SERVICE MANUAL

Color Inkjet Printer

EPSON Stylus C63/C64/C83/C84

COLOR IMAGING EPSON

EPSON®

Notice

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. REPLACE MALFUNCTIONING COMPONENTS ONLY WITH THOSE COMPONENTS BY THE MANUFACTURE; INTRODUCTION OF SECOND-SOURCE ICs OR OTHER NONAPPROVED COMPONENTS MAY DAMAGE THE PRODUCT AND VOID ANY APPLICABLE EPSON WARRANTY.

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.

CHAPTER 7.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, if not strictly observed, could result in injury or loss of life.

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.

Indicates that a particular task must be carried out according to a certain standard after disassembly and before re-assembly, otherwise the quality of the components in question may be adversely affected.

Revision Status

Revision	Issued Date	Description
A	2003/7/31	First Release

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CHAPTER

1

DISASSEMBLY AND ASSEMBLY

1.1 Overview

This section describes procedures for disassembling the main components of the Stylus C63/64/83/84. 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 procedures 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 adjustments required after reassembling 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.

1.1.1 Precautions

See the precautions given under the handling “WARNING” and “CAUTION” in the following column when disassembling or assembling EPSON Stylus PC63/64/83/84..

- **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.**
- **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 reassembly to avoid iujury from sharp metal edges.**
- **To protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.**
- **Never touch the ink or wasted ink with bare hands. If ink comes into contact with your skin, wash it off with soap and water immediately. If irritation occurs, contact a physician.**

- **Avant de commencer, assure vous que l’imprimante soit eteinte et que le cordon d’alimentation soit debranche.**
- **Veillez a jeter les piles usagees selon le reglement local.**

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.

- **When transporting the printer after installing the ink cartridge, be sure to pack the printer for transportation without removing the ink cartridge.**
- **Use only recommended tools for disassembling, assembling or adjusting the printer.**
- **Observe the specified torque when tightening screws.**
- **Apply lubricants and adhesives as specified. (See Chapter 3 for details.)**
- **Make the specified adjustments when you disassemble the printer.**
  (See Chapter 5 for details.)
- **Make sure the tip of the waste ink tube is located at correct position when reassembling the waste ink tube. Otherwise it will cause ink leakage.**

1.1.2 Tools

Use only specified tools to avoid damaging of the printer.

Table 1-1. Tools

Name	Supplier	Parts No.
Phillips Screw Driver (No.2)	EPSON	B743800200
Tweezer	EPSON	B741000100
Hexagon Box Driver (Opposite side : 5.5 mm)	EPSON	B741700100

1.1.3 Work Completion Check

If any service is made to the printer, use the checklist shown below to confirm all works are completed properly and the printer is ready to be returned to the user.

Table 1-2. Work Completion Check

Classification	Item	Check Point	Status
Main Unit	Self-test	Is the operation normal?	☐ Checked ☐ Not necessary
	On-line Test	Is the printing successful?	☐ Checked ☐ Not necessary
	Printhead	Is ink discharged normally from all the nozzles?	☐ Checked ☐ Not necessary
	Carriage Mechanism	Does it move smoothly?	☐ Checked ☐ Not necessary
		Is there any abnormal noise during its operation?	☐ Checked ☐ Not necessary
		Is there any dirt or foreign objects on the CR Guide Shaft?	☐ Checked ☐ Not necessary
		Is the CR Motor at the correct temperature? (Not too heated?)	☐ Checked ☐ Not necessary
	Paper Feeding Mechanism	• Is paper advanced smoothly? • No paper jamming? • No paper skew? • No multiple feeding? • No abnormal noise?	☐ Checked ☐ Not necessary
		Is the PF Motor at correct temperature?	☐ Checked ☐ Not necessary
		Is the paper path free of any obstructions?	☐ Checked ☐ Not necessary
Adjustment	Specified Adjustment	Are all the adjustment done correctly?	☐ Checked ☐ Not necessary
Lubrication	Specified Lubrication	Are all the lubrication made at the specified points?	☐ Checked ☐ Not necessary
		Is the amount of lubrication correct?	☐ Checked ☐ Not necessary
Function	ROM Version	Version:	☐ Checked ☐ Not necessary
Packing	Ink Cartridge	Are the ink cartridges installed correctly?	☐ Checked ☐ Not necessary
	Protective Materials	Have all relevant protective materials been attached to the printer?	☐ Checked ☐ Not necessary
Others	Attachments, Accessories	Have all the relevant items been included in the package?	☐ Checked ☐ Not necessary

1.2 Caution regarding assembling/disassembling of the printer mechanism, and how to ensure of quality on re-assembled product

On current low end models, we basically forbided to remove Housing (Lower) from Printer mechanism in your repair. This is because there is a possibility of main frame deformation when a part (such as Ink system) is removed from Printer mechanism without Housing (Lower).
Therefore, if you want to replace Ink system/PF motor, we recommend to replace with new Printer mechanism with Housing (Lower).

On these models, you have to remove Housing (Lower) from printer mechanism when replacing [Porous Pad] with new one.
Therefore, we clarify caution regarding assembling/disassembling of the printer mechanism without Housing (Lower), and how to ensure of quality on repaired productsin this section.

[Caution regarding assembling/disassembling of the printer mechanism]

1) Main frame

(a) Control of assembled standard position.

[Reason]

The assembed accuracy of each part composed of Printer mechanism is based on Housing (Lower).

[Service treatment]

Confirm that there is no gap between main frame and Housing (Lower).

[Reference]

To ensure the assembled accuracy, you have to control the assembled standard position of main frame against X/Y/Z-axis direction.

[X-axis direction]

- Make sure that main frame is correctly placed on the groove of Housing (Lower).
- Make sure that there is no gap between main frame and Housing (Lower).

[Y-axis direction]

Make sure that cut-out portion of main frame is correctly placed on the square protrusion of Housing (Lower).

[Z-axis direction]

- Make sure that there is no gap between main frame and Housing (Lower).
- Make sure that the left side of Printer mechanism is correctly fixed by two hooks.

(b) Control of vertical level of guide rail (Guide rail means the portion latched by hooks of IC holder & Print head assy..)

[Reason]

There is a possibility that printing failre/operation failure occurs by guide rail deformation.

[Service treatment]

- Do not remove [Mounting Plate, M/B] from Printer mechanism.
- Hold up the specified position of main frame to avoid the deformation.

(c) How to assemble of ASF unit/Circuit board/Paper guide upper

[Reason]

There is a possibility that main frame deformation is caused extra force in assembling. As the result, printing failre/operation failure occurs.

[Service treatment]

Hold the opposite side by by hand while you are installing the above parts.

2) Front frame

(a) Control of vertical level

[Reason]

There is a possibility that printing failre occurs by front frame deformation.

[Service treatment]

Handle Front frame in assembling/disassembling carefully.

3) IC holder

(a) Handling of IC holder

[Reason]

If IC holder is damaged in assembling/disassembling of your repair, there is a possibility that vital problem occus in user's futher operation.

[Service treatment]

Released two hooks of IC holder from the inside of IC holder by the tweezer.

[How to ensure of quality on re-assembled product]

We judge that the quality of re-assembled product is ensured if there is no problem about the print result by adjustment program..

1.3 Disassembly

The flowchart below shows step-by-step disassembly procedures. When disassembling each unit, refer to the page number shown in the figure.

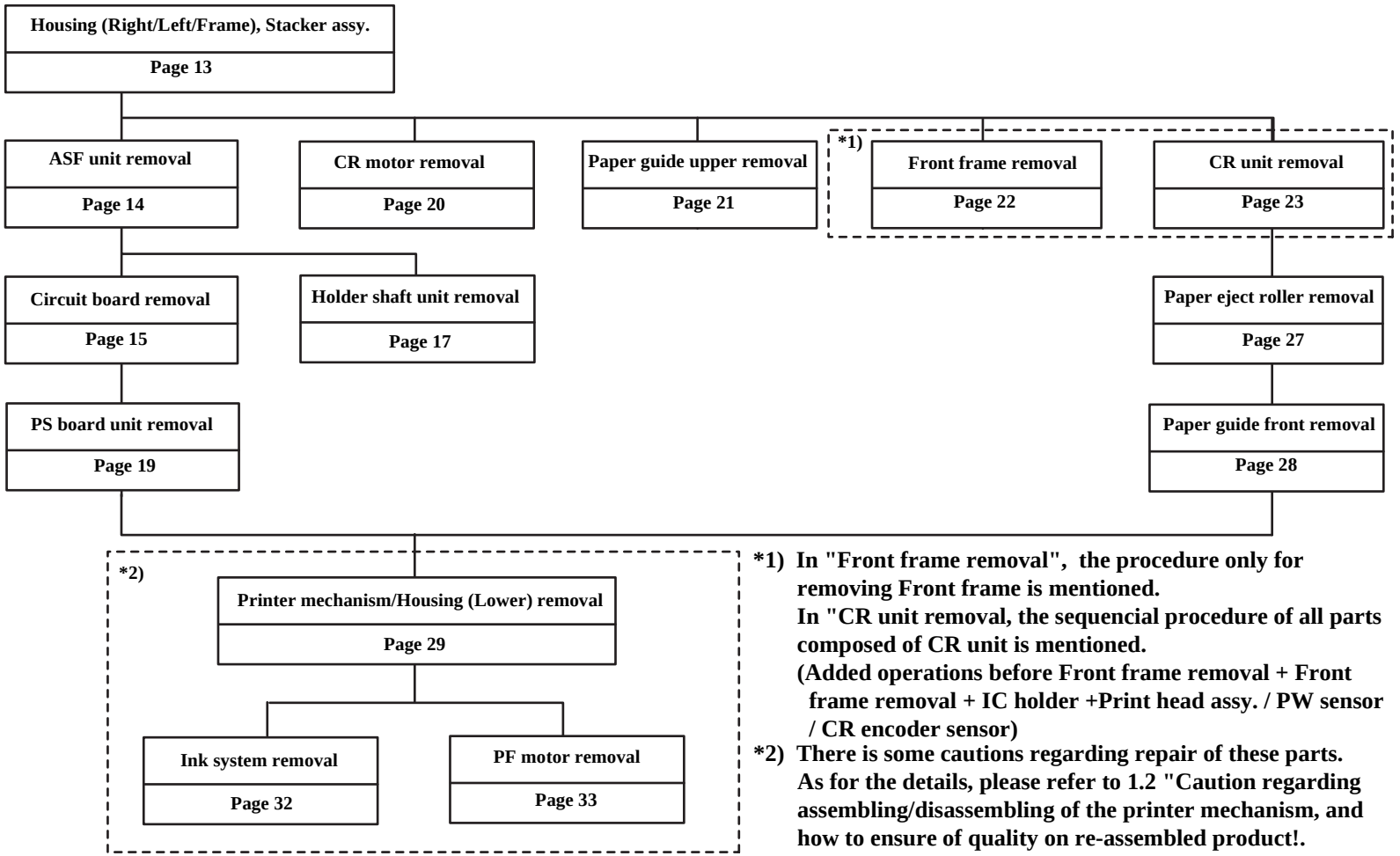


Figure 1-1. Disassembling flowchart

1.3.1 Housing (Right/Left/Frame), Stacker Assy. removal

☐ **External view**

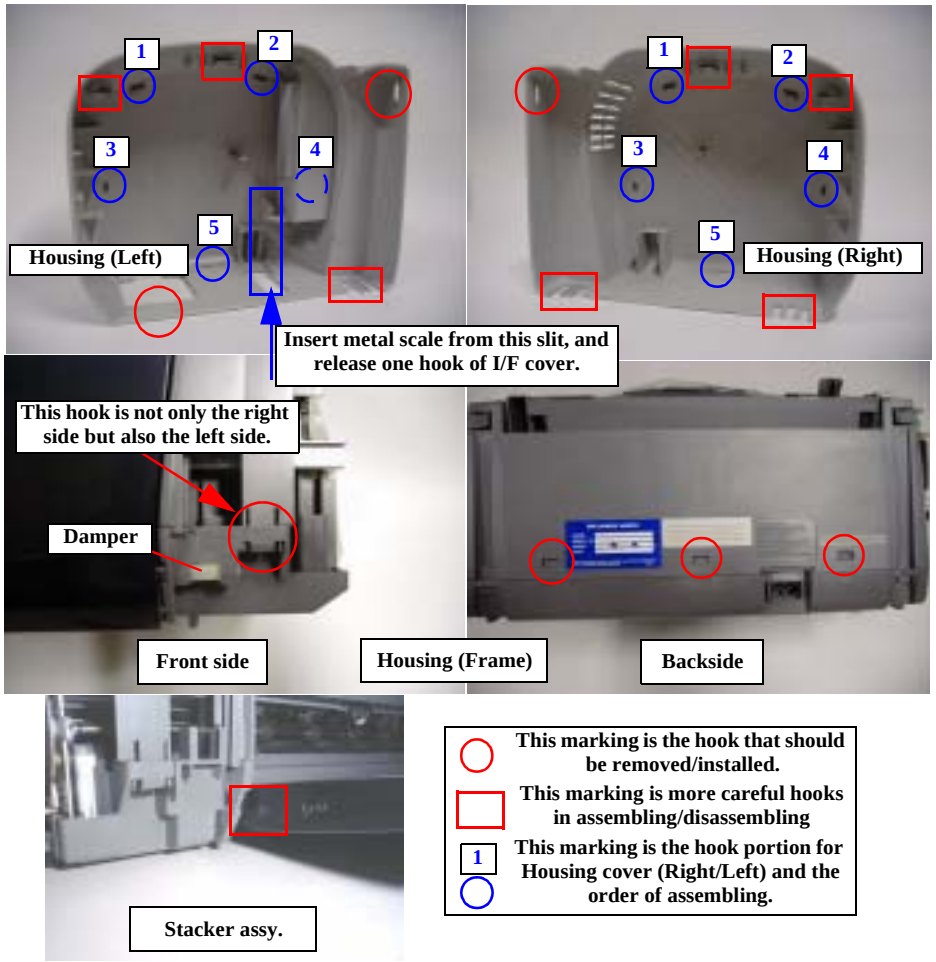


Figure 1-2. Housing (Right/Left/Frame) and Stacker assy. removal

☐ **Part/Unit that should be removed before removing Housing (Right/Left/Frame) or Stacker assy..**

Non

☐ **Removal procedure**

[Housing (Right/Left/Frame) removal]

1) Releasing five hooks by hand/precision screwdriver (-), and remove Housing (Right).
2) Release one hook of I/F cover by inserting metal scale vertically from the slit on bottom of Housing (Left), and remove I/F cover.
3) Releasing five hooks by hand/precision screwdriver (-), and remove Housing (Left)
4) Release five hooks by hand/precision screwdriver (-), and remove Housing (Frame).

