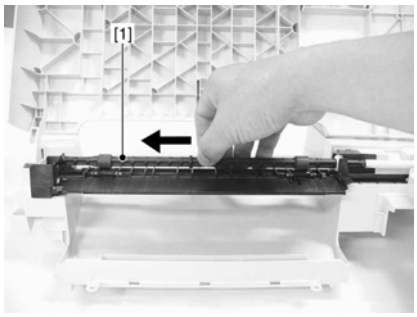
F-3-183

2) Turn the bushing [1] to pull it out in the direction of the arrow.



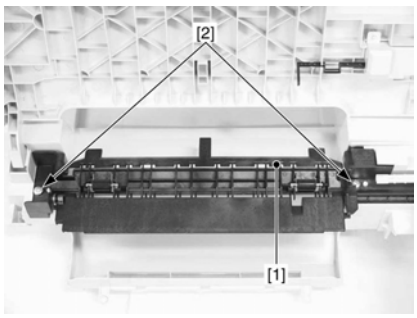
F-3-184

3) Remove the duplexing feed roller [1] in the direction of the arrow.



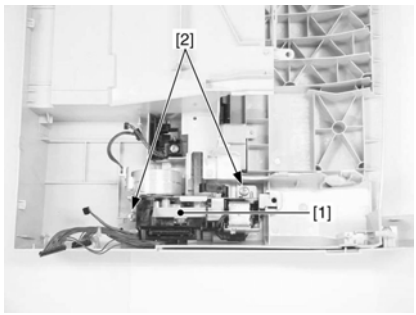
F-3-185

4) Remove the duplexing reversing assembly [1].
- 2 screws [2]



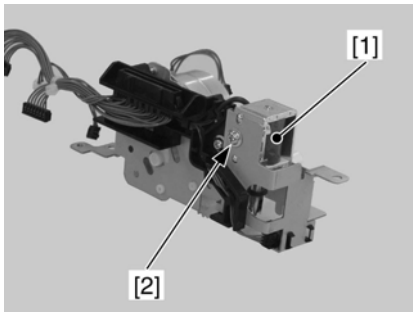
F-3-186

5) Remove the duplexing reversing drive assembly [1].
- 2 screws [2]



F-3-187

6) Free the cable from the guide to remove the duplexing flapper solenoid [1].
- 1 screw [2]



F-3-188

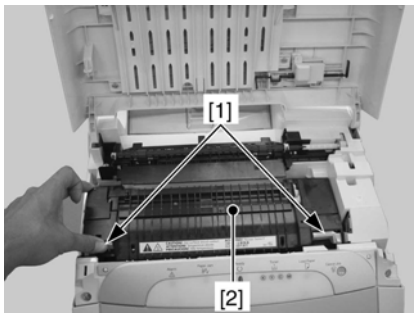
3.5 FIXING SYSTEM

3.5.1 Fixing Assembly

3.5.1.1 Removing the Fixing Assembly

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Open the upper cover.
2) Remove the fixing assembly [2] while pushing the fixing assembly lock lever [1] (two points on the left and right sides).



F-3-189

3.5.2 Fixing Sleeve Unit

3.5.2.1 Preparation for Removing the Fixing Sleeve Unit

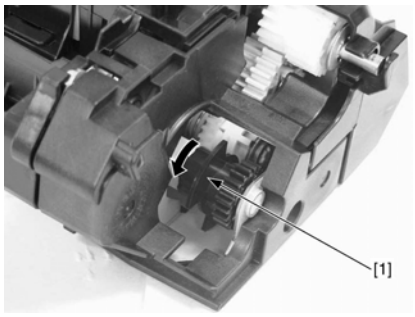
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]

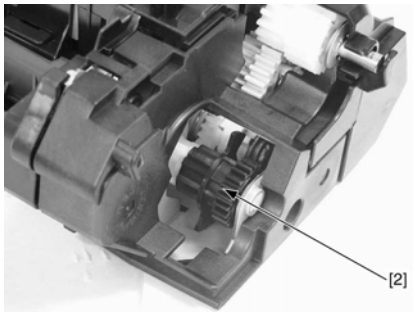
3.5.2.2 Removing the Fixing Sleeve Unit

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Turn the gear [1] to the position [2] in the direction of the arrow.

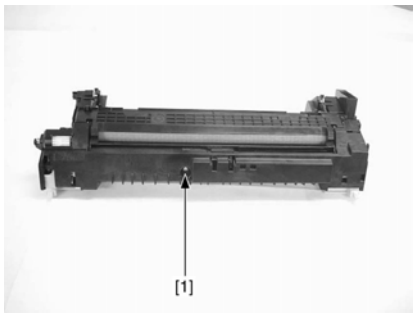


F-3-190



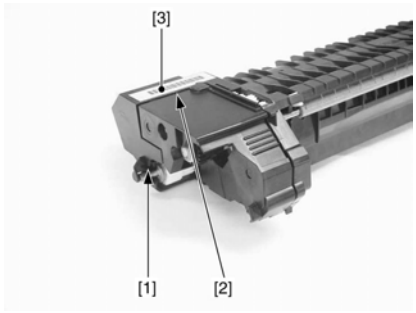
F-3-191

2) Remove the screw [1].



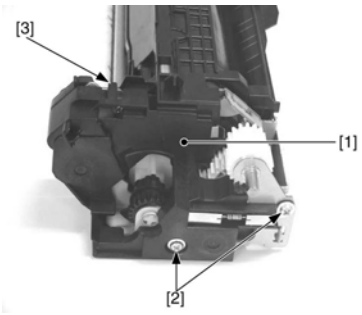
F-3-192

3) Free the claw [1] and claw [2] in this order to detach the cover [3].



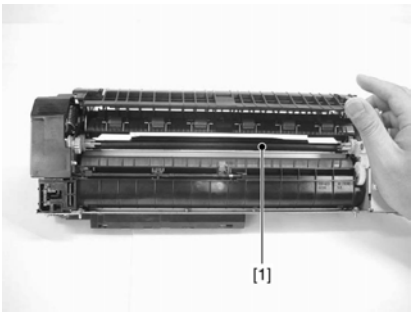
F-3-193

4) Detach the cover [1].
- 2 screws [2]
- 1 claw [3]

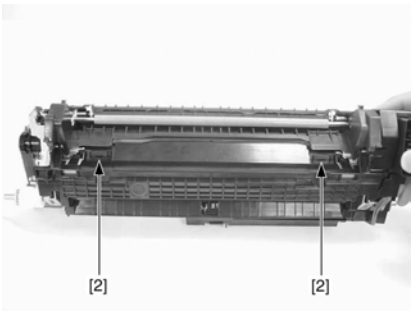


F-3-194

5) Detach the guide [1].
- 2 claws [2]

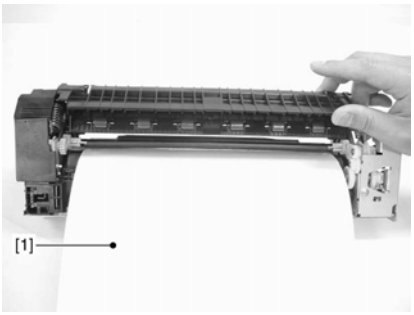


F-3-195



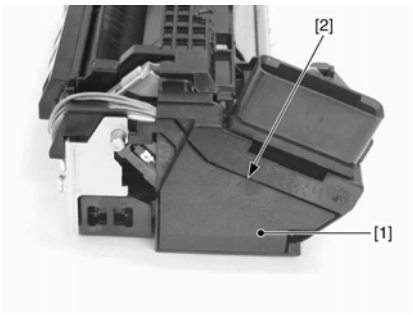
F-3-196

When detaching the guide, set the protective sheet [1] to the fixing sleeve to prevent scratch.



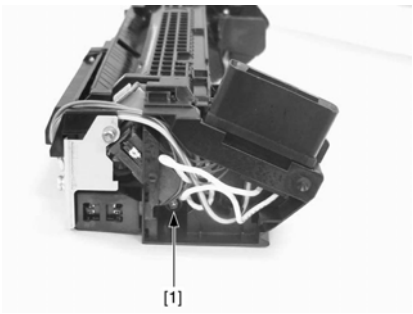
F-3-197

6) Detach the cover [1].
- 1 claw [2]



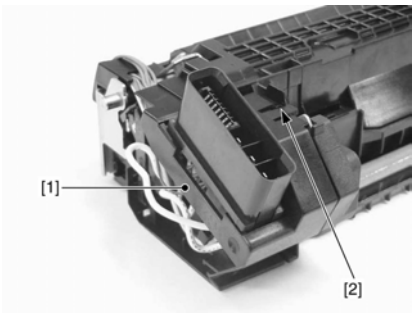
F-3-198

7) Remove the screw [1].



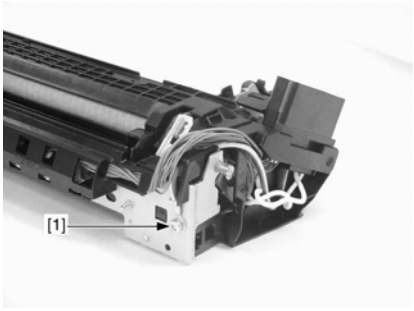
F-3-199

8) Remove the connector assembly [1].
- 1 claw [2]



F-3-200

9) Remove the screw [1].



F-3-201

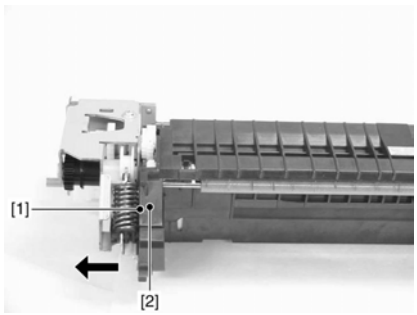
10) Remove the screw [1].

F-3-202

11) Remove the screw [1].

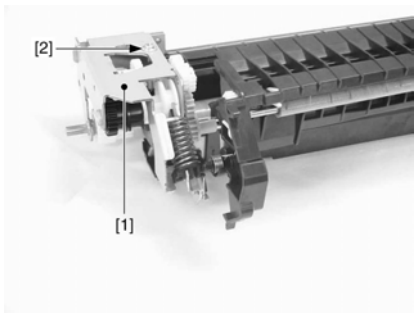
F-3-203

12) Move the side plate [1] to remove the unit [2].



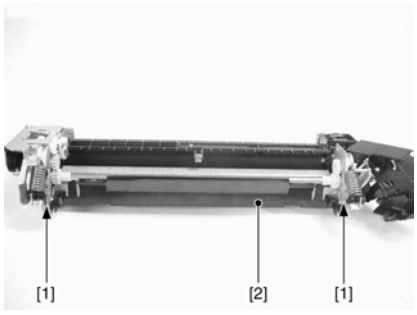
F-3-204

13) Detach the plate [1].
- 1 screw [2]



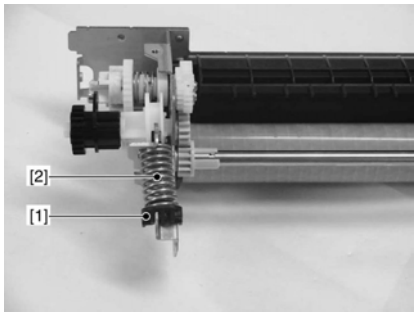
F-3-205

14) Remove the 2 areas [1] from the side plate to remove the unit [2].
- 2 claws [3]



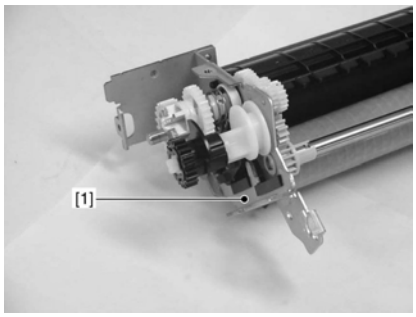
F-3-206

15) Remove the spring retainer [1] to remove the spring [2].



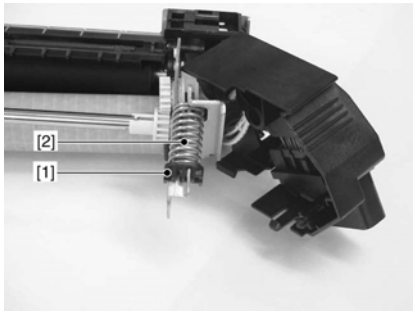
F-3-207

16) Detach the plate [1].



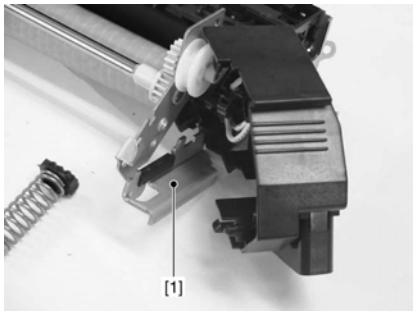
F-3-208

17) Remove the spring retainer [1] to remove the spring [2].



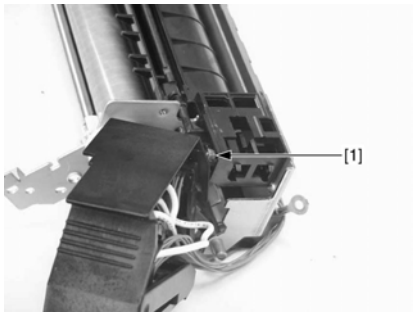
F-3-209

18) Detach the plate [1].



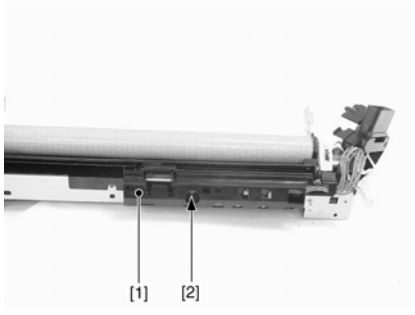
F-3-210

19) Disconnect the connector [1].



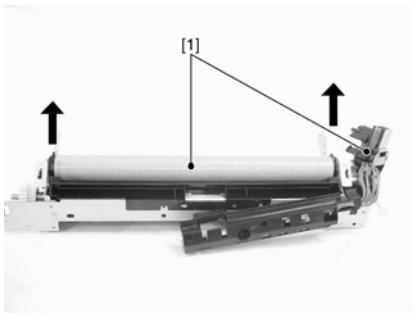
F-3-211

20) Remove the sensor unit [1].
- 1 screw [2]



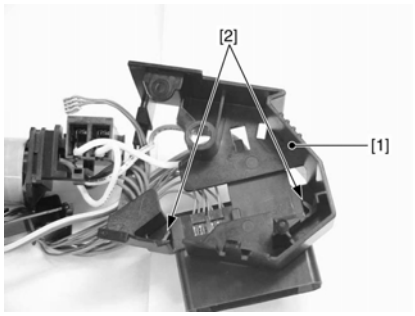
F-3-212

21) Remove the fixing sleeve unit [1].



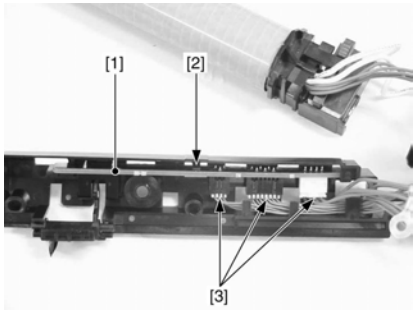
F-3-213

22) Detach the cover [1].
- 2 claws [2]



F-3-214

23) Detach the mount [1].
- 1 claw [2]
- 3 connectors [3]



F-3-215

3.5.3 Fixing Motor

3.5.3.1 Preparation for Removing the Fixing Motor

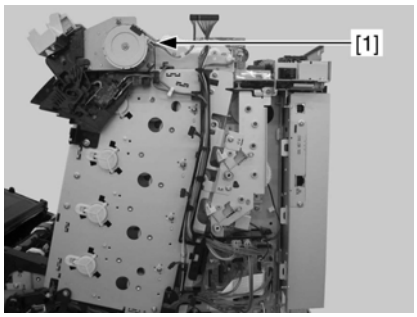
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Detach the rear cover. (page 3-1)[Removing the Rear Cover]
2) Remove the fixing assembly. (page 3-25)[Removing the Fixing Assembly]
3) Detach the upper cover. (page 3-2)[Removing the Upper Cover]
4) Detach the right cover. (page 3-1)[Removing the Right Cover]
5) Detach the left cover. (page 3-1)[Removing the Left Cover]
6) Remove the control panel. (page 3-7)[Removing the Control Panel]

3.5.3.2 Removing the Fixing Motor

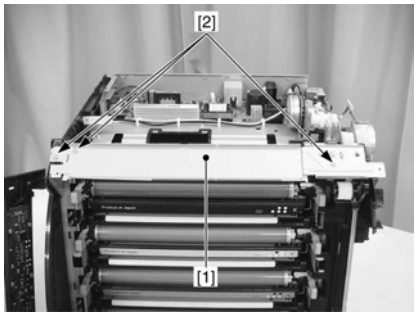
/ i-SENSYS LBP5360 / i-SENSYS LBP5300

1) Disconnect the connector [1].



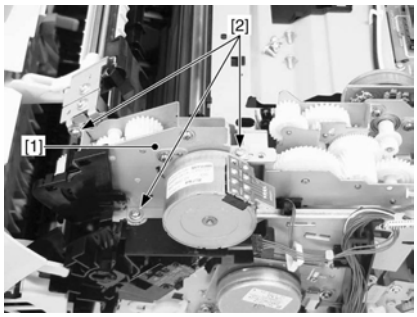
F-3-216

2) Detach the plate [1].
- 3 screws [2]



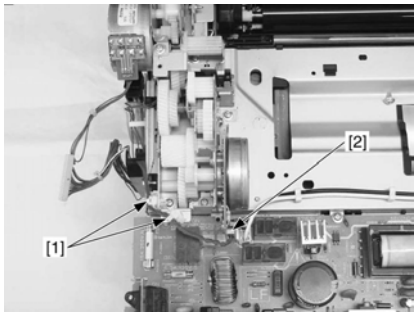
F-3-217

3) Remove the duplexing delivery drive assembly [1].
- 3 screws [1]



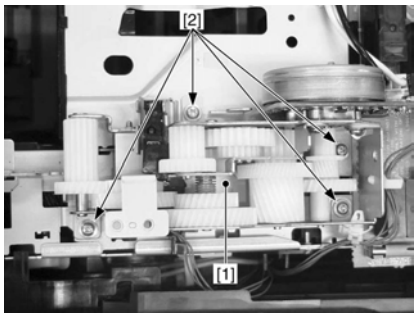
F-3-218

4) Free the 2 cable clamps [1] to disconnect the connector [2].



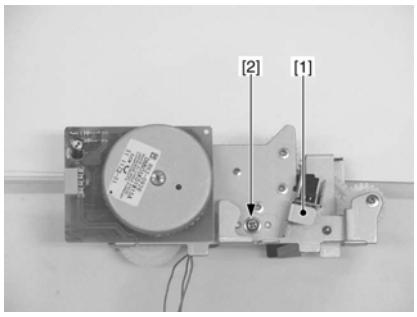
F-3-219

5) Remove the fixing drive assembly [1].
- 4 screws [2]



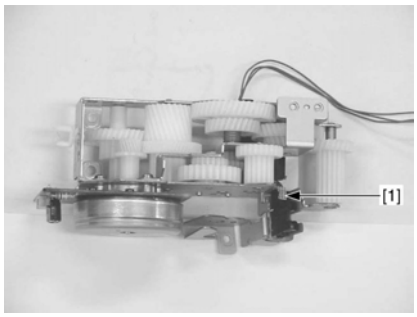
F-3-220

6) Remove the sensor mount [1].
- 1 screw [2]



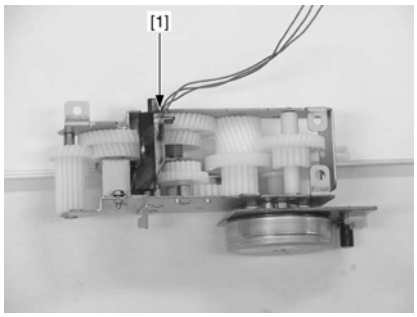
F-3-221

7) Disconnect the connector [1].



F-3-222

8) Detach the cable guide [1].



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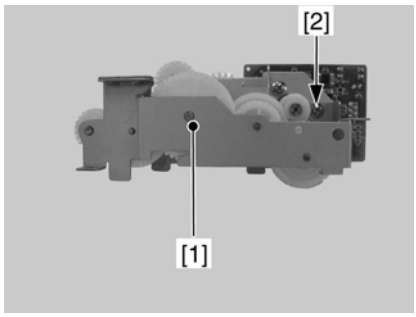
9) Detach the sheet metal [1].
- 1 screw [2]



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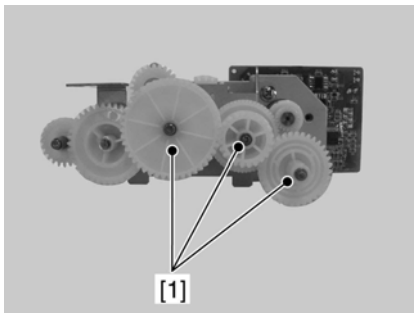
10) Remove the 3 gears [1].



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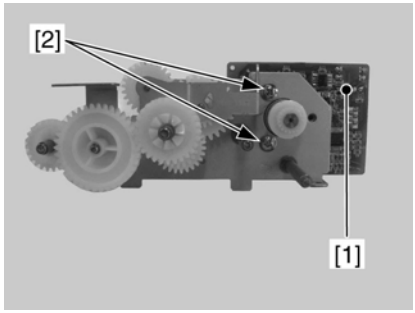
11) Remove the fixing motor [1].
- 2 screws [2]



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Chapter 4 MAINTENANCE AND INSPECTION

Contents

4.1 Periodically Replaced Parts

4.1.1 Periodically Replaced Parts

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine does not have parts that require periodical replacement.

4.2 Consumables

4.2.1 Durables Replaced by the User

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine does not have durables that require replacement by the user.

4.2.2 Durables Replaced by the Service Person

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The machine does not have parts that require replacement by the service person.

4.3 Periodical Service

4.3.1 Periodic Service

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The printer has no parts that require periodic servicing.

4.4 Cleaning

4.4.1 Pick-up roller

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Wipe with lint free paper.

4.4.2 Separation pad

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Wipe with lint free paper.

4.4.3 Registration roller

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Wipe with lint free paper. If the dirt does not come off, use alcohol.

