SERVICE MANUAL

Scanner • Printer • Copier

EPSON Stylus CX3100/3200

COLOR IMAGING EPSON

EPSON®

SEOT02002

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PRECAUTIONS

Precautionary notations throughout the text are categorized relative to 1)Personal injury and 2) damage to equipment.

DANGER Signals a precaution which, if ignored, could result in serious or fatal personal injury. Great caution should be exercised in performing procedures preceded by DANGER Headings.

WARNING Signals a precaution which, if ignored, could result in damage to equipment.

The precautionary measures itemized below should always be observed when performing repair/maintenance procedures.

DANGER

1. ALWAYS DISCONNECT THE PRODUCT FROM THE POWER SOURCE AND PERIPHERAL DEVICES PERFORMING ANY MAINTENANCE OR REPAIR PROCEDURES.
2. NO WORK SHOULD BE PERFORMED ON THE UNIT BY PERSONS UNFAMILIAR WITH BASIC SAFETY MEASURES AS DICTATED FOR ALL ELECTRONICS TECHNICIANS IN THEIR LINE OF WORK.
3. WHEN PERFORMING TESTING AS DICTATED WITHIN THIS MANUAL, DO NOT CONNECT THE UNIT TO A POWER SOURCE UNTIL INSTRUCTED TO DO SO. WHEN THE POWER SUPPLY CABLE MUST BE CONNECTED, USE EXTREME CAUTION IN WORKING ON POWER SUPPLY AND OTHER ELECTRONIC COMPONENTS.
4. WHEN DISASSEMBLING OR ASSEMBLING A PRODUCT, MAKE SURE TO WEAR GLOVES TO AVOID INJURIER FROM METAL PARTS WITH SHARP EDGES.

WARNING

1. REPAIRS ON EPSON PRODUCT SHOULD BE PERFORMED ONLY BY AN EPSON CERTIFIED REPAIR TECHNICIAN.
2. MAKE CERTAIN THAT THE SOURCE VOLTAGES IS THE SAME AS THE RATED VOLTAGE, LISTED ON THE SERIAL NUMBER/RATING PLATE. IF THE EPSON PRODUCT HAS A PRIMARY AC RATING DIFFERENT FROM AVAILABLE POWER SOURCE, DO NOT CONNECT IT TO THE POWER SOURCE.
3. ALWAYS VERIFY THAT THE EPSON PRODUCT HAS BEEN DISCONNECTED FROM THE POWER SOURCE BEFORE REMOVING OR REPLACING PRINTED CIRCUIT BOARDS AND/OR INDIVIDUAL CHIPS.
4. IN ORDER TO PROTECT SENSITIVE MICROPROCESSORS AND CIRCUITRY, USE STATIC DISCHARGE EQUIPMENT, SUCH AS ANTI-STATIC WRIST STRAPS, WHEN ACCESSING INTERNAL COMPONENTS.
5. DO NOT REPLACE IMPERFECTLY FUNCTIONING COMPONENTS WITH COMPONENTS WHICH ARE NOT MANUFACTURED BY EPSON. IF SECOND SOURCE IC OR OTHER COMPONENTS WHICH HAVE NOT BEEN APPROVED ARE USED, THEY COULD CAUSE DAMAGE TO THE EPSON PRODUCT, OR COULD VOID THE WARRANTY OFFERED BY EPSON.

About This Manual

This manual describes basic functions, theory of electrical and mechanical operations, maintenance and repair procedures of the printer. The instructions and procedures included herein are intended for the experienced repair technicians, and attention should be given to the precautions on the preceding page.

Manual Configuration

This manual consists of six chapters and Appendix.

CHAPTER 1. PRODUCT DESCRIPTIONS
Provides a general overview and specifications of the product.

CHAPTER 2. OPERATING PRINCIPLES
Describes the theory of electrical and mechanical operations of the product.

CHAPTER 3. TROUBLESHOOTING
Describes the step-by-step procedures for the troubleshooting.

CHAPTER 4. DISASSEMBLY / ASSEMBLY
Describes the step-by-step procedures for disassembling and assembling the product.

CHAPTER 5. ADJUSTMENT
Provides Epson-approved methods for adjustment.

CHAPTER 6. MAINTENANCE
Provides preventive maintenance procedures and the lists of Epson-approved lubricants and adhesives required for servicing the product.

APPENDIX Provides the following additional information for reference:

- Connector pin assignments
- Electric circuit boards components layout
- Electrical circuit boards schematics
- Exploded diagram & Parts List

Symbols Used in this Manual

Various symbols are used throughout this manual either to provide additional information on a specific topic or to warn of possible danger present during a procedure or an action. Be aware of all symbols when they are used, and always read NOTE, CAUTION, or WARNING messages.

Indicates an operating or maintenance procedure, practice or condition that is necessary to keep the product's quality.

Indicates an operating or maintenance procedure, practice, or condition that, if not strictly observed, could result in damage to, or destruction of, equipment.

May indicate an operating or maintenance procedure, practice or condition that is necessary to accomplish a task efficiently. It may also provide additional information that is related to a specific subject, or comment on the results achieved through a previous action.

I.ndicates an operating or maintenance procedure, practice or condition that, if not strictly observed, could result in injury or loss of life.

Revision Status

Revision	Issued Date	Description
A	Augusut 1,2002	First Release

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CHAPTER

1

PRODUCT DESCRIPTION

1.1 Overview

This section describes the specifications for the SPC (Scanner, Printer, Copier) machine “Stylus CX3100/3200”.

1.1.1 Basic Functions

The functions of Stylus CX3100/3200 are as described below:

- Printer function

  The Printer function produces photo quality output on the Epson special coated papers with BorderFree feature.

  - Print head

    Bk: 48 nozzles in each of 3 rows (144 nozzles in total)

    YMC: 48 nozzles for each

- Scanner function

  - The image can easily be acquired on the PC by means of the “Scan” button.
  - The maximum optical resolution of scanning is 600 dpi x 1200 dpi and pixel depth is 48-bit at the ADC output, 24-bit when passing to a PC.

- Standalone Copier function

  The Product has the Standalone Copier function that reproduces photo quality copies on the Epson special coated papers without PCs. The use of the latest print technology mounted on the Product achieves the highest standalone copy speed among the same class of the products.

  - Standard Copy mode

    This mode is used for the standard copier function. The bottom margin is 14 mm.

  - BorderFree Copy mode

    Photograph copy

  - Small Margin Copy mode

    The minimum copy margin is 1.5 mm.

  - Reduced (Minimize) Margin Copy mode

    This mode is basically the same as the standard copy mode, but the bottom margin is 3 mm.

  - Repeat Copy mode

    Mini photo stickers can be produced.

  - 2-up Copy mode

    Two pages of the original is shrunk and printed on one page. Consumption of copy paper can be saved.

  - Mirror Copy mode

    The original can be flipped from left to right and copied onto the Iron-on Cool Peel Transfer Paper.

1.1.2 Common

The specifications described below are common to the scanner and printer.

1.1.2.1 Electrical Specifications

Table 1-1. AC Input

	100 V Model	120 V Model	220-240 V Model
Rated voltage (VAC)	100	120	220-240
Input voltage (VAC)	90-110	108-132	198-264
Rated current (A)	0.6	0.6	0.3
Rated frequency range (Hz)	50-60		
Input frequency range (Hz)	49.5-60.5		
Power consumption (W)	Approx. 22 W (Standalone copying, ISO10561 Letter Patter, Plain Paper - Normal)		
	Approx. 6.5 W (Standby)		

NOTE: *The product is Energy Star compliant.*

NOTE: *The holding current to the motors is reduced when the printer has stayed in non-operation status for 5 minutes.*

NOTE: *The Scanner lamp is turned off when the Scanner has stayed in non-operation status for 15 minutes.*

1.1.2.2 Interface

In compliance with USB (Universal Serial Bus) Revision 1.1

- Connector

  USB Series B

1.1.2.3 Conformity to Safety and EMC Standards

Table 1-2. Conformity to Safety and EMC Standards

	100 V Model	120 V Model	220-240 V Model
Safety	-	• UL1950 • CSA22.2 No.950	• EN 60950
EMC	• VCCI Class B • Guideline for the Suppression of Harmonics in Household and General-Use Equipment	• FCC part15 subpart B class B • CSA C108.8 class B	• EN 55022 (CISPR Pub.22) class B • EN 55024 • EN 61000-3-2 • EN 61000-3-3 • AS/NZS 3548 Class B

1.1.2.4 Environmental Conditions

- Temperature
  - Operating

    10 ~ 35 °C
  - Non-operating

    -20 ~ 60 °C (In the shipment container.)

NOTE: *1 month at 40* °C *or 120 hours at 60* °C

- Humidity (no condensation)
  - Operating

    20 ~ 80%RH
  - Non-operating

    5 ~ 85%RH (In the shipment container.)
- Resistance to physical shock
  - Operating

    1 G, 1 x 10^{-3} second
  - Non-operating

    2 G, 2 x 10^{-3} second (In the shipment container.)
- Resistance to physical vibration
  - Operating

    0.15 G
  - Non-operating

    0.50 G (In the shipment container.)

1.1.2.5 Reliability

- Total print volume

  50,000 pages (A4, Letter)

- Print head life

  4000 million dots/nozzle

- Scan head

  MCBF 30,000 cycles

1.1.2.6 Acoustic Noise

- Level

  52 dB (Standalone copy, Plain Paper - Normal, according to ISO7779)

1.1.2.7 Weight and Overall Dimensions

- Weight

  7.5kg

- Overall Dimensions

  475 mm x 389 mm x 235 mm (Width x Depth x Height)

NOTE: *Neither the rubber feet nor the paper tray is included.*

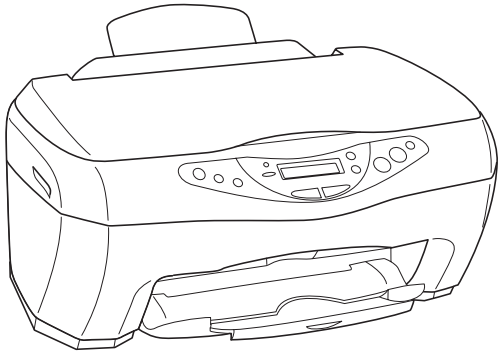


Figure 1-1. Appearance

1.2 Media Specifications

1.2.1 Black Ink Cartridge

- Color

  Black

- Print capacity

  600 pages (A4, ISO/IEC10561 Letter Pattern at 360 dpi)

1.2.2 Color Ink Cartridge

- Color

  Magenta, Cyan and Yellow

- Print capacity

  300 pages (A4, ISO/IEC10561 Letter Pattern at 360 dpi)

CHAPTER

2

OPERATING PRINCIPLES

2.1 Overview

This Chapter describes the operating principles of the mechanism and electric circuits of EPSON Stylus CX3100/3200.
EPSON Stylus CX3100/3200 roughly consists of a printer and a scanner. The mechanism can be divided into the printer and the scanner. The electric circuit includes the Main Board circuit, Power Supply Board circuit, scanner carriage circuit and control panel circuit.

2.1.1 Mechanism

2.1.1.1 Printer Mechanism

The printer mechanism comprises the Carriage carrying the print head, the CR Motor for driving the carriage in the lateral direction in the printing range, the Capping Unit for preventing the print head from drying, the PF Motor for transporting the paper, the ASF Unit for loading paper by the driving force from the PF motor, and the Paper Eject Unit for ejecting the paper after printing.

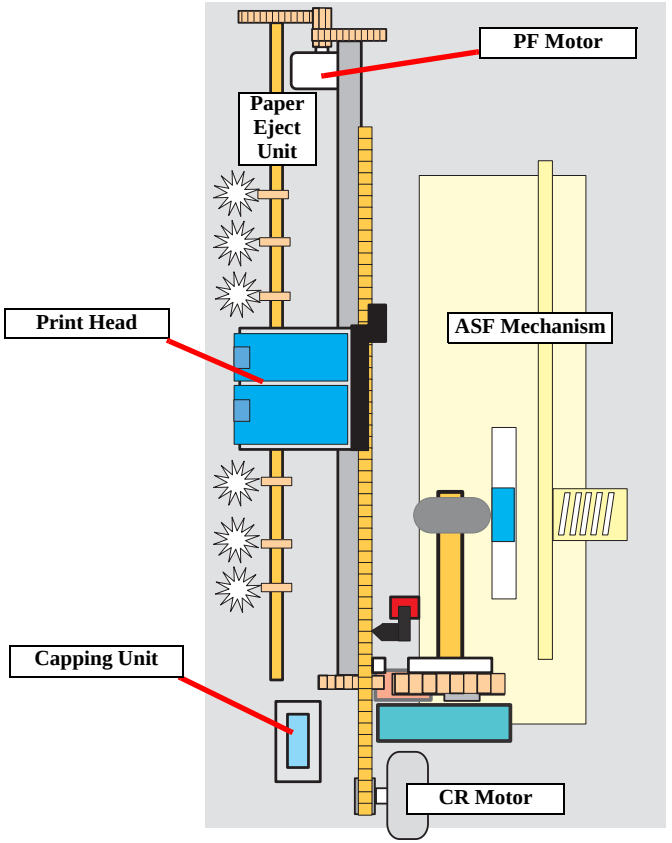


Figure 2-1. Outline of Printer Mechanism

2.1.1.2 Scanner Mechanism

The scanner consists of the Scanner Carriage Unit comprising the CCD for capturing images and the light source for illuminating the document, the Scanner Motor and Timing Belt for moving the scanner carriage unit along the document surface, and the Scan HP Detector for detecting the position of the scanner carriage unit.

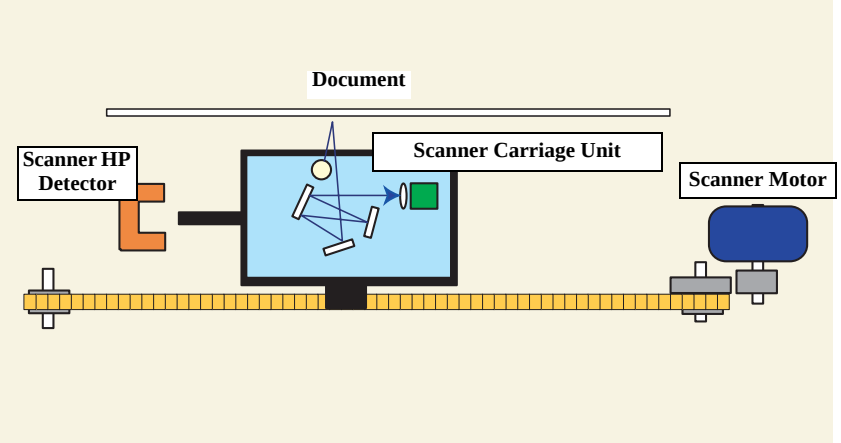


Figure 2-2. Scanner Mechanism

2.1.2 Electric Circuit

The electric circuit boards of Stylus CX3100/3200 are as follows:

- C497MAIN Board (main circuit board)
- C497PSB/C497PSE Board (power supply circuit board)

  This circuit board supplies the following voltages:

  - +3.3V: For logic
  - +42V: Driving power
  - +12V: Power to the scanner
- Scanner circuit board
- Panel circuit board

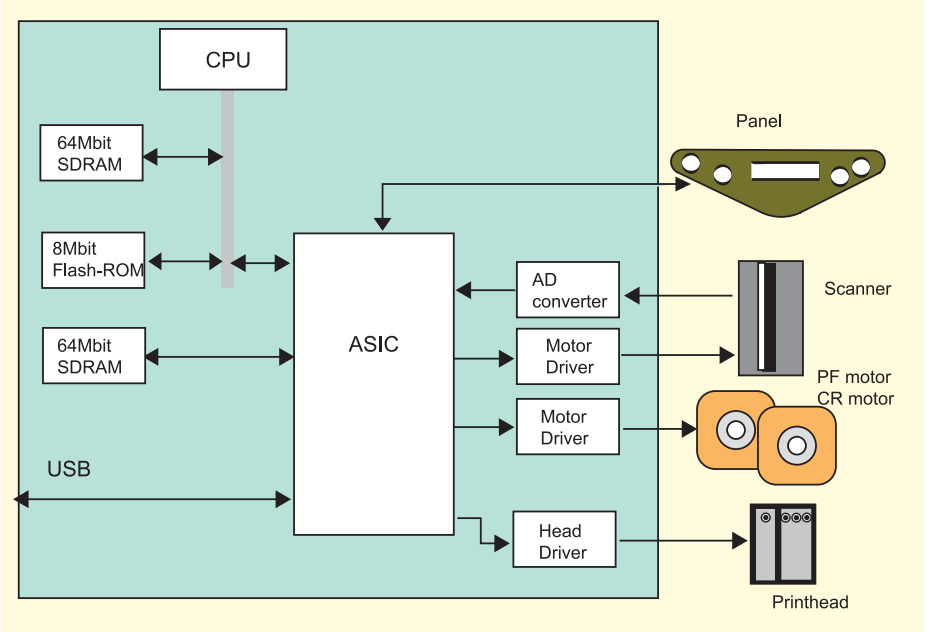


Figure 2-3. Electric Circuit Block

Table 2-1. Functions of Major Elements - C497MAIN

Location	Name	Description
IC1	C90A20**	CPU • Built-in RAM 10kB, Built-in Flash ROM 256KB • 144-pin, LQFP, Driving frequency: 48MHz • Control, image processing C90A20
IC5	MBM29LV800BC-PFTN or the equivalent	64Mbit Flash ROM • Stores firmware
IC2	E05C08**	ASIC • Motor control • Head control • Panel sensor input and output control • USB I/F
IC4	RTC9822	• EEPROM • Storage of default setting and backup of various parameters • Reset function • Timer function
IC7	A6615	CR Motor driver
IC11	LB11847	Scanner motor driver
IC6	E09A29LA	Head drive control IC • Supplies COMMON+42 V
IC8	K4S641632D	16Mbit SDRAM • System memory
IC9	K4S641632D	16Mbit SDRAM • Work area for copy functions

CHAPTER

3

TROUBLESHOOTING

3.1 Troubleshooting at Unit Level

By following this troubleshooting procedure, when some trouble has occurred, you can easily identify the unit which is the cause of the trouble, from its observation. Table 3-1 and Table 3-2 list the observations of various troubles. Once the type of the trouble has been identified, refer to the flowchart for that trouble.

The flowchart shown in Figure 3-1 outlines the troubleshooting procedure.

NOTE: *See page 33 for troubleshooting for motors and sensors.*

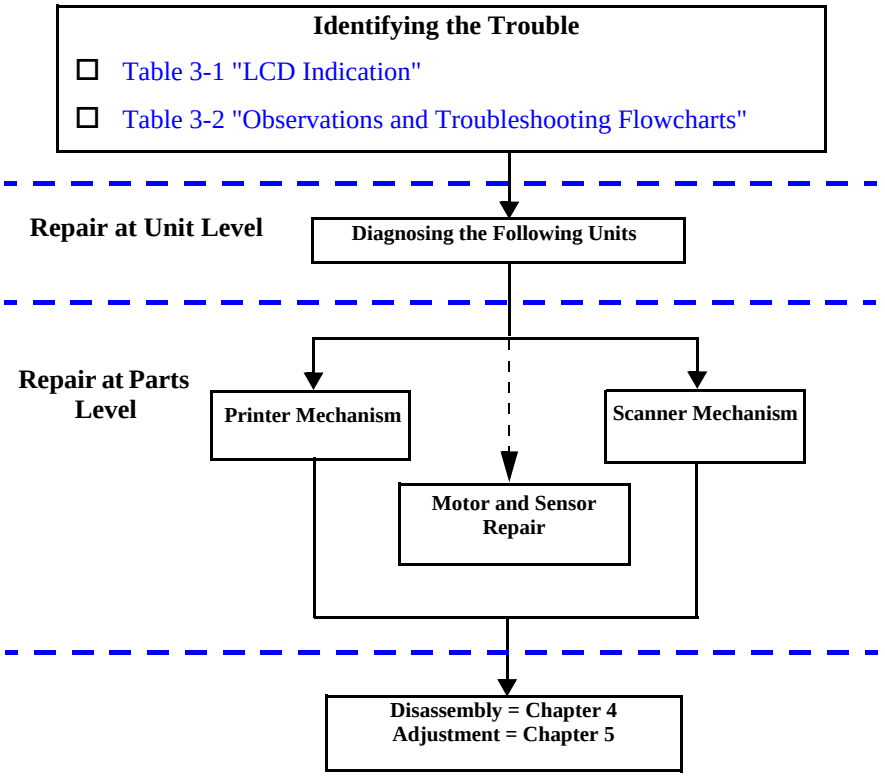


Figure 3-1. Troubleshooting Flowchart

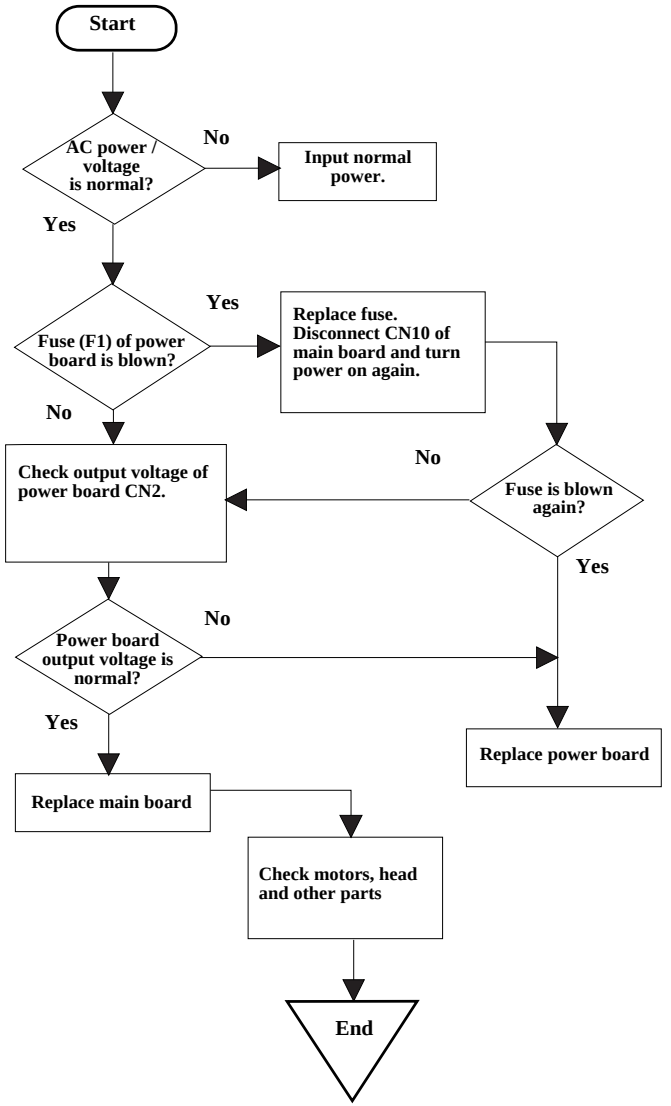
Table 3-1. LCD Indication

Error Status	LCD Indication (The upper line shows "Error indication" and the lower line shows descriptive character strings by scrolling.)	LED Indication		Restoration Method
		Power	Error LED	
Paper out	Paper out → Load paper in Paper tray and press the Color copy button.	-	Lighting up	Supply paper and press the Color or B&W copy button.
Paper jam	Paper jam or miss feed → Press the Color copy button and clear the paper jam by hand if necessary.	-	Lighting up	Remove the jammed paper and press the Color or B&W copy button.
Ink cartridge out / Ink end (black)	• No black ink cartridge → Press the Color copy button to install new ink cartridge. • Black ink out → Press the Color copy button to begin replacing the ink cartridge.	-	Lighting up	Move the carriage to the position for replacement by means of the Color or B&W copy button and replace the black ink cartridge with a new one. After replacement, close the scanner unit, and the carriage will move the printing start position and start printing.
Ink cartridge out / Ink end (color)	• No Color ink cartridge → Press the Color copy button to install new ink cartridge. • Color ink out → Press the Color copy button to begin replacing the ink cartridge.	-	Lighting up	Move the carriage to the position for replacement by means of the Color or B&W copy button and replace the color ink cartridge with a new one. After replacement, close the scanner unit, and the carriage will move the printing start position and start printing.
Waste ink overflow	Printer error → See your documentation and call service if necessary.	-	Blinking	Reset the waste ink counter after replacing the waste ink porous pad.
Fatal error	Printer error → See your documentation and call service if necessary.	-	Lighting up	Turn the power off once and turn it on again. If this turning the power off and on does not work to recover the printer, make repairs.
	Scanner error → See your documentation and call service if necessary.	-	Lighting up	Turn the power off once and turn it on again. If this turning the power off and on does not work to cover the scanner, make repairs. (Refer to "Troubleshooting for Scanner" *(p.30)*.
Scanner unit open	Scanner unit open → Close the scanner unit.	Blinking	Lighting up	Close the scanner unit.