[Stacker assy. removal]

1) Push cut-out portion of Stacker Assy. (left side) by precision screwdriver (-), and pull Stacker assy. to the front side of the printer.

CAUTION

☐ **Do not damage hooks by hand/precision screwdriver (-) in removing Housing (Right/Left) & Stacker assy..**

☐ **Do not tilt the printer too much when Housing (Right/Left/Frame) is removed by hand/precision screwdriver (-). This is because ink may possible flow if the cap is not covered by the Print head. (CR is out of the home position)**

REASSEMBLY

☐ **When assembling Housing (Right/Left/Frame) or Stacker assy. to printer mechanism,**

- **Hook five ribs for securing Housing cover (Right/Left) to Housing (Right/Left) in the order indicated in the figure.**
- **Make sure that hooks/protrusions of Housing (Right/Left/Frame), Stacker assy., SW bottom and Panel board is correctly fixed to Housing (Frame/Lower).**
- **Make sure that there is not the clearance between Housing (Right/Left/Frame) and Housing (Lower).**
- **Make sure that damper for Stacker assy. is correctly installed to the Housing (Lower).**

1.3.2 ASF unit removal

☐ **External view**

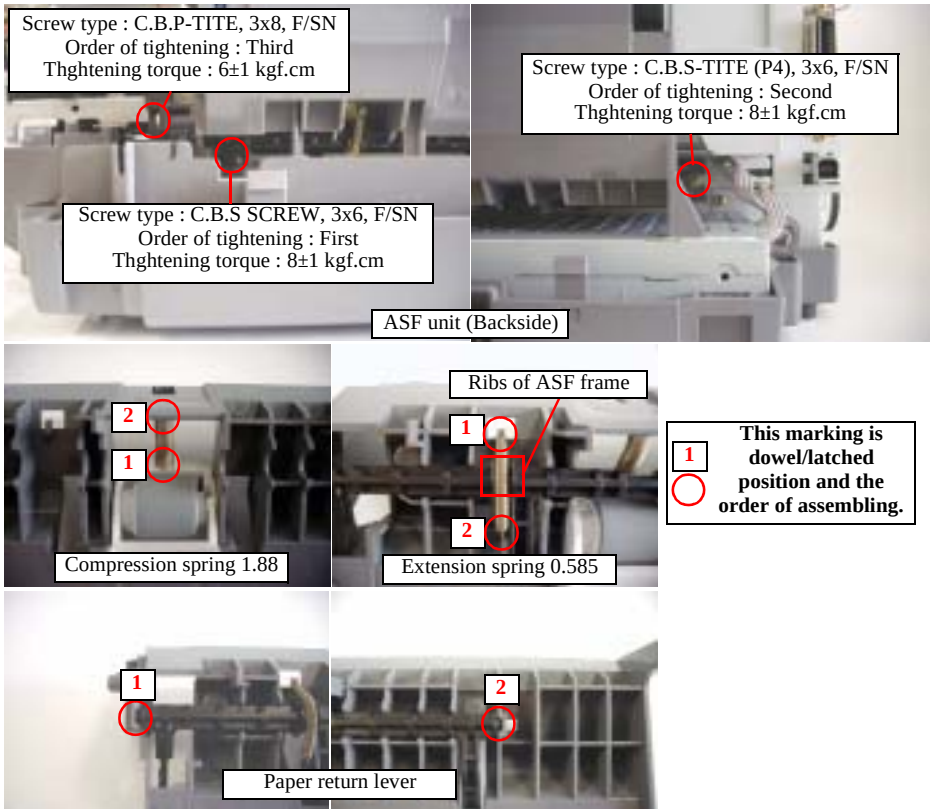


Figure 1-3. ASF unit removal

☐ **Part/Unit that should be removed before removing ASF unit**

Housing (Right/Left/Frame)

☐ **Removal procedure**

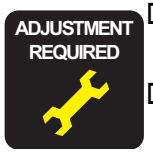
1) Remove three screws for securing ASF unit to main frame, and remove the unit with pulling up slightly to the backside of the printer.
2) Release left protrusion of Hopper by pulling its bottom toward the front side, and remove Hopper from ASF frame.
3) Release Extension spring 0.585 for Paper return lever, and remove the lever with releasing two protrusions.
4) Release Compression spring 1.88 for Returd roller unit, and turn the roller unit until it is free.

☐ **When assembling ASF unit,**

- **Make sure to latch Extension spring 0.585 for Paper return lever & Compression spring 1.88 for Returd roller unit in the order indicated in the figure, and to set Expression spring 0.585 between ribs of ASF frame.**
- **Make sure that Paper return lever & Returd roller unit move smoothly.**
- **Do not touch returd roller and cork on Hopper.**
- **Hook two dowels for securing Paper return lever to ASF frame in the order incicated in the figure.**

☐ **When assembling ASF unit to main frame,**

- **Make sure to install Compression spring 2.53 for Hopper correctly.**
- **Make sure that Hopper moves smoothly.**
- **Make sure to set ASF unit with the flat surface of LD roller up.**
- **Fasten three screws for securing ASF unit in the order/ tightening torque indicated in the figure.**
- **Make sure that there is no gap between ASF unit and Shield plate (upper) of PS board unit.**



☐ **When you replace ASF unit with new one, lubricate it with the suitable amount of G-26 grease by the specified position.**

☐ **When ASF unit is removed or replaced with new one, the following adjustment must be performed in the order below.**
1) Top margin adjustment
2) 1st dot adjustment

1.3.3 Circuit board removal

☐ **External view**

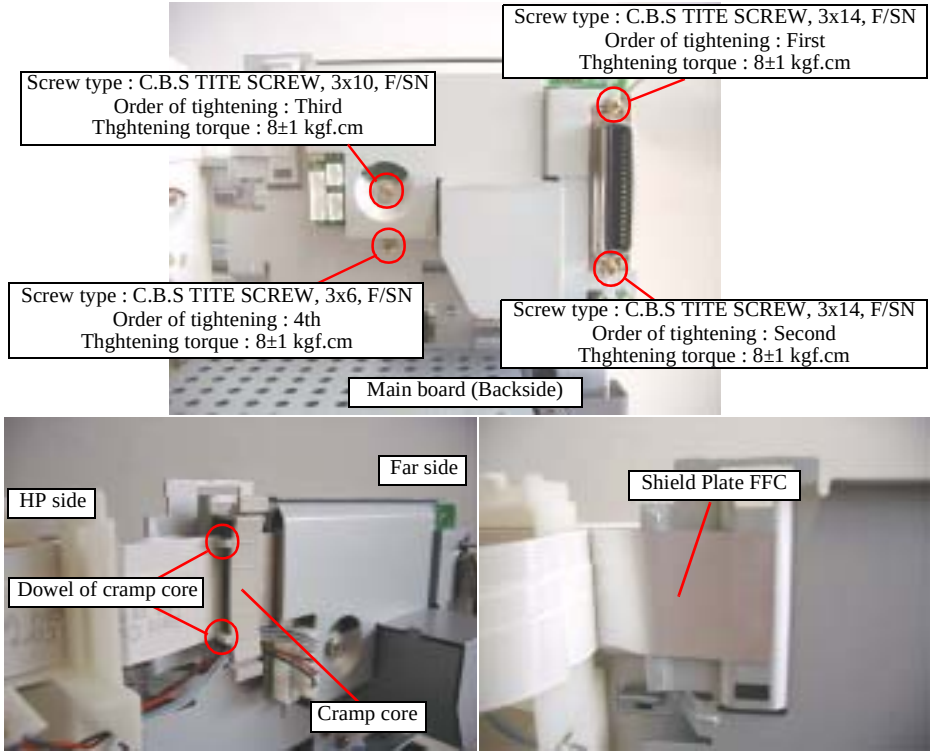


Figure 1-4. Circuit board

☐ **Part/Unit that should be removed before removing Circuit board**

Housing (Right/Left/Frame) / ASF unit

☐ **Removal procedure**

1) Remove Clamp core from [Mounting Plate, M/B], and disconnect the following seven cables from the corresponding connectors on main board.
   - CR motor connector cable : CN5
   - PF motor connector cable : CN6
   - Head FFC : CN7, CN8
   - PE sensor cable : CN9
   - Power supply connect cable : CN2
   - Panel board connector cable : CN4
2) Remove four screws for securing Circuit board to main frame, and remove the board.
3) Remove [Shield Plate, M/B] from main board.

☐ **When assembling Circuit board,**

- ■ **Make sure that the metal fittings for locking the Parallel interface is on its shield plate.**

☐ **When assembling Circuit board to main frame,**

- ■ **Make sure to connect all cables to the connectors (CN2, CN4, CN5, CN6, CN7, CN8, CN9) on main board in the correct direction.**
- ■ **Fasten four screws for securing Circuit board in the order/tightening torque indicated in the figure.**
- ■ **Make sure that Shield plate FFC on Head FFC is securely pasted on [Mounting Plate, M/B].**
- ■ **Make sure that two dowels of Clamp core is set in home position direction.**
- ■ **Make sure that PE sensor cable & CR motor connector cable are set on Holder shaft unit, and in Clamp core.**

☐ **When replacing the Main board with new one, perform the following service items.**

■ **If the read-out operation succeeds by adjustment program from defective main board, replace with new board and write the read out data to new one.**

1) Ink consumption counter
2) Waste drain ink pad counter
3) Head ID
4) Bi-d adjustment
5) Top margin adjustment
6) 1st dot position adjustment
7) PW adjustment (Only for SC83/84)
8) USB ID
9) Market ID
10) Head angular adjusstment
11) PF adjustmen
12) CR motor drive torque dispersion measurement

■ **If the read-out operation is not able to succeed by adjustment program from defective main board, perform the following service items after replacing main board with new one.**

1) Replace all ink cartridges with brand-new one for Ink consumption counter.
2) Replace the Waste drain ink pad with new one for Waste drain ink pad counter.
3) Input Head ID
4) Adjust Bi-D alignment
5) Adjust Top margin
6) Adjust 1st dot position
7) Adjust PW adjustment
8) Input the serial number for USB ID
9) Input EEPROM initial setting value for Market ID
10) Adjust Head angular
11) Adjust PF (Paper feed amount)
12) Input max. value of CR motor drive torque dispersion value