4.4.4 Registration shutter

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Wipe with lint free paper. If the dirt does not come off, use alcohol.

4.4.5 Feed guide

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Wipe with lint free paper. If the dirt does not come off, use alcohol.

4.4.6 Delivery roller

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Wipe with lint free paper. If the dirt does not come off, use alcohol.

4.4.7 Fixing inlet guide

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Wipe with a cloth using alcohol.

4.4.8 Color misregistration/Density sensor

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Wipe the detection window with lint free paper. If dirt does not come off, use alcohol.

Chapter 5 TROUBLESHOOTING

Contents

5.1 MEASUREMENT AND ADJUSTMENT

5.1.1 Adjustment of Electrical Components

5.1.1.1 After Replacing the DC controller PCB

i-SENSYS LBP5300

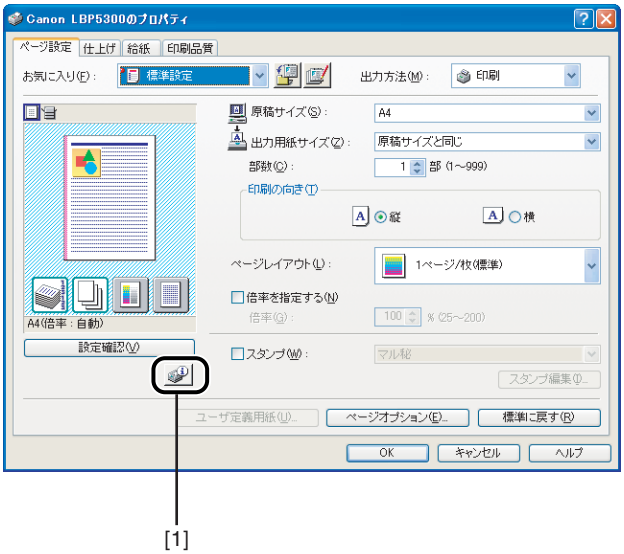
In the case that the DC controller PCB has been replaced, start the status window and execute the following procedure.
1) Execute Service Mode Option Menu > Printer Setting Restoration.

After executing the printer recovery setting, wait completion of the processing for approx. 15 sec.

---

2) Turn off/on the power supply of the host machine.
3) Execute Option Menu > Utility > Out-of-Register Colors Correction.
4) Execute Option Menu > Utility > Calibration.

Step for Moving to Service Mode
1) After power on, display the printer driver screen.
2) Display the status window [1] from the driver screen.
3) Enter the password (*28*) with the numeric pad.
4) The service mode [2] is displayed on 'Option' menu of the status window screen.



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5.1.1.2 After Replacing the DC controller PCB

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

In the case that the DC controller PCB has been replaced, execute the following procedure.
1) Execute the service mode function gr. > RESTORE DCON to restore the backup data stored in EEPROM of the video controller PCB.
2) Execute Utility Menu > STATUS PRINT.
3) Execute Utility Menu > CALIBRATION > COLOR REGIS.ADJ.

5.1.1.3 After Replacing the Video Controller PCB

i-SENSYS LBP5300

In the case that the video controller PCB has been replaced, remove EEPROM (ICS11S) from the old PCB and mount it in the new PCB.
Execute the following procedure when replacing the video controller PCB.
1) Turn on the power supply of the host machine.
2) Execute Option Menu > Utility > Out-of-Register Colors Correction in the status window.
3) Execute Option Menu > Utility > Calibration in the status window.

5.1.1.4 After Replacing the Video Controller PCB

/ i-SENSYS LBP5360

In the case that the video controller PCB has been replaced, remove EEPROM (ICS11S) from the old PCB and mount it in the new PCB.
Execute the following procedure when replacing the video controller PCB.
1) Execute Service Mode > Function gr. > CLEAR DCON.
2) Turn off/on the power supply.
3) Execute Utility Menu > Status Print.
4) Execute Utility Menu > CALIBRATION > COLOR REGIS.ADJ.

Execute the same procedure as the one for replacement of the video controller PCB also when EEPROM (ICS11S) was replaced.

5.1.1.5 Replacing EEPROM (When E747-000 occurs)

i-SENSYS LBP5300

1) Replace the video controller board or EEPROM (IC2S).
2) Turn on the power supply of the host machine.
3) Execute Option Menu > Utility > Out-of-Register Colors Correction in the status window.
4) Execute Option Menu > Utility > Calibration in the status window.

Memo
When EEPROM was replaced, a new USB serial number in EEPROM is assigned. The number of the printers on PC increases when USB is connected.

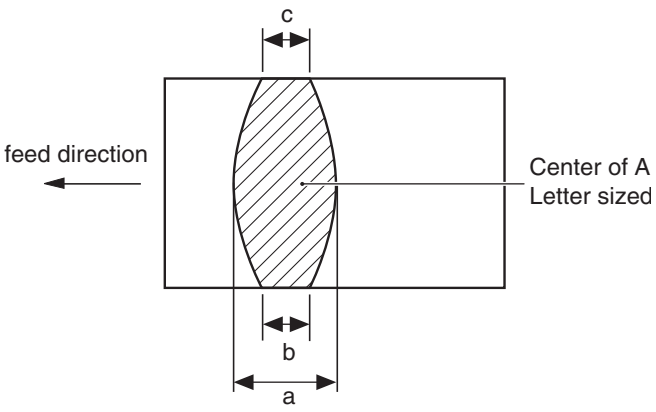
5.1.2 Adjustment of Fixing System

5.1.2.1 Checking the Nip Width (fixing pressure roller)

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

Do not check the nip width in wrong order. The fixing sleeve breakage may occur, if you do not follow the procedures below.

An incorrect nip width may cause the faulty fixing. Check the nip width by following the procedure below if poor fixing image defect occurs. Replace the fixing unit if the nip width is out of specification, since the nip width of the fixing unit is not adjustable in this printer.
1) Make an all solid black print of A4 or Letter size using an EP cartridge same as for this printer, and take the print to the customer's site.
2) Place the solid black print, with the printed side facing UP, in the cassette of the printer.
3) Press the test print switch.
4) Open the upper cover as soon as the leading edge of the paper appears in the delivery slot. Leave it for ten seconds.
5) Turn OFF the printer and take fixing unit from the printer. Then take the paper out from the fixing unit.
6) Measure the width of the glossy band across the paper and check that it meets the requirements as shown in Figure.
- Center (a): 8mm +/- 1mm
- Difference between right/left and center (a-b, a-c): 0mm to 1mm
- Difference between right and left (|b-c|): 1.5mm or less



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5.2 SERVICE TOOLS

5.2.1 Standard Tools

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

The table below lists the standard tools required for servicing the printer.

T-5-1

No.	Tool name	Tool No.	Remark
1	Tool case	TKN-0001	With a clip
2	Jumper wire	TKN-0069	0.02 to 0.3 mm
3	Clearance gauge	CK-0057	0 to 600 g for checking the cassette spring pressure
4	Compression spring scale	CK-0058	
			M4, M5 Length : 363 mm
5	Phillips screwdriver	CK-0101	
6	Phillips screwdriver	CK-0104	M3, M4 Length: 155 mm
7	Phillips screwdriver	CK-0105	M4, M5 Length: 191 mm
8	Phillips screwdriver	CK-0106	M4, M5 Length: 85 mm
9	Flat-blade screwdriver	CK-0111	
10	Precision flat-blade screwdriver set	CK-0114	6-piece set
11	Allen wrench set	CK-0151	5-piece set
12	File, fine	CK-0161	
13	Allen (hex) screwdriver	CK-0170	M4 Length: 107 mm
14	Diagonal cutting pliers	CK-0201	
15	Needle-nose pliers	CK-0202	
16	Pliers	CK-0203	Applied to the axis ring
17	Retaining ring pliers	CK-0205	
18	Crimper	CK-0218	
19	Tweezers	CK-0302	Employed to measure 150 mm
20	Ruler	CK-0303	
21	Mallet, plastic head	CK-0314	
22	Brush	CK-0315	
23	Penlight	CK-0327	100cc
24	Plastic bottle	CK-0327	500SH/PKG
25	Lint-free paper	CK-0336	
26	Oiler	CK-0349	30cc
27	Plastic jar	CK-0351	30cc
28	Digital multi-measure	FY9-2032	

5.2.2 Solvent/Oil List

/ i-SENSYS LBP5360 / i-SENSYS LBP5300

T-5-2

No.	Name	Uses	Remarks
1	Ethyl alcohol	Cleaning - Plastic - Rubber - External parts - Oil and toner stains	- Procure locally. - Flammable: keep away from flame
2	Grease	Apply to gears, shafts, bushings, and other sliding parts.	- MOLYKOTE(R) EM-50LS GREASE Dow Corning Asia Ltd. (Tool no. HY9-0007)
3			- MOLYKOTE(R) PD-910 LUBRICANT Dow Corning Asia Ltd. (Tool no. CK-8011)
4			- DRYSURF 1340B HARVES Co., Ltd.
5		Apply to fixing unit	- MOLYKOTE(R) HP-300 GREASE Dow Corning Asia Ltd. (Tool no. CK-8012)
6	Electroconductive grease	Apply to sliding parts where electroconduncion deeds	- MOLYKOTE(R) 41 GREASE Dow Corning Asia Ltd. (Tool no. CK-8007)
7	Thermoconductive grease	apply	- FC4476CV

Do not use alcohol to wipe external covers. Use a moist cloth (well wrung) to clean them.

5.3 ERROR CODE

5.3.1 Error Code

i-SENSYS LBP5300

T-5-3

Code		Detection details	Treatment
E000		Fixing unit startup defect	
		Description: The detected temperature of the main thermistor does not rise above 5 deg C (temperature at power ON is 0 deg C) within one second of the heater being energised. Cause: Main thermistor broken wire, fixer heater broken wire, DC controller PCB defect	- Check the connector of the low-voltage power supply PCB. - Replace the fixing film unit. - Replace the DC controller PCB.
E001		Abnormally high temperature in fixing unit	
	0000	Description: The detected temperature of the main thermistor is 225 deg C (equivalent to approx. 0.84V) or higher for 0.5 sec. or longer. Cause: Main thermistor defect, DC controller PCB defect	- Check the connector of the low-voltage power supply PCB. - Replace the fixing film unit. - Replace the DC controller PCB.
	0001	Description: The detected temperature of the main thermistor is 245 deg C (equivalent to approx. 2.12V) or higher for 0.5 sec. or longer. Cause: Main thermistor defect, DC controller PCB defect	
E003		Abnormally low temperature in fixing unit	
	0000	Description: The detected temperature of the main thermistor is 100 deg C (equivalent to approx. 2.60V) or lower for 0.5 sec. or longer. Cause: Low voltage power supply circuit board defect, main thermistor broken wire, DC controller PCB defect	- Check the connector of the low-voltage power supply PCB. - Replace the fixing film unit. - Replace the DC controller PCB.
	0001	Description:The detected temperature of the sub-thermistor fails to reach 100 °C (equivalent to approx. 0.38V) within 0.5 sec. or longer of the heater being energised. Cause:Sub-thermistor defect, DC controller circuit board defect	- Check the connector of the low-voltage power supply PCB. - Replace the fixing film unit. - Replace the DC controller PCB.
E004		Abnormality in fixing unit power supply drive circuitry	
		Description: Zero cross signal could not be detected within specified time limit. Cause: Fixing control circuitry defect	- Replace the low-voltage power supply PCB.
E012		Motor startup abnormality	
	0000	Description: ETB motor speed detection signal frequency does not reach specified frequency within 3.5 sec. or longer of the ETB motor drive starting. Cause: ETB motor defect, DC controller PCB defect	- Replace ETB motor - Replace DC controller PCB
	0001	Description: ETB motor speed detection signal frequency reaches the specified frequency but is then out of synch after 2 sec. or longer of operation. Cause: ETB motor defect, DC controller PCB defect	
	0002	Description:Drum motor speed detection signal frequency does not reach specified frequency within 2.5 sec. or longer of the yellow motor drive starting. Cause:Drum motor defect, DC controller PCB defect	- Replace drum motor - Replace DC controller PCB
	0003	Description: Yellow motor speed detection signal frequency reaches the specified frequency but is then out of synch after 2 sec. or longer of operation. Cause: Drum motor defect, DC controller PCB defect	
	0004	Description: Drum motor speed detection signal frequency does not reach specified frequency within 2.5 sec. or longer of the magenta motor drive starting. Cause: Drum motor defect, DC controller PCB defect	
	0005	Description: Magenta motor speed detection signal frequency reaches the specified frequency but is then out of synch after 2 sec. or longer of operation. Cause: Drum motor defect, DC controller PCB defect	
	0006	Description: Drum motor speed detection signal frequency does not reach specified frequency within 2.5 sec. or longer of the cyan motor drive starting. Cause: Drum motor defect, DC controller PCB defect	
	0007	Description: Cyan motor speed detection signal frequency reaches the specified frequency but is then out of synch after 2 sec. or longer of operation. Cause: Drum motor defect, DC controller PCB defect	
	0008	Description: Drum motor speed detection signal frequency does not reach specified frequency within 2.5 sec. or longer of the black motor drive starting. Cause: Drum motor defect, DC controller PCB defect	
	0009	Description: Black motor speed detection signal frequency reaches the specified frequency but is then out of synch after 2 sec. or longer of operation. Cause: Drum motor defect, DC controller PCB defect	
E014		Fixing motor drive abnormality	
	0000	Description: Fixing motor speed detection signal frequency does not reach specified frequency within 2.5 sec. or longer of the fixing motor drive starting. Cause: Fixing motor defect, DC controller PCB defect	- Replace fixing motor - Replace DC controller PCB
	0001	Description: Fixing motor speed detection signal frequency reaches the specified frequency but is then out of synch after 2 sec. or longer of operation. Cause: Fixing motor defect, DC controller PCB defect	
E078		Primary transfer disengagement mechanism abnormality	

Code		Detection details	Treatment
	0000	Description: Primary transfer disengagement mechanism does not work properly. Cause: High voltage contact defect, transfer roller disengagement solenoid defect, ETB unit defect, high voltage power supply PCB defect	- Replace ETB disengagement solenoid - Replace ETB unit - High voltage contact defect (check contacts from high voltage contacts of each colour station to high voltage PCB.)
E020		Density sensor abnormality	
		Description: Not enough light received upon image density detection. Cause: Soiled density detection sensor, density detection sensor defect, DC controller PCB defect, toner cartridge defect	- Replace ETB unit - High voltage contact defect (check contacts from high voltage contacts of each colour station to high voltage PCB.) - Replace DC controller PCB - Replace toner cartridge
E024		Toner remaining detection sensor abnormality	
	0000	Description: Abnormal output from toner remaining detection sensor (Yellow) Cause: Memory controller PCB defect, DC controller PCB defect, toner cartridge defect	- Replace toner cartridge - Replace memory controller PCB - Replace DC controller PCB
	0001	Description: Abnormal output from toner remaining detection sensor (Magenta) Cause: Memory controller PCB defect, DC controller PCB defect, toner cartridge defect	
	0002	Description: Abnormal output from toner remaining detection sensor (Cyan) Cause: Memory controller PCB defect, DC controller PCB defect, toner cartridge defect	
	0003	Description: Abnormal output from toner remaining detection sensor (Black) Cause: Memory controller PCB defect, DC controller PCB defect, toner cartridge defect	
E066		Environment sensor abnormality	
		Description: Environment sensor abnormality. Cause: Environment sensor defect, DC controller PCB defect	- Replace environment sensor - Replace DC controller PCB
E100		Scanner unit, laser unit, BD abnormality	
	0000	Description: Yellow optical assembly failure. Cause: Laser scanner defect, DC controller PCB defect	- Replace laser scanner - Replace DC controller PCB
	0001	Description: Magenta optical assembly failure. Cause: Laser scanner defect, DC controller PCB defect	
	0002	Description: Cyan optical assembly failure. Cause: Laser scanner defect, DC controller PCB defect	
	0003	Description: Black optical assembly failure. Cause: Laser scanner defect, DC controller PCB defect	
E194		CPR sensor abnormality	
	0000	Description: Colour displacement pattern cannot be recognised and measurement results are out of range. Cause: Soiled colour displacement sensor, colour displacement sensor defect, DC controller PCB defect, toner cartridge defect	- Replace ETB unitHigh voltage contact defect (check contacts from high voltage contacts of each colour station to high voltage PCB.) - Replace DC controller PCB - Replace toner cartridge
E196		DCON ROM abnormality	
		DC controller PCB ROM update failed.	- Replace DC controller PCB
E197		Engine communication error	
	0000	Internal communication error	- Replace DC controller PCB - Replace video controller PCB
	0001	Engine communication error	
E198		DC controller memory failure	
		Description: DC controller memory failure. Cause: DC controller PCB defect	- Replace DC controller PCB
E747		EEPROM error	
		Description: EEPROM error. Cause: Video controller PCB defect	- Replace video controller PCB
E804		Power supply fan failure	
		Description: Input after fan lock detection signal continues for approx. 10 sec. or longer. Cause: Power supply fan defect, DC controller PCB defect	- Replace power supply fan - Replace DC controller PCB
E805		Duplex fan failure	
		Description: Input after fan lock detection signal continues for approx. 10 sec. or longer. Cause: Duplex fan defect, DC controller PCB defect	- Replace duplex fan - Replace DC controller PCB
E840		Release mechanism abnormality	
		Description: Mechanism does not reach home position (engaged) after 2.5 sec. or longer after home position control begins. Cause: Fixing drive assembly defect, fixing release cam defect	- Replace fixing drive assembly - Replace fixing release cam

5.3.2 Error Code

/ i-SENSYS LBP5360

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Code	Description	Action
E000	Error in start-up of fixing assembly	

Code		Description	Action
	0000	Description When 1 sec passed after energization of the heater, the detected temperature of the main thermistor is not 5 deg C or more (0 deg C at power on). Cause Disconnection of main thermistor, disconnection of fixing heater, error in DC controller PCB.	- Check of the connector of the low-voltage power supply PCB - Replacement of fixing film unit - Replacement of DC controller PCB
E001		Error in overheating of fixing assembly	
	0000	Description The status where the detected temperature of the main thermistor is 225 deg C (approx. 0.84V equivalent) or more is detected for 0.5 continuous sec or more. Cause Error in main thermistor, error in DC controller PCB.	- Check of the connector of the low-voltage power supply PCB - Replacement of fixing film unit - Replacement of DC controller PCB
	0001	Description The status where the detected temperature of the sub thermistor is 245 deg C (approx. 2.12V equivalent) or more is detected for 0.5 continuous sec or more. Cause Error in sub thermistor, error in DC controller PCB.	
E003		Error in abnormally low temperature of fixing assembly	
	0000	Description The status where the detected temperature of the main thermistor is 100 deg C (approx. 2.60V equivalent) or less is detected for 0.5 continuous sec or more. Cause Error in low-voltage power supply PCB, disconnection of main thermistor, error in DC controller PCB.	- Replacement of low-voltage power supply PCB - Replacement of fixing film unit - Replacement of DC controller PCB
	0001	Description The status where the detected temperature of the sub thermistor is less than 100 deg C (approx. 0.38V equivalent) is detected 0.5 continuous sec or more after energization of the heater. Cause Error in sub thermistor, error in DC controller PCB.	- Check of the connector of the low-voltage power supply PCB - Replacement of fixing film unit - Replacement of DC controller PCB
E004		Error in fixing power supply drive circuit	
	0000	Description Cannot detect the zero cross signal for the specified period or more. Cause Error in fixing control circuit block.	- Replacement of low-voltage power supply PCB
E012		Error in activation of motor	

Code		Description	Action
	0000	Description When 3.5 sec passed after activation of ETB motor, the cycle of ETB motor speed detection signal does not become its specified value. Cause Error in ETB motor, error in DC controller PCB.	- Replacement of ETB motor - Replacement of DC controller PCB
	0001	Description After ETB motor speed detection signal became the specified value of the cycle, it exceeds the specified cycle for 2 continuous sec or more. Cause Error in ETB motor, error in DC controller PCB.	
	0002	Description When 2.5 sec passed after activation of the yellow drum motor, the cycle of drum motor speed detection signal does not become its specified value. Cause Error in drum motor, error in DC controller PCB.	- Replacement of drum motor - Replacement of DC controller PCB
	0003	Description After the yellow drum motor speed detection signal became the specified value of the cycle, it exceeds the specified cycle for 2 continuous sec or more. Cause Error in drum motor, error in DC controller PCB.	
	0004	Description When 2.5 sec passed after activation of the magenta drum motor, the cycle of drum motor speed detection signal does not become its specified value. Cause Error in drum motor, error in DC controller PCB.	
	0005	Description After the magenta drum motor speed detection signal became the specified value of the cycle, it exceeds the specified cycle for 2 continuous sec or more. Cause Error in drum motor, error in DC controller PCB.	
	0006	Description When 2.5 sec passed after activation of the cyan drum motor, the cycle of the drum motor speed detection signal does not become its specified value. Cause Error in drum motor, error in DC controller PCB.	
	0007	Description After the cyan drum motor speed detection signal became the specified value of the cycle, it exceeds the specified cycle for 2 continuous sec or more. Cause Error in drum motor, error in DC controller PCB.	
	0008	Description When 2.5 sec passed after activation of the black drum motor, the cycle of the drum motor speed detection signal does not become its specified value. Cause Error in drum motor, error in DC controller PCB.	
	0009	Description After the black drum motor speed detection signal became the specified value of the cycle, it exceeds the specified cycle for 2 continuous sec or more. Cause Error in drum motor, error in DC controller PCB.	
E014		Error in activation of fixing motor	
	0000	Description When 2.5 sec passed after activation of fixing motor, the cycle of the fixing motor speed detection signal does not become its specified value. Cause Error in fixing motor, error in DC controller PCB.	- Replacement of fixing motor - Replacement of DC controller PCB
	0001	Description After the fixing motor speed detection signal became the specified value of the cycle, it exceeds the specified cycle for 2 continuous sec or more. Cause Error in fixing motor, error in DC controller PCB.	
E020		Error in density sensor	
	0000	Description Cannot receive enough light when detecting image density. Cause Dirt on density sensor, error in density sensor, error in DC controller PCB, error in toner cartridge.	- Replacement of ETB unit - Error in high-voltage joint (Check high-voltage joint for each color, and each joint to high-voltage PCB) - Replacement of DC controller - Replacement of toner cartridge
E024		Toner level sensor failure	