Table 3-2. Observations and Troubleshooting Flowcharts

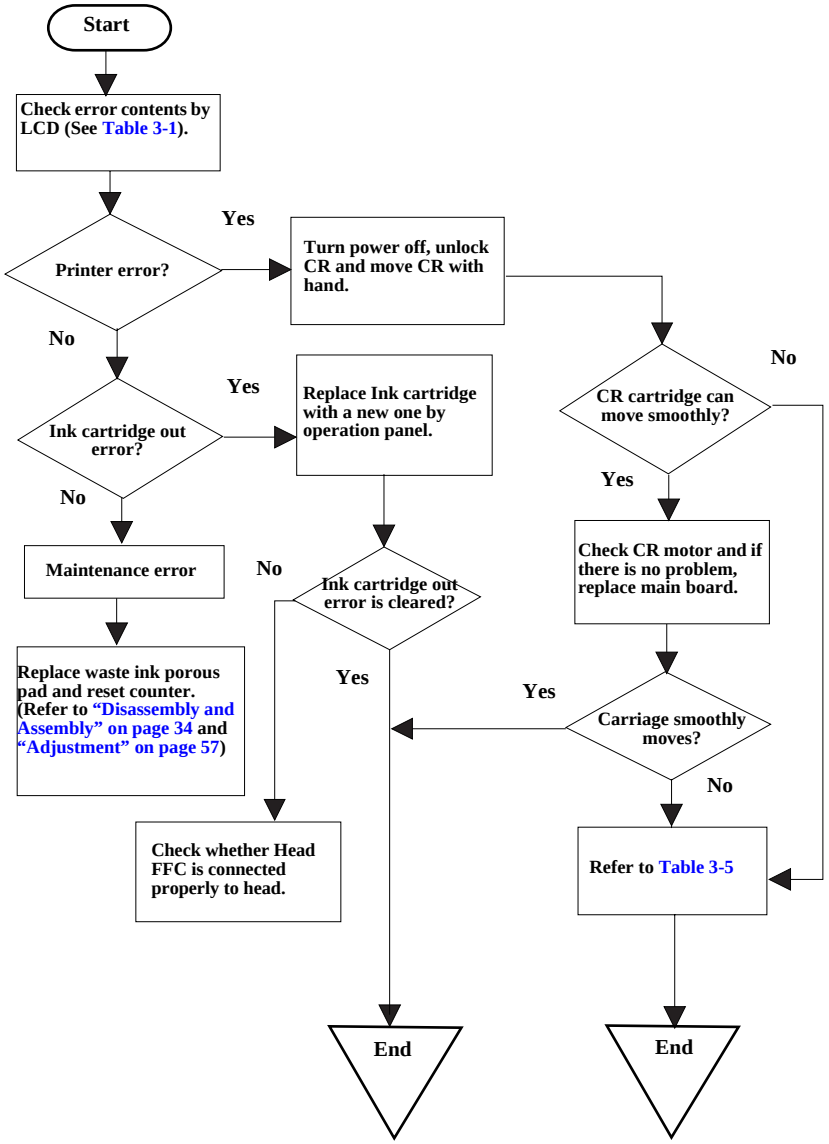
Observation	Details	Refer to
Power is on but not operating	LED does not turn on at all. Printer mechanism does not operate at all. Scanner mechanism does not operate at all.	Flowchart 3-1
Error is detected	LCD/LED panel shows error status.	Flowchart 3-2
Trouble related to print	Printing is not done. Print is abnormal (Dot missing, etc.). Print quality is bad.	Flowchart 3-3
Paper feeding is not normally carried out.	Paper feeding is not done. Paper jam occurs. Paper start up position is not correct.	Flowchart 3-4
Faulty operation panel	Pressing a button does not work.	Flowchart 3-5
Trouble related to scanner	Scanner does not operate normally.	Refer to "Troubleshooting for Scanner" *(p.30)*

3.1.1 Printer / Scanner does not operate at all even with power turned on



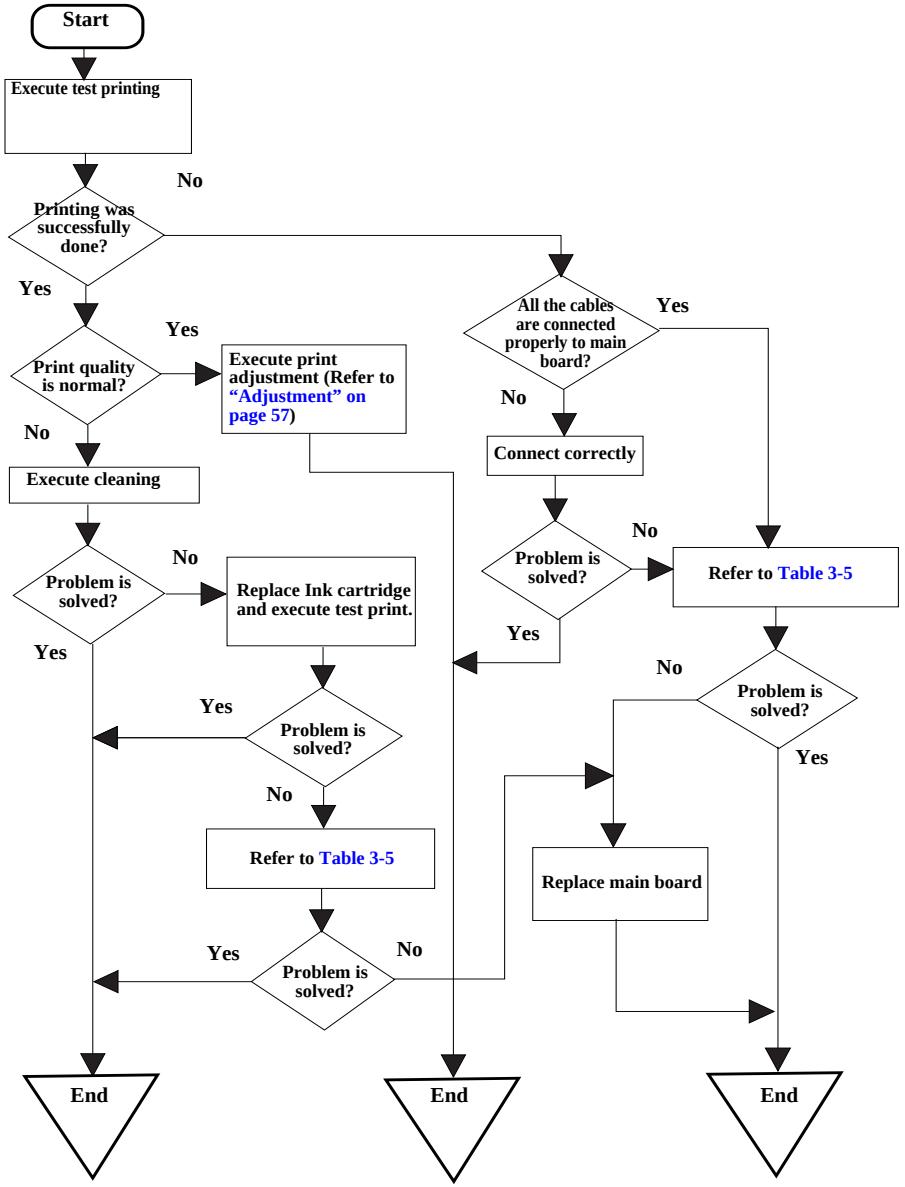
Flowchart 3-1.

3.1.2 Error is detected



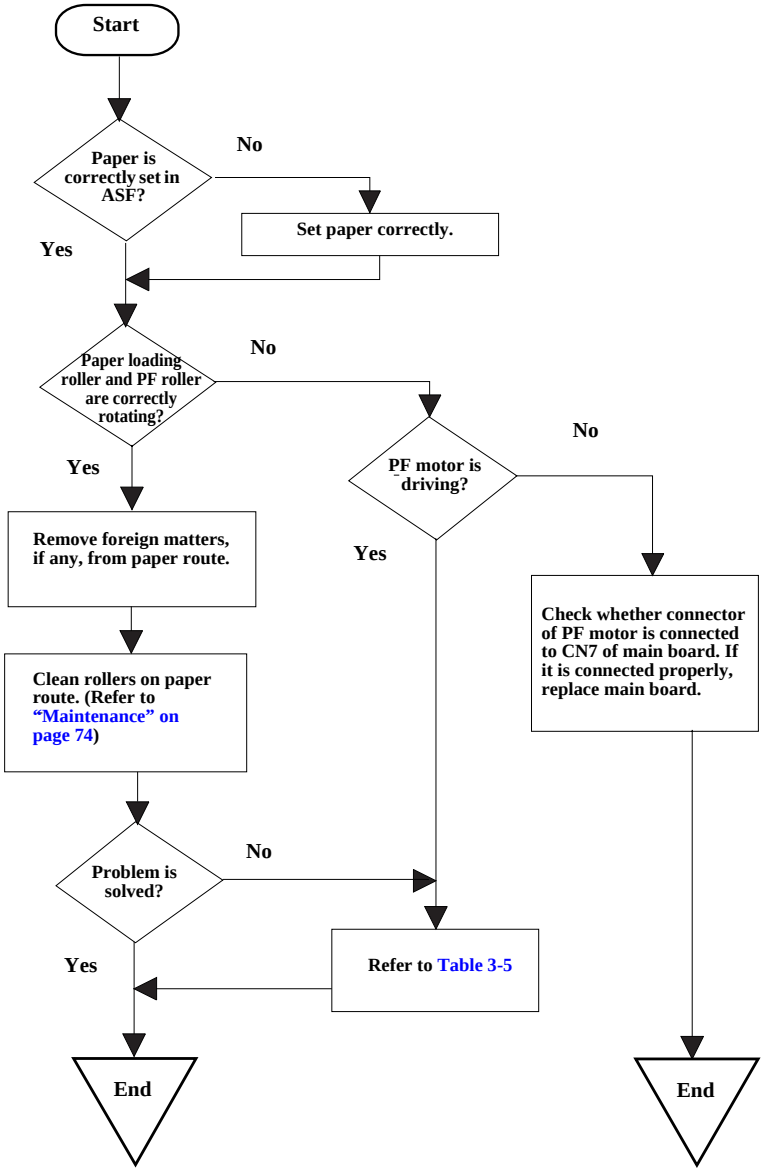
Flowchart 3-2.

3.1.3 Trouble related to Print



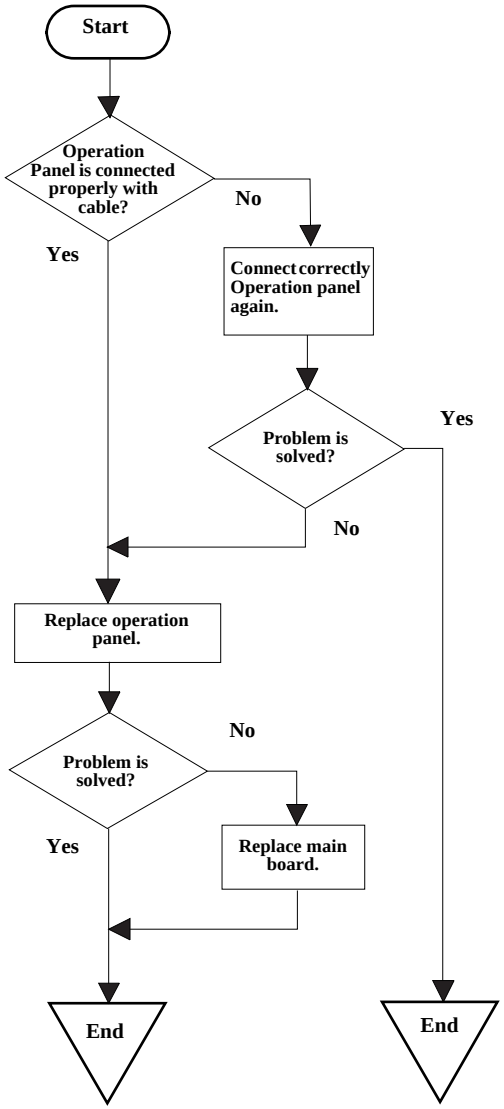
Flowchart 3-3.

3.1.4 Paper feeding is not normally carried out



Flowchart 3-4.

3.1.5 Operation Panel faulty



Flowchart 3-5.

3.2 Troubleshooting for Printer

This section describes repair / service of the Printer Mechanism. Listed below are various problems which may occur, observations of such problems, check point and remedies. For the pertinent observation, check the functions of the parts in question according to Check Point.

Table 3-3. Printer Errors

Observation	Cause	Remedy
Ink shortage / Ink out	• If any ink cartridge comes close to Ink out, Printer continues printing in ink shortage status. • If cartridge is completely empty, Printer indicates ink out error and stop printing.	• Start cleaning execution command on Panel or by Utility. • Carriage automatically moves to replacement position. • Replace ink cartridge with a new one.
Paper out	• When Printer cannot load paper, paper out error is indicated. • Paper stops in front of PE detector or paper is not loaded. • Paper is loaded without adjusting paper to right edge guide.	(1)Set paper on tray if paper is out. (2)If paper is stopped midway, pull paper out and check that paper is not folded. Loosen paper well and set it again with edge guide adjusted to paper width. (3)Execute “Load/Eject”. • Clean paper loading roller. Or replace paper loading roller. • Check that gears for ASF are engaged correctly.

Table 3-3. Printer Errors (continued)

Observation	Cause	Remedy
Paper jam	When paper is not ejected, paper jam error is indicated.	• Select “Load/Eject” from menu and execute it. (1)Open the printer cover and remove with hand all the paper inside the printer and all the set paper if there is paper on the way of loading. (2)Check that there is no paper in the printer and set paper again and execute paper loading and paper ejection. Then, this error display will be cleared and if there is print data, print operation will start. • Check whether Platen gap is correct value. (Refer to “Adjustment” on page 57)
Ink cartridge out	• If Ink cartridge is not correctly set, printer indicates ink cartridge out error.	• Check CSIC connection circuit. • Replace ink cartridge.
Maintenance error	Waste ink overflow indication is displayed if the total amount of ink consumed by cleaning and/or flushing has exceeded the predetermined limit.	After replacing waste ink porous pad, reset waste ink overflow counter. (Refer to “Protection Counter” on page 69)
Fatal error	• Carriage error: • Home of carriage can not be recognized. • Abnormal external power was applied to carriage or carriage operation is obstructed during printing. • PF error: PF motor does not operate adequately to feed paper by the required distance.	• Several seconds or more after turning power off, press power switch to turn power on. • Open maintenance cover and check that there is no obstacle in the carriage moving zone. If the error is not cleared even by the above operation, check the followings: • CR HP sensor/Harness • CR Lock mechanism • Main board

Table 3-4. Printer Mechanism Repair

Observation	Condition	Cause	Check Point	Remedy
Faulty pump mechanism	When power is turned on, PF motor operation is abnormal.	There are foreign matters on the PF gear.	Operate the platen drive gear by hand and check whether it rotates properly.	Remove foreign matters. Replace the printer mechanism.
		PF motor is faulty.	Check whether the internal coil resistance is just as specified and whether the harness is connected properly. See Table 3-13, "Motor Resistance and Check Point," on page 33.	Replace the printer mechanism or PF motor.
Ink is not absorbed at all or ink absorption is poor.	Ejected ink does not flow into Ink Eject tube.	Pump tube is crashed.	Check tube with the naked eye.	Replace the printer mechanism or pump unit.
		Capping unit is faulty.	Check capping rubber with the naked eye.	Replace the printer mechanism or capping unit.
		Tube is projecting from cap.	Check with the naked eye whether tube is projecting from cap.	Connect the tube correctly.
		Pump tube is entangled in the pump unit.	When cap assembly slides up completely, check whether there is a small slack in pump tube between cap assembly and pump unit.	Remove the entangled pump tube carefully, correct the tube condition and connect it to the cap assembly.
	Ink is not absorbed from head to cap.	Dirt on cap	Check whether any foreign matter is adhering to cap.	Remove foreign matters from the cap and if the cap is damaged, replace it with a new one.
		Faulty slide-up of cap	Check whether two compression springs are set on cap assembly.	Set the compression springs on the cap assembly.

Table 3-4. Printer Mechanism Repair (continued)

Observation	Condition	Cause	Check Point	Remedy
Faulty carriage operation	When power is turned on, carriage operation is abnormal.	There is an obstacle in CR shift area.	Check with the naked eye whether there is an obstacle.	Remove the obstacle.
		CR lock is not released.	Check that change lever is in the front of printer.	Return the change lever to the back of printer by tweeters or a small driver.
			Check whether the CN13 connector and coil resistance of the PF motor are as specified. See Table 3-13, "Motor Resistance and Check Point," on page 33.	Connect the PF motor to CN7 on the main board. Replace the printer mechanism or PF motor.
			Check whether any gear is damaged on the torque transmission route of PF motor.	Replace the damaged gear with a new one.
		Faulty CR motor	Check whether the internal coil resistance is just as specified and whether the harness is connected properly. See Table 3-13, "Motor Resistance and Check Point," on page 33.	Replace the CR motor.
	Abnormal carriage operation during printing	Carriage does not move smoothly.	Operate the carriage by hand and check whether carriage moves smoothly.	Clean the CR guide shaft and lubricate.
			Check tension of timing belt.	Adjust tension or replace the belt.
			Check whether there is an obstacle in carriage route.	Remove the obstacle.
Printing is not carried out correctly.	Carriage moves correctly but printing is not normal.	Head FFC is not connected properly.	Check whether Head FFC is connected properly to CN8 and CN9 of main board.	Connect the FFC correctly.
		Inside of FFC is not connected properly.	Check FFC by tester.	Replace the FFC.
		Faulty ink cartridge	Set new ink cartridge and execute test printing.	Replace the ink cartridge.
		Faulty head unit	Repeat cleaning and test printing alternately several times.	Replace the head unit.
		Faulty head cleaner	Check whether dust is adhering to head cleaner.	Clean or replace the head cleaner.

Table 3-4. Printer Mechanism Repair (continued)

Observation	Condition	Cause	Check Point	Remedy
Faulty print	Faulty printing occurs at specific dots.	Head surface is dirty. (Dot missing occurs)	Repeat cleaning and test printing alternately several times.	Clean with a swab fixed to a stick.
		Faulty head FFC	Check whether head FFC is damaged.	Replace the head FFC with a new one.
		Faulty head unit	Repeat cleaning and nozzle checking alternately several times.	If the condition is not improved even after cleaning, replace the head.
		Capping porous pad is in contact with head surface.	Check capping porous pad with the naked eye.	Replace the capping porous pad, if its shape is deformed or it is damaged.
	Sometimes dots are missing.	Head surface is dirty. (Dot is missing occurs)	Repeat cleaning and nozzle checking alternately several times.	Clean with a swab fixed to a stick.
		Inside of FFC is not connected properly.	Check FFC by tester.	Replace the head FFC.
		Head FFC is not connected.	Check whether Board and Carriage FFC are connected.	Connect the FFC correctly.
		Faulty Head unit.	Execute cleaning several times, and Check nozzle.	If the condition is not improved even after cleaning, replace the head.
		Faulty ink cartridge.	Set new ink cartridge and check nozzle.	Replace the ink cartridge.
	Black points or dots are printed.	Head FFC is not connected.	Check whether Board and Carriage FFC are connected.	Connect the FFC correctly.
		Faulty head unit	Check connection with head FFC.	If connection with the FFC is not faulty, replace the head.