1.3.4 Holder shaft unit removal

☐ **External view**

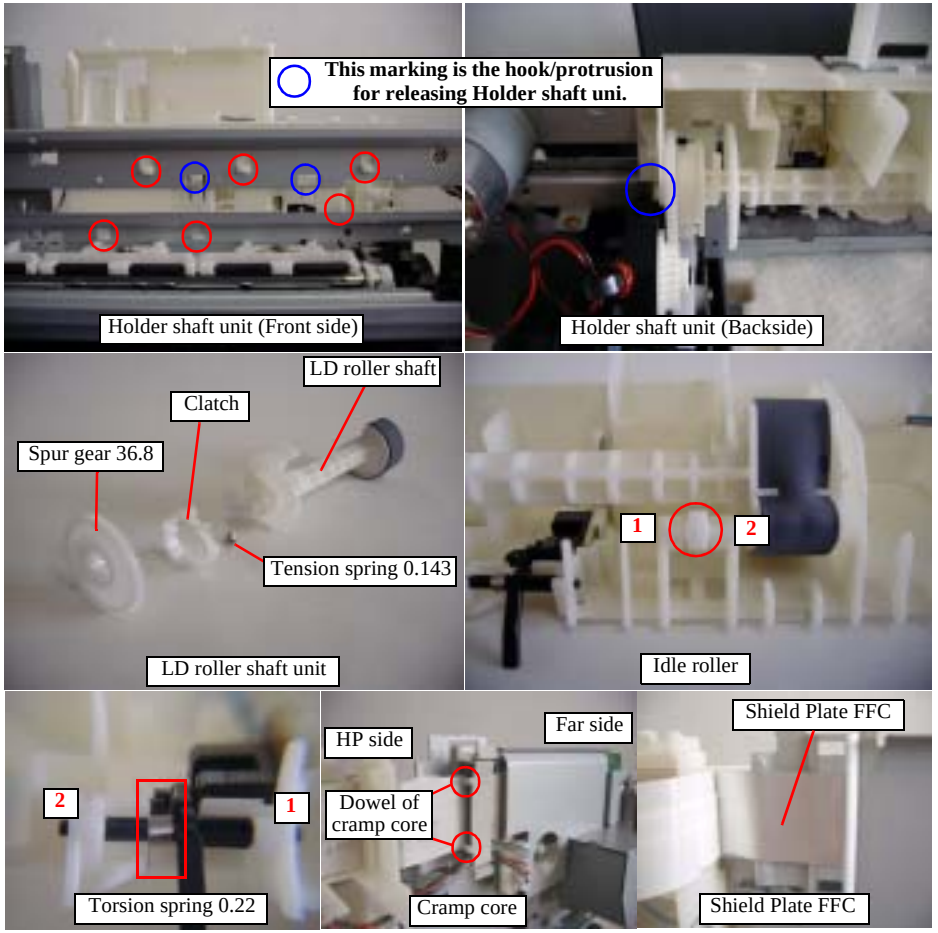


Figure 1-5. Holder shaft unit removal

☐ **Part/Unit that should be removed before removing Holder shaft unit**

Housing (Right/Left/Frame) / ASF unit

☐ **Removal procedure**

1) Disconnect Panel board connector cable from the connector on main board, and remove Panel board.
2) Remove Clamp core from [Mounting Plate, M/B] and disconnect Head FFC, CR motor connector cable and PE sensor cable from the connector on main board. Then, release Head FFC and CR motor connector cable from Holder shaft unit.

☐ **Shield plate FFC on Head FFC is pasted on [Mounting Plate, M/B]. Therefore, you have to remove Shield plate FFC with Head FFC.**

3) Release Change lever toward the backside of the printer by the tweezer, and move CR unit to the leftmost side (far side).
4) Remove Holder shaft unit from main frame as belows.
   Step1) Push two hooks of LD roller shaft holder, and pull Holder shaft unit upward slightly from main frame.
   Stepe2) Move Pump unit to home position side slightly while holing the whole of Holder shaft unit, and pull the bottom of the unit toward the backside of the printer.
5) Remove LD roller shaft along with Clutch mechanism from LD roller shaft holder.
6) Remove the Spur gear 36.8 from LD roller shaft.
7) Remove Extension spring, 0.143, and remove Clutch from LD roller shaft.
8) Release one hook for securing PE sensor board, and push the sensor board from the side contacting main frame by the tweezer.
9) Release Torsion spring 0.22 for PE detection levers, and remove the lever from LD roller shaft holder.

☐ **When assembling PE detection lever & sensor board to LD roller shaft holder,**

- **Make sure to set Torsion spring 0.22 for PE detection lever to the suitable position.**
- **Make sure that PE detection lever moves smoothly.**
- **Make sure that PE sensor board is correctly fixed by the hook of LD roller shaft holder.**

- Make sure to place PE sensor cable to the suitable groove on LD roller shaft holder.

☐ When assembling Clutch mechanism to LD roller shaft,

- Make sure to set the round hole of Clutch on the dowel of LD roller shaft.
- Make sure to set Tension spring 0.143 to the hooks of Clutch and LD roller shaft.
- Do not set Tension spring 0.143 with twisted condition.
- Make sure that the Clutch rotates properly.

☐ When assembling LD roller shaft to LD roller shaft holder,

- Do not touch LD roller.

☐ When assembling Idle roller to LD roller shaft holder,
(This operation is done after all parts composed of Holder shaft unit is assembled to LD roller shaft holder.)

☐ When assembling Holder shaft unit to main frame,

- Make sure that nine hooks of Holder shaft unit are correctly fixed.
- Make sure to place PE sensor cable, CR motor connector cable and Head FFC on the suitable position of Holder shaft unit.
- Make sure to connect PE sensor cable, CR motor connector cable and Head FFC to the connector (CN5, CN7, CN8, CN9) on main board.
- Make sure that Shield plate FFC on Head FFC is securely pasted on [Mounting Plate, M/B].
- Make sure that two dowels of Clamp core is set in home position direction.
- Make sure that PE sensor cable & CR motor connector cable are set on Holder shaft unit, and in Clamp core.
- Do not touch LD roller.

- Do not damage the tooth of Spur gear 36.8 and Combination gear 27.2, 19.2.

☐ When assembling Panel board to Holder shaft unit,
(This operation is done after installing Holder shaft unit to main frame.)

- Make sure to install Panel board correctly.
- Make sure to place Panel board connector cable on the suitable position of Holder shaft unit.

☐ When Holder shaft unit is removing or replacing Holder shaft unit with new one, the following adjustment must be performed in the order below.
1) Top margin adjustment
2) 1st dot adjustment

1.3.5 PS board unit removal

☐ **External view**

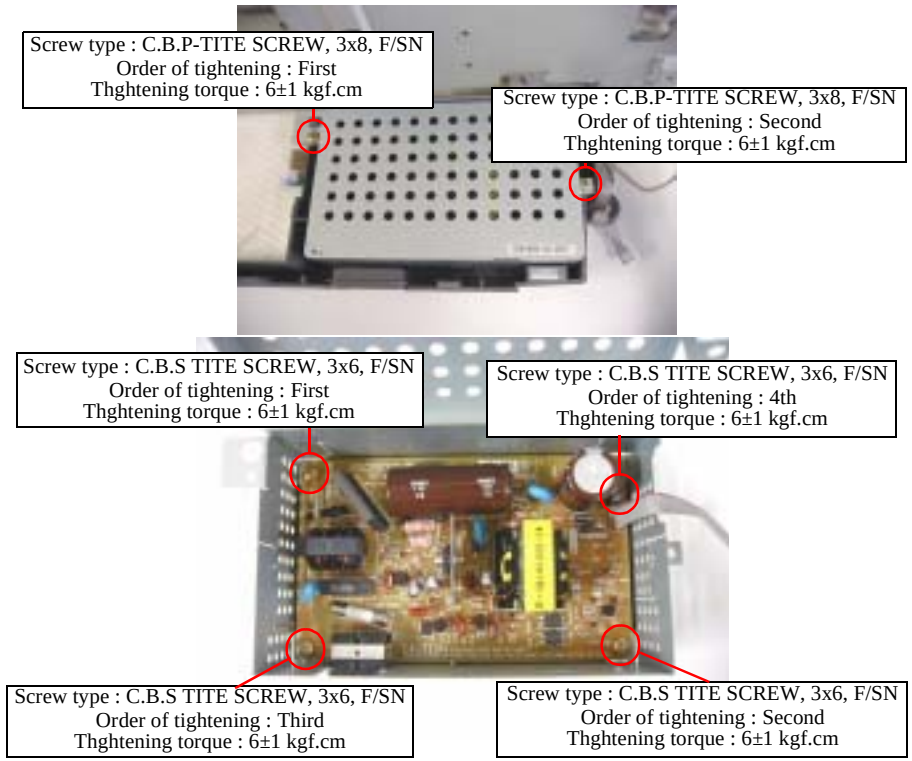


Figure 1-6. PS board unit removal

☐ **Part/Unit that should be removed before removing PS board unit**

Housing (Right/Left/Frame) / ASF unit / Main board

☐ **Removal procedure**

1) Remove three screws for securing PS board unit to main frame, and remove the unit with pulling toward the backside of the printer.
2) Release one hook of Shield Plate (Upper), and remove four screws for securing the PS board. Then, remove PS board from Shield plate (Lower).

☐ **When assembling the PS board to Shield plate (Lower) ,**

- **Make sure to install the PS board correctly.**
- **Fasten four screws for securing PS board in the order / torque indicated in the figure.**

☐ **When assembling Shield plate (Upper) to Shield palte (Lower),**

- **Make sure to place the Power supply connector cable in the space between both Shield plates.**
- **Make sure that Shield Plate (Upper) is correctly inserted.**

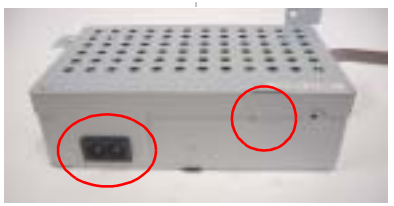


Figure 1-7. Assembling of Shield Plate (Upper)

☐ **When assembling PS board unit to Housing (Lower),**

- **Make sure to set PS board unit on the protrusion of Housing (Lower).**
- **Make sure to connect Power supply connector cable to the connector (CN2) on main board.**
- **Fasten two screws for securing PS board unit to the Housing (Lower) in the order /torque indicated in the figure.**

☐ **When PS board unit is removed or replaced with new one, the following adjustment must be performed in the order below.**
1) Top margin adjustment
2) PF adjustment
3) 1st dot adjustment
4) CR motor drive torque dispersion measurement

1.3.6 CR motor removal

☐ **External view**

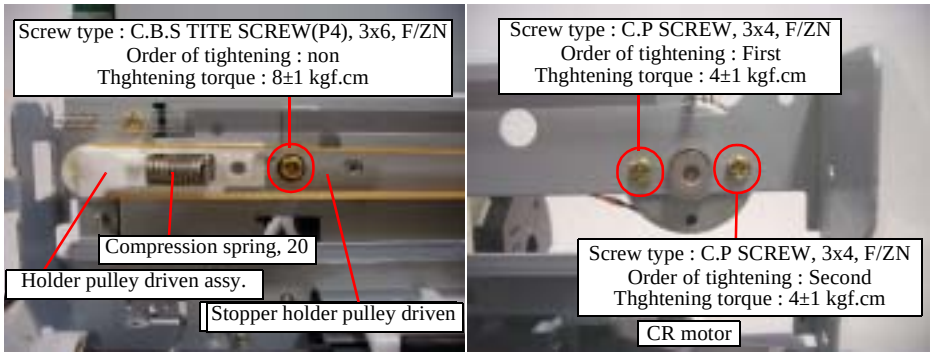


Figure 1-8. CR motor removal

☐ **Part/Unit that should be removed before removing CR motor**

Housing (Right/Left/Frame)

☐ **Removal procedure**

1) Release CR lock lever toward the backside of the printer by the tweezer, and move CR unit from home position to around the ceter of the printer mechanism.
2) Loosen one screw for securing Stopper holder pulley driven to main frame & CR timing belt by pushing Driven pulley holder to the right side, and release CR timing belt carefully from CR motor pinion gear.
3) Disconnect CR motor connector cable from the connector (CN5) on main board, and release CR motor connector cable from on Holder shaft unit.
4) Remove two screws for securing CR motor while holding the motor by hand.

CAUTION

☐ **When removing CR motor from main frame, do not damage the pinion gear of the motor.**

REASSEMBLY

☐ **When assembling the CR motor to main frame,**

- **Do not damage CR motor pinion gear with main frame.**
- **Make sure to connect the CR motor connector cable to the connector (CN5) on main board.**
- **Make sure to place CR motor connector cable to Holder shaft unit properly.**
- **Fasten two screws for securing CR motor in the order/ tightening torque indicated in the figure.**
- **Make sure that there is no gap between CR motor and frame main.**
- **Make sure to set CR motor upward the serial no. of the motor.**
- **Make sure that two dowels of Clamp core is set in home position direction.**
- **Make sure that PE sensor cable & CR motor connector cable are set on Holder shaft unit, and in Clamp core.**

ADJUSTMENT REQUIRED

☐ **When CR timing belt is removed or replaced with new one, tension adjustment of CR timing belt must be performed by the degital tension gauge.**

☐ **When CR motor is removed or replaced with new one, the following adjustment must be performed in the order below.**
1) Top margin adjustment
2) PF adjustment
3) Bi-d adjustment
4) Head angular adjustment
5) 1st dot adjustment
6) PW sensor adjustment (Only for SC83/84)
7) CR motor drive torque dispersion measurement

1.3.7 Paper guide upper removal

☐ **External view**

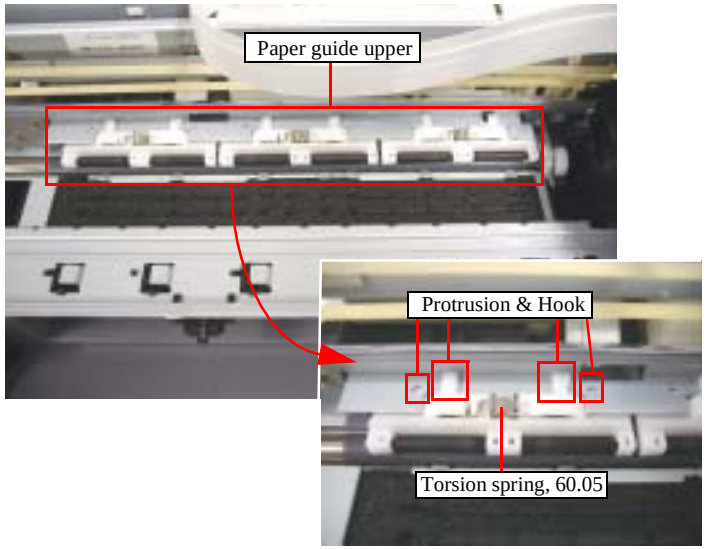


Figure 1-9.