Code		Description	Action
	0000	Description Failure output from the toner level sensor (Yellow). Cause Memory controller PCB assembly fault, DC controller PCB assembly fault, toner cartridge fault.	- Replace toner cartridge - Replace memory controller PCB assembly - Replace DC controller PCB assembly
	0001	Description Failure output from the toner level sensor (Magenta). Cause Memory controller PCB assembly fault, DC controller PCB assembly fault, toner cartridge fault.	
	0002	Description Failure output from the toner level sensor (Cyan). Cause Memory controller PCB assembly fault, DC controller PCB assembly fault, toner cartridge fault.	
	0003	Description Failure output from the toner level sensor (Black). Cause Memory controller PCB assembly fault, DC controller PCB assembly fault, toner cartridge fault.	
E066		Error in environment sensor	
		Description Failure in environment sensor. Cause Environment sensor fault, DC controller PCB assembly fault.	- Replace environment sensor - Replace DC controller PCB assembly
E078		Error in primary transfer estrangement unit	
	0000	Description Primary transfer estrangement unit does not function properly. Cause Terminal assembly fault, transfer roller estrangement solenoid fault, EBT unit fault, high-voltage power PCB assembly fault.	- Replace ETB estrangement solenoid - Replace ETB unit - Terminal assembly fault (check on every contact between the terminals of each color and the high voltage PCB assembly)
E100		Error in scanner motor, laser unit, BD	
	0000	Description Yellow scanner assembly malfunction. Cause Laser scanner unit fault, DC controller PCB assembly fault.	- Replace laser scanner unit - Replace DC controller PCB assembly
	0001	Description Magenta scanner assembly malfunction. Cause Laser scanner unit fault, DC controller PCB assembly fault.	
	0002	Description Cyan scanner assembly malfunction. Cause Laser scanner unit fault, DC controller PCB assembly fault.	
	0003	Description Black scanner assembly malfunction. Cause Laser scanner unit fault, DC controller PCB assembly fault.	
E194		Error in CPR sensor	
	0000	Description Cannot detect color displacement detection pattern, detected results fall outside the acceptable range. Cause Dirty color displacement detection sensor, color displacement detection sensor fault, DC controller PCB assembly fault, toner cartridge fault.	- Replace ETB unit - Terminal assembly fault (check on every contact between the terminals of each color and the high voltage PCB assembly) - Replace DC controller PCB assembly - Replace toner cartridge
E196		Error in DCON ROM	
		Updating the ROM on the DC controller PCB assembly has been failed.	- Replace DC controller PCB assembly
E197		Engine Communication Error	
	0000	Internal communication error	- Replace DC controller PCB assembly - Replace video controller PCB assembly
E198		DC controller memory malfunction	
	0000	Description DC controller memory malfunction. Cause DC controller PCB assembly fault.	- Replace DC controller PCB assembly
E602		HDD error	

Code		Description	Action
	0001	Not enough HDD space Occurs when the capacity of the installed HDD is smaller than an HDD space required for a software.	-
	0002	Downloading the controller firmware has been failed.	- Download the controller firmware again - Replace controller PCB assembly
	0003	HDD access error Error caused by a device or hardware in HDD access while executing bootrom. (Sector failure, device is busy, etc.)	Replace HDD
E604		Error in lacking of memory capacity	
	0000	Lack of memory capacity	- Remove and insert the expanded memory - Replace the expanded memory to the correct one - Replace the controller PCB
E733		Error in communication of printer system	
	0001	Error in communication between the DC controller PCB and the video controller PCB (DC controller PCB factor).	- Reactivation of power - Replace the DC controller PCB
	0004	Undefined command error	
	0005	Communication timeout error	
	0006	Unknown communication error	
E744		Error in invalid ID code when downloading firmware for controller	
	1000	Recognizing the invalid ID code when downloading firmware for controller.	Check each project ID, and download the firmware with valid project ID.
E760		Error in software program for video controller	
	0000	Fault of software program for the video controller	- Download the correct firmware for the video controller - Replace the video controller PCB
E804		Error in power supply fan	
	0000	Description The fan lock detection signal is input for about 10 sec or longer continuously. Cause Power supply fault, DC controller PCB fault.	- Replace the power supply fan - Replace the DC controller PCB
E805		Error in duplexing fan/CPU fan	
	0003	Description The CPU fan lock detection signal is input for about 10 sec or longer continuously. Cause CPU fan fault, video controller PCB fault.	- Replace the CPU fan - Replace the video controller PCB
	0005	Description The duplexing fan lock detection signal is input for about 10 sec or longer continuously. Cause Duplexing fan fault, DC controller PCB fault.	- Replace the duplexing fan - Replace the DC controller PCB
E840		Error in pressure release mechanism	
	0000	Description Although passing 2.5 sec from the start of HP control, HP (pressure condition) cannot be controlled. Cause Fixing drive assembly fault, fixing pressure release cam fault.	- Replace the fixing drive assembly - Replace the fixing pressure release cam

5.3.3 A4-XX_ERROR

/ i-SENSYS LBP5360

T-5-5

Number field	Description	Corrective action
A4-00 to 06	A fault exits in the software program of the video controller.	- Turn off and then on the power. - Replace the video controller board.

5.3.4 A5-XX_ERROR

/ i-SENSYS LBP5360

T-5-6

Number field	Description	Corrective action
A5-00 to 07	A fault has occurred while image data is being processed by the controller.	1) Turn on the power. 2) If step 1 fails, increase the memory. 3) If step 2 fails, replace the control board.

5.3.5 A7-XX_ERROR

/ i-SENSYS LBP5360

T-5-7

Number field	Description	Corrective action
A7-00	A fault exits in the software program of the video controller.	1) Turn on the power once again. 2) If step 1 fails, replace the controller board.

5.3.6 D7-XX_ERROR

i-SENSYS LBP5360

T-5-8

Number field	Description	Corrective action
D7-00, 01	A fault has occurred in the firmware of the PCL translator.	1) Turn on the power. 2) If step 1 fails, replace the controller board.

5.3.7 D8-XX_ERROR

/ i-SENSYS LBP5360

T-5-9

Number field	Description	Corrective action
D8-00 TO 0C	A fault has occurred in the firmware of the LIPS LX (BLD) translator.	1) Turn on the power. 2) If step 1 fails, replace the controller board.

5.4 Version Up

5.4.1 Outline

5.4.1.1 Overview of Upgrading Work

/ i-SENSYS LBP5360

The machine's system software may be upgraded using a PC to which the Service Support Tool (SST) has been installed.

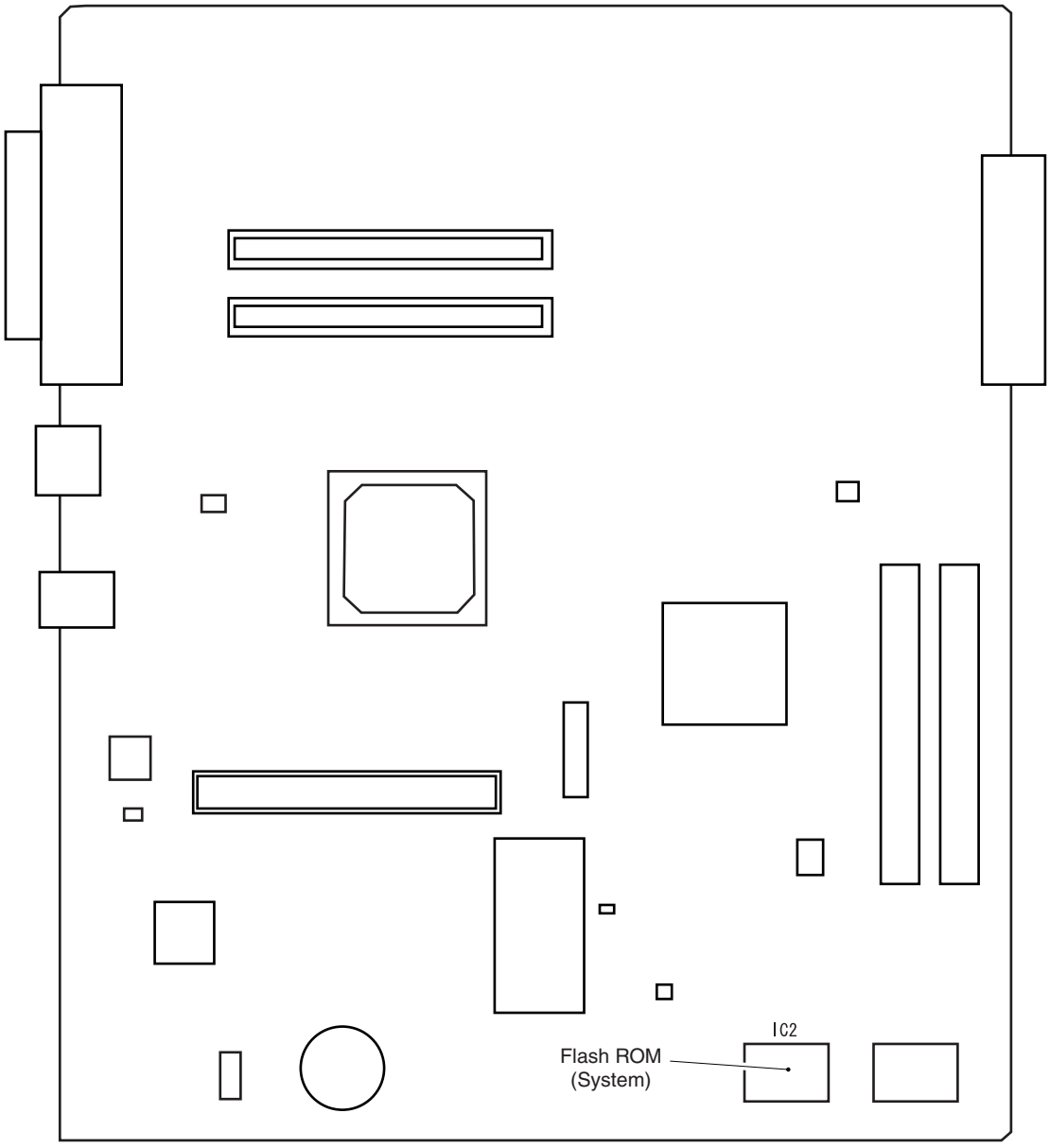
5.4.1.2 Construction of Firmware

/ i-SENSYS LBP5360

The following shows the composition of the machine's firmware:

T-5-10

Firmware	Function	Location	Remarks
cont	Controls overall machine operation.	Video controller board	Soldered to flash ROM (IC2)



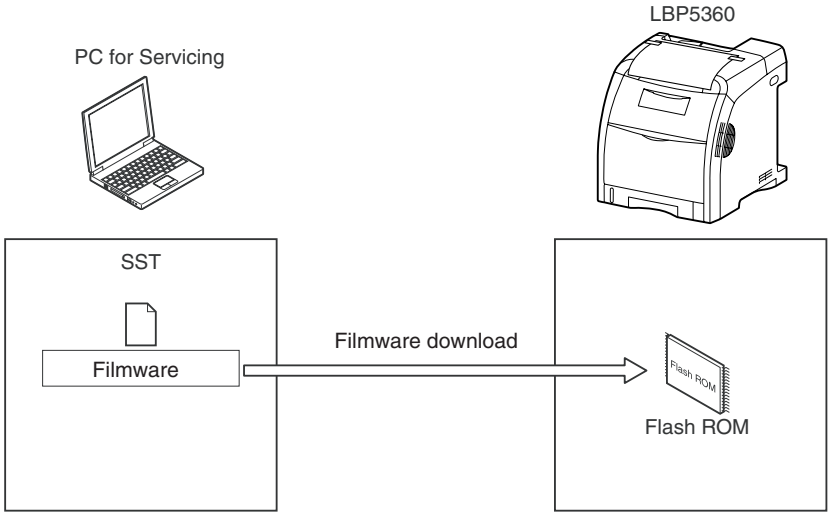
F-5-4

MEMO:
If downloading the firmware for hard disk (LBP5360H) to the machine without hard disk or downloading the firmware for Plain (LBP5360) to the machine with hard disk, 'E744-1000' is displayed on the control panel when the transfer from SST is completed. In addition, if downloading a firmware for other product, the same error code is displayed.
In such case, turn OFF/ON the machine, and perform download with correct firmware.

5.4.1.3 Outline of the Service Support Tool

/ i-SENSYS LBP5360

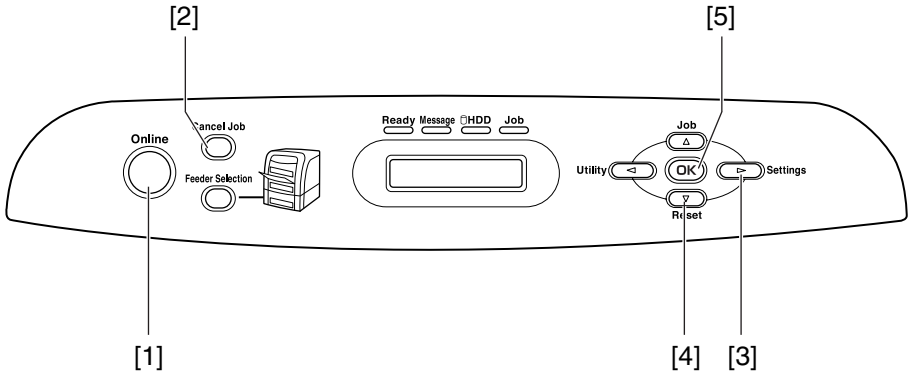
The service support tool (SST, hereafter) provides the following functions:



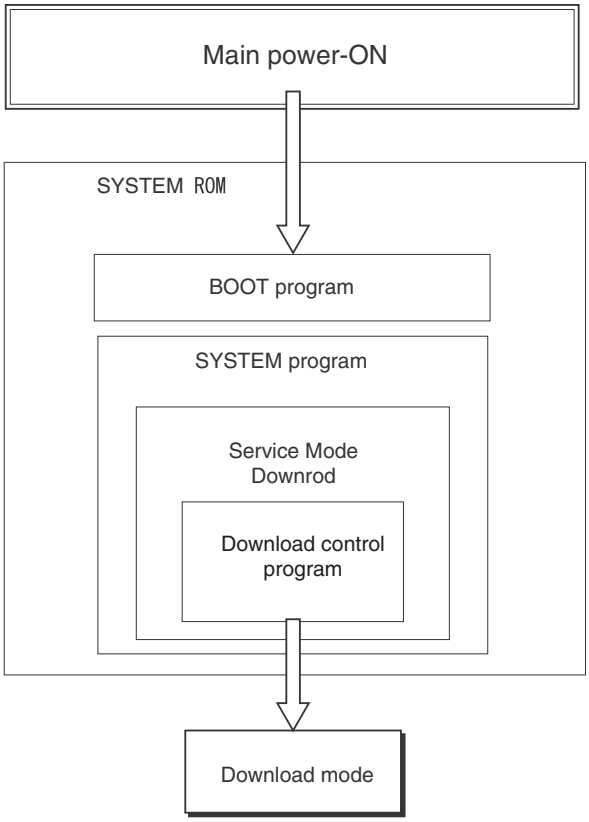
F-5-5

Memo:
The machine does not support uploading/downloading of the SST's backup mechanism.

To use the SST, put the machine in download mode:
Shifting to Download Mode
1. While holding down on the Online key (1) and the job cancel job key (2), turn on the power.
2. Press the settings key (3) several times; when 'SERVICE MODE' is indicated, press the reset key (4) to start service mode.
3. Press the setttings key (3) several times; when 'F/W UPDATE GR' is indicated, press the reset key (4).
4. Press the setttings key (3) several times; when 'USB' is indicated, press the reset key (4).
5. When 'OK?' is indicated, press the OK key (5) to start download mode.



F-5-6



F-5-7

5.4.2 Making Preparations

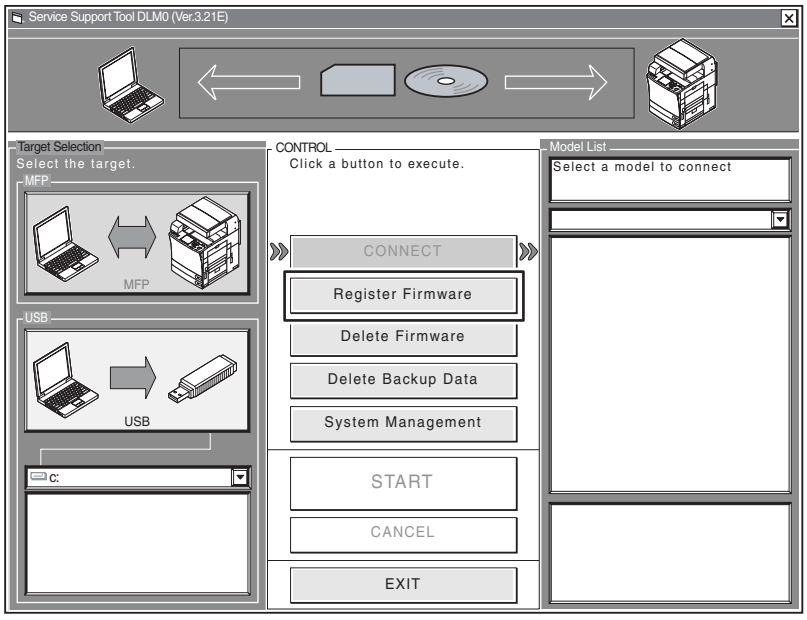
5.4.2.1 Registering the Firmware

/ i-SENSYS LBP5360

Copy the firmware from the system CD to the SST.

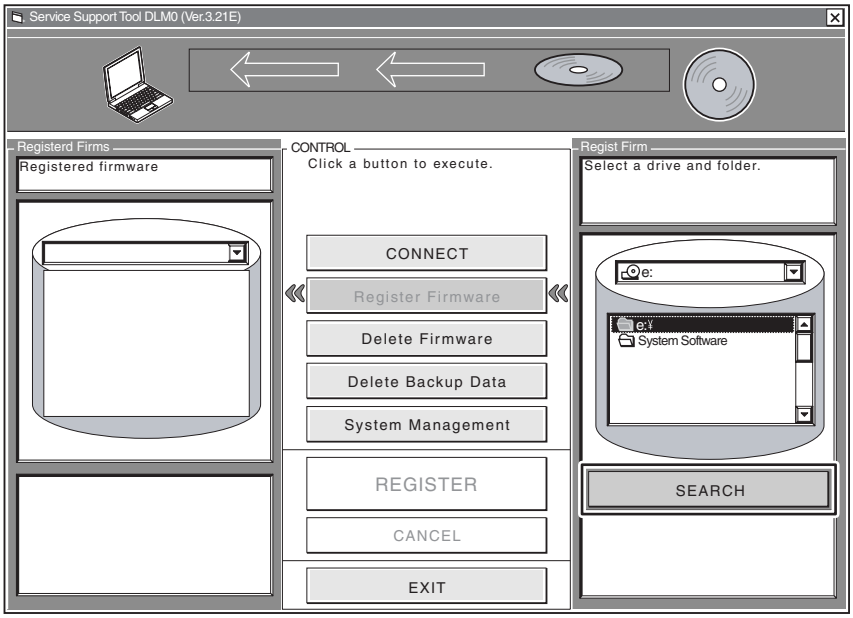
[Making Preparations]
Items to Prepare
- PC to which SST v3.22 or later has been installed
- system CD for the LBP5360

[Copying the Firmware]
1) Start up the PC.
2) Set the system CD in the PC.
3) Start up the SST.
4) Click [Register Firmware].



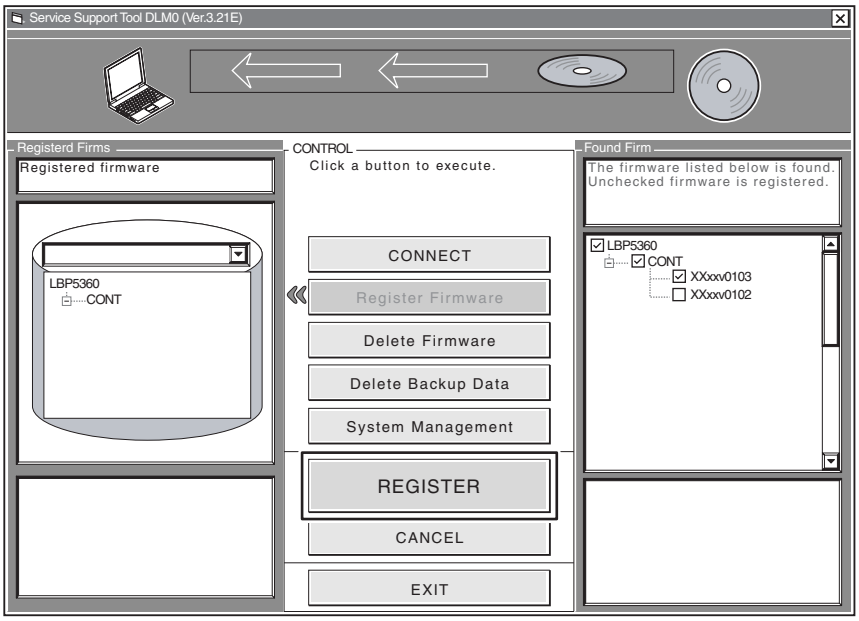
F-5-8

5) Select the drive in which you have set the system CD, and click [search].



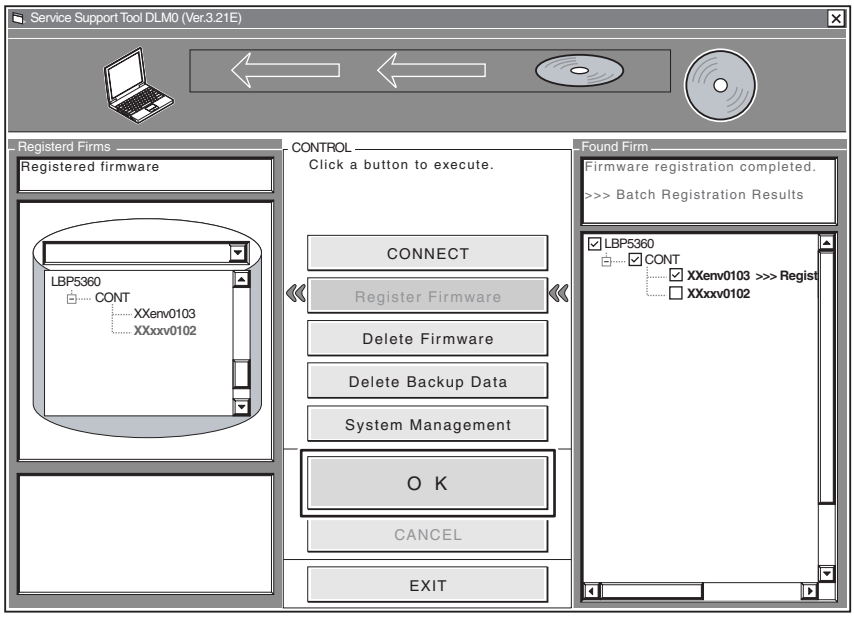
F-5-9

6) See that a list has appeared indicating the software found on the system CD. Deselect (by removing the check mark) from those folders and system software files you do not need; then, click [REGISTER].