Table 3-4. Printer Mechanism Repair (continued)

Observation	Condition	Cause	Check Point	Remedy
Faulty print	Vertical line is not straightly lined.	Bi-D adjustment has not been made.	Make Bi-D adjustment.	Refer to "Adjustment" *(p.57)*
	White line appears in output data.	Dirt is adhering to CR guide shaft.	Check whether dirt is adhering to the surface of CR guide shaft.	Clean the surface of CR guide shaft with a dry and soft cloth.
		Faulty CR guide shaft.	Check that CR guide shaft is steadily installed in the designated position. Check that CR guide shaft surface is flat.	Reinstall the CR guide shaft on the mounting slats (wing boards) on both sides of the frame, and fix it with the rod spring. Replace the CR guide shaft with a new one.
		Faulty slide operation of Carriage.	Check whether sufficient oil is remaining on the surface in the carriage slide area on the Paper Eject Frame.	Clean the surface in the carriage slide area and apply a specified amount of G-26. (Refer to "Maintenance" *(p.74)*)
		Paper feeding route is dirty.	Check whether PF roller is dirty.	Clean the surface of the PF roller carefully with a soft brush.
		Damaged gear	Check whether the following parts are not damaged. • Combination gear16, 21.6 • Combination gear 11.6, 36.8 • Spur gear 73.6 • Spur gear 25.6	Replace the damaged part with a new one.
		Platen gap is not correct.	Adjust platen gap.	Refer to "Adjustment" *(p.57)*
		As head surface is dirty, dot jet direction is slanting.	Repeat cleaning and test printing alternately several times.	Clean with a swab fixed to a stick.
			Check whether dust is adhering to head cleaner.	Clean or replace the head cleaner.
		Faulty ink cartridge	Set new ink cartridge and execute test printing.	Replace the ink cartridge.
		Faulty head unit	Clean several times, and execute test printing.	Replace the head unit.

Table 3-4. Printer Mechanism Repair (continued)

Observation	Condition	Cause	Check Point	Remedy
Faulty paper loading	Paper is not loaded.	Paper loading roller worn	Check whether paper loading roller rotates when paper feeding is not operating. Check whether paper loading roller is not slipping during paper feeding. Check that Micro Pearl or oily substance is not adhering to the paper loading roller	Clean the paper loading roller with the cleaning sheet. If this cleaning does not work to improve the condition, replace the paper loading roller. In order to remove Micro Pearl from the surface of LD roller, install the cleaning sheet up side down inside ASF. Grasp the upper end of the sheet steadily and try paper loading from printer driver. In order to remove oily substance, staple a cloth soaked in alcohol to a post card and clean the roller by the same method.as above. Check whether the gears for driving the PF roller are engaged correctly.
		Faulty operation of ASF hopper	Check ASF hopper operation with the naked eye.	Replace the ASF.
		Faulty clutch mechanism	Check whether clutch mechanism is damaged.	Replace the clutch mechanism with a new one.
	Multiple sheets of paper are always drawn in	Paper Return (preventive multiple feeding mechanism) does not operate correctly.	When paper is loaded, check whether Paper Return is correctly operating inside the ASF.	Reassemble the torsion spring 25.7 inside the ASF frame.
	Paper is loaded even without print job	Faulty operation of ASF hopper	Check whether the tip of change lever is damaged. Check whether compression spring 1.47 is not off the change lever.	Replace the change lever with a new one. Set the compression spring 1.47 on the change lever correctly.

Table 3-4. Printer Mechanism Repair (continued)

Observation	Condition	Cause	Check Point	Remedy
Faulty paper ejection	Paper is jammed on the way of paper ejection.	Faulty installation of Star Wheel Roller	Check that Star Wheel Roller is set on paper eject frame.	Remove the jammed paper, set the Star Wheel Roller in the paper eject frame steadily. If the hook of the Hook Roller is damaged, replace it with a new one.
		Faulty operation of Paper Eject Roller	Check whether Paper Eject Roller rotates correctly.	Check whether the gears for driving the Paper Eject Roller are engaged correctly.
	Paper is ejected without being printed.	Faulty HP/PE sensor	Check whether CN4 Connector is not disconnected from HP/PE sensor cable on main board or sensor.	Connect CN4 connector cable to CN4 on the main board. Replace HP /PE sensor with a new one.
Printer stops during initialization	Printer error is indicated.	Faulty PE sensor	Check PE sensor signal level. (Refer to Table 3-14, “Sensor Check,” on page 33)	Replace the PE sensor
		Faulty CR HP sensor	Check CR HP sensor signal level. (Refer to Table 3-14, “Sensor Check,” on page 33)	
		Head FFC is not connected properly.	Check whether Head FFC is connected properly.	Connect the Head FFC
		Faulty CR motor	Check whether CR motor cable is connected properly.	If there is no problem with cable connection, replace the CR motor.
			Check whether the internal coil resistance is just as specified and whether the harness is connected properly. See Table 3-13, “Motor Resistance and Check Point,” on page 33.	Replace the CR motor.
		Faulty PF motor	Check whether PF motor cable is connected properly.	If there is no problem with cable connection, replace the PF motor.
			Check whether the internal coil resistance is just as specified and whether the harness is connected properly. See Table 3-13, “Motor Resistance and Check Point,” on page 33.	Replace the printer mechanism or PF motor.
		CR lock is not undone.	Check whether no gear is damaged in the PF motor torque transmission route.	Replace the damaged gear with a new one.

3.3 Troubleshooting for Scanner

This section describes repair / service for the Scanner mechanism. In troubleshooting, first the trouble is identified at the unit level based on the observation. According to the observation as described in Table 3-6, perform the necessary checking by referring to the appropriate table.

Table 3-5. Scanner Errors at User Level

Error	Cause	Remedy
Scanner error	• Lamp has burnt out. • Power is turned on without unlocking the scanner. • The scanner carriage is interfering with any other part.	• Unlock the CR. • Replace the scanner lamp. • Replace the scanner carriage unit. • Remove the obstacle.
Command error	Undefined command is detected.	When correct command is received, error status is cancelled. Turn the power off once and then turn it on again.
Scanner open	Scanner cover is open.	Close the cover.

Table 3-6. Observation of Trouble and Reference for Remedy

Observation	Description of Trouble	Reference for Remedy
Even with power turned on, the machine does not operate.	The machine does not operate for initialization.	Table 3-7
"Fatal error" occurred. Indication error occurs and it is not cleared even after power is turned off once and then turned on again.	CR unit does not operate.	Table 3-8
	CR unit operates but error is indicated.	Table 3-9
	The fluorescent lamp does not turn on.	Table 3-10
Picture is not read clearly.	Picture is not read clearly.	Table 3-11
"Communication error". Indication error occurs and when communication with the host is tried again, "Communication error" recurs.	USB interface error	Table 3-12

Table 3-7. Scanner does not operate for initialization

Cause	Step	Check Point	Yes/No	Remedy
Connector is disconnected.	1	Check all connectors for disconnection?	Yes	Connect the disconnected connector.
			No	Replace the main board.

Table 3-8. Carriage unit does not operate

Cause	Step	Check Point	Yes/No	Remedy
Connector CN11 on main board is disconnected.	1	Connector CN11 on main board is disconnected?	Yes	Connect the connector.
Faulty carriage moving mechanism	2	Grease is applied properly?	No	Apply grease at designated point (Refer to "Maintenance" *(p.74)*)
	3	• Does CR motor operate when power is turned ON with upper case of Scanner removed? • Does CR unit move with CR motor removed?	No	Check the carriage moving mechanism, replace the relevant parts or remove and reinstall them.
Faulty CR motor	4	Disconnect connector CN7 on main board and measure with a tester the coil resistance between pins 2 and 4 and between 1 and 3 on motor side. See Table 3-13, "Motor Resistance and Check Point," on page 33	No	Replace the CR motor
Defective main board	5	-	-	Replace the main board

Table 3-9. Carriage operates but error indicated

Cause	Step	Check Point	Yes/ No	Remedy
Upper case of scanner is removed.	1	Upper case of scanner is removed.?	Yes	Install the upper case.
Defective main board	2	-	-	Replace the main board.
Defective CR HP sensor	3	-	-	Replace the CR HP sensor.

Table 3-10. Fluorescent lamp does not turn on

Cause	Step	Check Point	Yes/No	Remedy
Connector CN1 on main board is disconnected.	1	Connector CN1 on main board is disconnected?	Yes	Connect the connector CN1 on the main board.
Connector of CCD module is disconnected.	2	Connector of CCD module is disconnected?	Yes	Connect the connector on the CCD module.
Fluorescent lamp is not set correctly in connector on inverter board.	3	Fluorescent lamp is not set correctly in connector on inverter board?	No	Set the lamp correctly on the inverter board.
Defective lamp	4	Lamp turns on after replaced?	Yes	Replace the CCD module.
Defective inverter board	5	Inverter board is normal after replaced?	Yes	Replace the CCD module.
Defective main board	6	-	-	Replace the main board.

Table 3-11. Picture can not be read clearly

Cause	Step	Check Point	Yes/No	Remedy
Dirt on mirror inside CR unit	1	Picture can be read clearly after mirror is cleaned?	No	Clean fluorescent lamp surface.
Defective CCD module	2	-	-	Replace the CCD module.
Defective main board	3	-	-	Replace the main board.

Table 3-12. USB Interface error

Cause	Step	Check Point	Yes/No	Remedy
Host PC does not support Windows 98 essentially.	1	On Windows, open "My computer" → "Property" → "Device manager". "Universal serial bus controller" is effective?	No	Change the host.
Printer driver is not installed correctly.	1	On Windows, open "My computer" → "Property" → "Device manager". Printer driver is not installed in "Other devices"?	Yes	Delete the driver and install it again according to operation manual.
Defective USB cable	2	Operation is normal if USB cable is replaced?	Yes	Replace the USB cable.
Defective main board	3	-	-	Replace the main board.

3.4 Troubleshooting for Motors and Sensors

Table 3-13. Motor Resistance and Check Point

Section	Motor Name	Location	Check Point	Resistance
Printer	CR motor	CN13 (Main board)	Pin 1 & 3, Pin 2 & 4	7.8 Ω ± 10%
	PF motor	CN14 (Main board)	Pin 1 & 3, Pin 2 & 4	5.4 Ω ± 10%
Scanner	CR motor	CN7 (Main board)	Pin 1 & 2, Pin 3 & 4	26 Ω ± 7%

Table 3-14. Sensor Check

Section	Sensor Name	Location	Signal Level	Sensor Status
Printer	HP/ PE sensor	CN4 / Pin 1 & 2	Off: less than 0.7V	• Out of HP zone • No paper
			On: 2.4V and over	• Within HP zone • There is paper
Scanner	Scanner carriage HP sensor	CN2 / Pin 1 & 2	Off: less than 0.7V	Not at home position
			On: 2.4V and over	Within home position zone

CHAPTER

4

DISASSEMBLY AND ASSEMBLY

4.1 Overview

This section describes procedures for disassembly and assembly of main components of the product. Unless otherwise specified, disassembly units or components can be reassembled by reversing the disassembly procedure. Things, if not strictly observed, that could result in injury or loss of life are described under the heading “WARNING”. Precautions for any disassembly or assembly are described under the heading “CAUTION”. Chips for disassembling procedures are described under the heading “CHECK POINT”

If the assembling procedure is different from the reversed procedure of the disassembling, the procedure is described under the heading “REASSEMBLY”. Any adjustment required after disassembling the units are described under the heading “ADJUSTMENT REQUIRED”. When you have to remove any units or parts that are not described in this chapter, refer to the exploded diagrams in the appendix.

Read precautions described in the next section before starting.

4.1.1 Precautions

See the precautions given under the handling “WARNING” and “CAUTION” in the following column before disassembling and assembling the product.

- **Disconnect the power cable before disassembling or assembling the printer.**
  If you need to work on the printer with power applied, strictly follow the instructions in this manual by paying attention in order not to get electric shock.
- **Wear protective goggles to protect your eyes from ink. If ink gets in your eye, flush the eye with fresh water and see a doctor immediately.**
- **Always wear gloves for disassembly and re-assembly to avoid injury from sharp metal edge.**
- **If ink is fitted to skin, flush it out with water and soup. If inflammation is caused to skin, see a doctor.**
- **To protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.**
- **To prevent consumables form explosion or ignite, do not put it near fire or throw it into fire.**
- **If developing fluid or oil are fitted to skin or clothes, remove them completely with waste cloth and wash cleanly with water.**

- **Avant de commencer, assurez vous que l’imprimante soit eteinte et que le cordon d’alimentation soit debranche.**
- **Lorsque vous changez la pile au lithium, assurez vous que la nouvelle respecte bien les caracteristiques requises.**
- **Lorque que vous installez la pile au lithium, faites attention a l’inserer dans le bon sens en respectant la polarite.**
- **Veillez a jeter les piles usagees selon le reglement local.**
- **Ne rechargez pas les piles au lithium.**

Risque d’explosion si la pile est remplacée incorrectment. Ne remplacer que par une pile du même type ou d’un type équivalent recommandé par le fabricant. Eliminer les piles déchargées selon les lois et les règles de sécurité en vigueur.

CAUTION

- **Use only recommended tools for disassembling, assembling or adjusting the machine.**
- **Observe the specified torque when tightening screws.**
- **Apply lubricants and adhesive as specified.**
- **Once you have disassembled this machine, make the specified adjustments.**
  (See Chapter 5 for details.)
- **At assembly, make sure that the ink tube has been installed in the correct position. If it is not in the correct position, ink can leak.**
- **Never remove the ink cartridge from the carriage unless this manual specifies to do so.**
- **When transporting the printer after installing the ink cartridge, be sure to pack the printer for transportation without removing the ink cartridge.**

4.1.2 Tools

Use only specified tools to avoid damaging the machine.

Table 4-1. Tools

Tool Name	Available from	Tool Code
Phillips screw driver #2	EPSON	1080532
Phillips screw driver #1	EPSON	1080530
Tweezers	EPSON	1080561
Hexagonal box driver (opposite side: 5.5mm)	EPSON	1080584
M3 (5.5mm) wrench	EPSON	-
Radio pliers	EPSON	-
Acetate tape	EPSON	1003963
Tension gauge (2000cN)	EPSON	1213123

4.1.3 Screws

Table 4-2. Screws

No.	Description	Appearance
1	CBP-Tite *x* F/Ni	
2	C.C.P-Tite *x* F/Zb	
3	C.B.S. *x* F/Zn	
4	C.C.S-Tite *x*	
5	C.B.S-Tite *x* F/Zn	
6	C.B.S-Tite (P4) *x* F/Zn	
7	Bind B-Tite sems W2, 2.5x5F/Zb	
8	C.B.(O) SCREW *x* F/Zg	
9	C.B.P-Tite *x* F/Zn	
10	M3 Hexagon nut	

x: Screw nominal size x nominal length

4.1.4 Service Dispatch Standard

When this machine is completely repaired and returned to the user, confirm finally according to Check Points in the right list.

Table 4-3. Check List

Classification	Part	Check item	Check column
Printer unit	Self test	Operation is normal?	☐OK / ☐NG
	On line test	Print is normally done?	☐OK / ☐NG
	Print head (nozzle check pattern print)	Ink gets out normally from all the nozzles?	☐OK / ☐NG
	CR mechanism	CR smoothly operates?	☐OK / ☐NG
		CR makes abnormal sound during its operation?	☐OK / ☐NG
	Paper loading mechanism	Paper is smoothly loaded?	☐OK / ☐NG
		Paper jam does not happen?	☐OK / ☐NG
		Paper does not warp during paper loading?	☐OK / ☐NG
		Multiple papers are not fed?	☐OK / ☐NG
		Abnormal sound is not heard during paper loading?	☐OK / ☐NG
		There is no alien substance at paper route?	☐OK / ☐NG

Table 4-3. Check List (continued)

Classification	Part	Check item	Check column
Scanner unit	Mechanism	Glass surface is not dirty?	☐OK / ☐NG
		Alien substance is not mixed in the CR movement area?	☐OK / ☐NG
	CR mechanism	CR smoothly operates?	☐OK / ☐NG
		CR operates together with scanner unit?	☐OK / ☐NG
		CR makes abnormal sound during its operation?	☐OK / ☐NG
	Lamp	Lamp normally turns on and white reflection test is done near home position?	☐OK / ☐NG
On line test	On line test	Operation is normal?	☐OK / ☐NG
Copy	Copy	Local copy is normal?	☐OK / ☐NG
Adjustment	Designated adjustment items	Adjustment condition is suitable?	☐OK / ☐NG
Lubrication	Designated lubrication items	Lubrication is done at designated place?	☐OK / ☐NG
		Lubrication volume is suitable?	☐OK / ☐NG
Function	Version of firmware	The newest version	☐OK / ☐NG
Dispatch packing	Ink cartridge	Ink cartridge is normally installed?	☐OK / ☐NG
	Waste ink porous pad	Remained life of waste ink porous pad is sufficient?	☐OK / ☐NG
	Protection during distribution	Printer CR is in the cap position?	☐OK / ☐NG
		Scanner CR is locked?	☐OK / ☐NG
Others	Attached goods	All of attached goods from users are packed?	☐OK / ☐NG

4.2 Disassembly Process

The flowchart below shows Disassembly Process

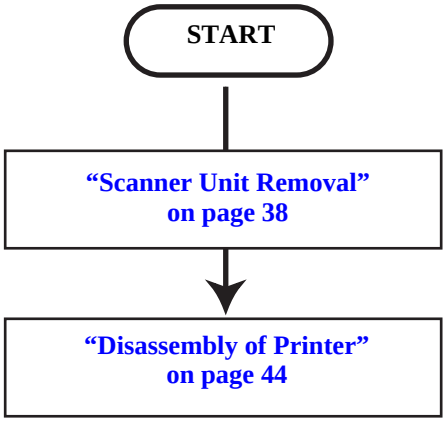


Figure 4-1. Flowchart (1)

4.2.1 Scanner Unit Removal

1. Remove the one screw (CBP-Tite 3x10 F/Zn) securing the FFC Cover to the Middle Housing.

NOTE: *Screw tightening torque: 0.5 -0.7 Nm*

Figure 4-2. Screw securing the Connector Cover

2. Remove the FFC Cover.
3. Disconnect the Harness Grounding Plate from the terminals on the Power Supply Unit.

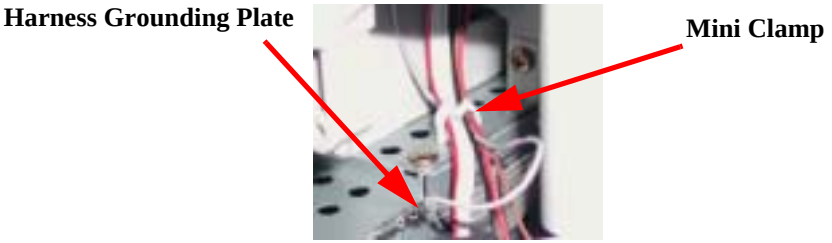


Figure 4-3. Harness Grounding Plate

4. Release the harness of the Scanner from the Mini Clamp on the Power Supply Unit.

5. Using tweezers or the like, disengage the upper and lower hooks on the Harness Fastening Plate which retain the Harness Fastening Plate to the Shield Cover for the Main Board.

Figure 4-4. Harness Fastening Plate

6. Remove the Ferrite Core from the Shield Cover for the Main Board.

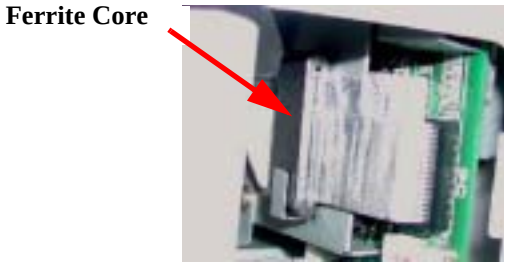


Figure 4-5. Ferrite Core

7. Disconnect the four lines of harness of the Scanner Unit from the Main Board.
   - CCD harness: CN1
   - HP detector harness: CN2
   - Panel harness: CN6
   - Motor harness: CN7
8. Remove the Ferrite Cores from the CCD harness and Panel harness.
9. Remove the two (right and left) screws (CBP-Tite 3x10 F/Ni) securing the Scanner Unit to the Middle Housing.

NOTE: *Screw tightening torque: 0.5-0.7 Nm*

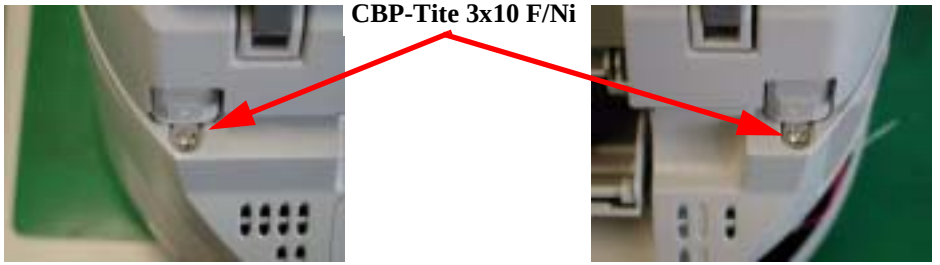


Figure 4-6. Screws securing the Scanner Unit

10. Remove the Scanner Unit upward.

CAUTION

When removing the Scanner Unit, take care not to damage the harness.

4.3 Scanner Unit Disassembly

This section describes the disassembly procedure for the scanner unit. Figure 4-7 shows the disassembly procedure flowchart for the scanner unit.