☐ **Part/Unit that should be removed before removing Paper guide upper**

Housing (Right/Left/Frame) / ASF unit / Circuit board / PS board / CR unit with Front frame / Paper eject roller / Paper guide front / Housing (Lower)

☐ **Removal procedure**

1) Push two dowels of Paper guide upper by the tweezer, and pull Paper guide upper toward the front side of the printer.

CAUTION

☐ **When removing/assembling Paper guide upper, avoid to damage the coated surface of PF roller by OHP sheet as the following figure.**

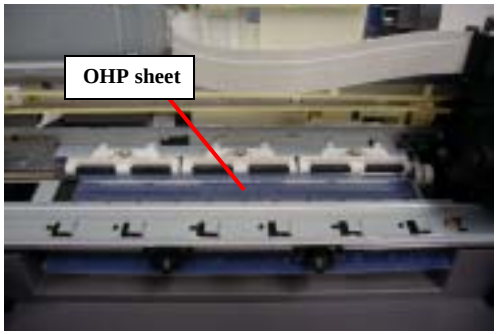


Figure 1-10. Paper guide removal procedure

REASSEMBLY

☐ **When assembling Paper guide upper,**

- **Make sure to install the tip of Torsion spring 60.05 in hole of Paper guide upper.**

☐ **When assembling Paper guide upper to main frame,**

- **Make sure that two dowels of Paper guide upper is installed to main frame, and that Torsion spring 60.05 is set to the protrusion of main frame.**

ADJUSTMENT REQUIRED

☐ **When Paper guide upper is removed or replaced with new one, the following adjustment must be performed in the order below.**

1) Top margin adjustment
2) PF adjustment
3) Bi-d adjustment
4) Head angular adjustment
5) 1st dot adjustment
6) PW sensor adjustment (Only for SC83/84)

1.3.8 Front frame removal

☐ **External view**

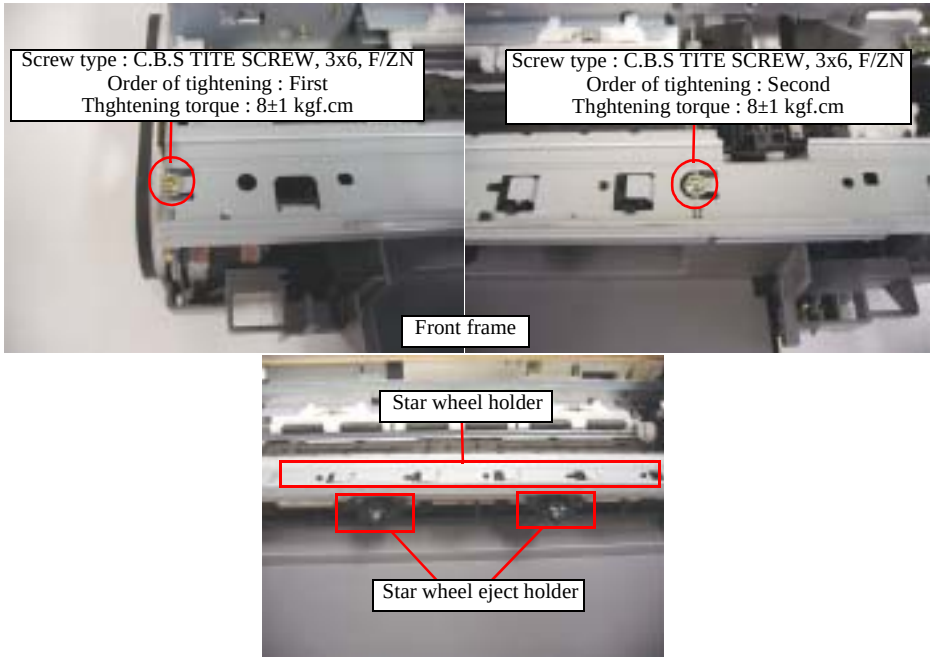


Figure 1-11. Front frame removal

☐ **Part/Unit that should be removed before removing Paper guide front**

Housing (Right/Left/Frame)

☐ **Prcedure of removal**

CAUTION

☐ **The following procedure is only for Front frame removal. In case that Front frame is removed for CR unit removal, there is some added operations before Front frame removal. As for the detailed procedure, refer to 1.2.7 "CR motor removal".**

1) Return CR unit to home position before removing Front frame.
2) Remove two screws for securing Front frame to main frame.
3) Lift up the left side of Front frame slightly, and slide the frame toward the front side of the printer.

CAUTION

☐ **Do not damage [Pulley, Eject, Driven] when sliding the Front frame to the left side of the printer.**

REASSEMBLY

☐ **When assembling Front frame to main frame,**

- **Make sure that the Star wheel holder & Star wheel eject holder is correctly fixed.**
- **Make sure that the Star wheel moves smoothly.**
- **Fasten two screws for securing Front frame to main frame in the order/tightening torque indicated in the figure.**
- **Make sure that the CR unit moves smoothly.**
- **Make sure that there is no gap between Front frame frame main.**
- **Do not hold Front frame while handling printer mechanism in your repair.**

ADJUSTMENT REQUIRED

☐ **When you replace Front frame with new one, lubricate it with the suitable amount of G-58 grease by the specified position.**

☐ **When Front frame is removed or replaced with new one, the following adjustment must be performed in the order below.**
1) PF adjustment
2) Bi-d adjustment

1.3.9 CR unit removal

NOTE: *"CR unit" described in this section means "IC holder with PW sensor/CR encoder sensor", "Print head assy.".*

NOTE: *The removal procedure for CR unit described in this section is as follows. Added operations before Front frame removal => Front frame removal => IC holder => Print head assy. / PW sensor / CR encoder sensor*

☐ **External view**

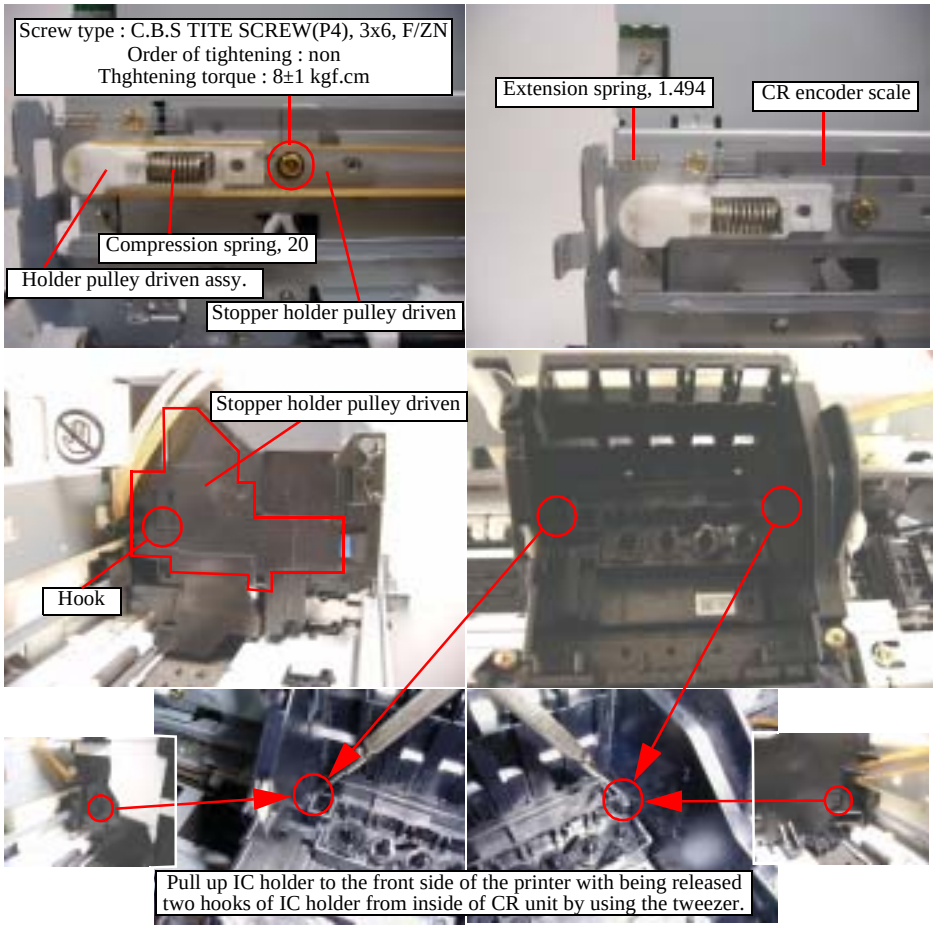


Figure 1-12. CR unit removal (1)

☐ **External view (Cont.1)**

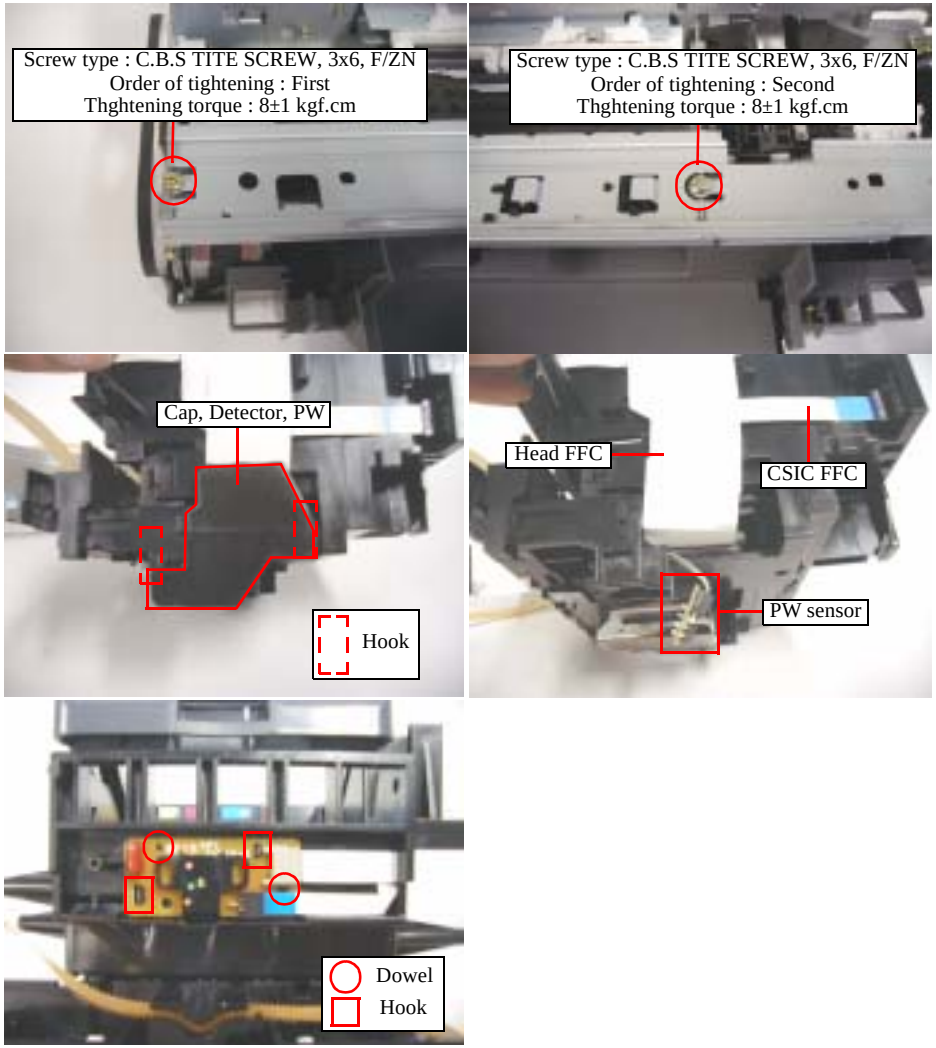


Figure 1-13. CR unit removal (2)

☐ **Part/Unit that should be removed before removing CR unit removal**

Housing (Right/Left/Frame)

☐ **Removal procedure**

1) Release CR lock lever toward the backside of the printer by the tweezer, and move CR unit from home position to around the center of the printer mechanism.
2) Remove Clamp core from [Mounting plate, M/B], and disconnect Head FFC from the connector on main board. Then, release Head FFC from Holder shaft unit.

CAUTION

☐ **Shield plate FFC on Head FFC is pasted on [Mounting Plate, M/B]. Therefore, you have to remove Shield plate FFC with Head FFC carefully.**

3) Loosen one screw for securing Stopper holder pulley driven to main frame & CR timing belt by pushing Driven pulley holder to the right side, and release CR timing belt carefully from CR motor pinion gear.
4) Remove CR encoder scale from main frame.
5) Release one hook for securing Cover cable head to CR unit, and remove Cover cable head with pushing it down .
6) Release two hooks for securing IC holder to Print head assy.by the tweezer, and pull IC holder until the holder contacts Front frame.
7) Return CR unit to home position before removing Front frame.
8) Remove two screws for securing Front frame to main frame.
9) Lift up the left side of Front frame slightly, and slide the frame toward the front side of the printer.
10) Move CR unit to the center of the printer mechanism with holding the whole of the unit by hand.