F-5-10

7) When the result of copying the system software has appeared, click [OK].



F-5-11

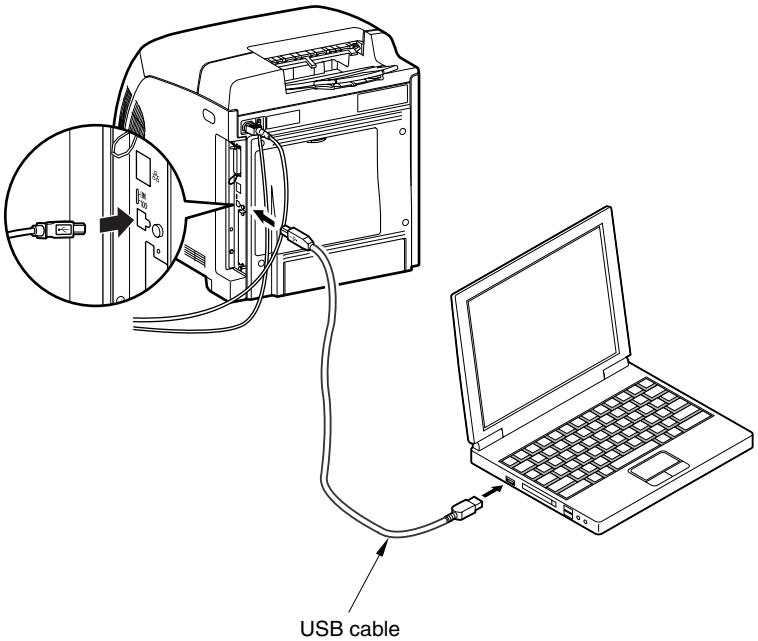
5.4.2.2 Making Connections

/ i-SENSYS LBP5360

Connect the PC to the machine.

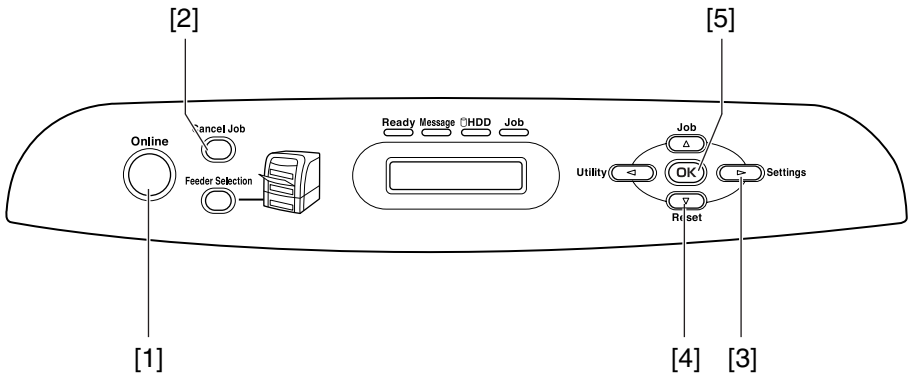
Making Preparations
Items to Prepare
- PC to which SST v3.22 or higher and LBP5360 firmware have been installed
- USB cable (USB1.1,USB2.0)

Procedure
1) Start up the PC.
2) Connect the machine and the PCB with a USB cable.



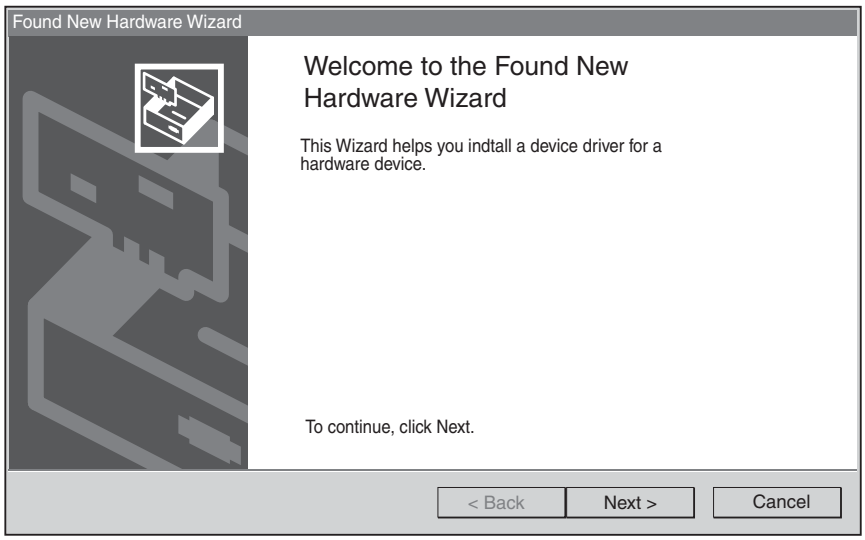
F-5-12

3) Turn on the main power as follows to start download mode.
Shifting to Download Mode
3-1. While holding down on the Online key (1) and the job cancel job key (2), turn on the power.
3-2. Press the settings key (3) several times; when 'SERVICE MODE' is indicated, press the reset key (4) to start service mode.
3-3. Press the setttings key (3) several times; when 'F/W UPDATE GR' is indicated, press the reset key (4).
3-4. Press the setttings key (3) several times; when 'USB' is indicated, press the reset key (4).
3-5. When 'OK?' is indicated, press the OK key (5) to start download mode.



F-5-13

Memo:
The New Hardware Wizard appears on the PC screen. Click [Cancel].



F-5-14

4) Start up the SST.

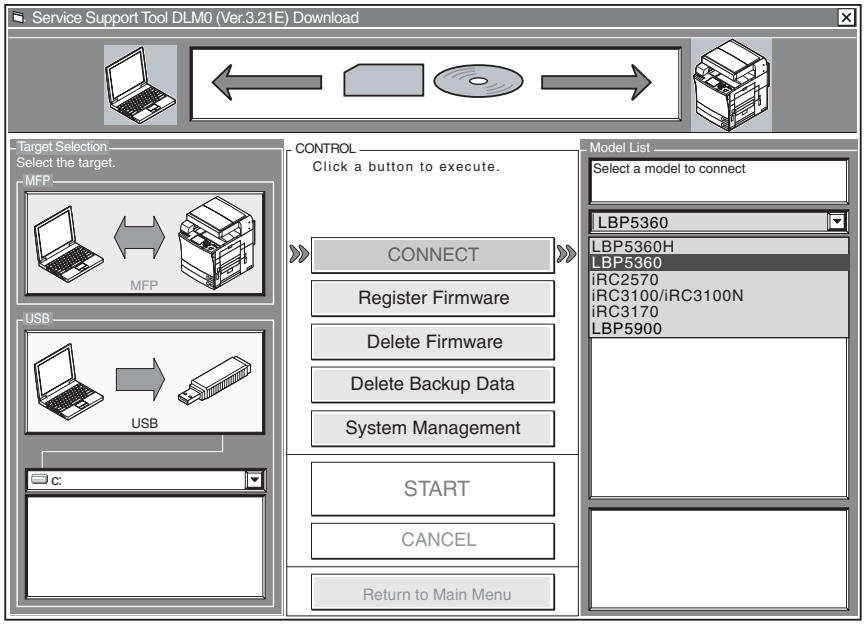
5.4.3 Downloading the System Software

5.4.3.1 Downloading Procedure

/ i-SENSYS LBP5360

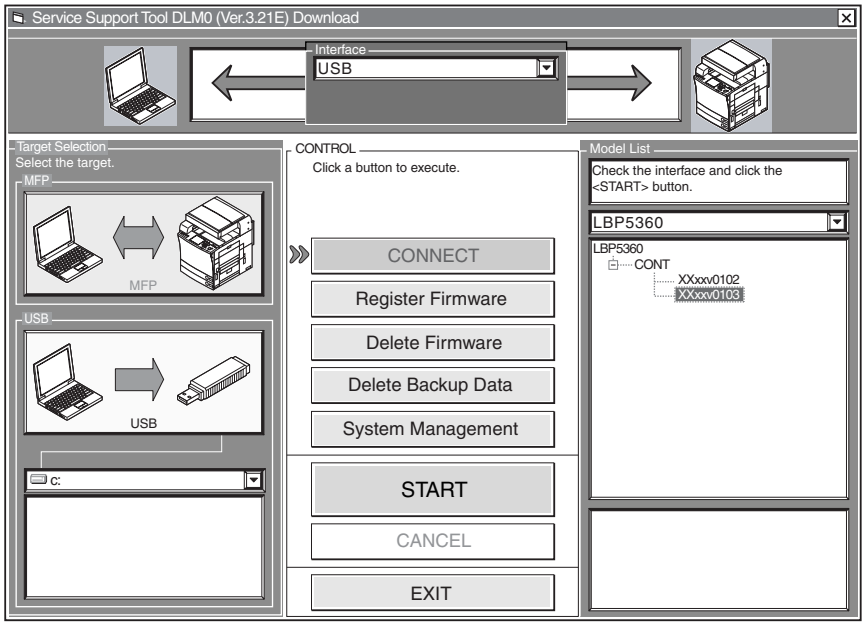
Point to Note When Downloading
There are 2 types of firmware: for Plain (LBP5360) and for hard disk (LBP5360H).
If downloading the firmware for hard disk (LBP5360H) to the machine without hard disk or downloading the firmware for Plain (LBP5360) to the machine with hard disk, 'E744-1000' is displayed on the control panel when the transfer from SST is completed. In addition, if downloading a firmware for other product, the same error code is displayed.
In such case, turn OFF/ON the machine, and perform download with correct firmware.

1) Select the model to connect. (LBP5360, 5360HÅj



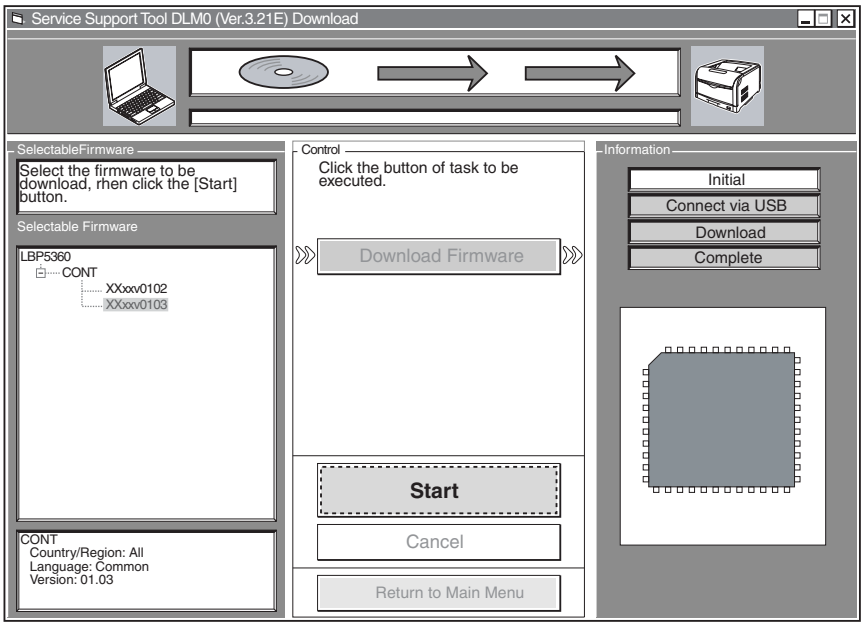
F-5-15

2) Select 'CONT' (LBP5360 or LBP5360H), and click [start].



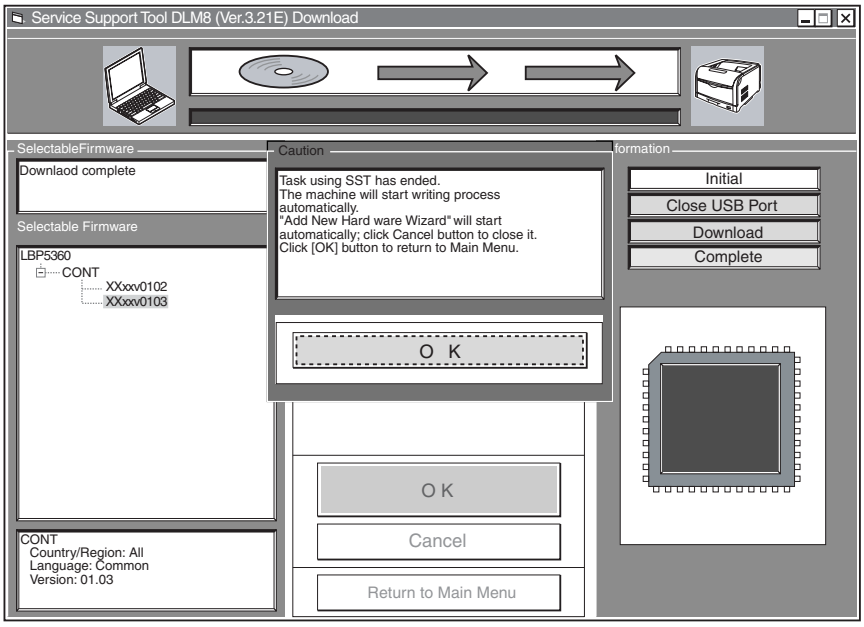
F-5-16

3) Select the version to download, and click [start].



F-5-17

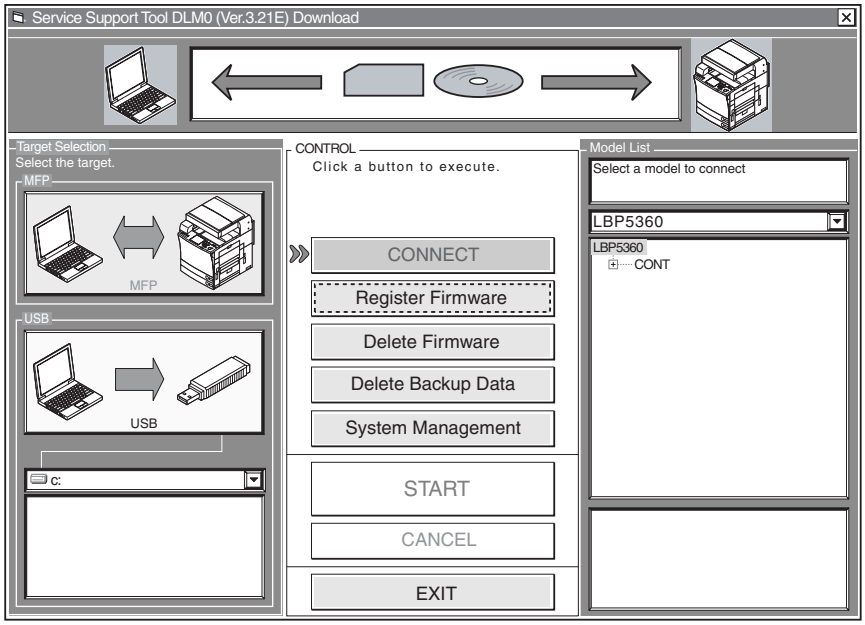
4) When the result of downloading is indicated, click [OK].



F-5-18

The end of work with the SST does not mean the end of work to be performed on the machine. Be sure not to turn off the machine until it indicates '00 ready'.
It takes about 1 min from when [start] is clicked to when '00 ready' is indicated.
If turning OFF the machine during the writing process, it is necessary to download the firmware again. If turning ON the machine under this condition, the machine startup with the download mode, so perform the firmware download.
If turning OFF/ON the machine once again without downloading, the error code 'E602-0002' will be displayed and disabling redownload; thus, PCB replacement will be required.

5) Click [EXIT].



F-5-19

After Downloading
The new version will not be effective unless the power has been turned off and then back on.

5.5 Service Mode

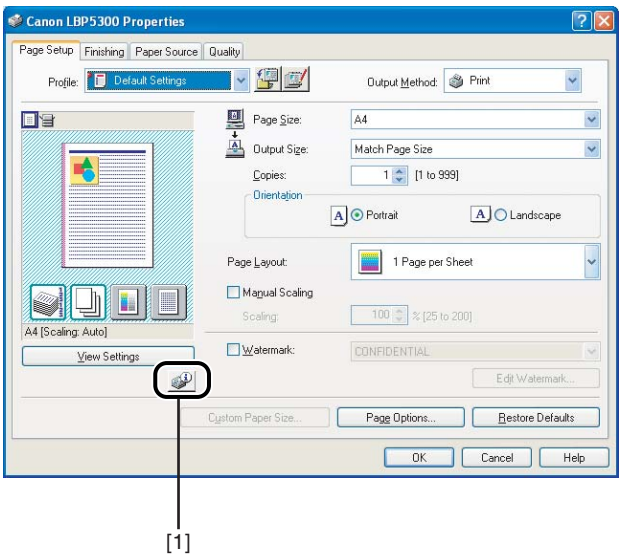
5.5.1 Outline

5.5.1.1 Outline

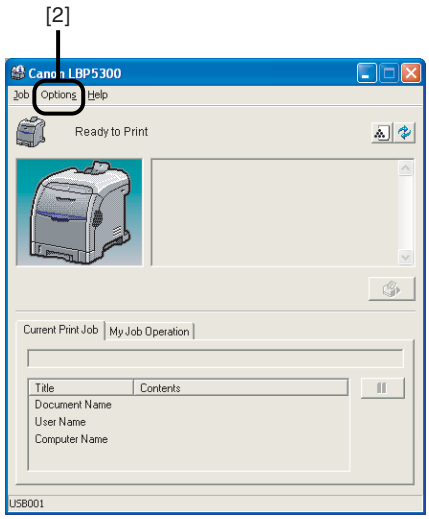
i-SENSYS LBP5300

The machine is equipped with service mode to enable the service person to check its condition. On a PC, enter the appropriate ID from the keyboard to add a special menu to the Printer Status Window screen.

Starting Service Mode
1. Turn on the power so that the Printer Driver screen appears.
2. On the Drive screen, bring up the Status window [1].
3. Enter the appropriate password (*28*) from the keyboard.
4. See that service mode [2] has appeared on the Option menu of the Status Window screen.



F-5-20

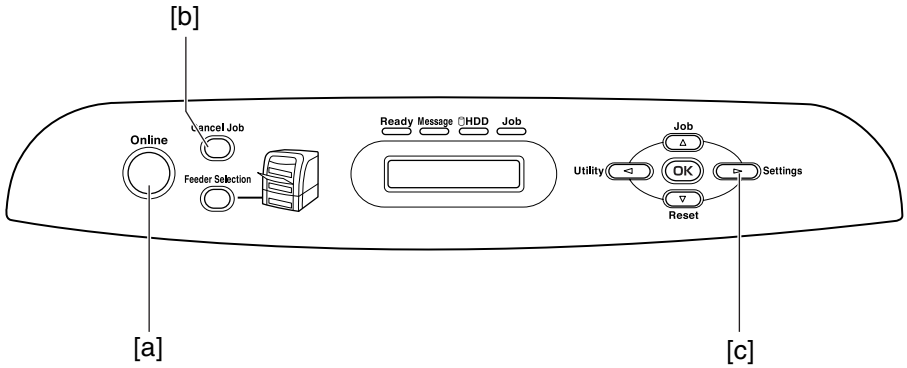


F-5-21

5.5.1.2 Outline

/ i-SENSYS LBP5360

Shifting to Service Mode
1) While holding down the Online key (a) and the Cancel Job key (b), turn on the power.
2) Press the Settings key (c) so that 'SERVICE MODE' is indicated.
3) Press the Enter key so that the group name appears. (Use the down arrow key to move to the next item.)



F-5-22

5.5.2 Service Mode Table

5.5.2.1 Service Mode Items

i-SENSYS LBP5300

T-5-11

Group		Description	Settings
Service Chart Print		Print of Service Chart Print 1	
		Print of Service Chart Print 2	
		Print of Service Chart Print 3	
COunter Details		Use it to check the number of printed pages using respective toner cartridges.	
Service settings	Charge Bias	Use it to set the offset value for the Charge Bias.	-10 to +10
	Developing Bias	Use it to set the offset value for the Developing Bias.	-10 to +10
	Attraction Bias	Use it to set the offset value for the Attraction Bias.	-20 to +20
	Fusing Temperature	Use it to set the fixing temperature.	-4 to +4
	Transfer Bias	Use it to set the offset value for the transfer bias.	Front side: -30 to +40 Back side: -40 to +30 Page-to-page Transfer Bias: -20 to +50
Configuration Page Print B		Print of configuration page print B	
Log Retention Settings		Output of Log file	
Printer Settings Restorration		When the DC controller PCB is exchanged, it rewrites it to NVRAM of the DC controller PCB that exchanges the data of NVRAM backed up to the video controller PCB.	