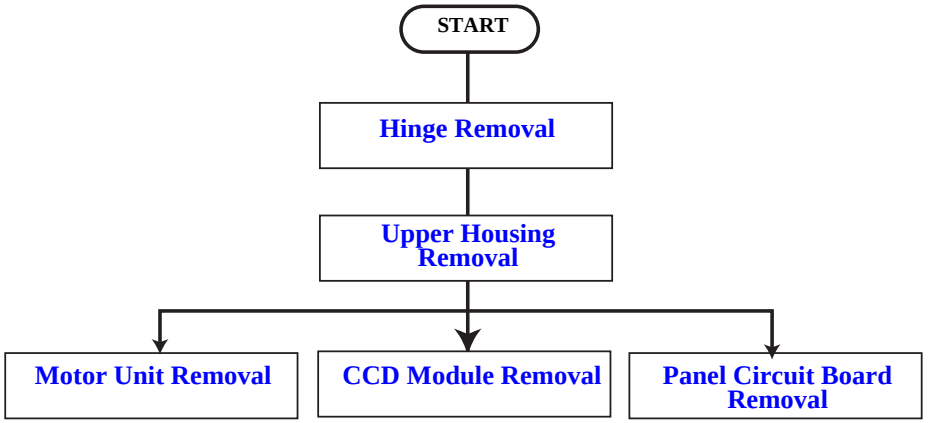


Figure 4-7. Flowchart (2)

CAUTION

Perform disassembly and assembly of the scanner unit in an environment free from dust. You are advised to work in a clean room or on a clean bench, if possible.

4.3.1 Hinge Removal

1. Remove the scanner unit. (Refer to "Scanner Unit Removal" on page 38)
2. Remove the document cover.
3. Remove the four screws (CBP-Tite 3x10 F/Zn) securing the hinge to the scanner unit.

NOTE: *Screw tightening torque: 0.5-0.7 Nm*

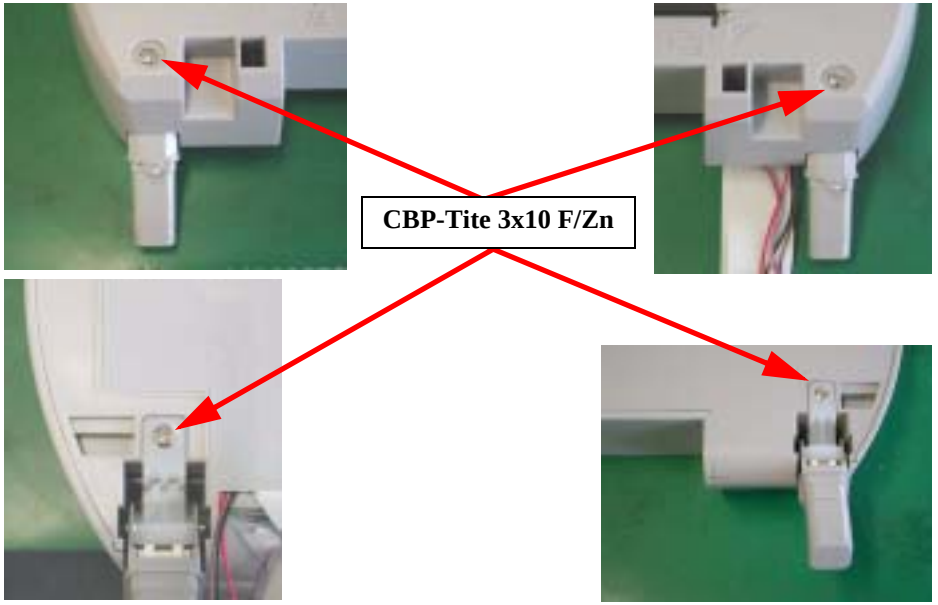


Figure 4-8. Screws securing the Hinge

4. Remove the hinge.

4.3.2 Upper Housing Removal

1. Remove the scanner unit. (Refer to "Scanner Unit Removal" on page 38)
2. Remove the hinge. (See "Hinge Removal" on page 40)
3. Remove the two screws (CCP-Tite 3x8 F/Zb) securing the upper housing to the scanner unit.

NOTE: *Screw tightening torque: TBD*

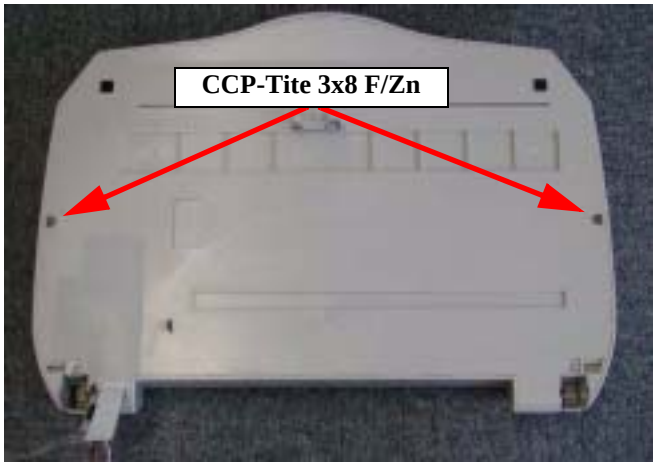


Figure 4-9. Screws securing the Upper Housing

4. Disengage the two hooks fastening the upper housing and lower housing.

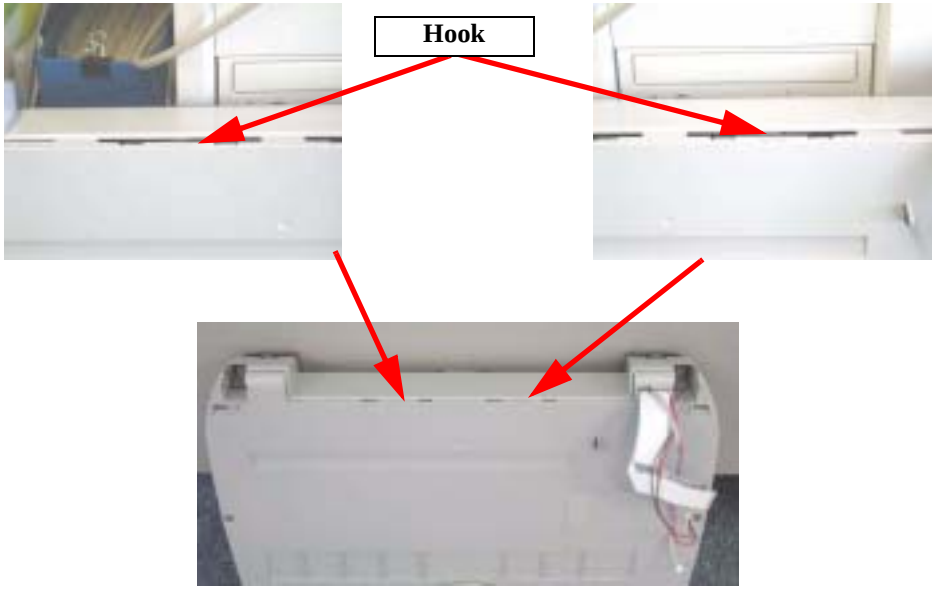


Figure 4-10. Hook Position

5. Open the upper housing by lifting it from the rear.
6. Insert your hand through the opening and disconnect the harness for the panel from the connector on the panel circuit board.

Figure 4-11. Harness Disconnection

4.3.3 Motor Unit Removal

1. Remove the scanner unit. (Refer to "Scanner Unit Removal" on page 38)
2. Remove the hinge. (See "Hinge Removal" on page 40)
3. Remove the upper housing. (See "Upper Housing Removal" on page 41)
4. Disconnect the motor harness from the lower housing.

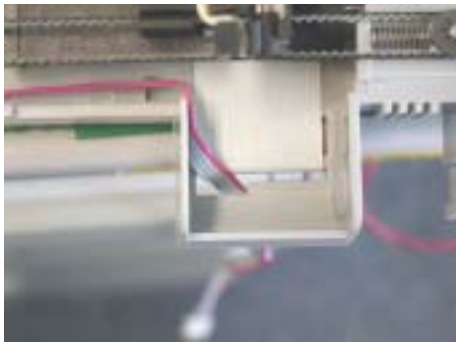


Figure 4-12. Motor Harness

5. Loosen the timing belt by pushing the driven pulley and remove the timing belt.

Figure 4-13. Driven Pulley for Timing Belt

6. Remove the three screws (CCP-Tite 3x8 F/Zb) securing the motor bracket to the lower housing.

NOTE: *Screw tightening torque: TBD*

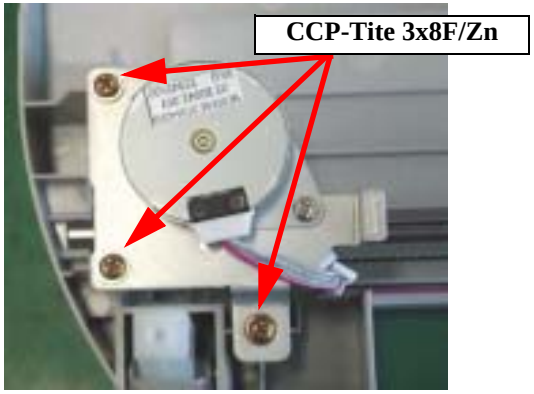


Figure 4-14. Screws securing the Motor Unit

7. Remove the motor unit.

CAUTION

Lead the harness of the motor along the groove in the lower housing without floating.

4.3.4 CCD Module Removal

1. Remove the scanner unit. (Refer to "Scanner Unit Removal" on page 38)
2. Remove the hinge. (See "Hinge Removal" on page 40)
3. Remove the upper housing. (See "Upper Housing Removal" on page 41)
4. Disconnect the FFC from the lower housing.
5. Disengage the timing belt from the retaining portion of the CCD module.

Figure 4-15. Timing Belt Retaining Portion

6. Remove the guide shaft from the lower housing.
7. Remove the guide shaft from the CCD module.

4.3.5 Panel Circuit Board Removal

1. Remove the scanner unit. (Refer to "Scanner Unit Removal" on page 38)
2. Remove the hinge. (See "Hinge Removal" on page 40)
3. Remove the upper housing. (See "Upper Housing Removal" on page 41)
4. Remove the five screws (CCP-Tite 3x6 F/Zb) securing the panel circuit board.

NOTE: *Screw tightening torque: TBD*

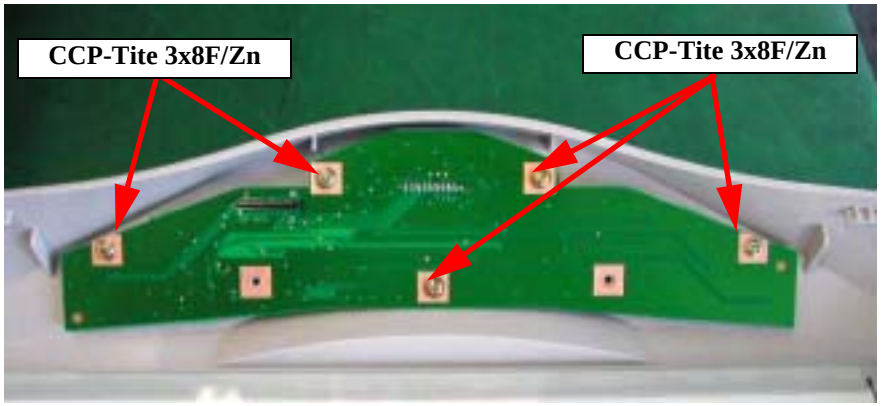


Figure 4-16. Screws securing the Panel Circuit Board

CAUTION

- **When installing the panel circuit board, take care that no dust enters between the LCD panel and the transparent cover.**
- **Do not touch the switch contacts on the panel circuit board with bare hand; otherwise, contact error can occur.**

4.4 Disassembly of Printer

This section describes the disassembly procedure for the printer of Stylus CX3100/3200. Figure 4-17 below shows the flowchart for disassembly procedure.

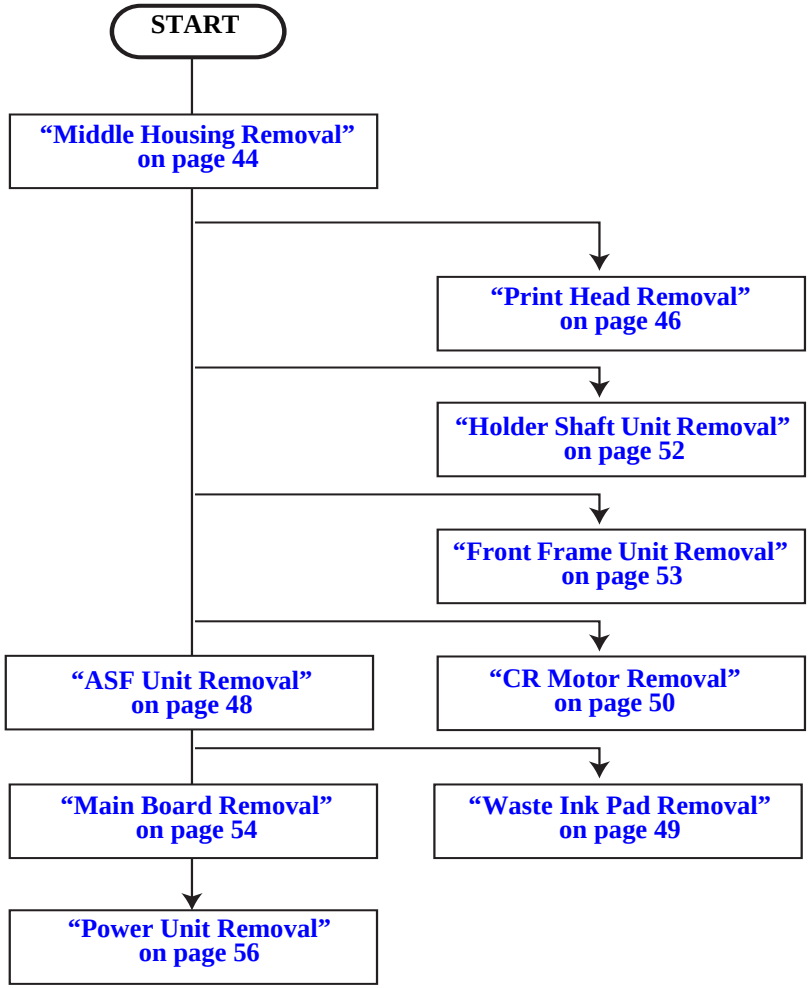


Figure 4-17. Flowchart (3)

4.4.1 Middle Housing Removal

1. Remove the scanner unit. (Refer to "Scanner Unit Removal" on page 38)
2. Remove the three screws (CBP-Tite 3x10 F/Ni) securing the Front Housing to the Middle Housing.

NOTE: *Screw tightening torque: 0.5-0.7 Nm*

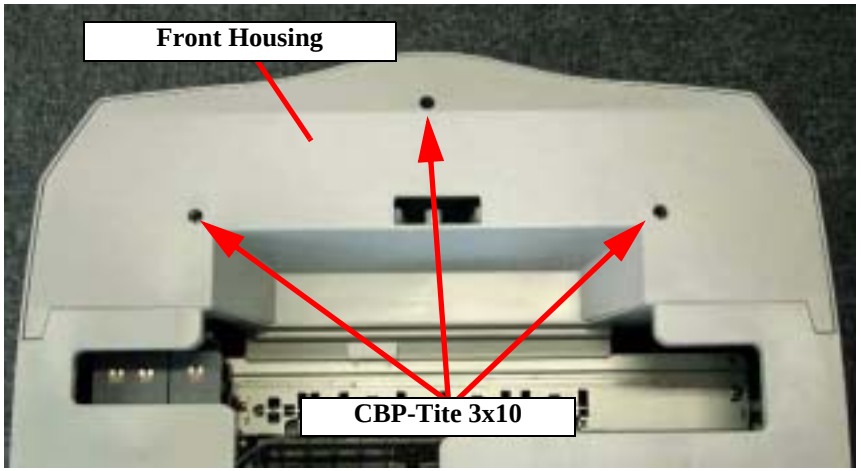


Figure 4-18. Screws securing the Front Housing

3. Remove the Front Housing.
4. Remove the four screws (CBP 3x10 F/Zn) securing the Middle Housing to the Porous Pad Tray.

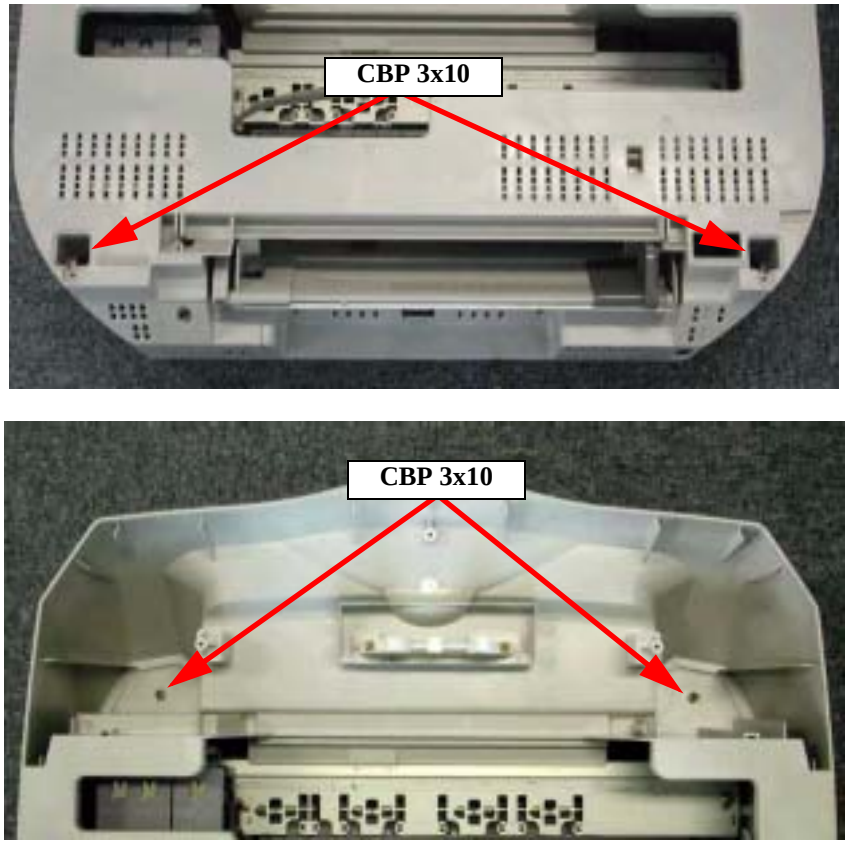


Figure 4-19. Screws securing the Middle Housing

NOTE: *Screw tightening torque: 0.5-0.7 Nm*

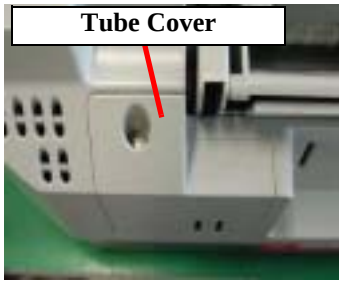
5. Move the left guide edge of the ASF to the left end.
6. Shift the Middle Housing rearward slightly and lift it for removal.

CAUTION

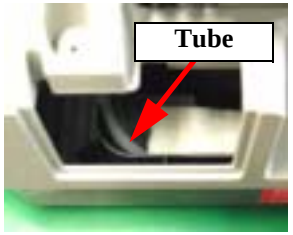
After installing the Middle Housing, remove the Tube Cover once and make certain that the tube is inserted into the Porous Pad properly.

- **Remove the one screw (CBP 3x10) securing the Tube Cover and remove the Tube Cover.**

NOTE: *Screw tightening torque: 0.5-0.7 Nm*



- **Check that the tube is inserted into the Porous Pad properly.**



CAUTION

■ **Set the Tube Holder and install the Tube Cover.**

4.4.2 Print Head Removal

1. Remove the Middle Housing. (See "Middle Housing Removal" on page 44.)
2. Remove the cartridge covers for the B&W and color cartridges from the Carriage Unit.
3. Disengage the two hooks (at A and B) of the FFC Holder and remove the FFC Holder from the Carriage Unit.

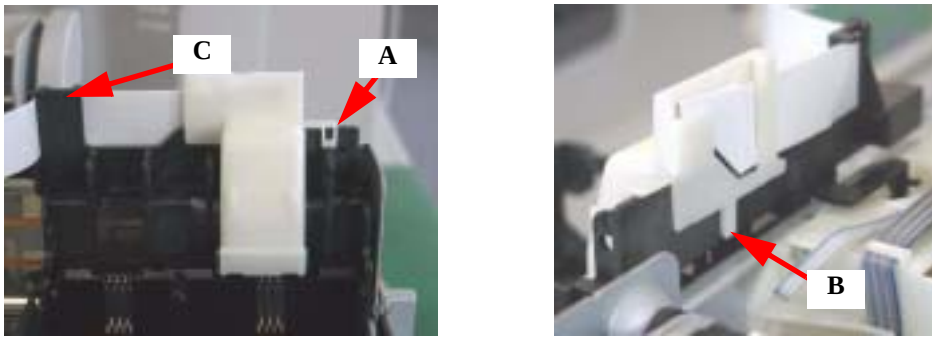


Figure 4-20. Removing the FFC Holder

4. Take off the Head FFC from the holding portion (at C) of the Carriage Unit.
5. Remove the two screws, namely, one C.B.P-Tite 3x8 F/Zn and one C.B.B-Tite W2 2.5x5 F/Zb, which secure the Print Head to the Carriage Unit.