CAUTION

☐ **Unless you held CR unit by hand, there is a possibility that the nozzle surface of Print head is damaged.**

11) Pull IC holder slightly to the front side of the printer, and remove CR unit from main frame.

CAUTION

☐ **You cannot remove IC holder from Print head assy., if you have to remove [Cover, Detector, PW] and Head FFC.**

☐ **There is a possibility of Head FFC damage by excessive pulling toward the front of the printer without removing Head FFC.**

Figure 1-14. Head FFC removal

12) Release two hooks for securing [Cap, Detector, PW] to IC holder, and remove [Cap, Detector, PW].

CAUTION

☐ **In case that [Cap, Detector, PW] is removed, PW sensor board is free. Therefore, be caureful not to damage PW sensor board.**

[Print head removal]
13) Disconnect Head FFC from the connectors on print head board, and remove Print head assy. from IC holder.

[PW sensor board removal]
13) Disconnect PW sensor FFC from the connector of PW sensor board.

[CR encoder sensor board removal]
13) Release two hooks for securing CR encoder sensor board to IC holder, and disconnect CR encoder senser FFC from the connector of CR encoder sensor board.

REASSEMBLY

- When assembling Print head assy.,
  - Make sure that the CR timing belt is set in the assembling groove correctly.
    (CR timing belt is under hook of Print head assy..)
  - Do not stain the CR timing belt with the grease (G-58).
  - Make sure to install [Grounding Plate, Head] in the suitable position in Print head assy..

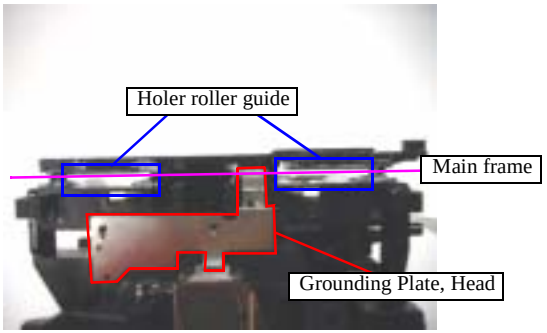


Figure 1-15. Setting position of Grounding Plate, Head & Holer roller guide

  - Make sure that [Holder Roller Guide] is correctly installed as the above figure.
- When assembling CR encoder sensor board to IC holder,
  - Make sure that CR encoder sensor board is correctly fixed.
  - Make sure that CR encoder sensor FFC is correctly connected.
- When assembling Print head assy. to IC holder,
  - Make sure that Print head assy. is correctly set.
  - Make sure that Head FFC & PW sensor FFC is correctly connected with interim condition in assembling.
  - Make sure that PW sensor board is correctly located.

REASSEMBLY

  - Make sure that [Cap, Detector, PW] is correctly fixed.
- When assembling CR unit to main frame,
  - Make sure that main frame is located between [Roller guide] and Print head assy..
  - Make sure that the right/left hook of Print head assy. is properly inserted into the hole of IC holder.
  - Make sure that four hooks of Cover cable head are inserted into IC holder.
  - Do not touch the lubrication area of main frame.
  - Make sure place Head FFC on the suitable position of Holder shaft unit.
  - Make sure that the CR unit moves smoothly.
  - Make sure that Head FFC is fully inserted.
  - Make sure that Shield plate FFC is straightly pasted. (not slant.)
  - Make sure that Clamp core is securely fixed.
  - Make sure that PE sensor cable & CR motor connector cable is set on Holder shaft unit, and in Clamp core.

REASSEMBLY

- When assembling CR encoder scale to printer mechanism,
  - Make sure that Extension spring 1.494 is not twisted.
  - Make sure that CR encoder scale is inserted between ribs of CR encoder sensor.
  - Make sure that CR encoder is not damaged, or dirt with the grease (G-58).
- When assembling CR timing belt to printer mechanism,
  - Make sure that [Stopper, Holder Pulley, Driven] is installed into dowels of main frame.
  - Fasten one screw for securing [Stopper, Holder Pulley, Driven] to main frame in the order/tightening torque indicated in the figure.

- ☐ **When you replace Holder pulley driven with new one, lubricate it with the suitable amount of G-65 grease by the specified position.**
- ☐ **When you replace Front frame with new one, lubricate it with the suitable amount of G-58 grease by the specified position.**
- ☐ **When you replace IC holder or Print head assy. with new one, lubricate it with the suitable amount of G-58 grease by the specified position.**
- ☐ **When you replace Pulley driven shaft with new one, lubricate it with the suitable amount of G-58 grease by the specific position.**
- ☐ **When you replace Pulley driven holder with new one, lubricate it with the suitable amount of G-58 grease by the specific position.**
- ☐ **When IC holder/PW sensor/CR encoder sensor is removed or replaced with new one, the following adjustment must be performed in the order below.**
  1) Top margin adjustment
  2) PF adjustment
  3) Bi-d adjustment
  4) Head angular adjustment
  5) 1st dot adjustment
  6) PW sensor adjustment (Only for SC83/84)
  7) CR motor drive torque dispersion measurement
- ☐ **When Print head assy. is removed or replaced with new one, the following adjustment must be performed in the order below.**
  1) Head ID input
  2) Top margin adjustment
  3) PF adjustment
  4) Bi-d adjustment
  5) Head angular adjustment
  6) 1st dot adjustment
  7) PW sensor adjustment (Only for SC83/84)
  8) CR motor drive torque dispersion measurement

- ☐ **When CR timing belt is removed or replaced with new one, tension adjustment of CR timing belt must be performed by the degital tension gauge.**

1.3.10 Paper eject roller removal

☐ **External view**

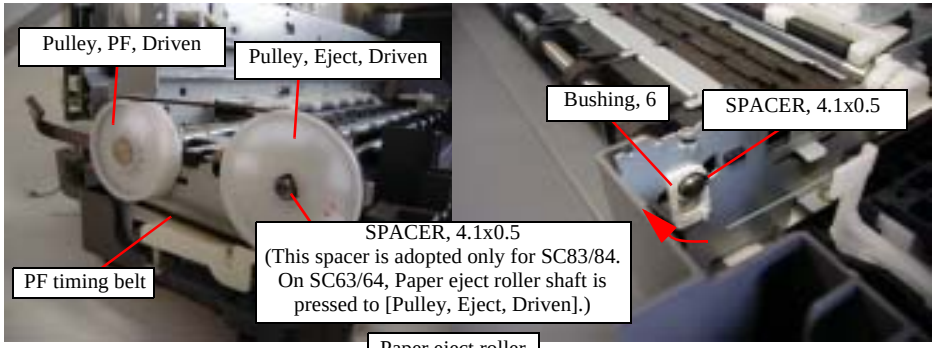


Figure 1-16. Paper eject roller removal

☐ **Part/Unit that should be removed before removing Paper eject roller**

Housing (Right/Left/Frame) / CR unit with Front frame

☐ **Removal procedurel**

1) Loosen PF timing belt with pulling the timing belt to the left side from [Pulley, PF, Driven]
2) Remove one spacer for securing [Pulley, Eject, Driven] to Paper eject roller, and remove [Pulley, Eject, Driven] with pulling it to the left side of the printer.
3) Remove one spacer for securing [Bushing, 6] to Paper eject roller, and turn [Bushing, 6] until it is free. (The end of [Bushing, 6] rotates to the front side of the printer.)
4) Slide Paper eject roller to home position side slightly, and pull up the left end of the roller.
5) Remove Paper eject roller with sliding to the left side of the printer.

CAUTION

☐ **Do not damage rubber portion of Paper eject roller when sliding the roller to the left side of the printer.**

REASSEMBLY

☐ **When assembling Paper eject roller to main frame,**

- **Do not touch the rubber portion.**
- **Make sure that [Bushing, 6] is correctly fixed.**
- **Do not damage the tooth of [Pulley, Eject, Driven] while PF timing belt is set.**
- **Make sure that Spacers for [Pulley, Eject, Driven] & [Bushing, 6] is correctly inserted to the slit of PF eject roller.**
- **Make sure that the Paper eject roller moves smoothly.**
- **On SC63/64, when Paper eject roller shaft from [Pulley, Eject, Driven], two hooks on Paper eject roller shaft are damaged. Therefore, do not use the shaft again because the paper feeding accuracy is lower.**
- **On SC83/84, you can use removed Paper eject roller shaft again by being careful of conbination direction between Paper guide shaft and Pulley. Therefore, mark on the shaft and Pulley before removing the shaft. (This marking is done in manufactory. But, please ignore the marking in your service.**

ADJUSTMENT REQUIRED

☐ **When you replace Paper eject roller with new one, lubricate it with the suitable amount of G-58 grease by the specified position.**

☐ **When PF timing belt is removed or replaced with new one, tension adjustment of PF timing belt must be performed by the degital tension gauge.**

☐ **When Paper eject roller is removed or replaced with new one, the following adjustment must be performed in the order below.**
1) Top margin adjustment
2) PF adjustment
3) Bi-d adjustment
4) Head angular adjustment
5) 1st dot adjustment
6) PW sensor adjustment (Only for SC83/84)

1.3.11 Paper guide front removal

☐ **External view**

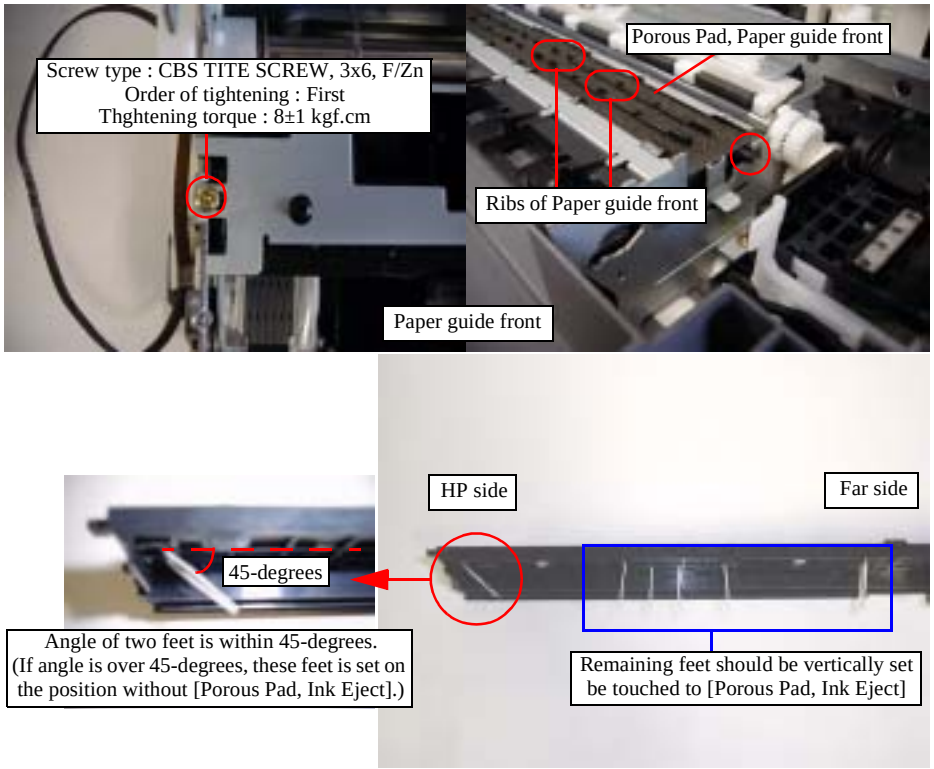


Figure 1-17. Paper guide front removal

☐ **Part/Unit that should be removed before removing Paper guide front**

Housing (Right/Left/Frame) / CR unit with Front frame / Paper eject roller

☐ **Removal procedure**

1) Remove one screw for securing Paper guide front to main frame, and remove Paper guide front with pulling the left side of Paper guide front slightly.