5.5.2.2 Service Mode

/ i-SENSYS LBP5360

T-5-12

Service Mode > Adjust gr.		
Item	**Description**	**Setting Range**
CALIBRATION	Set ON/OFF of calibration.	ON*/OFF
CHARGE BIAS Y	Set the charging bias value. (Yellow)	-10 to 10 (0*)
CHARGE BIAS M	Set the charging bias value. (Magenta)	-10 to 10 (0*)
CHARGE BIAS C	Set the charging bias value. (Cyan)	-10 to 10 (0*)
CHARGE BIAS K	Set the charging bias value. (Black)	-10 to 10 (0*)
DEV BIAS Y	Set the developing bias value. (Yellow)	-10 to 10 (0*)
DEV BIAS M	Set the developing bias value. (Magenta)	-10 to 10 (0*)
DEV BIAS C	Set the developing bias value. (Cyan)	-10 to 10 (0*)
DEV BIAS K	Set the developing bias value. (Black)	-10 to 10 (0*)
FRONT TRANS Y	Set the transfer bias value for the surface. (Yellow)	-30 to 40 (0*)
FRONT TRANS M	Set the transfer bias value for the surface. (Magenta)	-30 to 40 (0*)
FRONT TRANS C	Set the transfer bias value for the surface. (Cyan)	-30 to 40 (0*)
FRONT TRANS K	Set the transfer bias value for the surface. (Black)	-30 to 40 (0*)
BACK TRANS Y	Set the transfer bias value for the back. (Yellow)	-40 to 30 (0*)
BACK TRANS M	Set the transfer bias value for the back. (Magenta)	-40 to 30 (0*)
BACK TRANS C	Set the transfer bias value for the back. (Cyan)	-40 to 30 (0*)
BACK TRANS K	Set the transfer bias value for the back. (Black)	-40 to 30 (0*)
PG TRANS YMCK	Set the sheet-to-sheet bias value.	-20 to 50 (0*)
FRONT ATTACH	Set the attraction bias value for the surface.	-20 to 50 (0*)
BACK ATTACH	Set the attraction bias value for the back.	-20 to 20 (0*)
FRT FUSE TEMP	Set the fixing temperature value for the surface.	-4 to 4 (0*)
BCK FUSE TEMP	Set the fixing temperature value for the back.	-4 to 4 (0*)

T-5-13

Service mode > F/W update gr.		
Item	**Description**	**Settings**
USB	executes upgrading of the controller firmware* (only if USB)	----
NETWORK	executes upgrading of the controller firmware	----

T-5-14

Service Mode > Function gr.		
Item	**Description**	**Setting Range**
RESTORE DCON	Restore the backup information of the DC controller NVRAM that the video controller retains to the DC controller NVRAM.	----
CLEAR DCON	Initialize the backup area of the DC controller NVRAM in the video controller.	----
COLOR_MODE_SLCT	Set whether the judgment of color/mono print is performed at the printer side.	ON/OFF*

T-5-15

Service mode > log gr.		
Item	**Description**	**Settings**
SYSTEM LOG	sets the system log mechanism	ON*/OFF

T-5-16

Service mode > Network gr.		
Item	**Description**	**Settings**
FTP SYSLOG	Use it to set the various system log file acquisition functions.	ON/OFF*
JOB SERIALIZE	sets the connector serialization mechanism	ON/OFF*

PARTS CATALOG

LBP5300/5360/5400

Canon

Apr 29 2008

PREFACE

This Parts Catalog contains listings of parts used

Diagrams are provided with the listings to aid the service technician in identifying clearly, the item to be orderd.
Whenever ordering parts, consult this Parts Catalog for all of the information pertaining to each item. Be sure to include, in the Parts Request, the full item description, the item part number, and the quantity.

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RC1-6234-020	810 - 3	RC1-6580-000	103 - 2	RC1-6701-000	102 - 8
RC1-6235-000	810 - 4	RC1-6581-000	103 - 3	RC1-6702-000	104 - 4
RC1-6237-000	810 - 5	RC1-6582-000	103 - 4	RC1-6744-000	102 - 29
RC1-6245-000	810 - 6	RC1-6583-000	103 - 5	RC1-6771-020	103 - 19
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RC1-6258-000	810 - 9	RC1-6593-000	103 - 8	RC1-6776-000	104 - 23
RC1-6259-000	810 - 10	RC1-6594-000	103 - 9	RC1-6777-000	104 - 18
RC1-6260-000	810 - 11	RC1-6596-000	103 - 10	RC1-6780-020	300 - 13
RC1-6261-000	810 - 12	RC1-6605-000	103 - 11	RC1-6786-000	104 - 19
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RC1-6275-000	810 - 22	RC1-6624-000	104 - 32	RC1-6841-000	810 - 31
RC1-6276-000	810 - 23	RC1-6629-000	102 - 18	RC1-6843-000	810 - 33
RC1-6277-000	810 - 24	RC1-6631-000	102 - 1	RC1-6845-000	810 - 53
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RC1-6381-000	100 - 1	RC1-6643-020	102 - 6	RC1-7549-000	102 - 11
RC1-6382-000	100 - 2	RC1-6645-000	102 - 7	RC1-7551-000	105 - 8
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PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO
RC1-7563-000	102 - 42	RK2-0937-000	331 - 6	RM1-2613-000	105 - 16
RC1-7566-000	104 - 17	RK2-0939-000	104 - 25	RM1-2614-000	105 - 17
RC1-7567-000	102 - 35	RK2-0944-000	331 - 12	RM1-2616-000	266 - 1
RC1-7570-000	300 - 17	RK2-0954-000	101 - 1	RM1-2617-000	266 - 4
RC1-7572-000	810 - 34	RK2-0954-000	102 - 13	RM1-2618-000	266 - 3
RC1-7573-000	810 - 35	RK2-0966-000	103 - 20	RM1-2619-000	280 - 1
RC1-7574-000	810 - 36	RK2-0967-000	103 - 21	RM1-2620-000	100 - 15
RC1-7575-000	810 - 37	RK2-0969-000	106 - 3	RM1-2627-000	103 - 29
RC1-7576-000	103 - 17	RK2-0969-000	107 - 3	RM1-2632-000	106 - 14
RC1-7583-000	102 - 12	RK2-0970-000	106 - 4	RM1-2632-000	107 - 14
RC1-7588-000	331 - 13	RK2-0970-000	107 - 4	RM1-2640-000	105 - 24
RC1-7589-000	331 - 14	RK2-1302-000	106 - 1	RM1-2666-050	810 - 43
RC1-7590-000	331 - 11	RK2-1302-000	107 - 1	RM1-2667-100	810 - 44
RC1-7591-000	104 - 20	RK2-1563-050	105 - 20	RM1-2670-000	105 - 30
RC1-7592-000	104 - 21	RK2-1564-060	105 - 20	RM1-2677-000	102 - 24
RC1-7594-000	102 - 32	RK2-1897-000	001 - 1	RM1-2678-000	104 - 29
RC1-7597-000	103 - 26	RK2-1898-000	001 - 1	RM1-2679-020	260 -
RC1-7598-000	103 - 27	RK2-1899-000	001 - 1	RM1-2683-020	102 - 25
RC1-7599-000	106 - 16	RK2-1901-000	001 - 1	RM1-2687-000	270 -
RC1-7599-000	107 - 16	RK2-1911-000	001 - 1	RM1-2689-000	103 - 24
RC1-7601-000	300 - 18	RK2-1913-000	001 - 1	RM1-2692-030	331 - 8
RC1-7602-000	300 - 19	RK2-1914-000	001 - 1	RM1-2693-000	331 - 9
RC1-7606-000	810 - 51	RK2-1915-000	001 - 1	RM1-2694-010	331 - 10
RC1-7618-000	102 - 9	RL1-1064-000	104 - 31	RM1-2699-000	310 - 4
RC1-7632-000	810 - 45	RL1-1067-000	104 - 35	RM1-2702-000	310 - 3
RC1-7644-000	300 - 4	RL1-1068-000	102 - 17	RM1-2704-000	310 - 6
RC1-7645-000	300 - 28	RL1-1069-000	104 - 34	RM1-2706-030	300 - 22
RC1-7649-000	300 - 3	RL1-1074-000	300 - 20	RM1-2707-000	300 - 23
RC2-1597-000	100 - 4	RL1-1760-000	106 - 6	RM1-2708-000	300 - 24
RC2-1601-000	100 - 5	RL1-1761-000	106 - 6	RM1-2709-000	300 - 25
RC2-1605-000	300 - 6	RM1-2576-000	104 - 30	RM1-2710-000	100 - 12
RC2-1606-000	300 - 14	RM1-2578-100	106 - 7	RM1-2711-040	351 -
RC2-1618-000	100 - 8	RM1-2578-100	107 - 7	RM1-2718-000	330 - 1
RC2-1631-000	100 - 17	RM1-2581-000	105 - 11	RM1-2719-000	330 - 2
RC2-1634-000	106 - 2	RM1-2584-000	100 - 10	RM1-2720-000	265 -
RC2-1634-000	107 - 2	RM1-2585-000	103 - 22	RM1-2721-040	266 -
RC2-1644-000	100 - 6	RM1-2586-000	810 - 42	RM1-2722-010	360 -
RC2-1645-000	100 - 7	RM1-2587-000	106 - 10	RM1-2741-000	310 - 1
RC2-1646-000	810 - 50	RM1-2587-000	107 - 10	RM1-2744-050	810 - 43
RC2-1647-000	810 - 52	RM1-2592-000	106 - 11	RM1-2746-000	810 - 46
RC2-1650-000	300 - 26	RM1-2592-000	107 - 11	RM1-2747-030	810 - 48
RC2-1651-000	100 - 18	RM1-2594-000	103 - 23	RM1-2748-000	810 - 49
RC2-1654-000	100 - 21	RM1-2595-000	105 - 12	RM1-2751-000	103 - 28
RC2-1655-000	100 - 20	RM1-2596-000	102 - 43	RM1-2752-060	330 -
RC2-1760-000	100 - 11	RM1-2597-000	105 - 21	RM1-2758-000	280 -
RC2-2745-000	104 - 24	RM1-2601-000	810 - 47	RM1-2759-000	331 -
RC2-2746-000	300 - 29	RM1-2603-000	104 - 26	RM1-3912-000	106 - 8
RH9-1164-000	105 - 28	RM1-2605-000	105 - 23	RM1-3912-000	107 - 8
RH9-1166-000	105 - 29	RM1-2608-000	105 - 13	RM1-4097-000	105 - 25
RH9-1169-000	105 - 26	RM1-2609-000	105 - 32	RM1-4294-000	100 - 19
RH9-1170-000	105 - 27	RM1-2610-000	105 - 14	RM1-4295-000	100 - 9
RH9-1171-000	105 - 31	RM1-2611-000	105 - 15	RM1-4296-000	300 - 27

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PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO.	PARTS NUMBER	FIGURE & KEY NO
RM1-4297-000	100 - 16	XB4-7401-005	330 - 501		
RM1-4298-000	101 -	XB4-7401-005	331 - 501		
RM1-4299-000	100 - 13	XB6-7301-205	107 - 502		
RM1-4300-030	810 -	XD2-1100-242	810 - 501		
RM1-4301-000	810 - 43	XD3-1200-102	102 - 501		
RM1-4341-000	100 - 14	XD9-0234-000	810 - 39		
RM1-4347-000	100 - 19	XD9-0235-000	810 - 40		
RM1-4348-030	810 -	XG9-0572-000	810 - 41		
RM1-4349-030	810 -				
RM1-4350-010	310 -				
RM1-4354-000	102 - 26				
RM1-4355-000	102 - 26				
RM1-4356-000	101 - 2				
RM1-4380-000	102 - 26				
RM1-4381-000	102 - 26				
RM1-4382-000	102 - 26				
RM1-4383-000	102 - 26				
RM1-4384-000	102 - 26				
RM1-4385-000	102 - 26				
RM1-4386-000	101 -				
RM1-4387-000	100 - 19				
RM1-4594-000	107 - 17				
RM1-4680-000	107 - 17				
RM1-4746-000	100 - 19				
RM1-4747-000	100 - 19				
RM1-4829-000	106 - 9				
RM1-4830-000	106 - 9				
RU5-0328-000	300 - 21				
VS1-7177-002	105 - 22				
VS1-7207-020	266 - 2				
VS1-7257-007	331 - 7				
VS1-7258-007	105 - 18				
VS1-7258-014	104 - 27				
WA7-3940-000	107 - 19				
WE8-5689-000	001 - 2				
WP2-5214-000	105 - 9				
XA9-1449-000	103 - 25				
XA9-1449-000	105 - 10				
XA9-1449-000	810 - 38				
XA9-1500-000	102 - 27				
XA9-1500-000	104 - 22				
XA9-1500-000	105 - 19				
XA9-1671-000	106 - 15				
XA9-1671-000	107 - 15				
XA9-1671-000	810 - 32				
XA9-1671-008	310 - 5				
XB1-1300-807	107 - 501				
XB4-7401-005	100 - 501				
XB4-7401-005	102 - 502				
XB4-7401-005	105 - 501				
XB4-7401-005	107 - 503				
XB4-7401-005	300 - 501				

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Satera LBP5300

100V JP	**R96-2324-000**	**LSLA**

LASER SHOT LBP5300

120V US	**R96-2334-000**	**LSMA**
230V ASIA	**R96-2448-000**	**LSPA**
230V AU	**R96-2448-000**	**LSQA**
230V CN	**R96-2468-000**	**LSRA**

i-SENSYS LBP5300

230V EUR	**R96-2338-000**	**LSNA**

i-SENSYS LBP5360

230V EUR	**R96-2348-000**	**LSXA**

LASER SHOT LBP5360

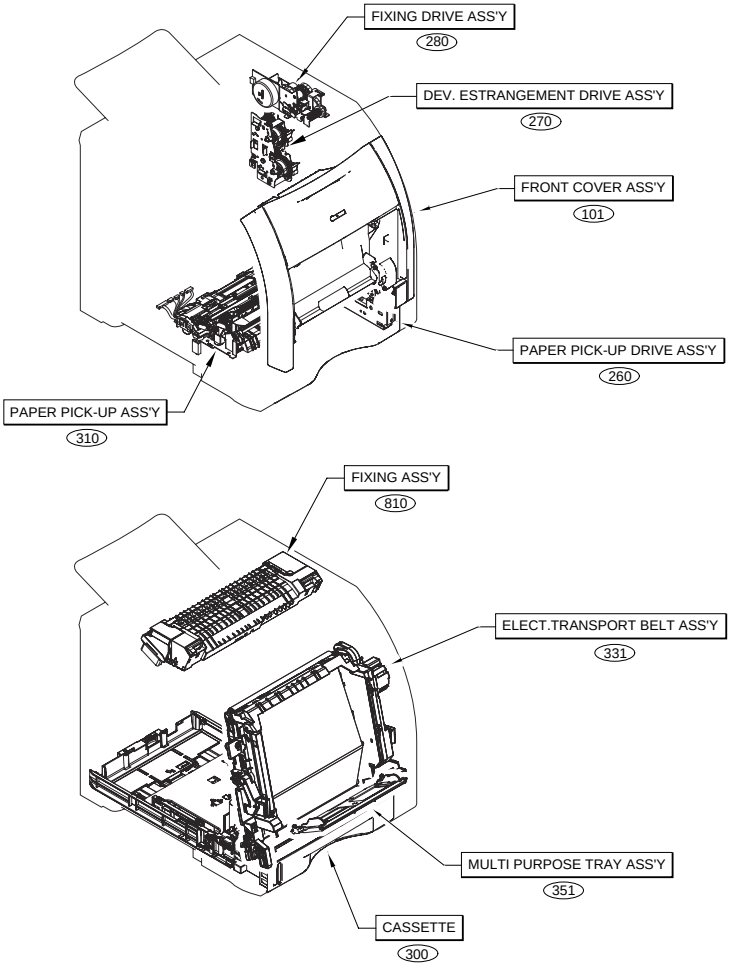
230V ASIA	**R96-2478-000**	**LSYA**
230V AU	**R96-2478-000**	**LTAA**
230V CN	**R96-2498-000**	**LTBA**

Satera LBP5400

100V	**R96-2354-000**	**LTCA**

Contents

FIGURE A
ASSEMBLY LOCATION DIAGRAM



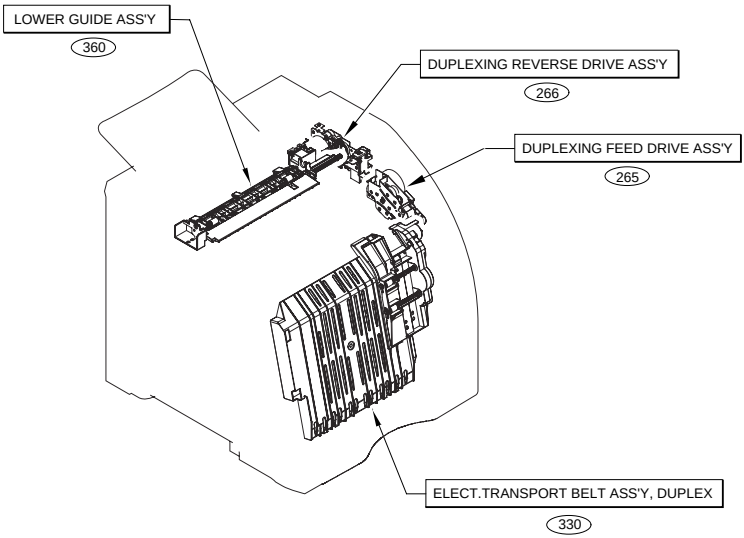
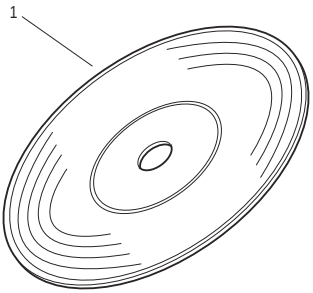

LOWER GUIDE ASS'Y
360
DUPLEXING REVERSE DRIVE ASS'Y
266
DUPLEXING FEED DRIVE ASS'Y
265
ELECT.TRANSPORT BELT ASS'Y, DUPLEX
330

FIGURE 001
ACCESSORIES



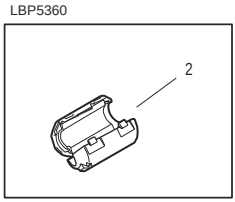
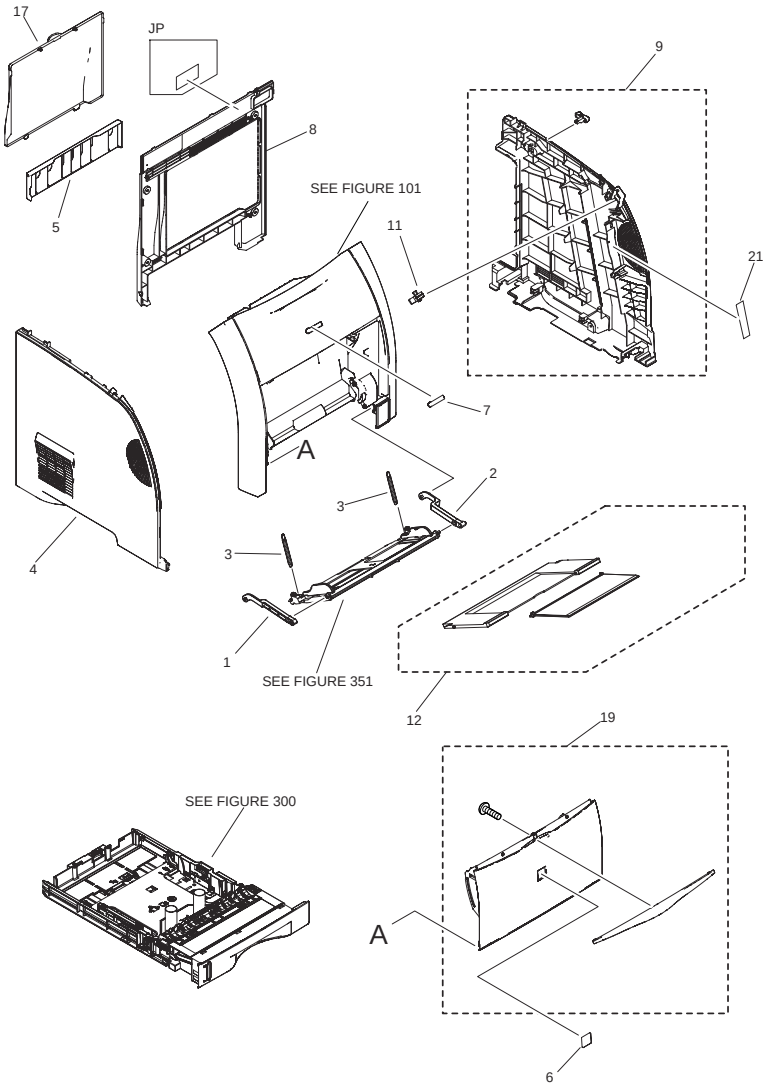


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.001	NPN		RF	ACCESSORIES		
1	RK2-1899-000		1	CD-ROM, USER SOFTWARE	LBP5300 English/Spanish	
1	RK2-1898-000		1	CD-ROM, USER SOFTWARE	LBP5300 English/French/ German/Italian	
1	RK2-1897-000		1	CD-ROM, USER SOFTWARE	LBP5300 Japanese	
1	RK2-1901-000		1	CD-ROM, USER SOFTWARE	LBP5300 Chinese	
1	RK2-1914-000		1	CD-ROM, USER SOFTWARE	LBP5360 English/French/ German/Italian	
1	RK2-1913-000		1	CD-ROM, USER SOFTWARE	LBP5360 English	
1	RK2-1915-000		1	CD-ROM, USER SOFTWARE	LBP5360 Chinese	
1	RK2-1911-000		1	CD-ROM, USER SOFTWARE	LBP5400	
2	WE8-5689-000		1	FILTER, NOISE(RING CORE)	LBP5360	

FIGURE 100
EXTERNAL COVERS, PANELS, ETC.