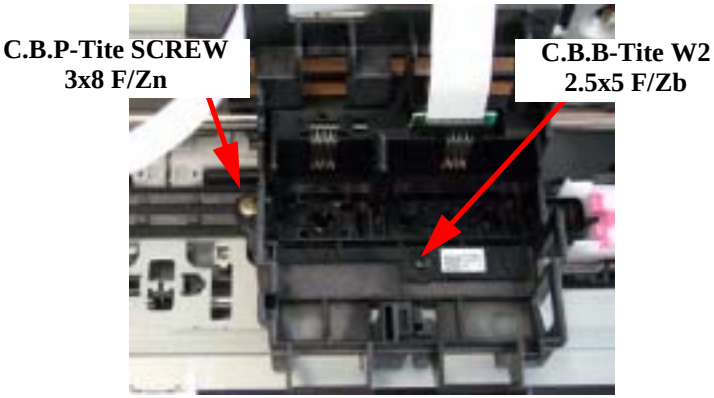


Figure 4-21. Screws securing the Print Head

6. Remove the Print Head.
7. Disconnect the Head FFC from the connector of the Print Head.

ADJUSTMENT REQUIRED

Once you have replaced the Print Head with a new one, make the following adjustments:
(Refer to "Adjustment by Adjustment Program" on page 59)

- **Head ID Input**
- **Ink Charge**
- **Bi-D Adjustment**
- **Top Margin Adjustment**
- **First Dot Position Adjustment**

When you have removed once and then installed the Print Head, make the following adjustments:

- **Head Cleaning**
- **Bi-D Adjustment**
- **Top Margin Adjustment**
- **First Dot Position Adjustment**

CHECK POINT

Installing the Print Head

1. **Set the Head FFC in the holding portion (at C) of the Carriage Unit. (See Figure 4-20, "Removing the FFC Holder", p. 46)**
2. **Make sure that the head grounding plate is installed on the Carriage Unit properly.**

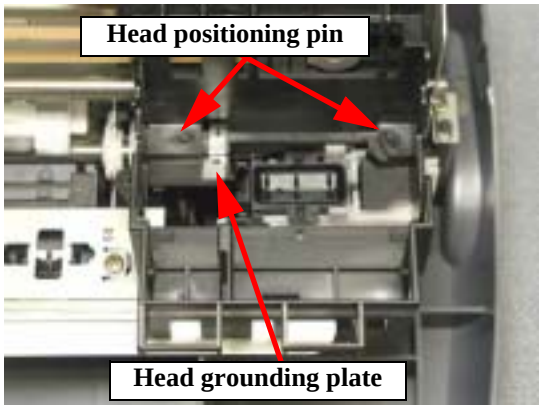


Figure 4-22. Head Mounting Position

3. **Install the Print Head so that the two holes are put properly on the respective pins of the Carriage Unit. (See Figure 4-22, "Head Mounting Position", p. 47)**
4. **Secure the Print Head with the one screw (C.B.P-Tite SCREW 3x8 F/Zn) and one screw (C.B.B.-Tite W2 2.5x5 F/Zb).**
   Screw tightening torque;
   C.B.P-Tite 3x8 F/Zn:0.5-0.7Nm
   C.B.B-Tite W2 2.5x5 F/Zb:0.15-0.25Nm

CHECK POINT

Installing the FFC Holder

- **Make certain that the Head FFC has been installed properly.**

Figure 4-23. Installing the Head FFC

- **Make sure that the Head FFC is connected to the Print Head properly.**
- **Make sure that the FFC Holder is installed on the Carriage Unit properly.**

4.4.3 ASF Unit Removal

1. Remove the Middle Housing. (See "Middle Housing Removal" on page 44.)
2. Remove the three screws, namely, one C.B.P-Tite 3x6 F/Zn, one C.B.S-Tite(P4) 3x6 F/Zn and one C.B.P-Tite 3x8 F/Zn, which secure the ASF Unit to the printer mechanism.

Figure 4-24. Removing the ASF Unit Securing Screws

3. Remove the ASF Unit.

NOTE: *Screw tightening torque*
C.B.P-Tite 3x8 F/Zn:0.5-0.7 Nm
C.B.S-Tite(P4) 3x6 F/Zn: 0.7-0.9 Nm
C.B.P-Tite 3x8 F/Zn: 0.7-0.9 Nm

CAUTION

- **Do not touch the LD Pad or Hopper Pad of the ASF Unit.**
- **Do not reuse any scratched pad.**

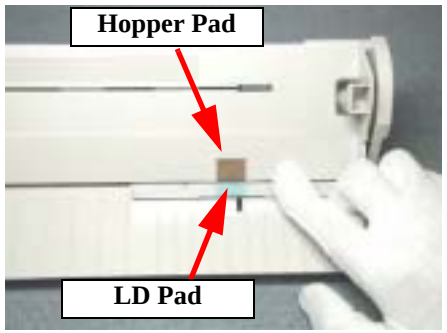


Figure 4-25. Hopper Pad and LD Pad

CHECK POINT

When installing the ASF Unit, the flat surface of the LD Roller must face the inside of the Mechanism Unit.

Figure 4-26. LD Roller Installation

4.4.4 Waste Ink Pad Removal

1. Remove the Middle Housing. (See "Middle Housing Removal" on page 44.)
2. Remove the ASF Unit. (See "ASF Unit Removal" on page 48)
3. Remove the Tube Holder.

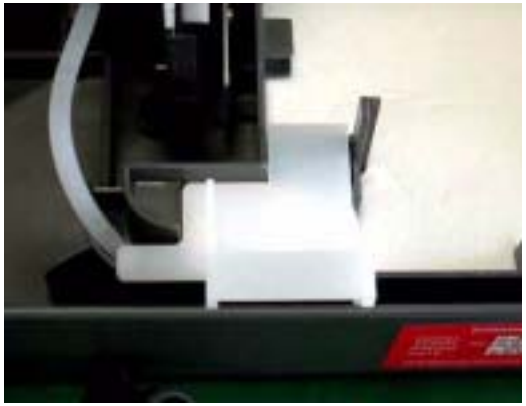


Figure 4-27. Removing the Tube Holder

4. Remove the Tube Holder Waste Ink Pad.

Figure 4-28. Removing the Tube Holder Waste Ink Pad

5. Remove the Waste Ink Pad.

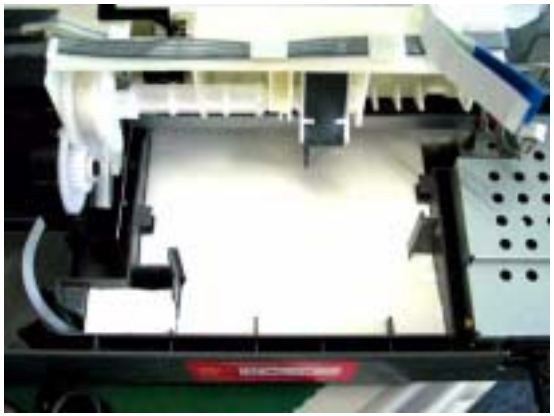


Figure 4-29. Removing the Waste Ink Pad

CAUTION

When installing the Tube Holder Waste Ink Pad, make certain that the tube is placed in the Porous Pad Tray.

4.4.5 CR Motor Removal

1. Remove the Middle Housing. (See "Middle Housing Removal" on page 44.)
2. Loosen the timing belt by pushing the driven pulley holder at the left end of the printer mechanism and remove the timing belt from the CR Motor pinion.

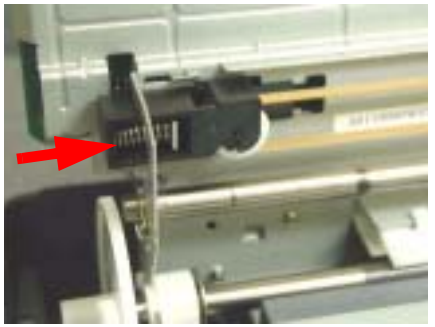


Figure 4-30. Removing the Timing Belt

3. Disconnect the motor lead wires from the connector (CN14) on the Main Board.
4. Disconnect the Print Head FFC from the connectors (CN8 and CN9) on the Main Board.
5. Disengage the one hook with which the FFC Spacer fastens the clamp to the Holder Shaft Unit and remove the clamp upward.

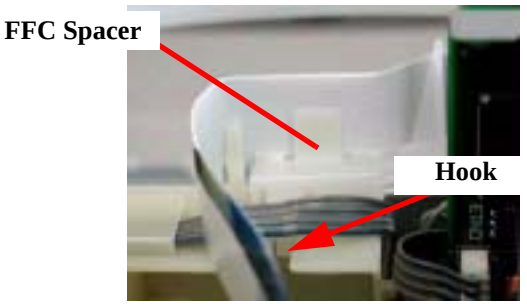


Figure 4-31. Removing the FFC Clamp

6. Release the motor lead wires from the fastening portion of the Holder Shaft Unit.

Figure 4-32. Releasing the Motor Lead Wires

7. While holding the motor, remove the four hexagon nuts (M3) securing the motor to the mechanism.

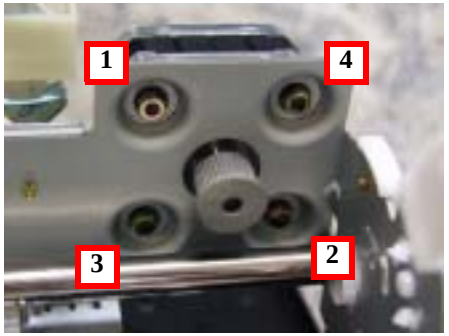
Figure 4-33. Removing the CR Motor

CAUTION

When installing the CR Motor, pay attention to the following particulars:

- **Connect the motor lead wires to the connector (CN14) on the Main Board.**
- **Tighten the hexagon nuts in the numeric order shown below.**

NOTE: *Screw tightening torque: 0.5-0.7Nm*



- **Check that the motor is secured properly.**

ADJUSTMENT REQUIRED

Once the CR Motor has been removed or replaced, make adjustments in the order specified below:

1. **Bi-D Adjustment (See p.63)**
2. **First Dot Position Adjustment (See p.67)**

4.4.6 Holder Shaft Unit Removal

1. Remove the Middle Housing. (See "Middle Housing Removal" on page 44.)
2. Remove the ASF Unit. (See "ASF Unit Removal" on page 48)
3. Remove the FFC Spacer and Head FFC from the Holder Shaft Unit. (See "CR Motor Removal" on page 50)
4. Release the CR Motor lead wires from the Holder Shaft Unit. (See "CR Motor Removal" on page 50)
5. Disconnect the HP/PE sensor lead wires from the connector (CN4) on the Main Board.
6. Disengage the two hooks fastening the Holder Shaft Unit to the printer mechanism (step 1) and lift the holder upward slightly (step 2).

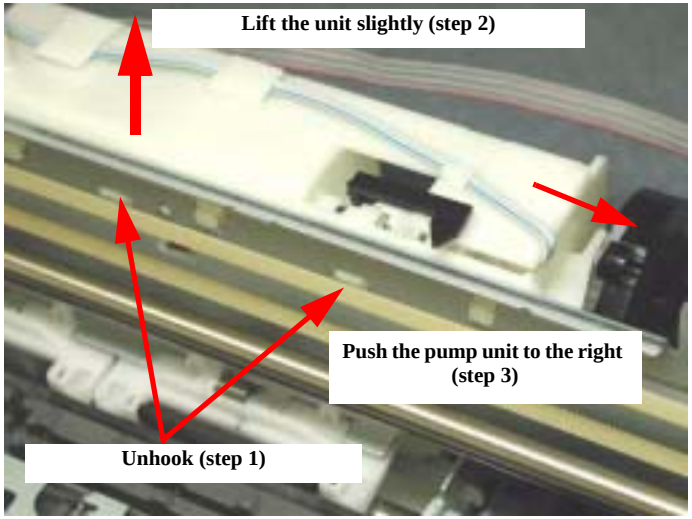
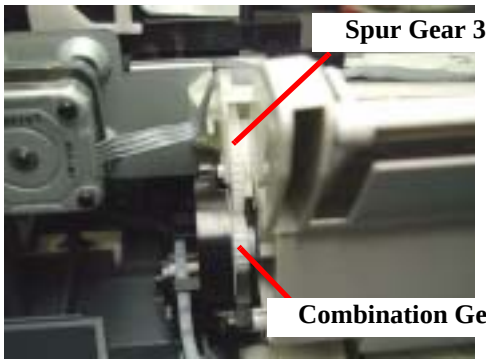


Figure 4-34. Removing the Holder Shaft Unit

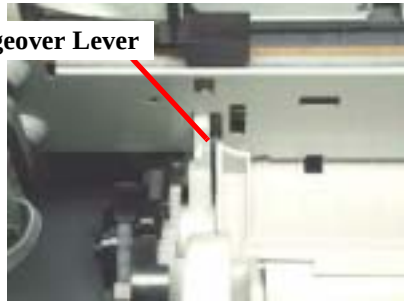
7. Push the pump unit to the right and disengage the pump unit from the pin on the Holder Shaft Unit and lift the Holder Shaft Unit for its removal (step 3).

CAUTION

- **Do not touch the LD Roller.**
- **Ensure that the Head FFC, the CR Motor lead wires and the HP/PE sensor lead wires are fastened to the Holder Shaft Unit properly.**
- **Ensure that the Head FFC, the CR Motor lead wires and the HP/PE sensor lead wires are connected to the respective connectors on the Main Board properly.**
- **Take care not to damage the teeth of the Spur Gear 35.2 and combination gear 16, 32.**



- **Ensure that the tip of the changeover lever inside the pump unit is positioned inside the printer mechanism.**



ADJUSTMENT REQUIRED

Once the Holder Shaft Unit has been removed or replaced, make adjustments in the order specified below:

1. **Bi-D Adjustment (See p.63)**
2. **First Dot Position Adjustment (See p.67)**

4.4.7 Front Frame Unit Removal

1. Remove the Middle Housing. (See "Middle Housing Removal" on page 44.)
2. Move the Carriage Unit to the home position by hand.
3. Remove the two screws (C.B.S. 3x6 F/Zn) securing the Front Frame Unit.
4. Lift the left end of the Front Frame Unit and move it to the left carefully for removal.

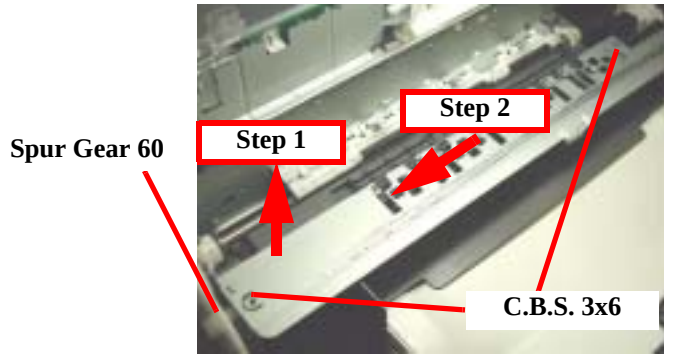


Figure 4-35. Removing the Front Frame Unit

CAUTION

When removing and installing the Front Frame Unit, take care not to damage the Spur Gear 60.

4.4.8 Main Board Removal

1. Remove the Middle Housing. (See "Middle Housing Removal" on page 44.)
2. Remove the ASF Unit. (See "ASF Unit Removal" on page 48)
3. Remove the two screws (C.B.S. 3x6 F/Zn) securing the M/B Grounding Plate to the Shield Cover and remove the M/B Grounding Plate.

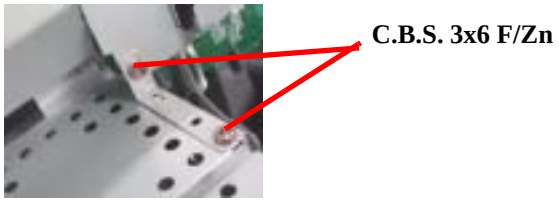


Figure 4-36. M/B Grounding Plate

NOTE: *Screw tightening torque;C.B.S. 3x6, F/Zn (2 pcs.): 0.5-0.7Nm*

4. Remove the three screws (C.B.S. 3x6 F/Zn) securing the Main Board and Shield Cover to the Printer Mechanism.

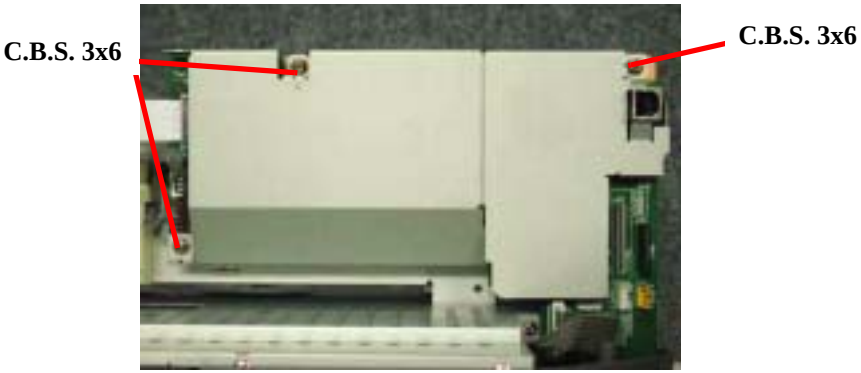


Figure 4-37. Removing the Main Board

NOTE: *Screw tightening torque;C.B.S. 3x6, F/Zn (3 pcs.): 0.5-0.7Nm*

5. Disconnect the following lead wires from the respective connectors on the Main Board.
   - Power Supply Board: CN5
   - HP/PE sensor lead wires: CN4
   - Head FFC: CN8 and 9
   - PF Motor lead wires: CN13
   - PF Motor lead wires: CN14

CAUTION

- Install the Shield Cover on the Main Board so that the USB connector is held in the Shield Cover. (See below)

- Connect the power supply cable on the secondary side to the Main Board so that the blue-band cable end is positioned at pin 1 as shown below.

- When installing the Main Board in the Printer Mechanism Unit, engage the Main Board with the hooks on the Mechanism Unit as shown below.

ADJUSTMENT REQUIRED

Once you have replaced the Main Board with a new one, make the following adjustments:

- Destination Setting (EEPROM Initialization) (See p.61)
- Head ID Input (See p.62)
- Bi-D Adjustment (See p.63)
- USB ID Input (See p.65)
- Top Margin Adjustment (See p.66)
- First Dot Position Adjustment (See p.67)

ADJUSTMENT REQUIRED

When you have removed once and installed the Main Board, make the following adjustments:

- Bi-D Adjustment (See p.63)

There may be cases where the contents of EEPROM on the Main Board can be read, for example, when only the motor driver has broken down. In such cases, to shorten repair time, you can back up only the adjusted values by executing the following operation and download the adjusted values onto the newly installed Main Board.

- EEPROM Data Backup (See p.70)

4.4.9 Power Unit Removal

1. Remove the Middle Housing. (See "Middle Housing Removal" on page 44.)
2. Remove the ASF Unit. (See "ASF Unit Removal" on page 48)
3. Remove the Main Board. (See "Main Board Removal" on page 54)
4. Remove the three screws, namely, one C.B.S. 3x6 F/Zn and two C.B.P-TITE 3x8 F/Zn, securing the Power Supply Unit to the Porous Pad Tray.

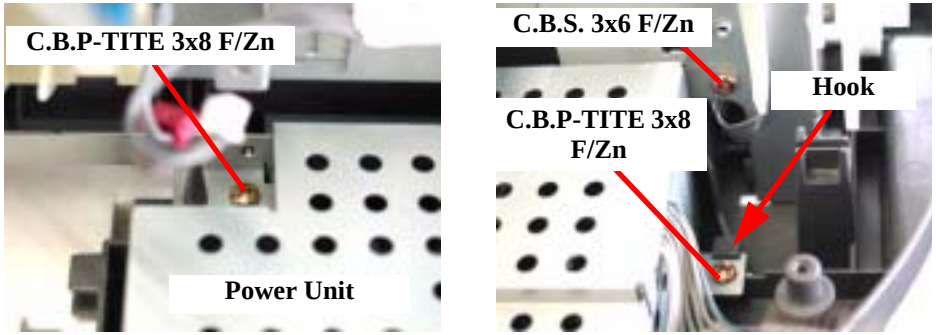


Figure 4-38. Power Supply Unit Removal

5. Remove the Power Supply Unit by detouring the hook on the Porous Pad Tray.

NOTE: *Screw tightening torque: C.B.P-TITE 3x8 F/Zn (2 pcs.): 0.5-0.7Nm*
C.B.S. 3x6, F/Zn (1 pc.): 0.5-0.7Nm

CHAPTER

5

ADJUSTMENT

5.1 Overview

This Chapter describes the necessary adjustment items and adjustment procedures for applicable Unit / Parts.

5.1.1 Printer Mechanism Adjustment Items

The adjustment items for this product are as indicated below. When performing any of these adjustments, be sure to execute all the related items so that this product operates normally.

Table 5-1. Mechanism Adjustment Items

	1	2	3	4	5	6
Adjust contents	**Firmware upload**	**Head ID input**	**Ink filling**	**Bi-D adjust**	**USB-ID input**	**Protect counter reset**
Head removal	Not applicable	Not applicable	Not applicable	①	Not applicable	Not applicable
Head replace	Not applicable	①	②	③	Not applicable	Not applicable
Main board replacement	①	①	Not applicable	②	③	Not applicable
CR unit replace/ removal	Not applicable	Not applicable	Not applicable	②	Not applicable	Not applicable
CR motor replace	Not applicable	Not applicable	Not applicable	①	Not applicable	Not applicable
Printer mechanism replace	Not applicable	①	②	③	Not applicable	Not applicable
Waste ink porous pad replace	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	①

Note 1: ○ mark shows that adjustment work is necessary. The circled figures indicate the order in which the adjustment work is to be carried out.

2: The following adjustment is not necessary for this product.

•Head Slanting Adjustment

This section shows details of each Adjustment Process according to Adjustment Program.

Adjustment Information for each Printer Mechanism needs to be set for this product in order to maintain reliable printing function and print quality for each printer mechanism. Accordingly, once the Printer Mechanism, Main Board or Print Head has been replaced, it is necessary to set and save the correct information of the mechanism into the Main Board by using the Adjustment Program.

During execution of the Adjustment Program, be sure to turn off the power to the printer when parts are to be removed and installed.

5.1.2 Dedicated Tools

Table 5-2 shows the dedicated tools for executing the adjustment items listed above.

Table 5-2. Dedicated Tools

No.	Name	Adjustment Items	Description / Specification
1	Adjustment Program	Mechanism setting	Dedicated program
2	EFlash3.exe	Firmware upload	Dedicated program
3	RMDEV. exe	ROM rewriting limitation invalidation program	Dedicated program

5.2 Adjustment by Adjustment Program

This machinery is adjusted by using the dedicated adjustment program. Adjusted compensation values are written into EEPROM on the Main Board.

This Program is intended to absorb the unevenness of features of individual Printer Mechanisms and ensure a satisfactory print quality. When the Printer Mechanism, Print Head or Main Board has been replaced, it is necessary to write the correct compensation values by using this Adjustment Program.

5.2.1 Adjustment Program Installation

1. Insert the floppy disk storing the Adjustment Program into the floppy disk drive.
2. Open the floppy disk holder and copy “Adjustment Program” onto the desk top.
3. Execute the Adjustment Program.