☐ **Do not touch the rib of Paper guide front and [Porous Pad, Paper guide, Front].**

☐ **Do not touch eight feet of [Porous Pad, Paper guide, Front; Sub].**

☐ **When assembling Paper guide front to main frame,**

- **Do not touch the rib of Paper guide front and [Porous Pad, Paper guide, Front].**
- **Make sure to install the dowels of Paper guide front into the holes of main frame.**
- **Make sure that there is no gap between Paper guide front and main frame.**
- **Be careful not to bend eight feet of [Porous Pad, Paper guide, Front; Sub] in assembling/disassembling.**
- **Wipe off drain ink on ribs of Paper guide front by the cotton stick. (In this time, do not touch the cotton stick to [Porous Pad, Paper Guide Front] that soluble oid is included.)**

☐ **When Paper guide front is removed or replaced with new one, the following adjustment must be performed in the order below.**

1) Top margin adjustment
2) PF adjustment
3) Bi-d adjustment
4) Head angular adjustment
5) 1st dot adjustment
6) PW sensor adjustment (Only for SC83/84)

1.3.12 Printer mechanism/Housing (Lower) removal

☐ **External view**

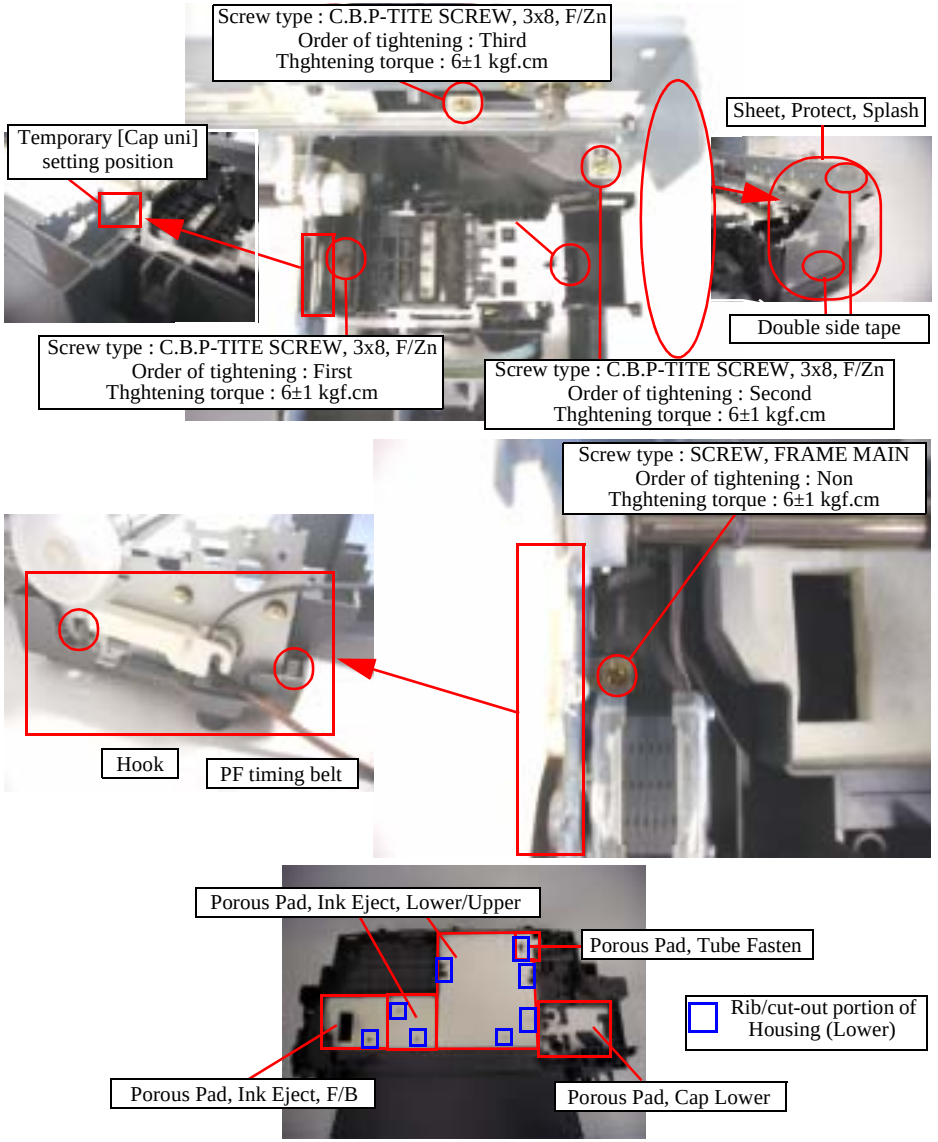


Figure 1-18.

☐ **Part/Unit that should be removed before removing Printer mechanism/ Housing (Lower)**

Housing (Right/Left/Frame) / ASF unit / Circuit board / PS board / CR unit with Front frame / Paper eject roller / Paper guide front

☐ **Removal procedure**

1) Peel off [Sheet, Protect, Splash] from Cap unit.
2) Remove four screws for securing Printer mechanism to Housing (Lower).
3) Release one hook for securing Cap unit by the tweezer, and insert the protrusion of Cap unit to temporary [Cap unit] setting portion.
4) Release two hooks for securing Printer mechanism (left side) to Housing (Lower) by the tweezer, and pull the left side of printer mechanism upward with holding the specific position of printer mechanism.
5) Remove the whole of printer mechanism from Housing (Lower) carefully.

CAUTION

☐ **When lifting Printer mechanism from Housing (lower), be careful not to drip off the ink from the end (Waste drain ink pad side) of the ink tube.**

☐ **Do not remove Printer mechanism upward by lifting it at the unspecified position to avoid the deformation of main frame.**

Figure 1-19. Holding position of Printer machanism

REASSEMBLY

☐ When assembling Printer mechanism to Housing (Lower),

■ On this models, the assembed accuracy of each part composed of Printer mechanism is based on Housing (Lower).
To ensure the assembled accuracy, you have to control the assembled standard position of main frame against X/Y/Z-axis direction as the following figure.
[X-axis direction]
- Make sure that main frame is correctly placed on the groove of Housing (Lower).
- Make sure that there is no gap between main frame and Housing (Lower).

[Y-axis direction]
Make sure that cut-out portion of main frame is correctly placed on the square protrusion of Housing (Lower).

[Z-axis direction]
- Make sure that there is no gap between main frame and Housing (Lower).
- Make sure that the left side of Printer mechanism is correctly fixed by two hooks.

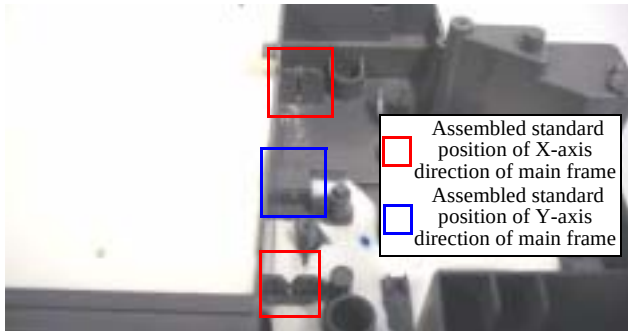


Figure 1-20.

REASSEMBLY

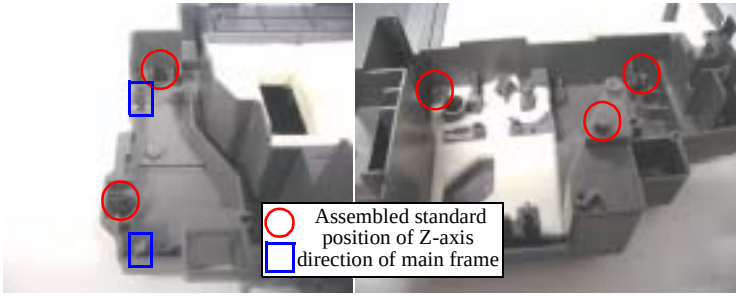


Figure 1-21. Assembled standard position of main frame

■ Fasten four screws for securing Printer mechanism to Housing (Lower) in the order/tightening torque indicated in the figure.

■ Make sure that total seven [Porous Pad] is correctly set in rib/cut-portion of Housing (Lower).

■ Make sure that there is gap between the surface of [Porous Pad, Ink Eject, Uppoer (Large)] and the surface of [Porous Pad, Ink Eject, Uppoer (Small)].

■ Make sure to place ink tube on the groove of Housing (Lower), and to set [Porous Pad, Tube Fasten] on the end of ink tube.

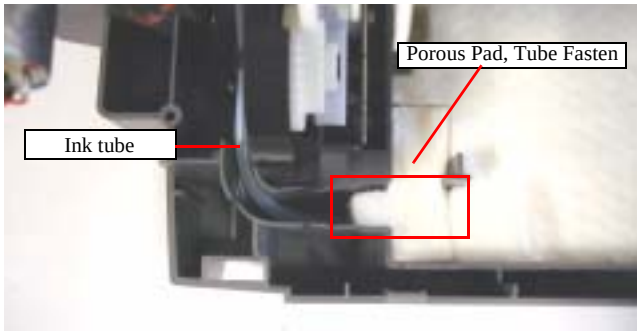


Figure 1-22. Setting position of Ink tube (1)

REASSEMBLY

- **Do not touch the sealing rubber portion and the Cleaner head of the Cap unit.**
- **Make sure that [Sheet, Protect, Splash] is correctly pasted on Cap unit.**
  If the adherence of [Sheet, Protect, Splash] is lower, replace it with new one to avoid that ink leak out of printer.
- **Make sure that ink tube is connected on joint tube area of cap frame.**

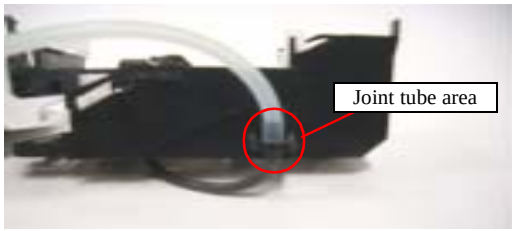


Figure 1-23. Setting position of Ink tube (2)

- **Make sure that ink tube is securely fixed by the groove of Housing (Lower), and that line mark is faced to far side direction. (ink tube is not twisted.)**

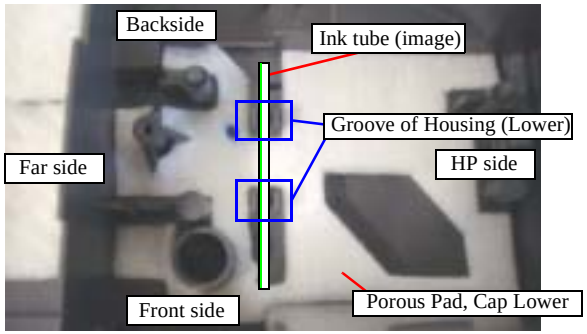


Figure 1-24. Setting position of Ink tube (3)

- **Be careful not to crash or leave any stress on the Ink tube.**

REASSEMBLY

- **Make sure that Cap unit moves smoothly.**
- **Do not damage Change lever and Combination gear, 27.2, 19.2 by dropping.**

ADJUSTMENT REQUIRED

☐ **When Housing (Lower) is removed or replaced with new one, the following adjustment must be performed in the order below.**
1) Top margin adjustment
2) PF adjustment
3) Bi-d adjustment
4) Head angular adjustment
5) 1st dot adjustment
6) PW sensor adjustment (Only for SC83/84)

1.3.13 Ink system removal

☐ **External view**

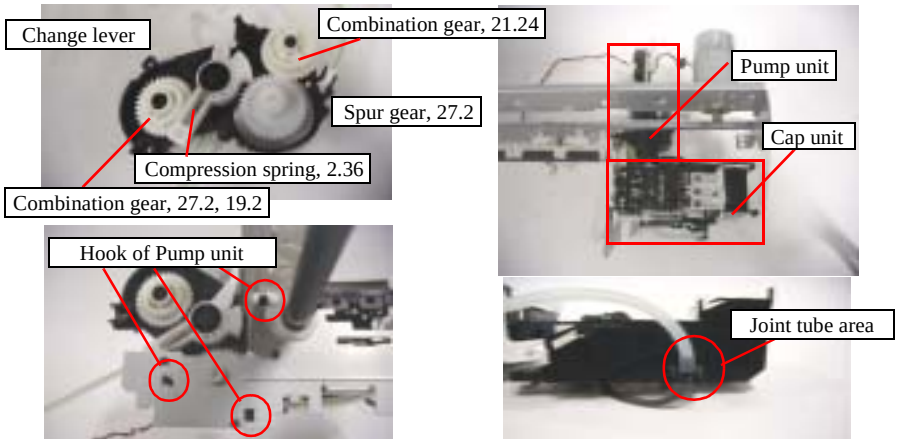


Figure 1-25.

☐ **Part/Unit that should be removed before removing Ink System**

Housing (Right/Left/Frame) / ASF unit / Circuit board / Holder shaft unit / PS board / CR unit with Front frame / Paper eject roller / Paper guide front / Housing (Lower)

☐ **Removal procedure**

1) Release three hooks for securing Pump unit to main frame carefully, and remove Pump unit with supporting Change lever and Combination gear, 27.2, 19.2 by your finger. (Supporting of Change lever and gear is to prevent damage by dropping in disassembly.)
2) Remove the whole of Ink system from printer mechanism, and remove four gears and the Pump pulley.

CAUTION

☐ **Make sure that Cap unit is in temporary [Cap unit] setting portion before removing Ink system.**

☐ **You cannot remove ink tube from pump frame because the tube is fixed by silicon material. This silicon is applied to ;**
1) prevent that ink leaks in Pump unit.
2) control the length of ink tube in pump frame.