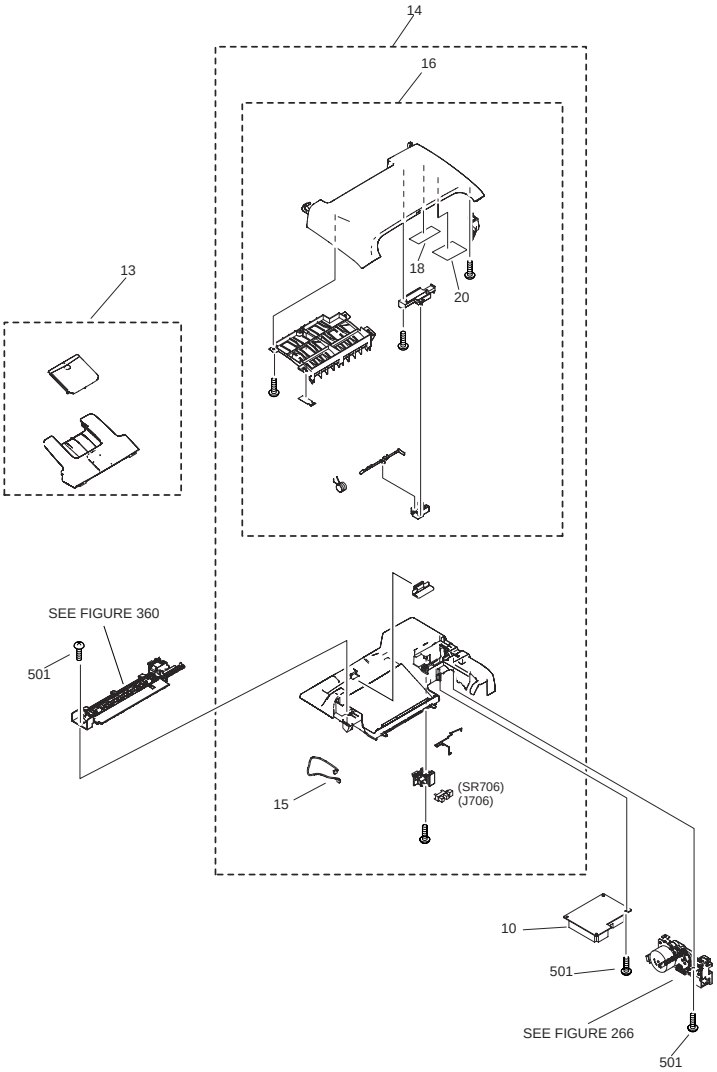

14
16
18
20
13
SEE FIGURE 360
501
15
(SR706)
(J706)
10
501
SEE FIGURE 266
501

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.100	NPN		RF	EXTERNAL COVERS, PANELS, ETC.		
1	RC1-6381-000		1	LINK, M.P. HINGE, LEFT		
2	RC1-6382-000		1	LINK, M.P. HINGE, RIGHT		
3	RC1-6383-000		2	SPRING, TENSION		
4	RC2-1597-000		1	COVER, LEFT		
5	RC2-1601-000		1	COVER, CASSETTE, REAR LEFT		
6	RC2-1644-000		1	EMBLEM, ABS	EXCEPT JP	
6	FC5-5256-000		1	EMBLEM	JP	
7	RC2-1645-000		1	PLATE, CANON LOGO		
8	RC2-1618-000		1	COVER, REAR		
9	RM1-4295-000		1	RIGHT COVER ASS'Y		
10	RM1-2584-000		1	DUPLEXING PCB ASS'Y		
11	RC2-1760-000		1	ARM, COVER, RIGHT		
12	RM1-2710-000		1	M.P. EXTENSION TRAY ASS'Y		
13	RM1-4299-000		1	FACE-DOWN TRAY ASS'Y		
14	RM1-4341-000		1	TOP COVER ASS'Y		
15	RM1-2620-000		1	CABLE, PAPER FULL		
16	RM1-4297-000		1	UPPER COVER ASS'Y		
17	RC2-1631-000		1	LID, COVER, REAR		
18	RC2-1651-000		1	LABEL, FIXING JAM CLEARING		
19	RM1-4387-000		1	MULTI COVER ASS'Y	LBP5300 EUR	
19	RM1-4347-000		1	MULTI COVER ASS'Y	LBP5300 EXCEPT EUR	
19	RM1-4294-000		1	MULTI COVER ASS'Y	LBP5360 AU/ASIA/CN	
19	RM1-4746-000		1	MULTI COVER ASS'Y	LBP5360 EUR	
19	RM1-4747-000		1	MULTI COVER ASS'Y	LBP5400	
20	RC2-1655-000		1	LABEL, JAM DISPOSE CAUTION		
21	RC2-1654-000		1	LABEL, CARTRIDGE EXCHANGE		
501	XB4-7401-005		1	SCREW,TAPPING,TRUSS HEAD,M4X10		

FIGURE 101
FRONT COVER ASS'Y

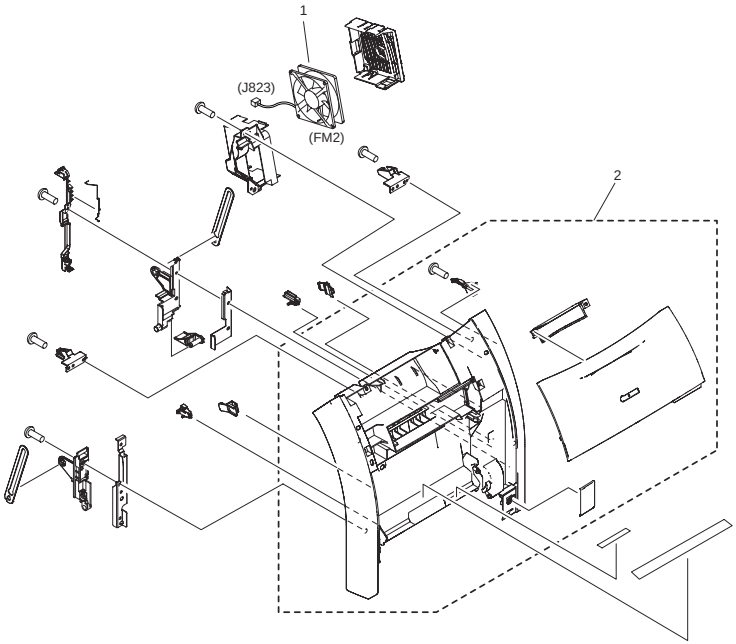


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.101	RM1-4298-000		1	FRONT COVER ASS'Y	EXCEPT JP	
Fig.101	RM1-4386-000		1	FRONT COVER ASS'Y	JP	
1	RK2-0954-000		1	FAN		
2	RM1-4356-000		1	HANDLE COVER ASS'Y		

FIGURE 102
INTERNAL COMPONENTS 1

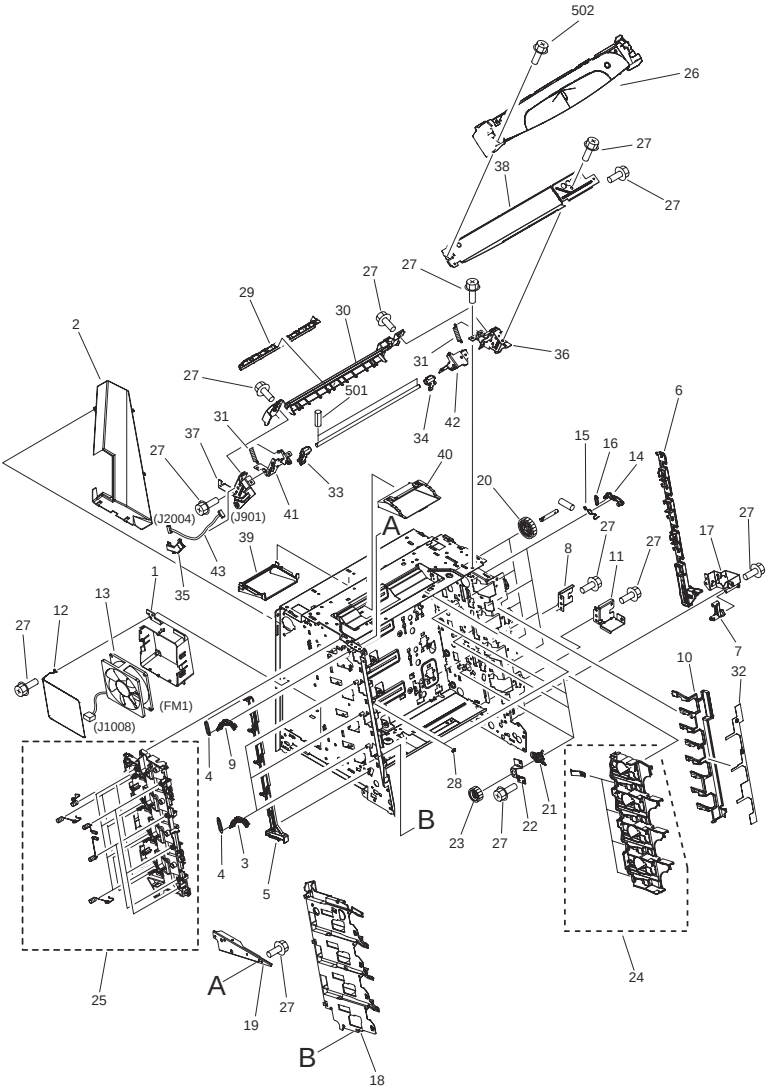


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.102	NPN		RF	INTERNAL COMPONENTS 1		
1	RC1-6631-000		1	HOLDER, FAN		
2	RC1-6632-000		1	DUCT, FAN		
3	RC1-6633-000		3	LEVER, LOCK, LEFT		
4	RC1-6634-000		4	SPRING, TENSION		
5	RC1-6636-000		1	LEVER, LOCK SLIDE, LEFT		
6	RC1-6643-020		1	LEVER, LOCK SLIDE, RIGHT		
7	RC1-6645-000		1	CAM, SLIDE, RIGHT		
8	RC1-6701-000		1	SUPPORT, RIGHT LOWER, REAR		
9	RC1-7618-000		1	LEVER, LOCK, LEFT UPPER		
10	RC1-6824-020		1	COVER, SIDE PLATE, RIGHT		
11	RC1-7549-000		1	CROSSMEMBER, RIGHT LOWER, FR.		
12	RC1-7583-000		1	SPRING, GROUNDING		
13	RK2-0954-000		1	FAN		
14	RC1-6640-020		4	LEVER, LOCK, RIGHT		
15	RC1-6641-000		4	SPRING, GROUNDING		
16	RC1-6677-000		4	SPRING, TENSION		
17	RL1-1068-000		1	SUPPORT, RACK		
18	RC1-6629-000		1	GUIDE, CARTRIDGE, LEFT		
19	RC1-6875-000		1	PLATE, REINFORCEMENT, LEFT		
20	RC1-6571-000		4	GEAR, 58T		
21	RC1-6573-000		4	BUSHING		
22	RC1-6574-000		4	BASE, DEV. OUTPUT GEAR		
23	RC1-6575-000		4	GEAR, 29T		
24	RM1-2677-000		1	CARTRIDGE GUIDE RIGHT ASS'Y		
25	RM1-2683-020		1	CONTACT HOLDER ASS'Y		
26	RM1-4382-000		1	CONTROL PANEL ASS'Y	LBP5300 Chinese	
26	RM1-4381-000		1	CONTROL PANEL ASS'Y	LBP5300 Illustration	
26	RM1-4380-000		1	CONTROL PANEL ASS'Y	LBP5300 Japanese	
26	RM1-4354-000		1	CONTROL PANEL ASS'Y	LBP5300 English	
26	RM1-4383-000		1	CONTROL PANEL ASS'Y	LBP5400	
26	RM1-4355-000		1	CONTROL PANEL ASS'Y	LBP5360 English	

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
26	RM1-4384-000		1	CONTROL PANEL ASS'Y	LBP5360 Illustration	
26	RM1-4385-000		1	CONTROL PANEL ASS'Y	LBP5360 Chinese	
27	XA9-1500-000		20	SCREW, RS, M3X8		
28	RC1-6679-000		2	COVER, LOCK CLAW		
29	RC1-6744-000		1	GUIDE, DUPLEXING EXTERNAL		
30	RC1-6795-000		1	COVER, GUIDE CROSSMEMBER		
31	RC1-7552-000		2	SPRING, TENSION		
32	RC1-7594-000		1	LABEL, CARTRIDGE POSITIONING		
33	RC1-7554-010		1	LATCH, LEFT		
34	RC1-7555-010		1	LATCH, RIGHT		
35	RC1-7567-000		1	COVER, PANEL CABLE		
36	RC1-6618-000		1	MOUNT, FIXING GUIDE, RIGHT		
37	RC1-6619-000		1	MOUNT, FIXING GUIDE, LEFT		
38	RC1-6694-000		1	FRAME, CONTROL PANEL		
39	RC1-7547-000		1	DUCT, 2		
40	RC1-7548-000		1	DUCT, 3		
41	RC1-7562-000		1	HOLDER, TOGGLE, LEFT		
42	RC1-7563-000		1	HOLDER, TOGGLE, RIGHT		
43	RM1-2596-000		1	CABLE, PANEL		
501	XD3-1200-102		2	PIN, SPRING		
502	XB4-7401-005		2	SCREW,TAPPING,TRUSS HEAD,M4X10		

FIGURE 103
INTERNAL COMPONENTS 2

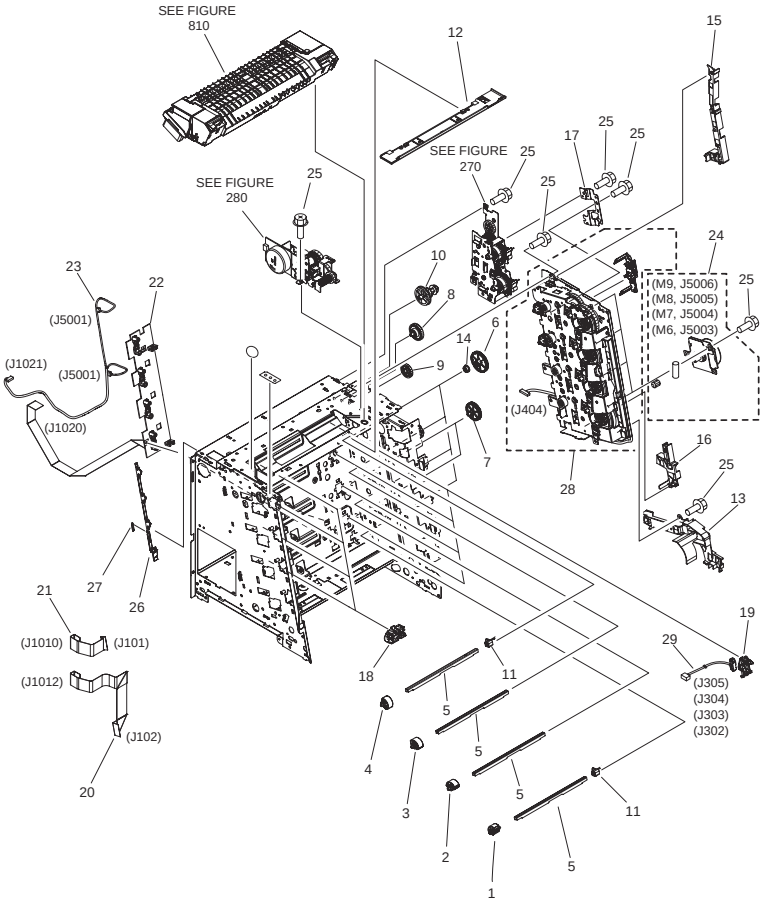


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.103	NPN		RF	INTERNAL COMPONENTS 2		
1	RC1-6579-000		1	CAM, DEV.ESTRANGEMENT, 1		
2	RC1-6580-000		1	CAM, DEV.ESTRANGEMENT, 2		
3	RC1-6581-000		1	CAM, DEV.ESTRANGEMENT, 3		
4	RC1-6582-000		1	CAM, DEV.ESTRANGEMENT, 4		
5	RC1-6583-000		4	SHAFT, DEV.ESTRANGEMENT		
6	RC1-6584-000		4	CAM/GEAR, 48T		
7	RC1-6589-000		2	GEAR, 41T		
8	RC1-6593-000		1	GEAR, 19T/30T		
9	RC1-6594-000		1	GEAR, 31T		
10	RC1-6596-000		1	GEAR, 17T/41T		
11	RC1-6605-000		2	FLAG, DEV.ESTRANGEMENT		
12	RC1-6668-000		1	COVER, CROSSMEMBER, UPPER		
13	RC1-6682-000		1	GUIDE, CABLE, RIGHT, 1		
14	RC1-6823-000		4	BUSHING		
15	RC1-7544-000		1	GUIDE, CABLE, RIGHT, 3		
16	RC1-7545-000		1	GUIDE, CABLE, RIGHT, 4		
17	RC1-7576-000		1	CROSSMEMBER, DRIVE SIDE PLATE		
18	RC1-6651-000		4	COVER, SHUTTER, LEFT		
19	RC1-6771-020		4	HOLDER, TONER CARTRIDGE		
20	RK2-0966-000		1	CABLE, SCANNER FLAT		
21	RK2-0967-000		1	CABLE, SCANNER FLAT		
22	RM1-2585-000		1	CARTRIDGE SENSOR PCB ASS'Y		
23	RM1-2594-000		1	CABLE, SCANNER		
24	RM1-2689-000		4	DRIVE MOTOR ASS'Y		
25	XA9-1449-000		10	SCREW, RS, M3X8		
26	RC1-7597-000		1	LEVER, SENSING		
27	RC1-7598-000		1	SPRING, TENSION		
28	RM1-2751-000		1	MAIN DRIVE ASS'Y		
29	RM1-2627-000		4	CABLE, TAG MEMORY		

FIGURE 104
INTERNAL COMPONENTS 3

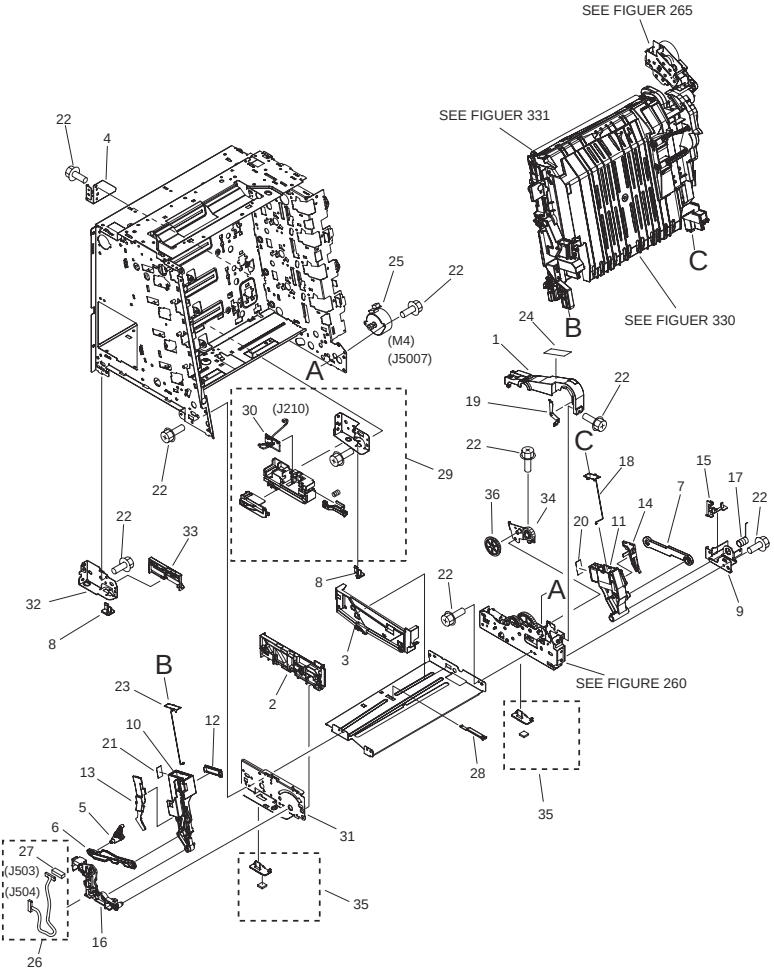


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.104	NPN		RF	INTERNAL COMPONENTS 3		
1	RC1-6405-000		1	COVER, GEAR		
2	RC1-6499-000		1	GUIDE, CASSETTE FRONT, LEFT		
3	RC1-6502-000		1	GUIDE, CASSETTE FRONT, RIGHT		
4	RC1-6702-000		1	BRACKET, RIGHT REAR		
5	RC1-6638-000		1	CAM, SLIDE, LEFT		
6	RC1-6639-000		1	ROD, LINK, LEFT		
7	RC1-6646-000		1	ROD, LINK, RIGHT		
8	RC1-6650-000		2	FOOT, REAR		
9	RC1-6670-000		1	MOUNT, HINGE, RIGHT		
10	RC1-6673-020		1	HOLDER, E.T.B., LEFT		
11	RC1-6674-000		1	HOLDER, E.T.B., RIGHT		
12	RC1-6675-000		1	COVER, CONNECTOR		
13	RC1-6676-000		1	COVER, E.T.B. HOLDER, LEFT		
14	RC1-6680-000		1	COVER, E.T.B. HOLDER, RIGHT		
15	RC1-6683-000		1	GUIDE, CABLE, RIGHT 2		
16	RC1-6684-000		1	MOUNT, HINGE, LEFT		
17	RC1-7566-000		1	SPRING, COMPRESSION		
18	RC1-6777-000		1	SPRING, GROUNDING		
19	RC1-6786-000		1	PLATE, GROUNDING		
20	RC1-7591-000		1	LABEL, POSITIONING, RIGHT		
21	RC1-7592-000		1	LABEL, POSITIONING, LEFT		
22	XA9-1500-000		10	SCREW, RS, M3X8		
23	RC1-6776-000		1	SPRING, GROUNDING		
24	RC2-2745-000		1	LABEL, JAM CLEARING		
25	RK2-0939-000		1	MOTOR, AC24V, 9W		
26	RM1-2603-000		1	CABLE, SENSOR		
27	VS1-7258-014		1	CONNECTOR, DRAWER		
28	RC1-6833-020		1	PLATE, PLATE LOCK RELEASE, MD.		
29	RM1-2678-000		1	RIGHT REAR BASE ASS'Y		
30	RM1-2576-000		1	CASSETTE SENSOR PCB ASS'Y		
31	RL1-1064-000		1	BASE, LEFT FRONT		

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
32	RC1-6624-000		1	BASE, LEFT REAR		
33	RC1-6501-000		1	GUIDE, CASSETTE REAR, LEFT		
34	RL1-1069-000		1	PLATE, GEAR, 3		
35	RL1-1067-000		2	FOOT RUBBER ASS'Y, FRONT		
36	RC1-6420-000		1	GEAR, 26T/34T		