- **Before installing this program, make sure that the USB Driver has been installed on the PC.**
- **This program is exclusive for use on windows98/Me. This does not operate on DOS or Windows3.x or NT.**
- **Do not start the program before connecting the USB cable to Stylus CX3100/3200.**
- **The Adjustment Program comes with some sub files which appear by decompressing the compressed file. Be sure to store the sub files in the same holder where the Adjustment Program is stored.**

5.2.2 Adjustment Program Start

1. When the Adjustment Program is started, the screen as shown in Figure 5-1 is displayed. Select the Model Name.

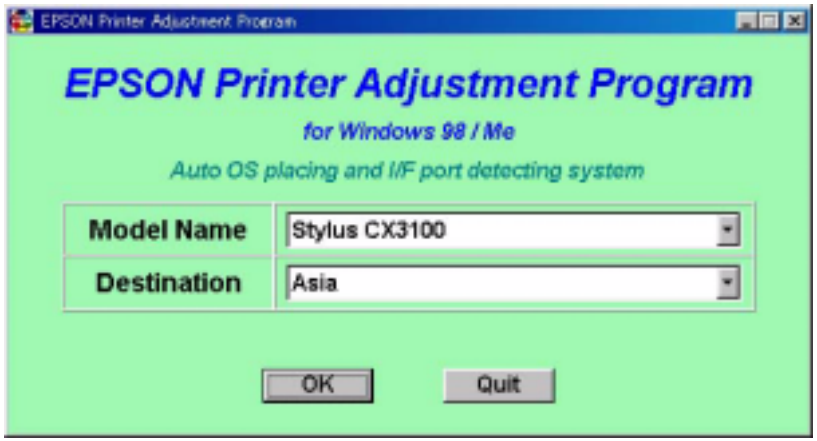


Figure 5-1. Model Name Port Number Selection

2. Select the destination of Stylus CX3100/3200.
3. Click the [OK] button.

CHECK POINT

■ **While Stylus CX3100/3200 is warming up (Power LED is blinking), the program can not be executed (communication error occurs). Execute the program after making certain that the Power LED of the printer is lit.**

From the menu, select the item for which the adjustment is to be made. (Refer to Table 5-3)

Table 5-3. Adjustment Item Menu

Menu	Adjustment Item for which setting can be made
Adjustment	Destination Setting (EEPROM Initialization) *(p.61)*
	Head ID Input *(p.62)*
	Bi-D Adjustment *(p.63)*
	USB ID Input *(p.65)*
	Top Margin Adjustment *(p.66)*
	First Dot Position Adjustment *(p.67)*
Maintenance	Head Cleaning *(p.68)*
	Ink Charge *(p.68)*
	Charging the transportation liquid
	Protection Counter *(p.69)*
	EEPROM Data Backup *(p.70)*
Check pattern printing	A4 Plain Paper Printing *(p.70)*
Additional function	EEPROM Data *(p.71)*

Upon completion of selection of model and destination, the screen as shown in Figure 5-2 is displayed.

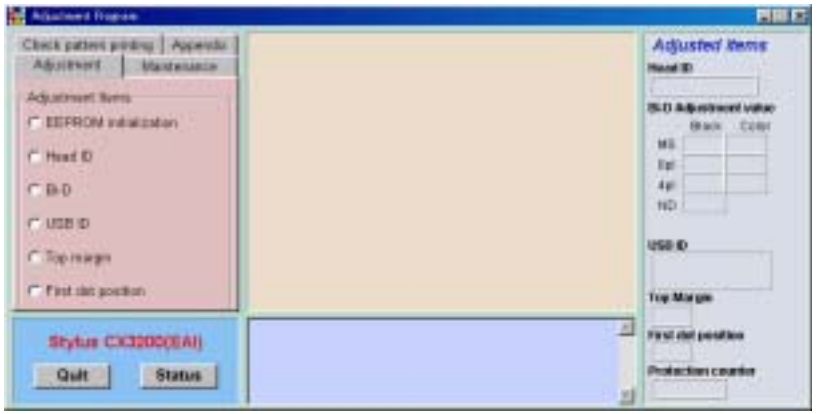


Figure 5-2. Adjustment Program

The Adjustment Program has the following buttons.

- Quit

  Click the [Quit] button, and a menu screen to select [Quit] or [Next] will be displayed. Clicking the [Quit] button on that menu screen will complete the adjustment and close the program. Clicking the [Next] button will return the display to the screen for selecting a Model Name and Destination.

5.2.3 Destination Setting (EEPROM Initialization)

When the Main Board of this machinery has been replaced with a new one, enter the initial setting values in EEPROM with this Adjustment Item.

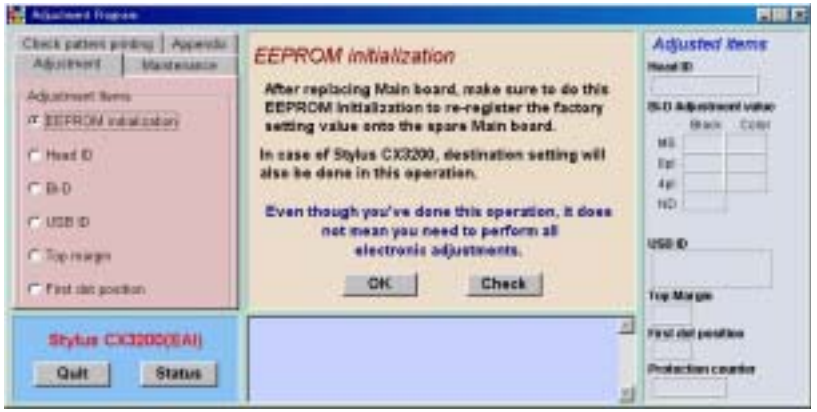


Figure 5-3. EEPROM Initialization

Click the [OK] button, and the message indicating that the initial values of Stylus CX3100/3200 have been written will appear in the lower center of the screen.
Click the [Check] button, and you can check the current setting of printer destination.

5.2.4 Head ID Input

With this item, you can write the Head ID in EEPROM and check the current set value. This adjustment compensates for the unevenness of ink eject volume and ensure satisfactory print quality. Unless the correct ID is input, unevenness in print density can occur.
This adjustment is required on any of the following occasions.

- When the Print Head has been replaced with a new one
- When the Main Board has been replaced with a new one
- When the Printer Mechanism has been replaced with a new one

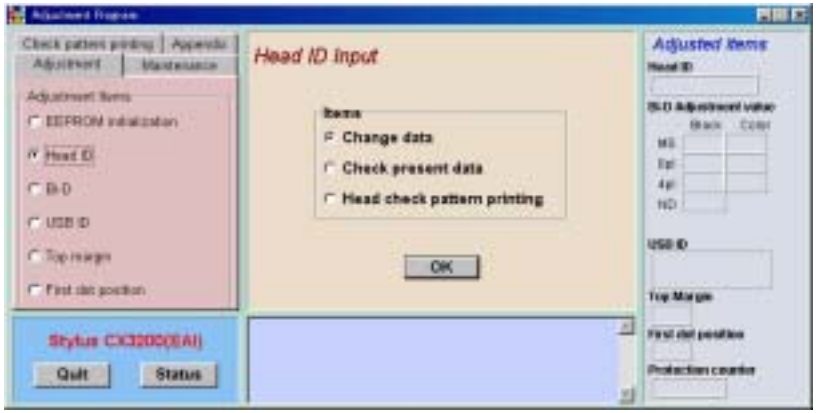


Figure 5-4. Head ID Adjustment Items

1. Click the item for which the adjustment is to be made and click the [OK] button. Select the [Check present data], and the Head ID currently stored in EEPROM will be indicated at the lower center of the screen.

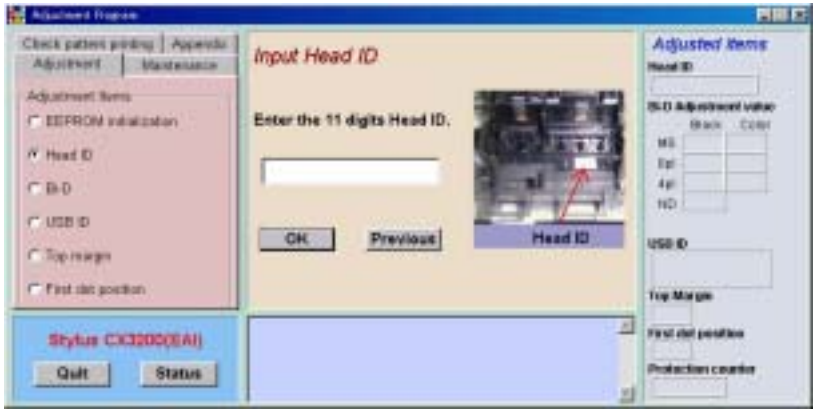


Figure 5-5. Head ID Input

2. Check the 11-digit ID written on the Printer Head and input it. Upon completion of input, click the [OK] button. For returning to previous screen, click the [Previous] button. The input values are indicated for the respective input items at “Adjusted items list”.

CAUTION

For Head ID, use the 11-digit character string described in the Print Head. Example: T17R4TUTTTG

5.2.5 Bi-D Adjustment

This adjustment corrects the deviation of printing timing for bidirectional printing which can occur due to variation of assembly precision/component parts of the Printer Mechanism. In this adjustment, print the Bi-D Pattern and adjust so that the pattern can be correctly printed. And the current setting value can be checked. Carry out this adjustment in the sequence as Printing of pattern → Checking → Adjustment → Printing → Checking. This adjustment is necessary when any of the following works has been performed:

- Printer Mechanism replacement
- Main Board replacement
- CR Motor replacement
- Carriage Assembly replacement
- Printer head replacement

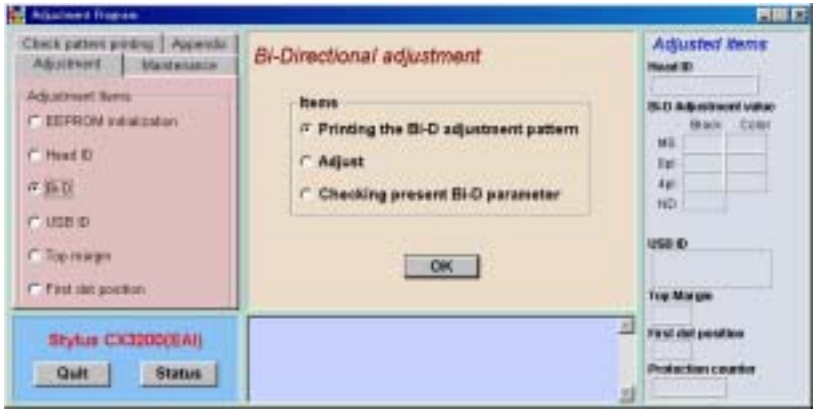


Figure 5-6. Bi-D Adjustment Item

1. Click the item for which the adjustment is to be made and click the [OK] button. When you select “Printing the Bi-D adjustment pattern”, you can print the pattern. When “Checking present Bi-D parameter” is selected, the set value is indicated at the lower center of the screen. When you select “Input Bi-Directional adjustment value”, you can input the adjusted values.
2. From the printed Bi-D adjustment pattern, judge which vertical line corresponding to which compensation value for each mode is straight.

Figure 5-7. Bi-D Adjustment Pattern

3. If adjustment is necessary, select [Bi-D Adjustment] and input the compensation values at the relevant points in each mode. Adjusted values can be input for each mode.

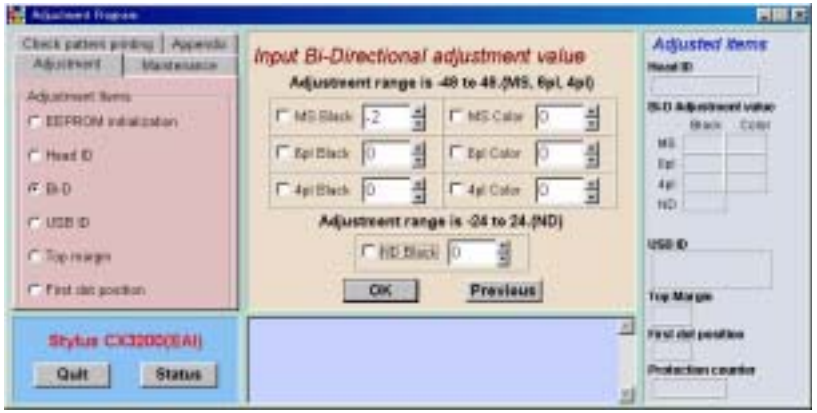


Figure 5-8. Input Bi-Directional Adjustment Value

4. Check the item for which the adjustment is to be made. The input value is indicated in [Adjusted items] at the right side of the screen.
5. By repeating steps 1 to 4 above, make adjustment to minimize the deviation of bidirectional printing timing.

5.2.6 USB ID Input

Stylus CX3100/3200 is equipped with the USB Interface as standard. As the USB Port Driver controls the device through the USB ID on Windows98 or iMac, a proper USB ID is assigned to this product. Since the USB ID is stored in EEPROM on the Main Board, the USB ID needs to be input again when the Main Board has been replaced with a new one. The USB ID is an 18-digit alphanumeric character string specific to the machine, and recorded at the particular address on EEPROM. The USB ID is determined at the factory as follows:

- Manufacture process line No. (3 digits)
- PC No. (2 digits)
- Date (12 digits) -The built-in time data of the PC is used.
- "0" (1 digit)

In repair, the 10-digit product serial number is used as the 10 digits of the new USB ID, and the new USB ID is completed with an 8-digit character string which is produced by Adjustment Program and automatically added to the serial number. Then input the new USB ID in EEPROM on the new Main Board.

1. Click the item for which the adjustment is to be made and click the [OK] button. When you select [USB ID], the set value is indicated at the lower center of the screen.
   When you select [USB ID Change], the screen as shown Figure 5-9 below is displayed and the Head ID can be input.

Figure 5-9. USB ID Input

2. Read 10 digits serial number from manufacture plate on the back of Stylus CX3100/3200 and input it and click the [OK] button. New USB ID is input to EEPROM.

5.2.7 Top Margin Adjustment

By this adjustment, set the value of top margin.

1. By pressing the [Print] button, print the adjustment pattern on PPC55kg paper.

Figure 5-10. Top Margin Adjustment Pattern

2. Measure the distance (top margin: specified value 3 mm) from the front end of the paper with the print pattern to the horizontal bar representing the printing start position.
3. If the measured value is deviated from the specified value, select the [Adjust] button to enter the adjustment mode.

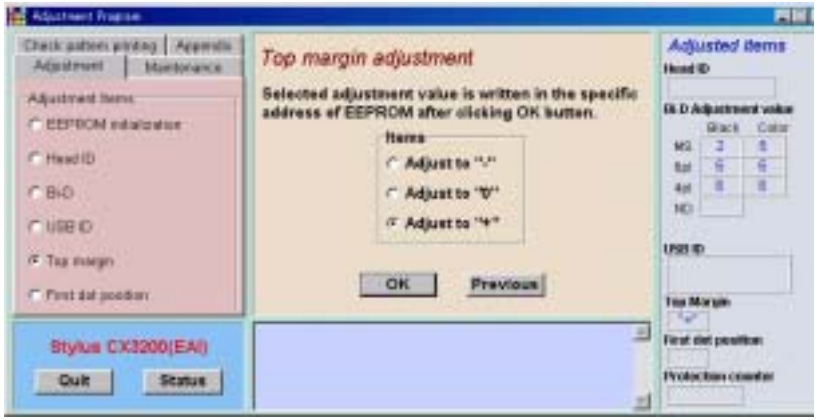


Figure 5-11. Adjustment Mode

4. Select the desired one of the "+", "0" and "-" buttons and press the "OK" button for setting. Select "+" to enlarge the margin or "-" to lessen it. Three levels are available for selection.
5. Print the pattern again and check the top margin.
6. Determine the setting value so that the top margin as close to the specified value as possible.

5.2.8 First Dot Position Adjustment

This adjustment corrects the left margin (Print start position) for post card printing and A4 printing.
The value indicated at the center of the adjustment window is the current value recorded in EEPROM.

1. Press the [Print] button to print the adjustment pattern.

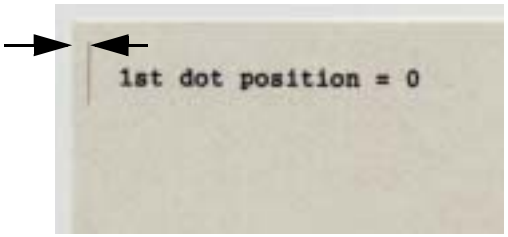


Figure 5-12. First Dot Position

2. Measure the distance (left margin) from the left edge of the paper for the print pattern to the vertical line representing the print start position.
3. Change the setting by pressing the "Δ" or "∇" button beside or under the current value.

Figure 5-13. First Dot Position Adjustment Mode

4. Press the [Write] button to set the adjustment value.
5. Press the [Print] button to print the adjustment pattern.
6. Repeat steps 2 to 5 above and adjust so that the left margin will be 3+/-1.5 mm.

CHECK POINT

- **While Stylus CX3100/3200 is warming up (Power LED is blinking), the program can not be executed (communication error occurs). Execute the program after making certain that the Power LED of the printer has turned on.**
- **Each input of one step will change the first dot position by 1/2880 inch (0.009 mm).**

5.2.9 Head Cleaning

You can execute more intensive cleaning than Head Cleaning, which is carried out by selecting it in the menu on the Operation Panel. This function releases the Head Nozzle from clogging which can cause dot missing.

NOTE: *The following amount of ink will be consumed every time head cleaning is executed:*

Black : 1/9 of unused ink cartridge

Color : 1/18 of unused ink cartridge

Click the [OK] button, and head cleaning will be executed.

CAUTION

If the nozzle is not released from clogging even by this cleaning, execute initial ink filling. (Refer to "Ink Charge" on page -68**)**

5.2.10 Ink Charge

When the Head or Printer Mechanism has been replaced, ink is not available in the ink route just after its installation, thus ink needs to be filled.

When the following work has been performed, ink must be initially filled by executing this item.

- Printer Mechanism replacement
- Printer Head replacement

NOTE: *The following amount of ink will be consumed every time ink charge is executed:*

Black : 1/3 of unused ink cartridge

Color : 1/7 of unused ink cartridge

5.2.11 Protection Counter

This counter controls total ink eject volume and displays error status if the volume exceeds the set value, displaying the waste ink overflow indication (printer error indication and Error LED blinking.). By selecting this item, you can check or clear the protection counter.

This operation is necessary after the following work.

- Waste Ink Porous Pad replacement

Click the item to be executed and click the [OK] button.
When you select “Checking the present counter” on the screen as shown in Figure 5-14 and click the [OK] button, the count value will be indicated at the lower center of the screen.

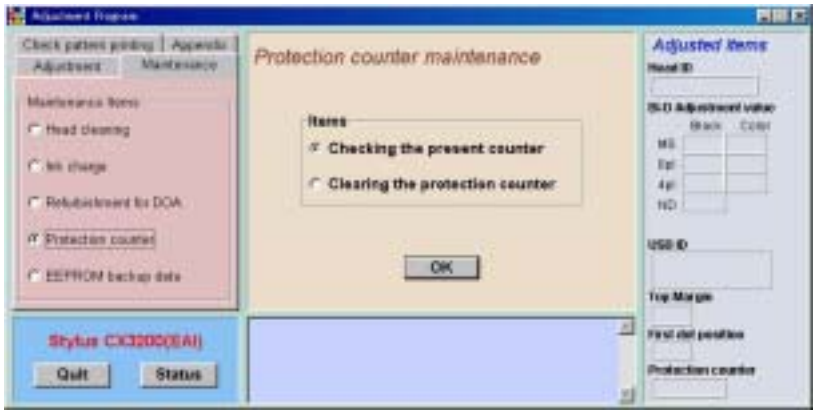


Figure 5-14. Protection Counter Reading

When you select “Clearing the protection counter”, the screen as shown in Figure 5-15 is displayed. Click the [OK] button to clear the protection counter.

Figure 5-15. Clearing the Protection Counter

5.2.12 EEPROM Data Backup

This function is to back up data and write it on the new board when the Main Board has been replaced with a new one. For example, with the conventional models, whenever the Main Board is replaced, the ink counter is automatically reset and can not be handed down to the new board. With this function, however, the original data can be used with the new board, thus the adjustment process can be shortened.

Data to be backed up are as follows.

- Protection counter
- Each color ink consumption counter
- Bi-D adjustment values
- First dot position adjusted value
- Head ID
- USB ID
- Market ID (Destination set value)

1. To execute data backup, press the [OK] button. Data will be read from EEPROM
2. When reading data from EEPROM, the following indication appears.
3. Replace the Main Board and turn on the power to the printer.
4. After confirming that Stylus CX3100/3200 has finished warming up, press the [OK] button. Press the [Cancel] button to discontinue backup.

CHECK POINT

- **While Stylus CX3100/3200 is warming up (Power LED is blinking), the program can not be executed (communication error occurs). Execute the program after making certain that the Power LED of the printer has turned on.**

5.2.13 Check Pattern Printing

This function is to print several patterns on paper. By this printing, you can check the functions of Stylus CX3100/3200.

5.2.13.1 A4 Plain Paper Printing

A4 paper is used for printing of check patterns. Before executing printing, set A4 paper in the ASF and click the [OK] button. Then, printing of Check Patterns will start.