REASSEMBLY

☐ **When assembling Ink system,**

- **Do not touch the sealing rubber portion and the Cleaner head of the Cap unit.**
- **Make sure that line mark on ink tube is not twisted.**
- **Make sure that ink tube is connected on joint tube area of cap frame.**
- **Make sure that Cap unit moves smoothly.**
- **Make sure that all gears are correctly set in each gear shaft of pump frame, and make sure that all gears can be rotated smoothly.**
- **Make sure to set the Compression spring 2.36 for the Change lever in the correct condition.**
- **Be careful not to crash or leave any stress on the Ink tube.**

☐ **When assembling Ink system to main frame,**

- **Make sure that Pump unit is correctly fixed.**
- **Do not damage Change lever and Combination gear, 27.2, 19.2 by dropping.**

ADJUSTMENT REQUIRED

☐ **When you replace Ink system with new one, lubricate it with the suitable amount of G-46 grease by the specified position.**

☐ **When Ink system is removed or replaced with new one, the following adjustment must be performed in the order below.**
1) Top margin adjustment
2) PF adjustment
3) Bi-d adjustment
4) Head angular adjustment
5) 1st dot adjustment
6) PW sensor adjustment (Only for SC83/84)

1.3.14 PF motor removal

☐ **External view**

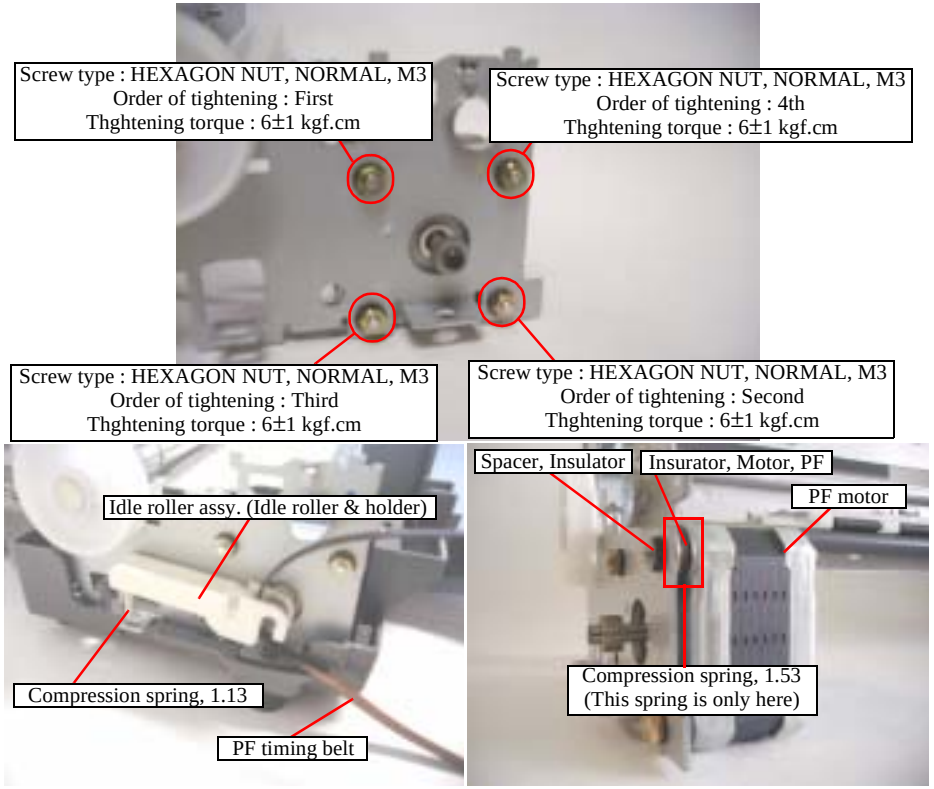


Figure 1-26. PF motor removal

☐ **Part/Unit that should be removed before removing PF motor**

Housing (Right/Left/Frame) / ASF unit / Circuit board / PS board / CR unit with Front frame / Paper eject roller / Paper guide front / Housing (Lower)

☐ **Procedure of removal**

1) Remove Idle roller assy. & Compression spring, 1.13 for keeping PF timing belt tension.
2) Remove four nuts for securing PF motor to main frame, and remove the motor.

☐ **When removing PF motor from main frame, do not damage the pinion gear of PF motor.**

☐ **When assembling PF motor to main frame,**

- **Do not damage PF motor pinion gear with main frame.**
- **Make sure to place PF motor connector cable to Housing (Lower) properly before put printer mechanism on Housing (Lower).**

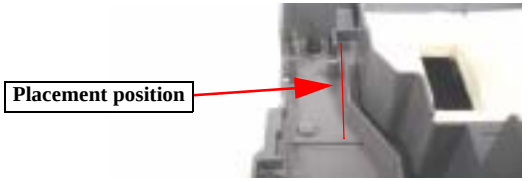


Figure 1-27. Placement position of PF motor cable

- **Make sure to connect PF motor connector cable to connector (CN6) on main board by the tweezer.**
- **Fasten four nuts for securing PF motor to main frame in the order/tightening torque indicated in the figure.**
- **Make sure that there is no gap between [Spacer, Insulator] and frame main.**
- **Make sure not to lost Compression Spring, 1.53.**

☐ **When PF motor is removed or replaced with new one, the following adjustment must be performed in the order below.**
1) Top margin adjustment
2) PF adjustment
3) Bi-d adjustment
4) Head angular adjustment
5) 1st dot adjustment
6) PW sensor adjustment (Only for SC83/84)

CHAPTER

2

ADJUSTMENT

2.1 Overview

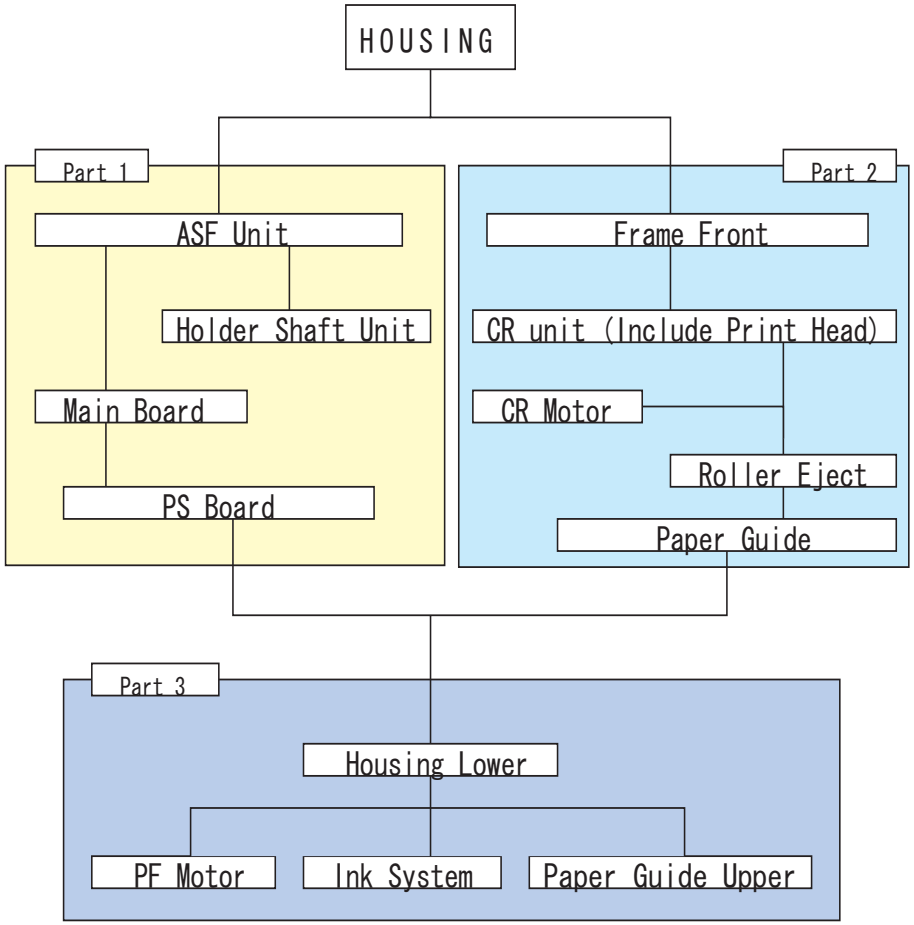
This section describes the procedure for adjustments required when the printer is disassembled and assembled for repair or service.

2.1.1 Required Adjustment

If you remove or replace the specific part in your service/repair, you have to perform the appropriate adjustment as listed Table 5-1 below.
In this printer, it is necessary to perform appropriate adjustment in order to maintain consistent printing function and quality, eliminate differences of each printer mechanism's characteristics.Therefore, in case that the combination between the printer mechanism and the main board changes or the Printhead is replaced during the repair service, you must input the correct adjustment value into the EEPROM on the Main board by using the Adjustment program

CHECK POINT

In case that any parts are removed and assembled on the repair product while running the Adjustment program, make sure to turn off the printer.



Flowchart 2-1. Required adjustment flowchart

Table 2-1. Required Adjustment

Performance Priority	1	2	3	4	5	6	7	8	9	10
Adjustment item / Replaced part	Market ID setting	USB ID input	Head ID input	Head angular adjustment	Bi-D adjustment	PF adjustment	PW sensor adjustment	1st dot adjustment	Top margin adjustment	CR motor drive torque dispersion measurement
Part 1										
ASF Unit Removal/Replacement	NA	NA	NA	NA	NA	NA	NA	(2)	(1)	NA
Holder Shaft Unit Removal/ Replacement	NA	NA	NA	NA	NA	NA	NA	(2)	(1)	NA
Main Board Removal	NA	NA	NA	NA	NA	(3)	NA	(2)	(1)	NA
Main Board Replacement	(1)	(1)	(1)	(5)	(4)	(3)	[7]	(6)	(2)	(8)
PS Board Removal	NA	NA	NA	NA	NA	(2)	NA	(3)	(1)	NA
PS Board Replacement	NA	NA	NA	NA	NA	(2)	NA	(3)	(1)	(4)
Part 2										
Frame Front Removal/Replacement	NA	NA	NA	NA	(2)	(1)	NA	NA	NA	NA
CR unit Removal/Replacement	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	(7)
Printhead Replacement	NA	NA	(1)	(5)	(4)	(3)	[7]	(6)	(2)	(8)
Roller Eject Removal/Replacement	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	NA
CR Motor Removal	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	NA
CR Motor Replacement	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	(7)
Paper Guide Removal/Replacement	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	NA
Part 3										
Housing Rower Removal/ Replacement	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	NA
PF Motor Removal/Replacement	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	NA
Ink System Removal/Replacement	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	NA
Paper Guide Upper Removal/ Replacement	NA	NA	NA	(4)	(3)	(2)	[6]	(5)	(1)	NA

NOTE: *"◯": Required necessary adjustment*
"□": Only C83/C84 is required necessary adjustment.
The numbers in the circle/square shows the required adjustment order.
"NA": Not applicable.
• Platen Gap adjustment are not required on this product.
• C63/C64 are not loaded with PW sensor, therefor you may not carry out PW adjustment.

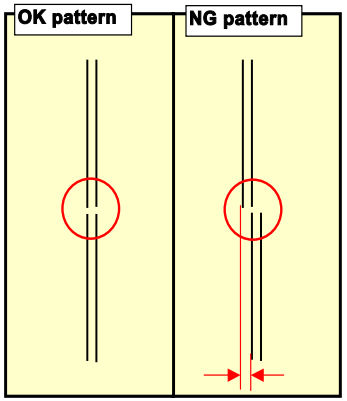
NOTE: *• When the Main board is replaced with new one, you may have to replace waste drain ink pad also in case the EEPROM parameter back up function is not available on the defective main board.*

CAUTION

If using new main board in the printer mechanism replacement, you need to perform EEPROM initial setting of main board. And then, please perform the adjustment by usual procedure.

2.1.2 Head Angular Adjustment

1)Set Normal Paper A4 on the Paper Support.
2)Select Head Angular adjustment in the adjustment Program.
3)Judge the values, if some of it are NG, select the corresponding items and adjust.
4)Print the check pattern again, and check the adjustment result.

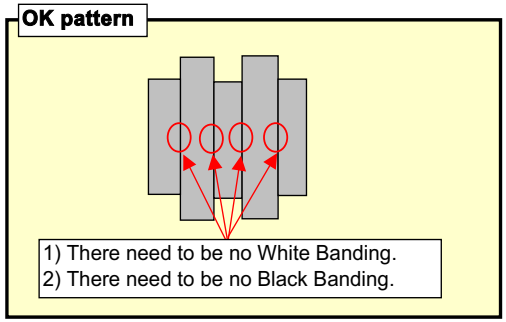


[Reference]
Shift length of Head Angular pattern is MAX ±50µm.

Figure 2-1. Head Angular Printing Pattern

2.1.3 Bi-D Adjustment

1)Set Normal Paper A4 on the Paper Support.
2)Select Bi-D adjustment in the adjustment Program.
3)Judge the values of VSD1;VSD2;VSD3 and ECO, if some of it are NG, select the corresponding items and adjust.
4)Print the check pattern again, and check the adjustment result.



[Reference]
GAP for banding pattern of Bi-D adjustment is VSD1:60µm,VSD2:60µm,VSD3:40µm,VSD4:40µm,ECO:85µm.