FIGURE 105
INTERNAL COMPONENTS 4

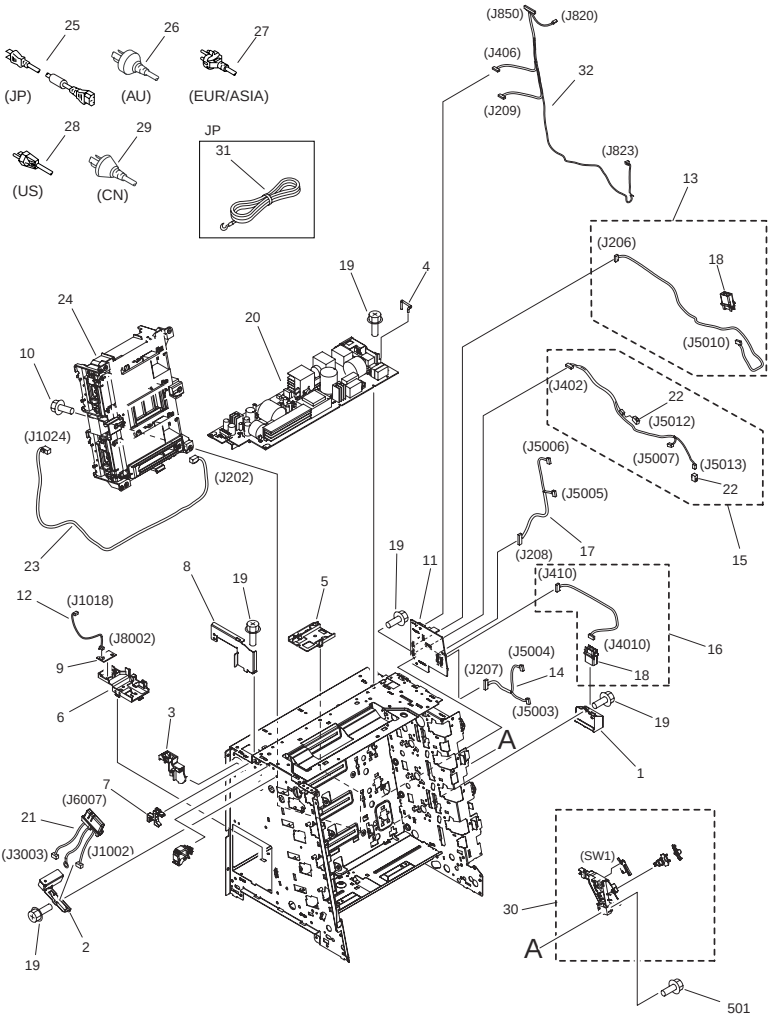


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.105	NPN		RF	INTERNAL COMPONENTS 4		
1	RC1-6652-000		1	HOLDER, DRAWER CONNECTOR		
2	RC1-6653-000		1	HOLDER, DRAWER		
3	RC1-6681-000		1	GUIDE, CABLE, LEFT		
4	RC1-6700-000		1	ARM, SWITCH LINK		
5	RC1-6772-000		1	GUIDE, FLEXIBLE FLAT CABLE, 1		
6	RC1-6773-000		1	GUIDE, FLEXIBLE FLAT CABLE, 2		
7	RC1-6825-000		1	GUARD, CABLE		
8	RC1-7551-000		1	BRACKET, LEFT, REAR		
9	WP2-5214-000		1	SENSOR UNIT, TEMPERATURE		
10	XA9-1449-000		5	SCREW, RS, M3X8		
11	RM1-2581-000		1	DRIVER PCB ASS'Y		
12	RM1-2595-000		1	CABLE, ENVIRONMENT SENSOR		
13	RM1-2608-000		1	CABLE, E.T.B.		
14	RM1-2610-000		1	CABLE, DRUM MOTOR		
15	RM1-2611-000		1	CABLE, SOLENOID		
16	RM1-2613-000		1	CABLE		
17	RM1-2614-000		1	CABLE, DRUM MOTOR		
18	VS1-7258-007		2	CONNECTOR, DRAWER		
19	XA9-1500-000		10	SCREW, RS, M3X8		
20	RK2-1563-050		1	LOW VOLTAGE POWER PCB ASS'Y	100/120V	
20	RK2-1564-060		1	LOW VOLTAGE POWER PCB ASS'Y	230V	
21	RM1-2597-000		1	FIXING UNIT CABLE ASS'Y		
22	VS1-7177-002		2	CONNECTOR, DRAWER		
23	RM1-2605-000		1	CABLE, DRIVE POWER		
24	RM1-2640-000		1	SCANNER ASS'Y		
25	RM1-4097-000		1	POWER CORD, 100V	JP	
26	RH9-1169-000		1	CORD, POWER	AU	
27	RH9-1170-000		1	CORD, POWER, 230V	EUR/ASIA	
28	RH9-1164-000		1	CORD, POWER	US	
29	RH9-1166-000		1	CORD, POWER	CN	
30	RM1-2670-000		1	INTERLOCK SWITCH ASS'Y		

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
31	RH9-1171-000		1	WIRE, GROUNDING	JP	
32	RM1-2609-000		1	CABLE, DUPLEXING DOCKING		
501	XB4-7401-005		1	SCREW,TAPPING,TRUSS HEAD,M4X10		

FIGURE 106
INTERNAL COMPONENTS 5 (LBP5300)

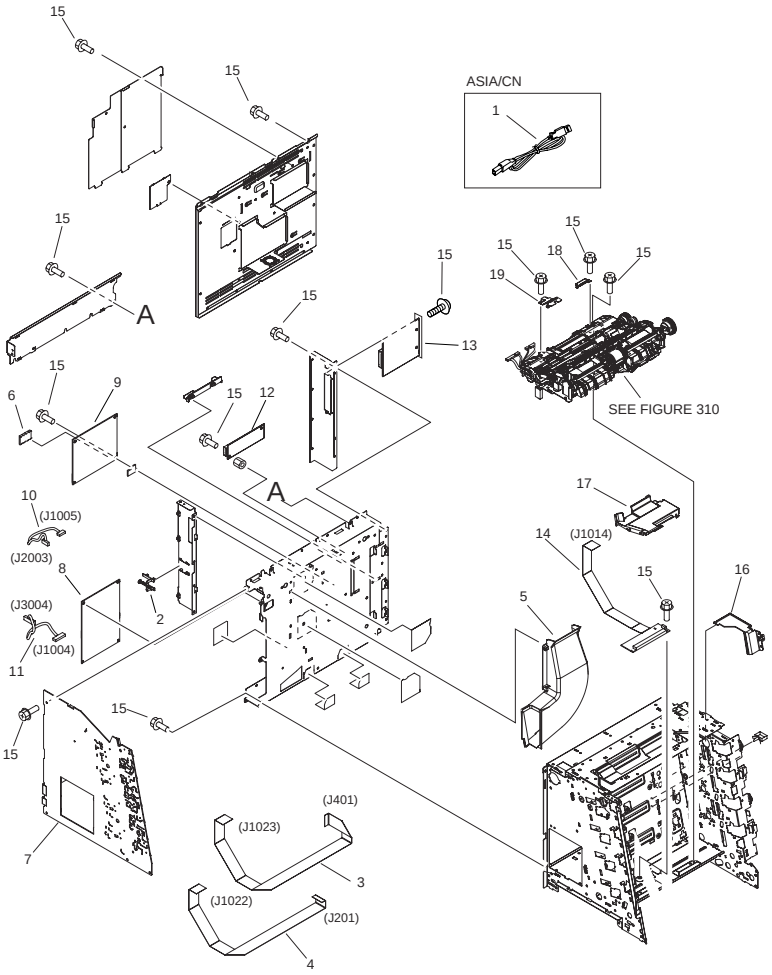


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.106	NPN		RF	INTERNAL COMPONENTS 5	LBP5300	
1	RK2-1302-000		1	CABLE, USB HOST POWER SUPPLY	ASIA/CN	
2	RC2-1634-000		1	ARM, SWITCH		
3	RK2-0969-000		1	CABLE, DRIVE FLAT, 1		
4	RK2-0970-000		1	CABLE, DRIVE FLAT, 2		
5	RC1-7546-000		1	DUCT, 1		
6	RL1-1760-000		1	IC, S93C66BD0I-D8S1G, EEP-ROM	100V	
6	RL1-1761-000		1	IC, S93C66BD0I-D8S1G, EEP-ROM	120/230V	
7	RM1-2578-100		1	HIGH-VOLTAGE PCB ASS'Y		
8	RM1-3912-000		1	DC CONTROLLER PCB ASS'Y		
9	RM1-4829-000		1	VIDEO CONTROLLER PCB ASS'Y	100V	
9	RM1-4830-000		1	VIDEO CONTROLLER PCB ASS'Y	120/230V	
10	RM1-2587-000		1	CABLE, PANEL CONNECTING		
11	RM1-2592-000		1	CABLE, POWER CONTROL		
12	FM2-6644-000		1	USB BOARD PCB ASSEMBLY		
13	FM3-0628-000		1	NETWORK BOARD PCB ASS'Y		
14	RM1-2632-000		1	RELAY PCB ASS'Y		
15	XA9-1671-000		AR	SCREW, D, M3X8		
16	RC1-7599-000		1	SHIELD, PCB		
17	RC1-6607-000		1	COVER, CONNECTOR		
18	RC1-6611-000		1	COVER, PAPER SENSOR		
19	RC1-6612-000		1	COVER, REGISTRATION SENSOR		

FIGURE 107
INTERNAL COMPONENTS 6 (LBP5400/5360)

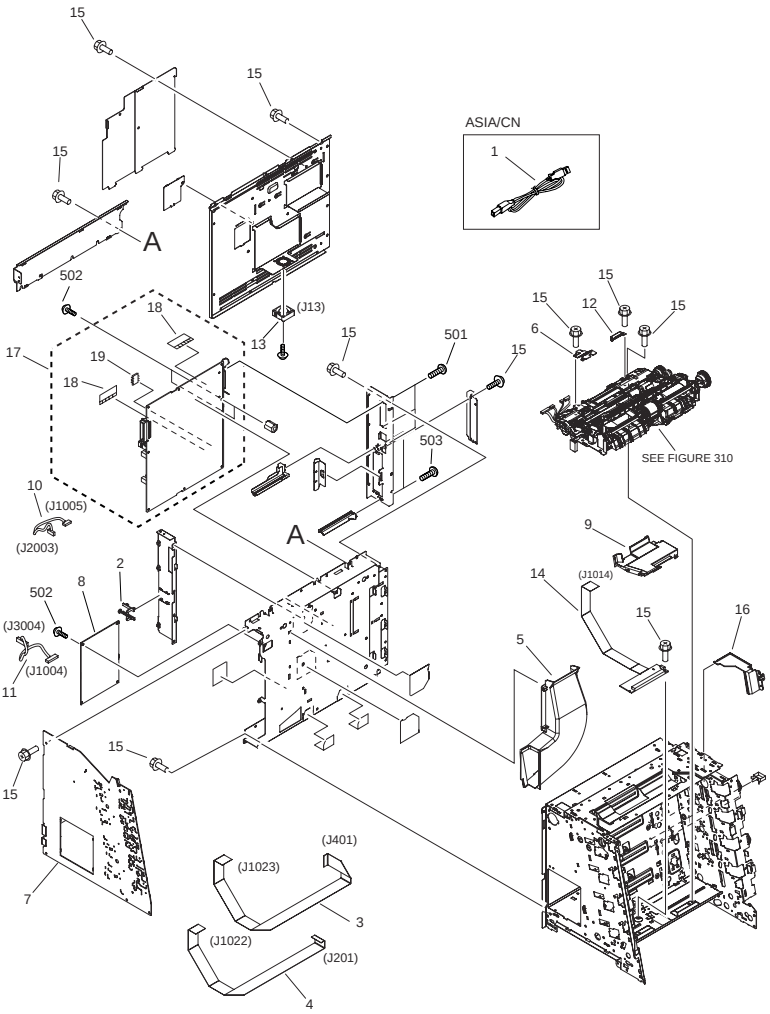


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.107	NPN		RF	INTERNAL COMPONENTS 6	LBP5400/5360	
1	RK2-1302-000		1	CABLE, USB HOST POWER SUPPLY	ASIA/CN	
2	RC2-1634-000		1	ARM, SWITCH		
3	RK2-0969-000		1	CABLE, DRIVE FLAT, 1		
4	RK2-0970-000		1	CABLE, DRIVE FLAT, 2		
5	RC1-7546-000		1	DUCT, 1		
6	RC1-6612-000		1	COVER, REGISTRATION SENSOR		
7	RM1-2578-100		1	HIGH-VOLTAGE PCB ASS'Y		
8	RM1-3912-000		1	DC CONTROLLER PCB ASS'Y		
9	RC1-6607-000		1	COVER, CONNECTOR		
10	RM1-2587-000		1	CABLE, PANEL CONNECTING		
11	RM1-2592-000		1	CABLE, POWER CONTROL		
12	RC1-6611-000		1	COVER, PAPER SENSOR		
13	FK2-0697-000		1	FAN		
14	RM1-2632-000		1	RELAY PCB ASS'Y		
15	XA9-1671-000		AR	SCREW, D, M3X8		
16	RC1-7599-000		1	SHIELD, PCB		
17	RM1-4680-000		1	VIDEO CONTROLLER PCB ASS'Y	LBP5360	
17	RM1-4594-000		1	VIDEO CONTROLLER PCB ASS'Y	LBP5400	
18	FK2-3538-000		2	DIMM ASS'Y		
19	WA7-3940-000		1	IC, CAT24AC128L, EEP-ROM		
501	XB1-1300-807		3	SCREW, CROSS-RECESS, FCH		
502	XB6-7301-205		2	SCREW, TP, M3X12		
503	XB4-7401-005		2	SCREW,TAPPING,TRUSS HEAD,M4X10		

FIGURE 260
PAPER PICK-UP DRIVE ASS'Y

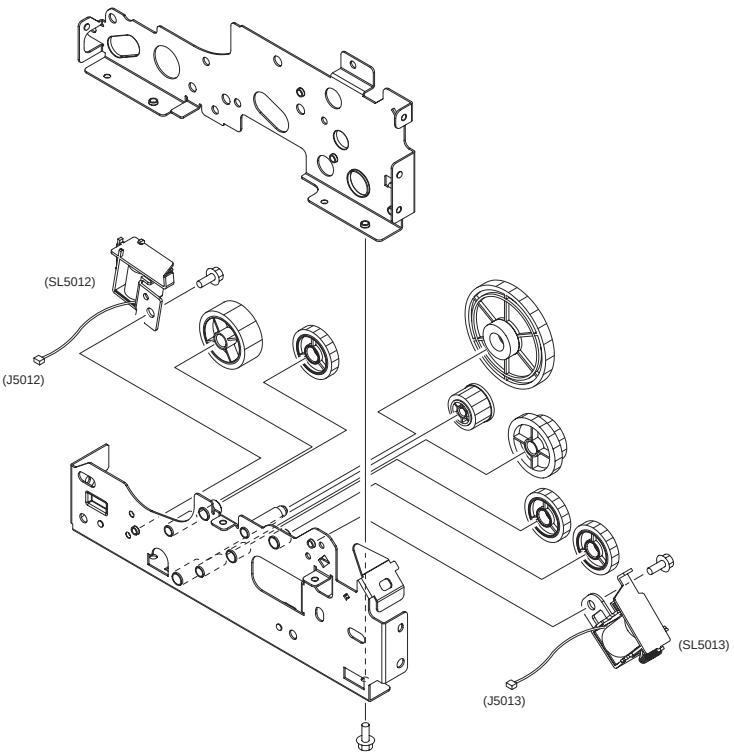


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.260	RM1-2679-020		1	PAPER PICK-UP DRIVE ASS'Y		

FIGURE 265
DUPLEXING FEED DRIVE ASS'Y

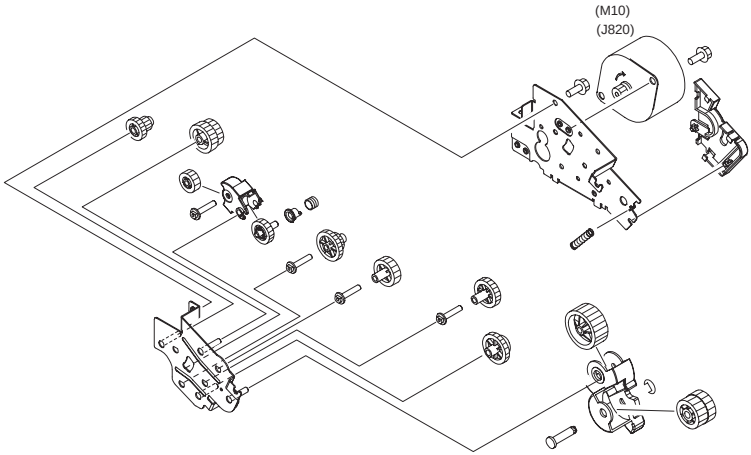


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.265	RM1-2720-000		1	DUPLEXING FEED DRIVE ASS'Y		

FIGURE 266
DUPLEXING REVERSE DRIVE ASS'Y

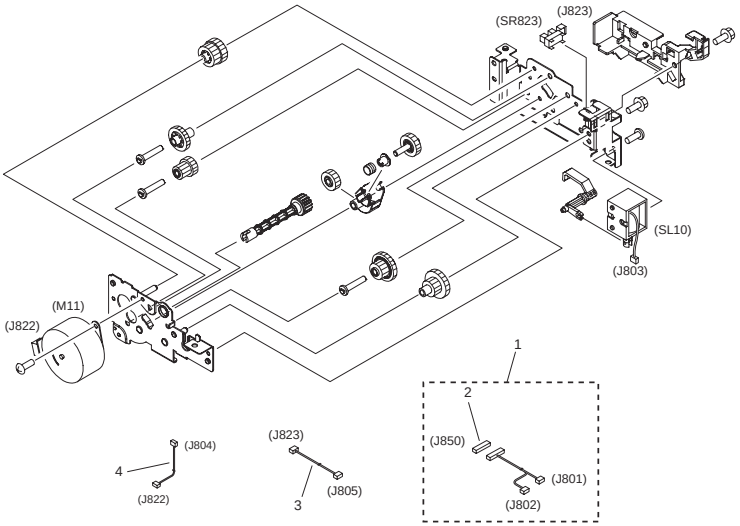


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.266	RM1-2721-040		1	DUPLEXING REVERSE DRIVE ASS'Y		
1	RM1-2616-000		1	CABLE, DUPLEXING		
2	VS1-7207-020		1	CONNECTOR, SNAP TIGHT		
3	RM1-2618-000		1	CABLE, DUPLEXING SENSOR		
4	RM1-2617-000		1	CABLE, DUPLEXING		

FIGURE 270
DEV. ESTRANGEMENT DRIVE ASS'Y

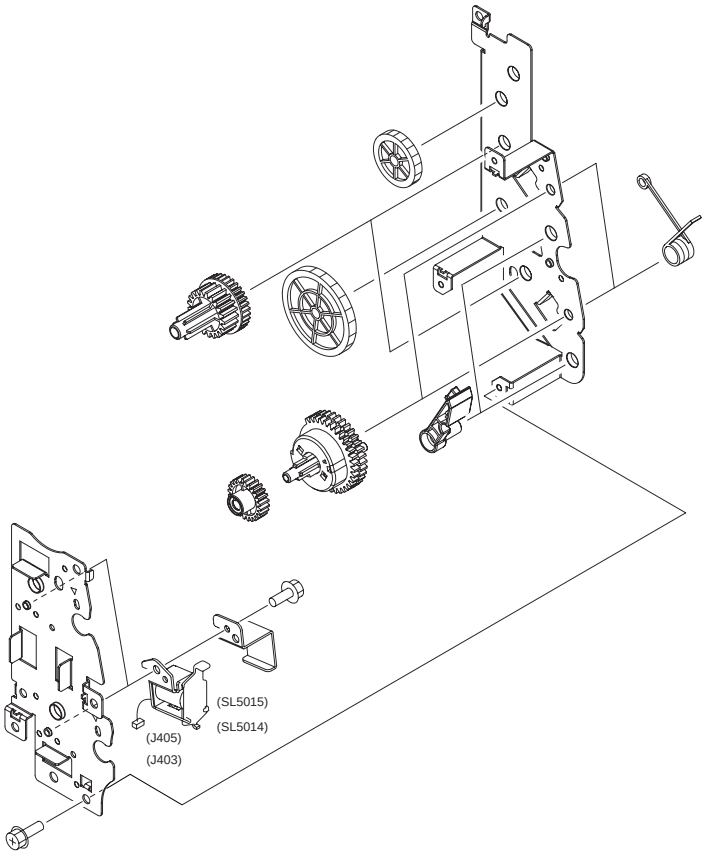


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.270	RM1-2687-000		1	DEV. ESTRANGEMENT DRIVE ASS'Y		

FIGURE 280
FIXING DRIVE ASS'Y

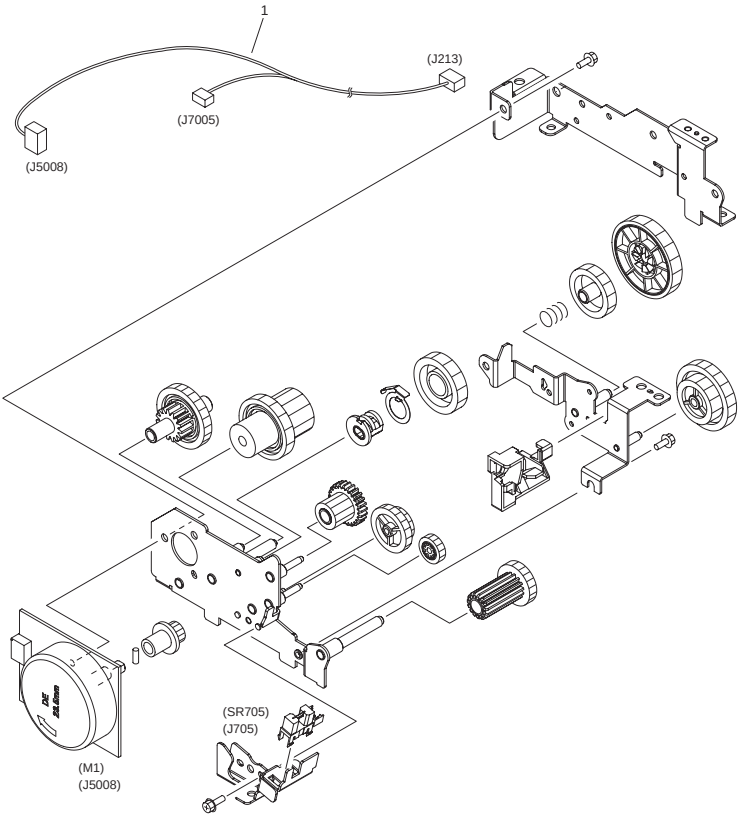


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.280	RM1-2758-000		1	FIXING DRIVE ASS'Y		
1	RM1-2619-000		1	CABLE, FIXING DRIVE		