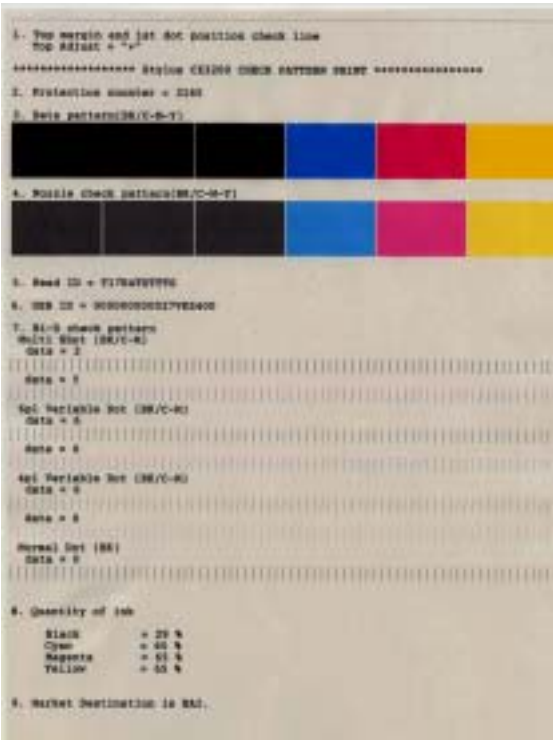


Figure 5-16. A4 Plain Paper Printing

Check the printed patterns. If there is any problem, make adjustment for the relevant items by using the program again.

5.2.14 EEPROM Data

With this function, even in error status, you can check the data in EEPROM or write data in it by directly designating addresses in EEPROM. (But if the CPU of the Main Logic Circuit, I/F Receiver, RAM or EEPROM is broken down, this function can not be used.)
Check “EEPROM data” in the additional function menu, and the following menu will be indicated.

The EEPROM data function has the following two functions:

- Checking the data in EEPROM

  You can check the data in EEPROM in the range of designated addresses. Designate the addresses at which you want to check the data and click the [OK] button, and the data in EEPROM will be read from the printer and displayed on the screen.

- Inputting data in EEPROM

  You can write data to change the value at the designated address in EEPROM. But, use this function on special occasions only. If data is changed carelessly, trouble can occur.

5.3 Firmware Uploading

The firmware for Stylus CX3100/3200 is stored in flash ROM on the C497MAIN Board. Therefore, firmware can be reinstalled by uploading it from the personal computer without disassembling the machine. This section describes the procedure for uploading firmware.

CAUTION

- **The personal computer to be used for installing firmware must be equipped with Windows98, Me, 2000 or later operating system, which permits use of the USB interface.**
- **The personal computer must have the TWAIN 5 and EFlash3 installed beforehand.**

1. Connect the Stylus CX3100/3200 to the personal computer with the USB cable.
2. Turn on the power to the personal computer and Stylus CX3100/3200.
3. Double-click the EFlash3 icon to start the EFlash3 program.

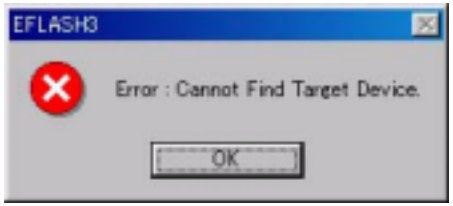
Figure 5-17. EFlash3 Starting Screen

4. Click the "(N) >" button to proceed with the program on the screen, and the screen as shown below will be displayed.

CAUTION

If the error display as shown below has appeared, take the following actions:

- **Change the underlined model name indicated below in "C497_Bessho.inf", which is contained in the same holder as the upload program is contained, to the model name for which firmware is now to be uploaded.**



strTarget1=EPSON CC-550L
strTarget2=EPSON STYLUS CX3200
strTarget3=EPSON CC-570L

- **If the error recurs even after above change, replace the PC with another one and check to see if the error is cleared.**

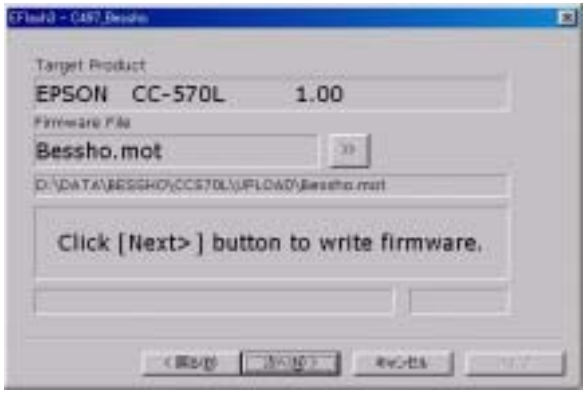


Figure 5-18. Search for Firmware

5. Make a search for firmware by means of the ">>" button.

CAUTION

Firmware is available in the Motorola format (with the extension as *.MOT).
If the firmware file has a different extension, rewrite it to MOT.

1. When the menu as shown below has been displayed, click the “Open” button to open the selected file.

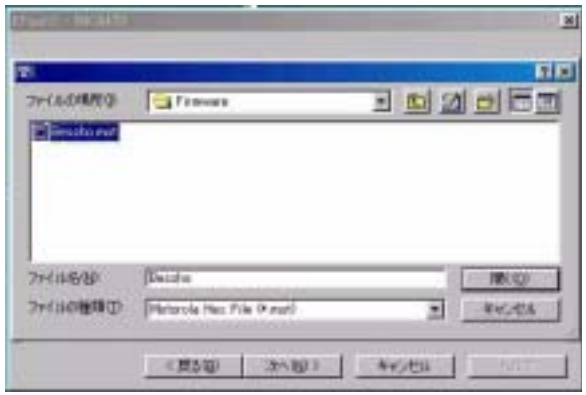


Figure 5-19. Firmware File Selection

2. Press the “>” button on EFlash3, and firmware will be transferred.

Figure 5-20. Firmware Transfer Start

3. Upon successful completion of firmware transfer, the window as shown below will be displayed on the EFlash3 screen. The power to Stylus CX3100/3200 will automatically be turned off. Once power is turned on next time, Stylus CX3100/3200 will operate on the new firmware.

Figure 5-21. Upload Completion

CAUTION

■ **With a personal computer on an operating system of Windows98 Second edition, the number of times of writing in ROM is limited to 10. To invalidate this limitation, decompress all the files in the compressed file “Win98&98SE supplement tool.zip” and execute the newly generated execution file “RMDEV.exe”.**

CHAPTER

6

MAINTENANCE

6.1 Overview

This section describes maintenance work to maintain the functions and performance of this product.

6.1.1 Cleaning

Clean if dirt is visible. As dirt on the glass for placing the document affects directly image reading quality, clean the glass completely.

CAUTION

- **Never use chemical solvents, such as thinner or benzine, as they may deform or deteriorate plastic and rubber products.**
- **Be careful not to damage any components when you clean inside the printer.**
- **Do not scratch the surface of the PF roller assembly. Use a soft brush to wipe off any dust. Use a soft cloth moistened with alcohol to remove ink stain.**
- **Do not use frequently the cleaning sheet included in the media. It may damage the coated surface of the PF roller. However, it is no problem to clean the surface of the ASF LD roller by placing the adhesive surface of the cleaning sheet on the ASF LD roller.**

☐ Exterior parts

Use a clean soft cloth moistened with water and wipe off any dirt. If the exterior parts are very dirty, use a cloth moistened with a neutral detergent to wipe it off.

☐ Inside the printer

Use a vacuum cleaner to remove any paper dust.

☐ Glass for placing the original document on

Remove dust or any paper with a clean dry cloth. If dirt is serious or foreign material is adhering, wipe it off with a cloth moistened with a neutral detergent. If a trace of wiping has remained, wipe the glass again with a dry clean cloth.

☐ ASF LD Roller

If paper dust on the surface of the ASF LD Roller lowers the friction, place the adhesive surface of the cleaning sheet included in the media on the surface of the ASF roller and repeat paper loading from the ASF.

6.1.2 Maintenance of the Scanner

6.1.2.1 Lubrication Points of the Scanner (TBD)

When any part of the CR Unit of the scanner has been replaced or the sound of carriage moving is loud, lubrication is necessary. Figure 6-1 and Figure 6-2 below indicate the designated grease and lubrication points.

Table 6-1. Designated Grease

Kind	Name	Parts Code	Supply Source
Grease	G-45	1033657	EPSON

Table 6-2. Designated Lubrication Points

Figure	Lubrication Points	Lubrication
Figure 6-1	Scanner carriage guide shaft	G-26

CAUTION

If lubrication exceeds the designated volume, the mechanism may be damaged or functions may be impaired. Be sure to apply the designated volume of grease correctly.

Figure 6-1. Lubrication Points of the Scanner

6.1.3 Maintenance of the Printer

If print irregularity (dot missing, white line, etc.) has occurred or the printer indicates “Maintenance Error”, take the following actions to clear the error.

6.1.3.1 Head Cleaning

The printer has a built-in head cleaning function, which is activated on the operation panel. Confirm that the printer is in the stand-by state (the power indicator is not blinking). Select “Head Cleaning” by means of the Menu buttons on the operation panel and execute it, and the printer will start head cleaning.

6.1.3.2 Maintenance Error

Ink is used not only for printing but also for other operations, such as cleaning. During such an operation, the printer wastes a certain amount of ink and drains it into the waste ink pad, and the amount of the waste ink is counted.
Once the amount of waste ink reaches the predetermined limit, the printer indicates “Maintenance Request” and the waste ink pad must be replaced.

- ☐ Overflow Counter (Protection Counter) count up ≥ 23270
- ☐ Time for replacing the Waste Ink Pad

  When the total amount of waste ink reaches the predetermined limit, the printer indicates “Maintenance Request”. (Refer to “TBD”). During repair operation, check the overflow counter and the firmware version, selected code page and nozzle check pattern.
  If the ink counter value is close to its upper limit, notify your customer and recommend that the waste ink pad is to be replaced. (If the waste ink pad is not replaced at that time, “Maintenance Error” will occur just after the printer is retuned to the customer.) Once you have the confirmation from the customer, replace the waste ink pad.
- ☐ Replacement procedure

  Refer to “Waste Ink Pad Removal” on page 49
- ☐ Treatment after replacement

  Reset the Overflow counter (Protection counter). Turn on the power to the printer and enter into the special menu (ordinary operation) and execute waste ink counter reset menu or perform counter clear by the adjustment program. (Refer to “Protection Counter” on page 69)

6.1.3.3 Lubrication Points of the Printer

The kinds and volume of the oils and grease for lubrication of the Printer are determined based on factory evaluation. Therefore, be sure to apply a specified volume of the designated grease to each designated point for repair and maintenance of the Printer. The designated grease and application points are indicated below.

- **Never use any oil or grease other than designated, since any other oil or grease can badly affect the machine life or function of the product or damage the mechanism.**
- **As the volume of application is also designated based on evaluation result, be sure to apply the designated volume of grease correctly.**

Table 6-3. Designated Lubricant

Kind	Name	Parts Code	Available from
Grease	G-46	1039172	EPSON
Grease	G-58	1082176	EPSON

Table 6-4. Designated Lubrication Points

Figure	Lubrication Points / Amount of Application	Precautions
Figure 6-2	☐ Lubrication Points • 4 positions on the periphery of the CR guide shaft ☐ Grease to be applied • G-58 ☐ Amount of Application • 100 mg in total (25 mg at each position)	• Do not apply to any part of the carriage unit other than specified. • Use an injector to apply grease. • Move the carriage unit from side to side to spread the applied grease evenly. • After applying grease, check that the carriage unit moves smoothly.
Figure 6-3	☐ Lubrication Points • 4 positions in the grooves in the driven pulley holder ☐ Grease to be applied • G-58 ☐ Amount of Application • 1 mm in diameter x 1 mm in length (at each position)	• Use an injector to apply grease.
Figure 6-4, Figure 6-5	☐ Lubrication Points • Center area and notched portion on the front frame ☐ Grease to be applied • G-58 ☐ Amount of Application • Center area: 1 mm in diameter x 300 mm in length • Notched portion: 1 mm in diameter x 20 mm in length	• Use an injector to apply grease. • Move the carriage unit from side to side to spread the applied grease evenly.

Table 6-4. Designated Lubrication Points (continued)

Figure	Lubrication Points / Amount of Application	Precautions
Figure 6-6	☐ Lubrication Points • Top of the paper eject roller (9 positions), and similar positions after rotating the roller rearward by 180 degrees ☐ Grease to be applied • G-46 ☐ Amount of Application • Apply evenly with a brush.	• Apply the grease after replacement with the after-sale service part.
Figure 6-7	☐ Lubrication Points • Apply to the surface of top teeth of the spur gear 60 and then turn the gear M rearward by 90 degrees ☐ Grease to be applied • G-58 ☐ Amount of Application • 1 mm in diameter x 25-50 mm in length	• Use an injector to apply grease. • Do not touch the surface to which the grease has been applied. • Apply the grease after replacement with the after-sale service part.
Figure 6-8	☐ Lubrication Points • Center on the driven pulley shaft (1 position) • Inner periphery of the hole in the driven pulley (2 positions) ☐ Grease to be applied • G-58 ☐ Amount of Application • Driven pulley shaft: 1 mm in diameter x 20 mm in length • Driven pulley hole: 1 mm in diameter x 1 mm in length (at each position)	• Use an injector to apply grease.

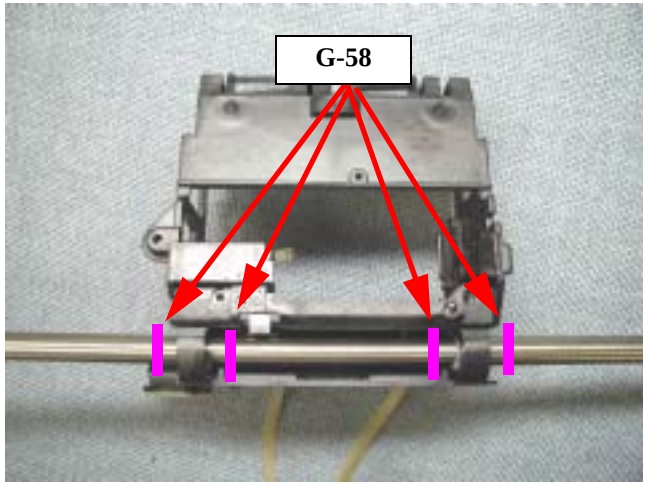


Figure 6-2. Lubrication Points of the Printer 1

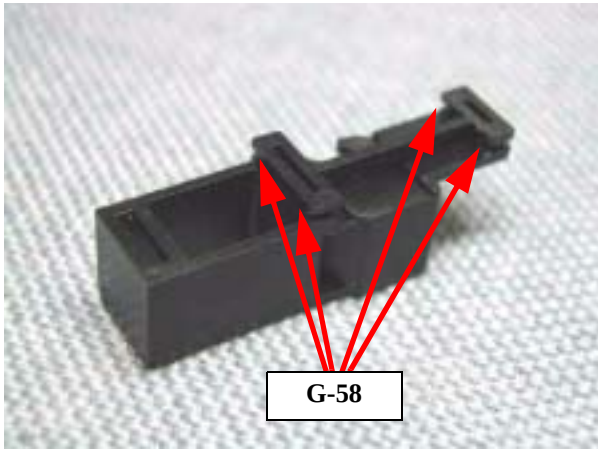


Figure 6-3. Lubrication Points of the Printer 2

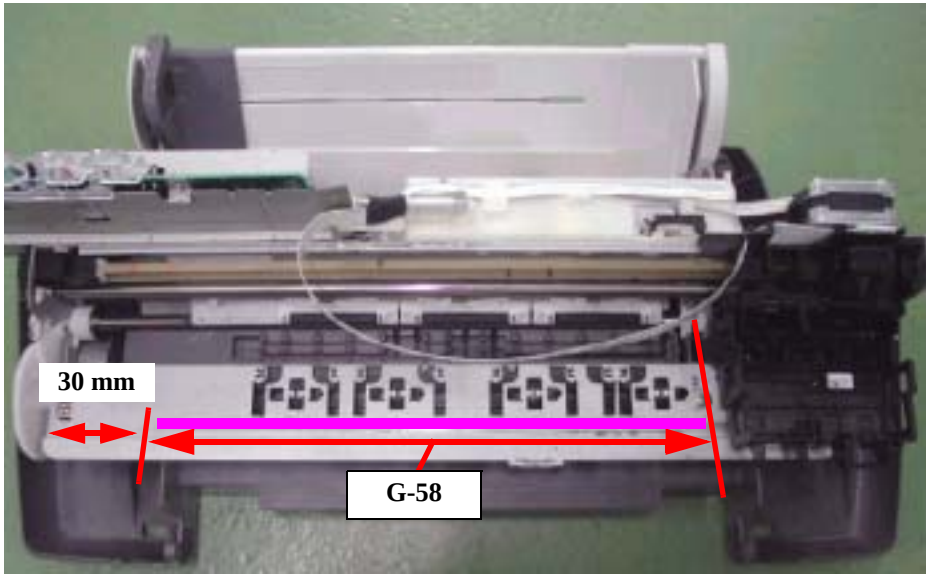


Figure 6-4. Lubrication Points of the Printer 3

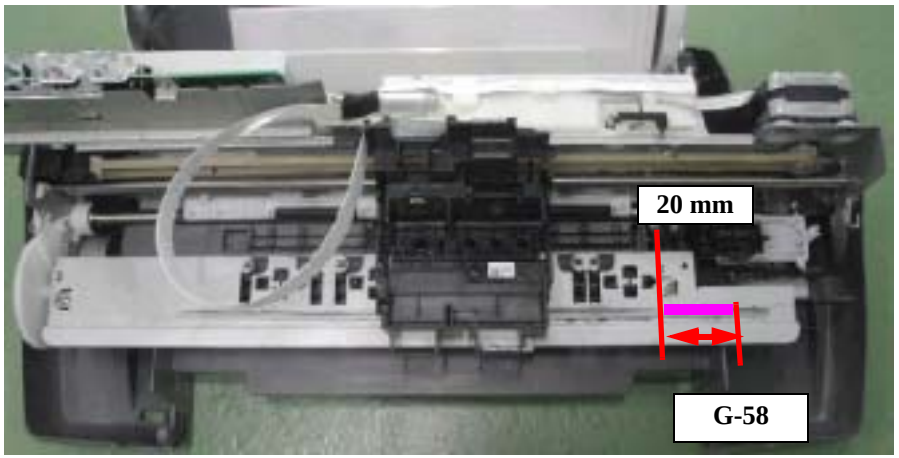


Figure 6-5. Lubrication Points of the Printer 4

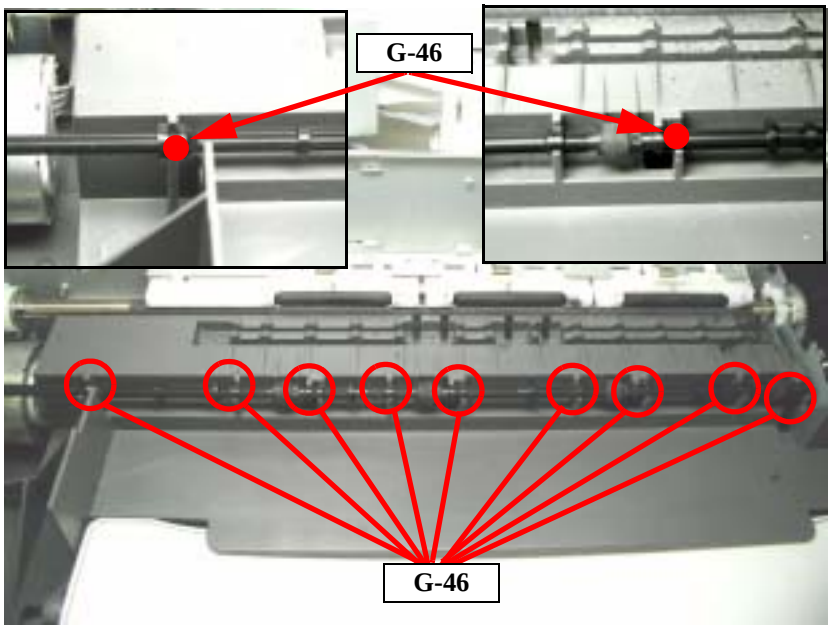


Figure 6-6. Lubrication Points of the Printer 5

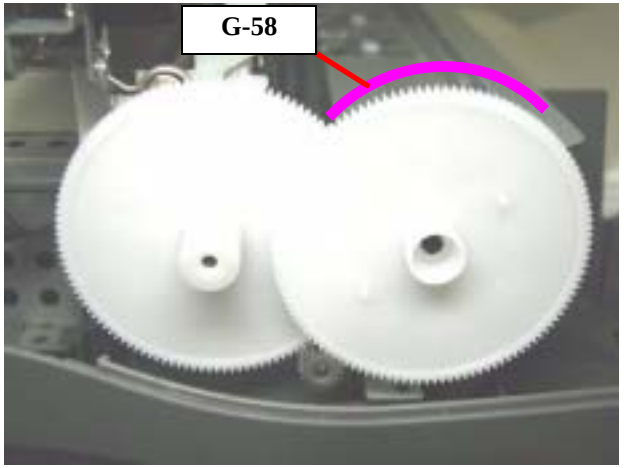


Figure 6-7. Lubrication Points of the Printer 6

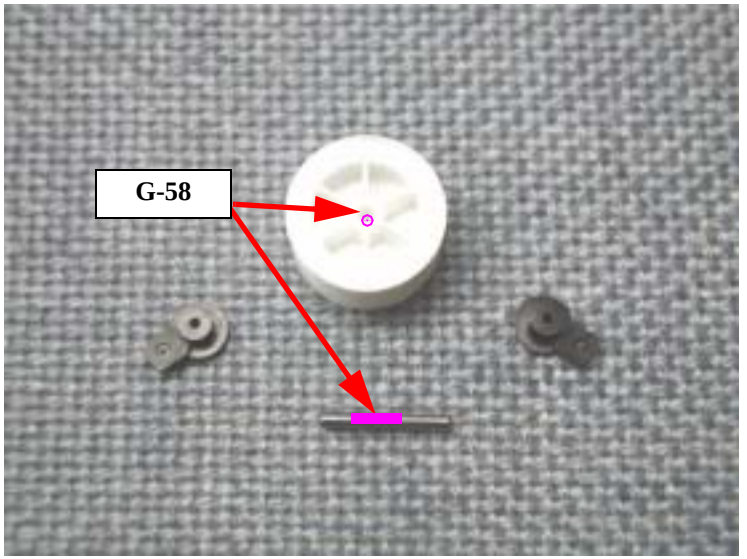


Figure 6-8. Lubrication Points of the Printer 7

CHAPTER

7

APPENDIX

7.1 Connectors

7.1.1 Connector Assignments

Figure below shows the connector assignments on the circuit boards of Stylus CX3100/ 3200.