FIGURE 300
CASSETTE

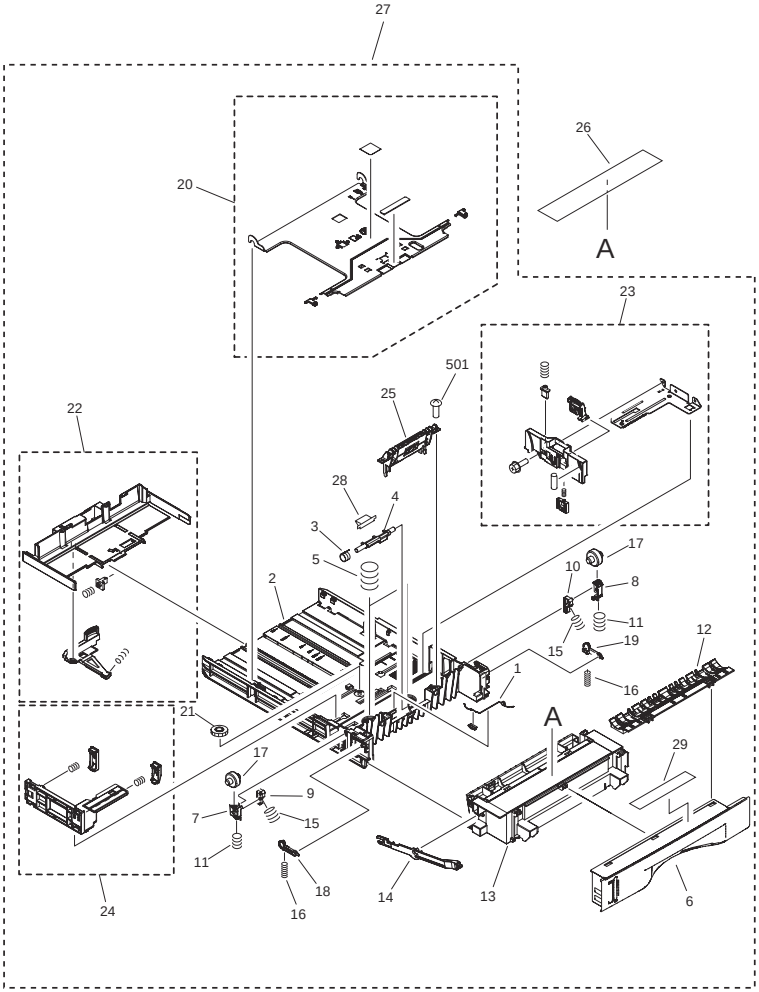


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.300	NPN		RF	CASSETTE		
1	RC1-6461-000		1	SPRING, GROUNDING		
2	RC1-6462-030		1	BODY, CASSETTE		
3	RC1-7649-000		1	SPRING, COMPRESSION		
4	RC1-7644-000		1	LOCK, PAPER LIFTING PLATE, 1		
5	RC1-6465-000		2	SPRING, COMPRESSION		
6	RC2-1605-000		1	COVER, CASSETTE, FRONT		
7	RC1-6492-000		1	CAM, LEFT		
8	RC1-6493-000		1	CAM, RIGHT		
9	RC1-6494-000		1	RACK, LEFT		
10	RC1-6495-000		1	RACK, RIGHT		
11	RC1-6498-000		2	SPRING, COMPRESSION		
12	RC1-6540-020		1	GUIDE, CASSETTE PAPER		
13	RC1-6780-020		1	FRAME, CASSETTE, FRONT		
14	RC2-1606-000		1	ARM, REMNANT INDICATION		
15	RC1-6787-000		2	SPRING, COMPRESSION		
16	RC1-6788-000		2	SPRING, COMPRESSION		
17	RC1-7570-000		2	ROLLER, CAM		
18	RC1-7601-000		1	STOPPER, CASSETTE, LEFT		
19	RC1-7602-000		1	STOPPER, CASSETTE, RIGHT		
20	RL1-1074-000		1	PLATE, PAPER LIFTING		
21	RU5-0328-000		1	GEAR, 10T		
22	RM1-2706-030		1	BACK END LIMIT ASS'Y		
23	RM1-2707-000		1	PAPER SIDE END RIGHT ASS'Y		
24	RM1-2708-000		1	PAPER SIDE END LEFT ASS'Y		
25	RM1-2709-000		1	SEPARATION HOLDER ASS'Y		
26	RC2-1650-000		1	LABEL, 250 CASSETTE		
27	RM1-4296-000		1	CASSETTE		
28	RC1-7645-000		1	LOCK, PAPER LIFTING PLATE, 2		
29	RC2-2746-000		1	LABEL, JAM CLEARING		
501	XB4-7401-005		2	SCREW,TAPPING,TRUSS HEAD,M4X10		

FIGURE 310
PAPER PICK-UP ASS'Y

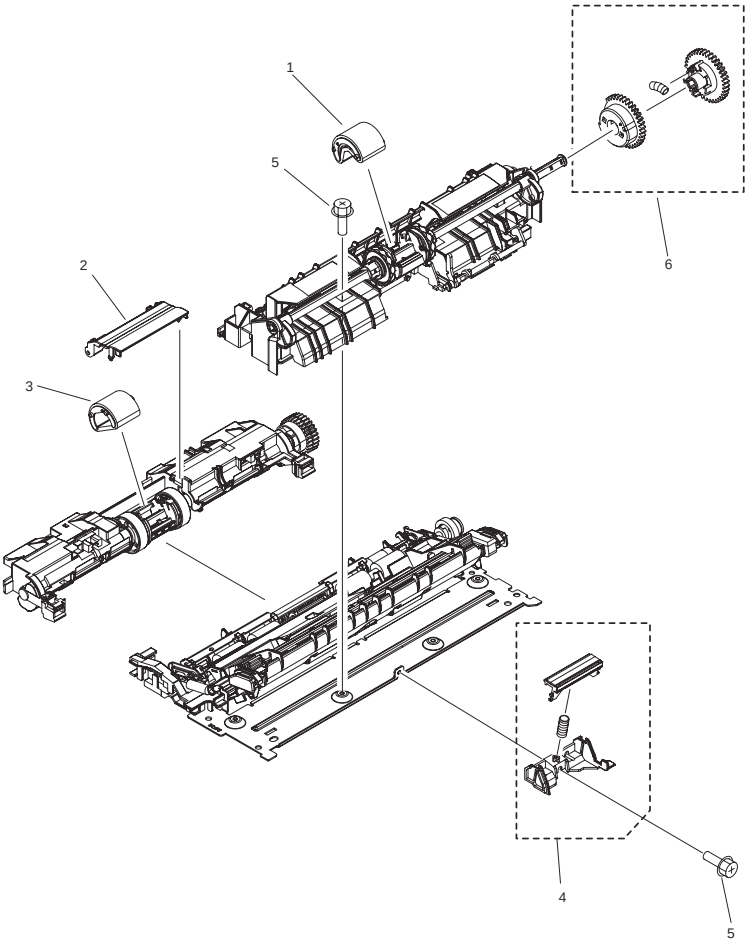
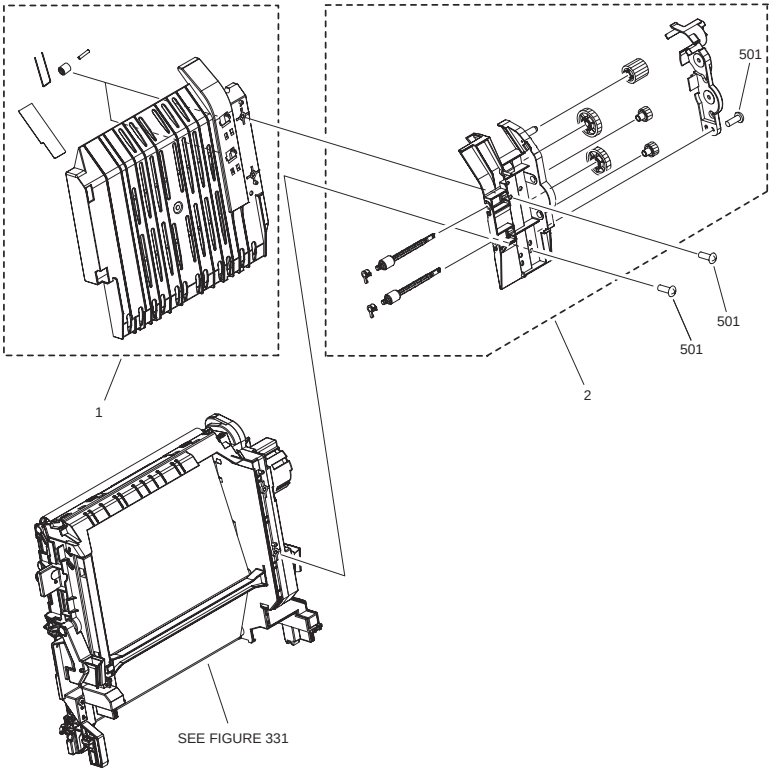


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.310	RM1-4350-010		1	PAPER PICK-UP ASS'Y		
1	RM1-2741-000		1	MULTI-PURPOSE ROLLER ASS'Y		
2	RC1-6609-000		1	COVER, CASSETTE ROLLER		
3	RM1-2702-000		1	CST. PICK-UP ROLLER ASS'Y		
4	RM1-2699-000		1	MULTI-PURPOSE SEP. PAD ASS'Y		
5	XA9-1671-008		5	SCREW, D, M3X8		
6	RM1-2704-000		1	M.P. PAPER PICK-UP GEAR ASS'Y		

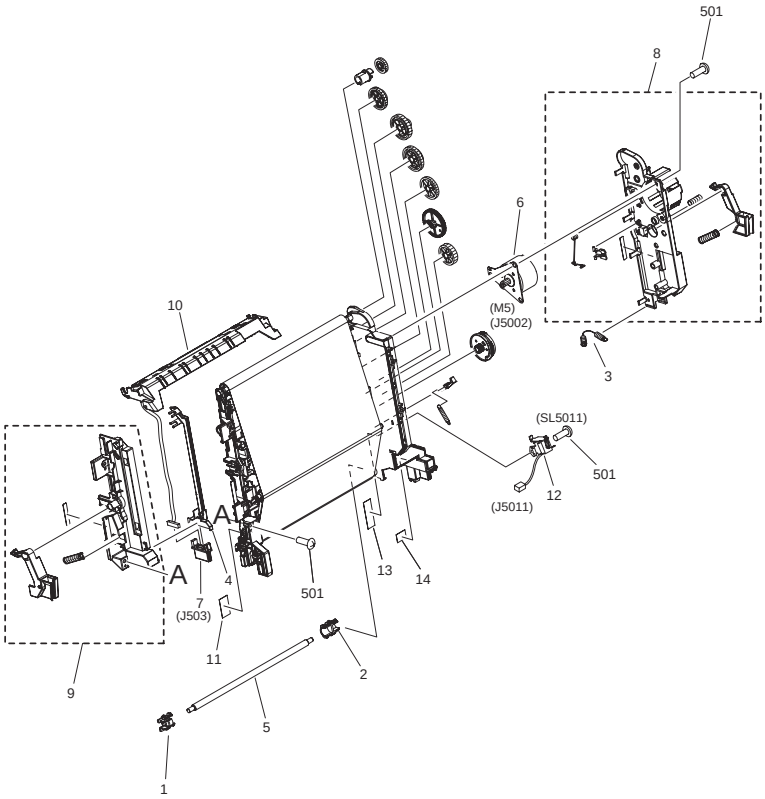
FIGURE 330
ELECT.TRANS.BELT ASS'Y, DUPLEX



NOTE : This assembly includes the assemblies shown in Figure 331.
注 ： このユニットはFigure 331のユニットを含みます。

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.330	RM1-2752-060		1	ELECT.TRANS.BELT ASS'Y, DUPLEX	SEE NOTE	
1	RM1-2718-000		1	DUPLEXING PAPER FEED ASS'Y		
2	RM1-2719-000		1	POSITION GUIDE ASS'Y		
501	XB4-7401-005		4	SCREW,TAPPING,TRUSS HEAD,M4X10		

FIGURE 331
ELECT.TRANSPORT BELT ASS'Y



NOTE:This assembly is included in the assembly shown in Figure 330.
注：このユニットはFigure 330のユニットに含まれます。

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.331	RM1-2759-000		1	ELECT.TRANSPORT BELT ASS'Y	SEE NOTE	
1	RC1-6323-020		1	BUSHING		
2	RC1-6324-000		1	BUSHING		
3	RC1-6350-000		1	SPRING, TENSION		
4	RC1-6370-000		1	COVER, E.T.B. CABLE, LEFT		
5	RC1-6854-000		1	ROLLER, ATTRACTION		
6	RK2-0937-000		1	MOTOR, DC		
7	VS1-7257-007		1	CONNECTOR, DRAWER		
8	RM1-2692-030		1	E.T.B. GEAR COVER ASS'Y		
9	RM1-2693-000		1	E.T.B. LEFT COVER ASS'Y		
10	RM1-2694-010		1	REG. SENSING HOLDER ASS'Y		
11	RC1-7590-000		1	LABEL, E.T.B. INSERT POSITION		
12	RK2-0944-000		1	SOLENOID		
13	RC1-7588-000		1	LABEL, E.T.B.		
14	RC1-7589-000		1	LABEL, E.T.B. INSERT POSITION		
501	XB4-7401-005		10	SCREW,TAPPING,TRUSS HEAD,M4X10		

FIGURE 351
MULTI PURPOSE TRAY ASS'Y

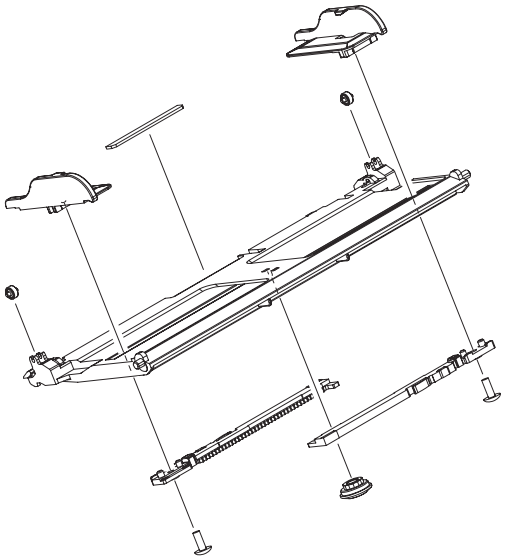


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.351	RM1-2711-040		1	MULTI PURPOSE TRAY ASS'Y		

FIGURE 360
LOWER GUIDE ASS'Y

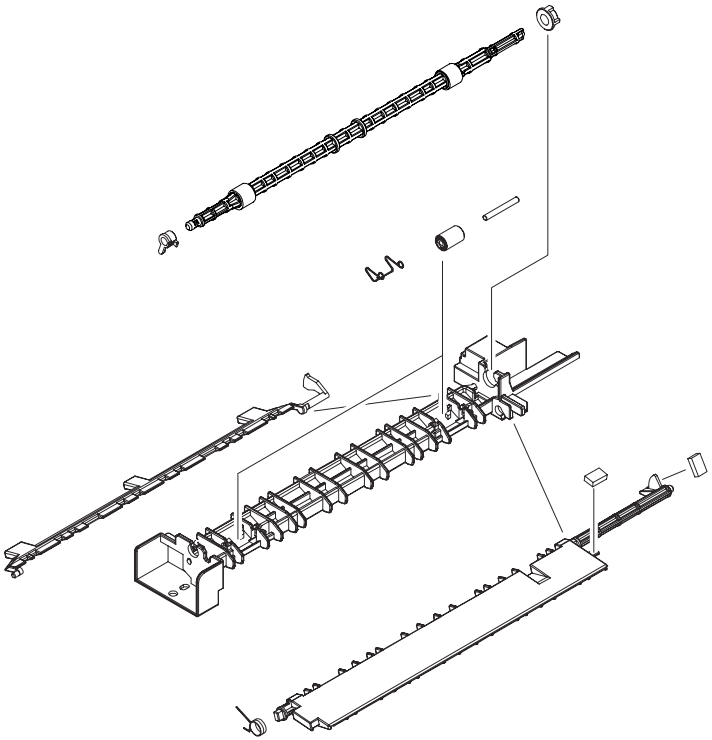


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.360	RM1-2722-010		1	LOWER GUIDE ASS'Y		

FIGURE 810
FIXING ASS'Y

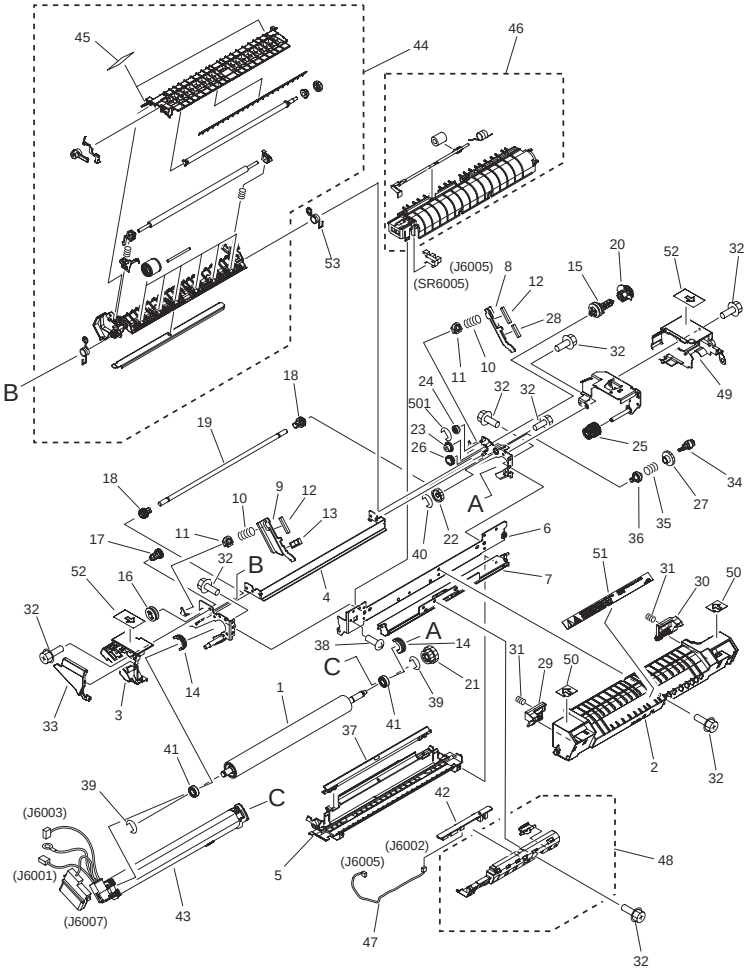


FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
Fig.810	RM1-4300-030		1	FIXING ASS'Y	100V	
Fig.810	RM1-4348-030		1	FIXING ASS'Y	120V	
Fig.810	RM1-4349-030		1	FIXING ASS'Y	230V	
1	RC1-6229-030		1	ROLLER, PRESSURE		
2	RC1-6230-020		1	COVER, PRE-FIXING		
3	RC1-6234-020		1	COVER, FIXING, LEFT		
4	RC1-6235-000		1	CROSSMEMBER, FIXING, REAR		
5	RC1-6237-000		1	COVER, FIXING, LOWER		
6	RC1-6245-000		1	PLATE, FIXING BASE		
7	RC1-6254-030		1	GUIDE, FIXING ENTRANCE		
8	RC1-6257-000		1	PLATE, SLEEVE PRESSURE, RIGHT		
9	RC1-6258-000		1	PLATE, SLEEVE PRESSURE, LEFT		
10	RC1-6259-000		2	SPRING, COMPRESSION		
11	RC1-6260-000		2	HOLDER, PRESSURE SPRING		
12	RC1-6261-000		2	SLIDER, CAM, 1		
13	RC1-6262-000		1	GUIDE, CABLE		
14	RC1-6263-000		2	BUSHING		
15	RC1-6264-000		1	CAM, ESTRANGEMENT, RIGHT		
16	RC1-6265-000		1	CAM, ESTRANGEMENT, LEFT		
17	RC1-6266-000		1	GEAR, 15T		
18	RC1-6267-000		2	GEAR, 15T		
19	RC1-6268-000		1	SHAFT, CAM		
20	RC1-6269-000		1	GEAR, 21T		
21	RC1-6270-000		1	GEAR, 23T/23T		
22	RC1-6275-000		1	GEAR, 31T		
23	RC1-6276-000		1	GEAR, 23T/14T		
24	RC1-6277-000		1	GEAR, 14T/17T		
25	RC1-6281-020		1	GEAR, 22T/15T		
26	RC1-6285-000		1	GEAR, 15T		
27	RC1-6303-000		1	GEAR, 25T		
28	RC1-6308-000		1	SLIDER, CAM, 2		
29	RC1-6839-000		1	LOCK, FIXING, LEFT		

FIGURE & KEY NO.	PARTS NUMBER	RANK	Q'TY	DESCRIPTION	SERIAL NUMBER/ REMARKS	SVC
30	RC1-6840-000		1	LOCK, FIXING, RIGHT		
31	RC1-6841-000		2	SPRING, COMPRESSION		
32	XA9-1671-000		10	SCREW, D, M3X8		
33	RC1-6843-000		1	COVER		
34	RC1-7572-000		1	RATCHET		
35	RC1-7573-000		1	SPRING, COMPRESSION		
36	RC1-7574-000		1	HOLDER, SPRING		
37	RC1-7575-000		1	COVER, SHAFT		
38	XA9-1449-000		1	SCREW, RS, M3X8		
39	XD9-0234-000		2	RING, E		
40	XD9-0235-000		1	RING, E		
41	XG9-0572-000		2	BEARING, BALL		
42	RM1-2586-000		1	RELAY PCB ASS'Y		
43	RM1-4301-000		1	FIXING FILM GUIDE ASS'Y	100V	
43	RM1-2666-050		1	FIXING FILM GUIDE ASS'Y	120V	
43	RM1-2744-050		1	FIXING FILM GUIDE ASS'Y	230V	
44	RM1-2667-100		1	PAPER DELIVERY GUIDE ASS'Y		
45	RC1-7632-000		2	LABEL, OPEN/CLOSE GUIDE		
46	RM1-2746-000		1	HEAT INSULATING COVER ASS'Y		
47	RM1-2601-000		1	CABLE, FIXING DC		
48	RM1-2747-030		1	LOOP SENSOR HOLDER ASS'Y		
49	RM1-2748-000		1	FIXING RIGHT COVER ASS'Y		
50	RC2-1646-000		2	LABEL, FIXING, 1		
51	RC1-7606-000		1	LABEL, HIGH TMP. CAUTION		
52	RC2-1647-000		2	LABEL, FIXING, 2		
53	RC1-6845-000		1	SPRING, TORSION		
501	XD2-1100-242		1	WASHER, RETAINING		