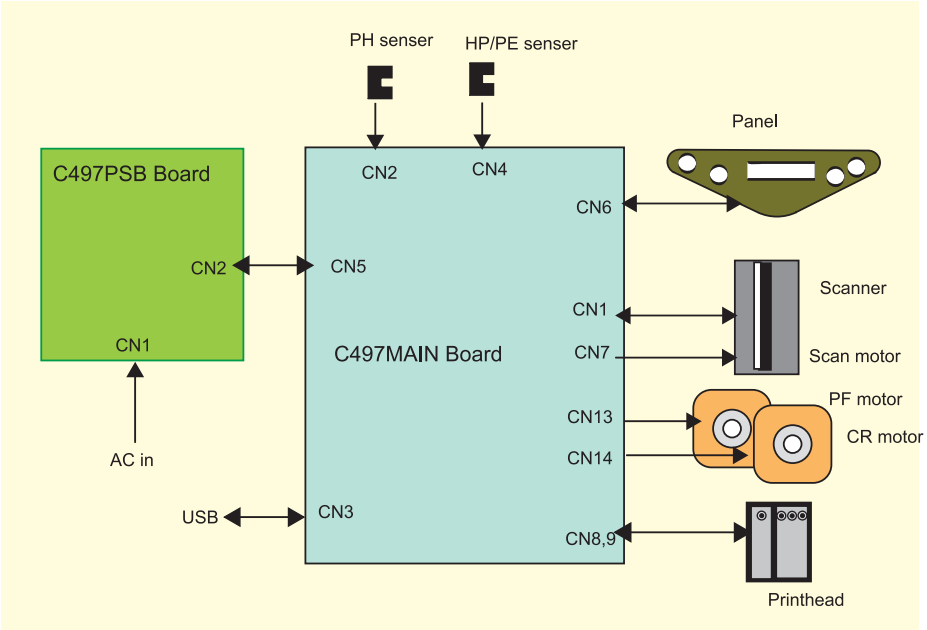


Figure 7-1. Connector Assignments of Circuit Boards

7.2 Circuit Board Component Layout

7.3 Electric Circuit Diagrams

This section shows electric circuit diagrams of Stylus CX3100/3200. The electric circuits of Stylus CX3100/3200 are provided on the following circuit boards:

- C497MAIN Board

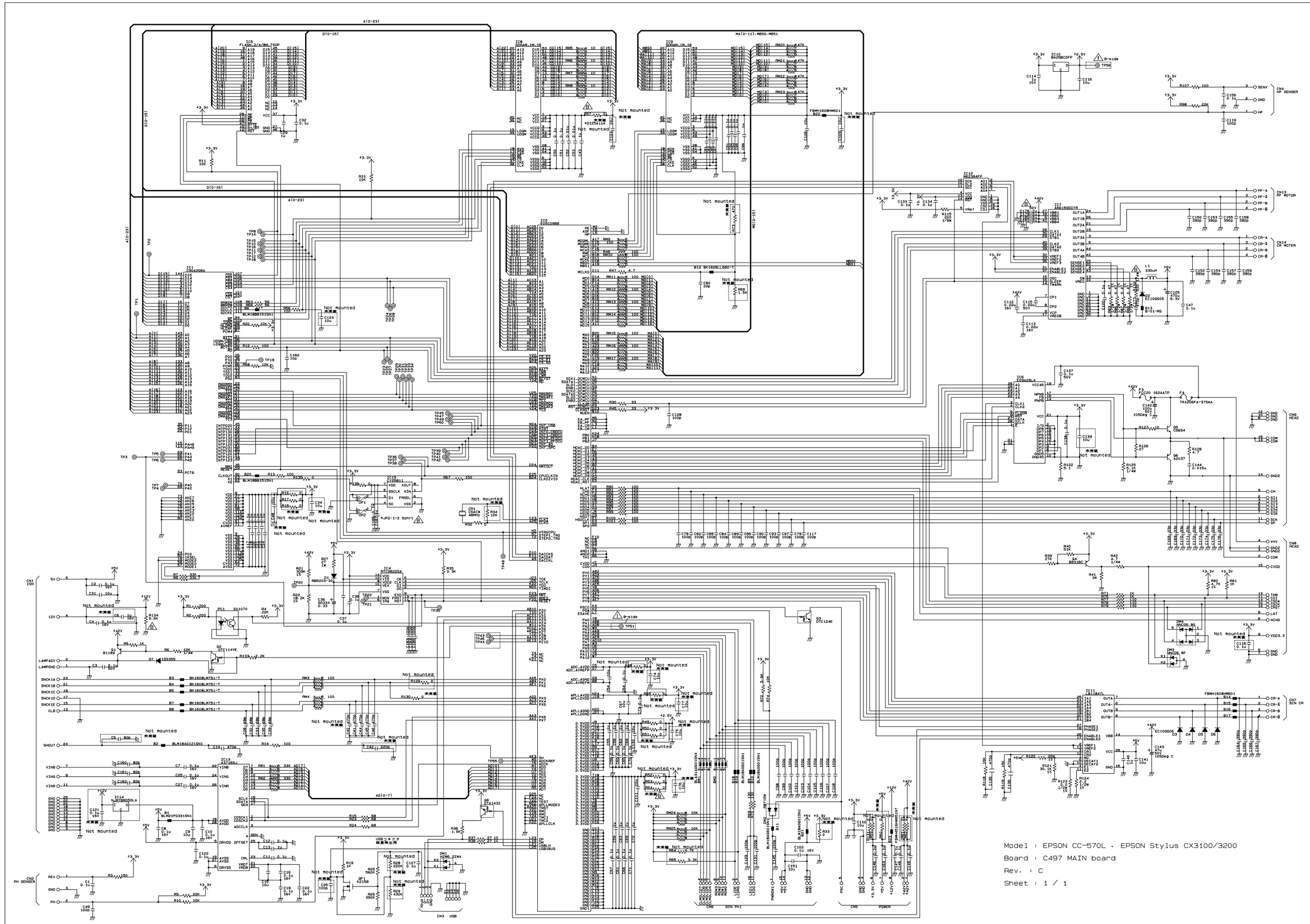
  Printer circuit

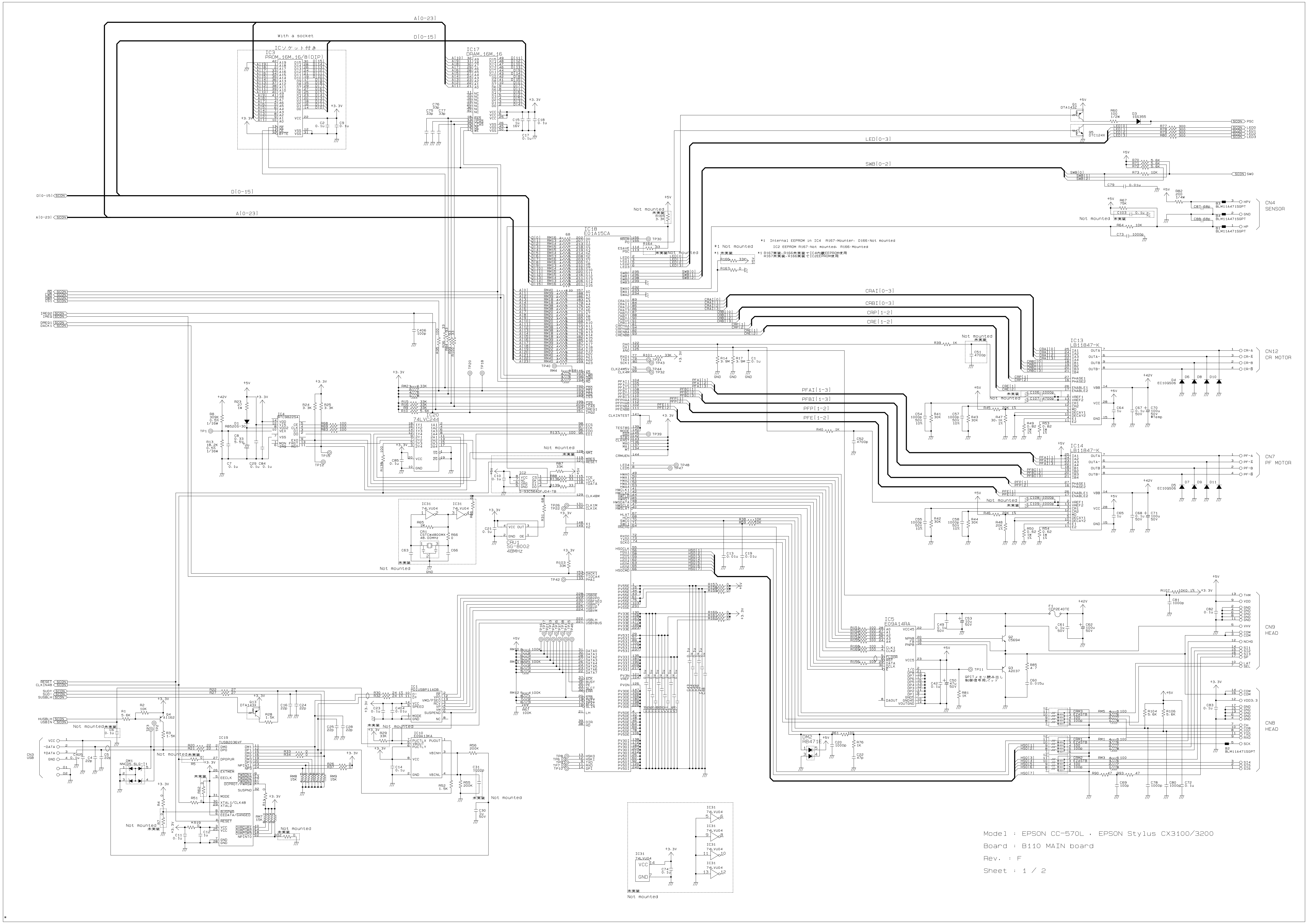
- B110MAIN Board

  Scanner circuit

- C497PSB Board

  Power supply circuit


Model : EPSON CC-570L . EPSON Stylus CX3100/3200
Board : C497 MAIN board
Rev. : C
Sheet : 1 / 1

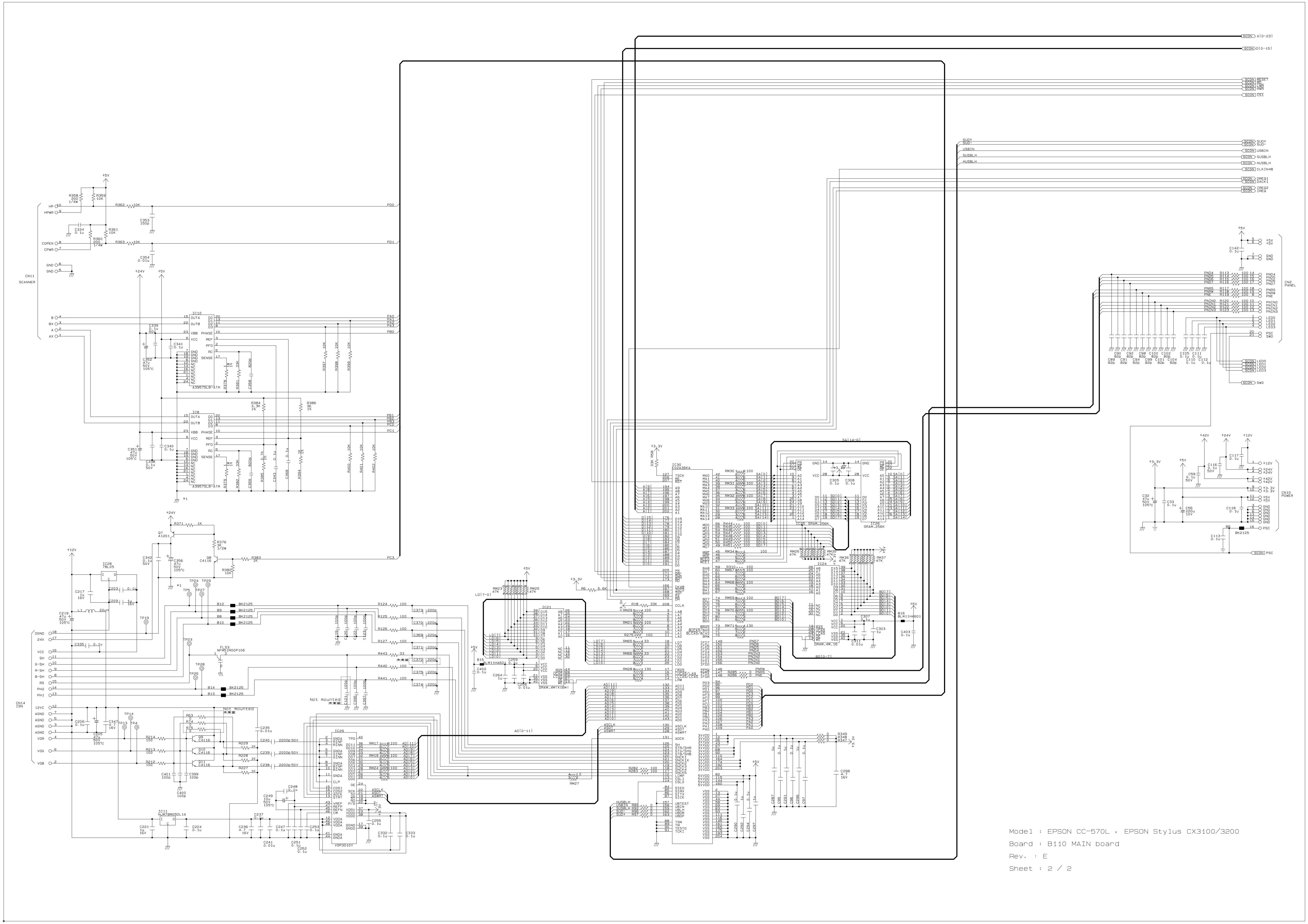


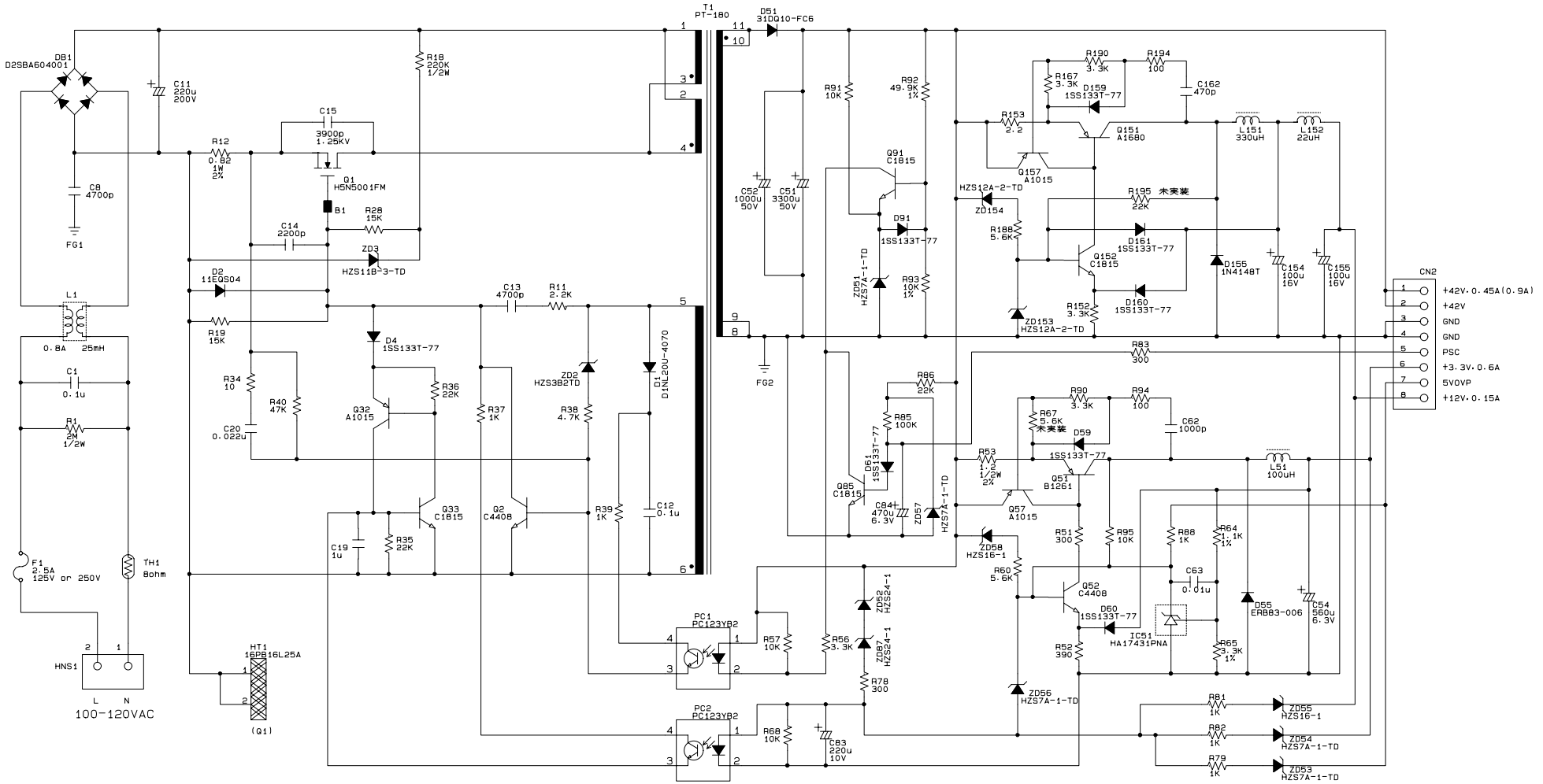
Model : EPSON CC-570L , EPSON Stylus CX3100/3200

Board : B110 MAIN board

Rev. : F

Sheet : 1 / 2


Model : EPSON CC-570L · EPSON Stylus CX3100/3200
Board : B110 MAIN board
Rev. : E
Sheet : 2 / 2

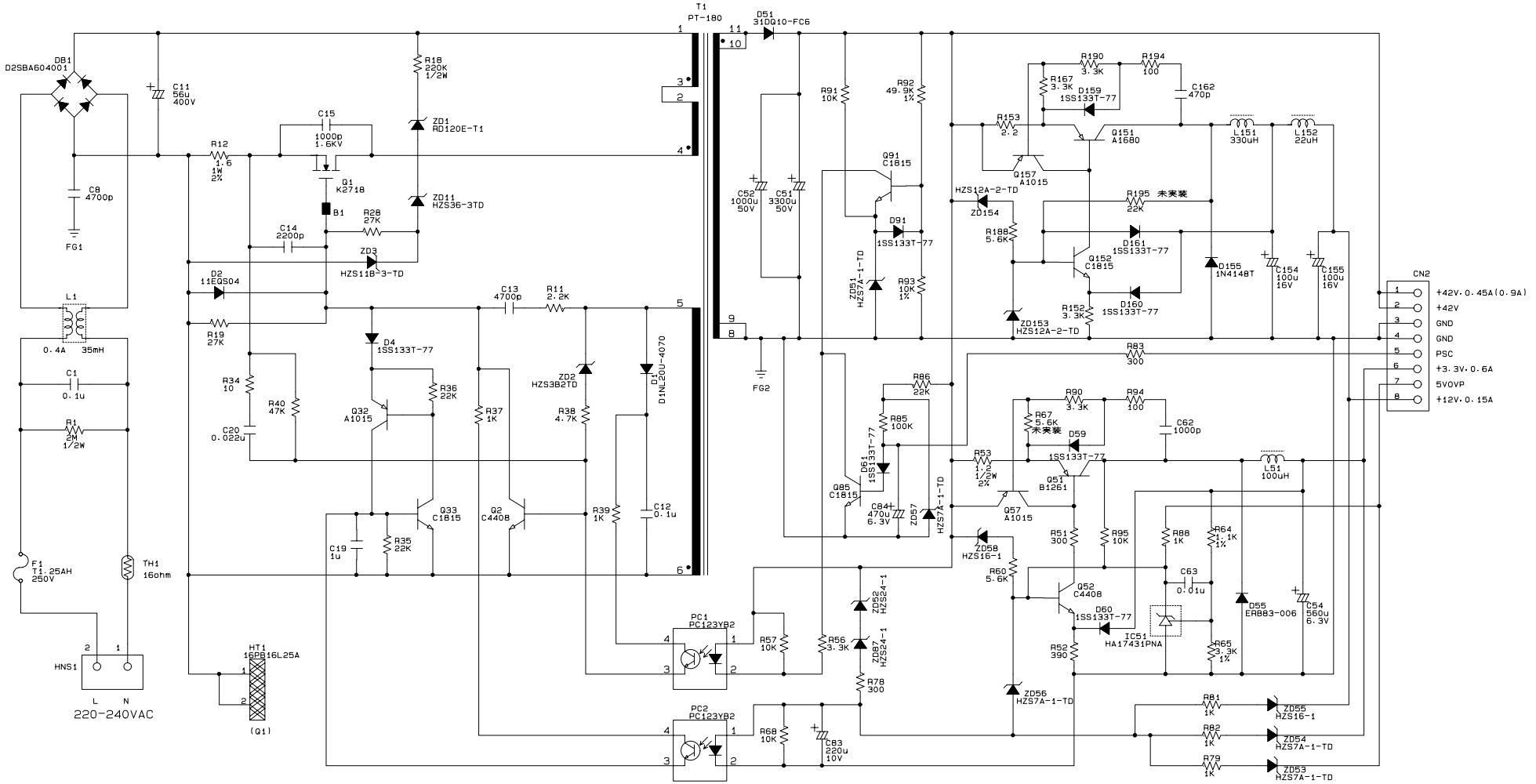


Model : EPSON CC-570L , EPSON Stylus CX3100/3200

Board : C497 PSB board

Rev. : A

Sheet : 1 / 1



Model : EPSON CC-570L , EPSON Stylus CX3100/3200

Board : C497 PSE board

Rev. : A

Sheet : 1 / 1

7.4 Exploded Diagrams

7.5 ASP List