Figure 2-2. Bi-D Adjustment Pattern 1

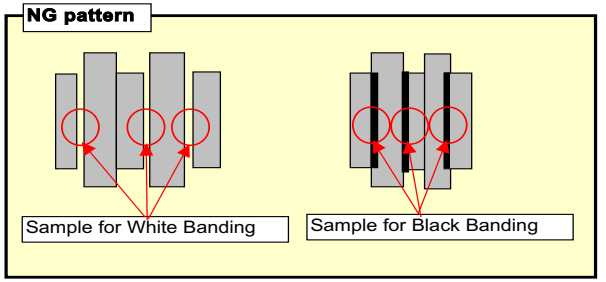


Figure 2-3. Bi-D Adjustment Pattern 2

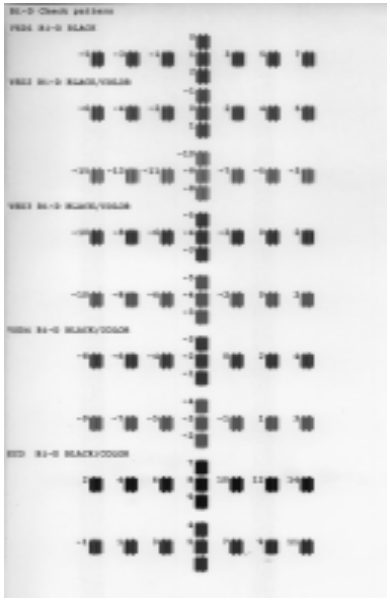
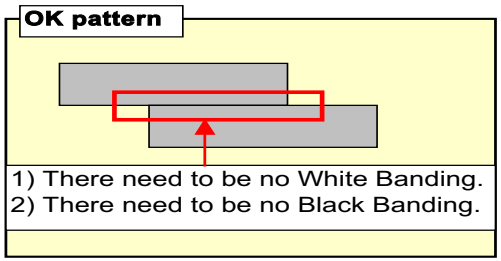


Figure 2-4. Bi-D Adjustment Pattern3

2.1.4 PF Adjustment

1)Set Super Fine Photo Paper A4 on the Paper Support.
2)Select PF adjustment in the adjustment program.
3)Print the PF adjustment check patterns, choose the pattern that has the smallest displacements, and enter it in the adjustment program.
4)Print the check patterns again, and check the adjustment result.



[Reference]
GAP for banding pattern of PF adjustment is ±35µm.

Figure 2-5. PF Adjustment Pattern 1

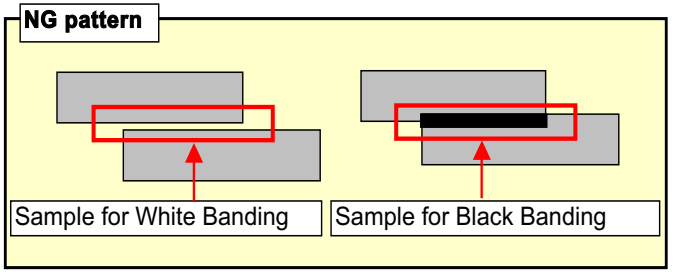


Figure 2-6. PF Adjustment Pattern 2

2.1.5 PW Adjustment

1)Set Economy Photo Paper A4 on the Paper Support.
2)Print the PW sensor adjustment check pattern, choose the pattern number 5mm away from each edge, and enter it in the adjustment program.

Figure 2-7. PW Adjustment Pattern

2.1.6 First Dot Adjustment

1)Set Economy Photo Paper A4 on the Paper Support.
2)Print the First Dot adjustment check pattern, It adjusts so that it may be set to 3±1.5mm away from each edge.

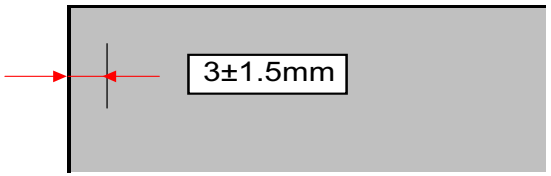


Figure 2-8. First Dot Pattern

2.1.7 Top Margin Adjustment

1)Set Normal Paper A4 on the Paper Support.
2)Print the Top Margin adjustment check pattern, It adjusts so that it may be set to 3±1mm away from each edge.

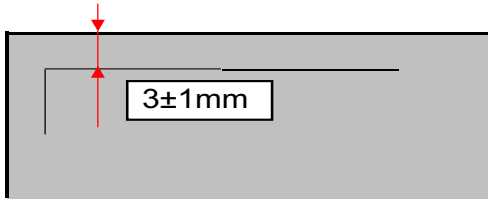


Figure 2-9. Top Margin Adjustment Pattern

2.1.8 CR Motor Drive Torque Dispersion Measurement

1)Choose CR Motor drive torque dispersion measurement in the adjustment program.
2)Following the screen prompts, turn on the necessary Replacement part cheek box and click the OK button. According to the replacement part, variation value write and variation measurement/write are performed automatically.

2.1.9 A4 Normal Print and A4 SF Paper Print

After completing the adjustment, check the printing result with “A4 Normal Paper Print” and “A4 SF Paper Print“ by using the Adjustment program.
If the result is not good, perform appropriate adjustment.

Figure 2-10. A4 Normal Print

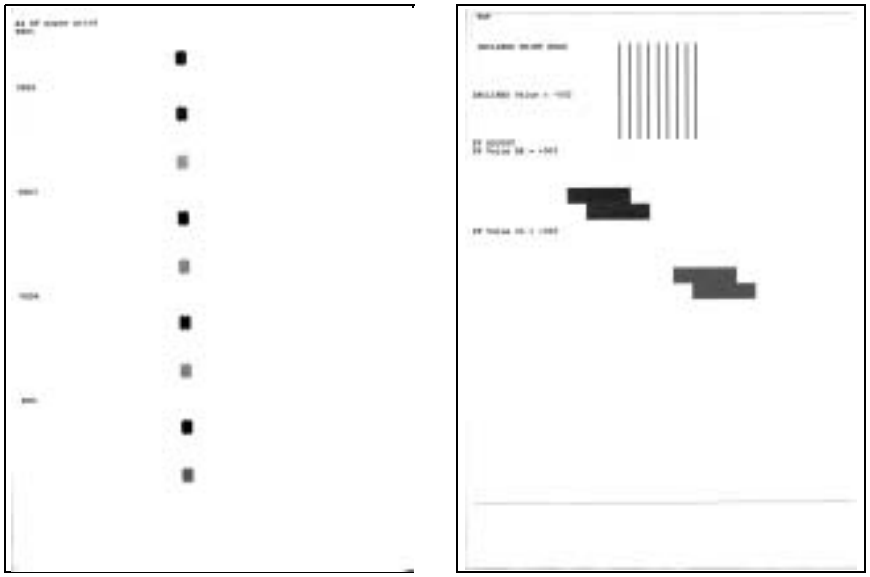


Figure 2-11. A4 SF Paper Print

CHAPTER

3

MAINTENANCE

3.1 Overview

This section provides information to maintain the printer in its optimum condition.

3.1.1 Cleaning

This printer has no mechanical components which require regular cleaning except the Printhead. Therefore, when returning the printer to the user, check the following parts and perform appropriate cleaning if stain is noticeable.

CAUTION

- **Never use chemical solvents, such as thinner, benzine, and acetone to clean the exterior parts of the printer like the Housing. These chemicals may deform or deteriorate the components of the printer.**
- **Be careful not to damage any components when you clean inside the printer.**
- **Do not scratch the coated surface of the PF roller. Use soft brush to wipe off any dusts. Use a soft cloth moistened with alcohol to remove the ink stain.**
- **Do not use cleaning sheet included in the media for normal usage. It may damage the coated surface of PF roller.**
  If the adhesive surface of the cleaning sheet is set to the LD roller shaft side and used to clean the LD roller surface, it is no problem.

☐ Exterior parts
Use a clean soft cloth moistened with water, and wipe off any dirt. If the exterior parts are stained by the ink, use a cloth moistened with neutral detergent to wipe it off.

☐ Inside the printer
Use a vacuum cleaner to remove any paper dust.

☐ LD Roller
When paper loading function does not operate because friction of the LD roller is lowered by any paper dust, set the adhesive side up of the cleaning sheet (included in the media) to remove any paper dust. Repeat loading the cleaning sheet several times.

3.1.2 Service Maintenance

If any abnormal print (dot missing, white line, etc.) has occurred or the printer indicates the "Maintenance request error" (This error is displayed as "Maintenance call error" in the STM3), take the following actions to clear the error.

☐ Printhead cleaning
When dot missing or banding phenomenon has occurred, you need to perform the printhead cleaning operation*1 by using the printhead cleaning function. This function can be performed by the control panel operation, the printer driver utility and the Adjustment program.
In case that the cleaning sequence is performed by the control panel operation, confirm that the printer is in stand-by state (the Power LED is lighting), and hold down the Error reset button on the control panel for more than 3 seconds. Then, the printer starts the cleaning sequence (the Power LED blinks during this sequence).
In case that you select and perform the manual cleaning by the printer driver utility, the most appropriate cleaning mode is selected. The following is the process to perform the printhead cleaning from the printer driver utility.
As for the operation of the Adjustment program, refer to Chapter 5 Adjustment.

*1: The Stylus C63/C64/C83/84 has four modes for manual cleaning, and even during printing, the appropriate cleaning mode is automatically selected and performed according to various conditions. Therefore the ink consumption amount for manual cleaning varies depending on each mode.

1. Select the “EPSON Status Monitor 3” in the printer driver utility, and make sure that the printer is in stand-by state by using the Status monitor 3. If the printer is in stand-by state, the following figure is indicated on the monitor.

Figure 3-1. Status monitor 3 indication

2. Select the “Head Cleaning” in the printer driver utility, and perform the printhead cleaning. After performing the printhead cleaning operation, print a nozzle check pattern by selecting the “Nozzle Check“. If you repeat the printhead cleaning operation without selecting the “Nozzle Check”, CL1, the weakest cleaning, will be repeated.

Figure 3-2. Head cleaning function in the printer driver utility

- Maintenance request error (Maintenance call error)
  Ink is used for the printhead cleaning operation as well as the printing operation. When the ink is used for the printhead cleaning operation, the ink is drained to the Waste drain ink pad and the amount of the waste ink is stored as the waste ink counter into the EEPROM on the Main board. Due to this, when the waste ink counter has reached the limit (Waste ink counter = Protection counter A = 47000 points (C83/C84), 25000 points (C63/C64)) of the absorbing capability of the Waste drain ink pad, the Maintenance call error is indicated on Status monitor 3 as following figure.

Figure 3-3. Maintenance error indication in STM3

In this case, replace to new Waste drain ink pad and clear the waste ink counter stored into the EEPROM. The waste ink counter can be reset only from the Adjustment program because this printer dose not have the waste ink counter reset function by the control panel SW. As for the procedure, refer to Chapter 2 Adjustment.
In your repair activity, check the waste ink counter along with the firmware version, Main board checker program version and nozzle check pattern on the nozzle check pattern printing. If the waste ink counter is closed to its limit, recommend that the Waste drain ink pad will be replaced with new one. This is because the "Maintenance request error" will may occur after returning the repaired product to the customer.

3.1.3 Lubrication

The characteristics of the grease have great affects on the mechanical function and durability, especially does the characteristics about temperature environment. The type and amount of the grease used to lubricate the printer parts are determined based on the results of the internal evaluations. Therefore, be sure to apply the specified type and amount of the grease to the specified part of the printer mechanism during servicing.

- **Never use oil or grease other than those specified in this manual. Use of different types of oil or grease may damage the component or give bad influence on the printer function.**
- **Never apply larger amount of grease than specified in this manual.**

- **G-46/G-58/G-26 is already on the printer mechanism for service part in the manufactory.**

Table 3-1. Specified lubricants

Type	Name	EPSON code	Supplier
Grease	G-46	1039172	EPSON
Grease	G-58	1082176	EPSON
Grease	G-26	1080614	EPSON

Table 3-2. Lubrication point

No.	Lubrication type/point	Remarks
1	**<Lubrication point>** • Lubricate G-58 on the touch side [ROLLER GUIDE] and [HOLDER ROLLER GUIDE]. (Refer to Figure 3-4.) **<Lubrication type>** • G-58 **<Lubrication amount>** • Φ1mm x 2 position	• G-58 shouldn't spread to any other parts. • Use a syringe to apply it. • Pay Attention of Handling [PRINT HEAD] while lubrication process.
2	**<Lubrication point>** • Lubricate G-46 to 2 position of shafts on [FRAME PUMP]. (Refer to Figure 3-5.) **<Lubrication type>** • G-46 **<Lubrication amount>** • Dip Cotton Bud into G-46, and let G-46 drop from the Cotton bud.	• G-46 shouldn't be spread to any other parts. • Don't let G-46 become dried on Cotton bud. (while lubrication process) • Don't use Cotton bud if its cotton becomes damage and the fibers come out.
3	**<Lubrication point>** • Lubrication G-58 on front side [FRAME FRONT], a track where [HOLDER I/C ASSY] slides. (Refer to Figure 3-6) **<Lubrication type>** • G-58 **<Lubrication amount>** • Φ1mm x length of Frame front as (Refer to Figure 3-6).	• Make sure G-58 shouldn't spread or drop to other parts (over mechanism). • After lubrication, move the CR unit from side to side in order to spread it evenly.

Table 3-2. Lubrication point

No.	Lubrication type/point	Remarks
4	**<Lubrication point>** • Lubricate G-58 along CR guide parts of [FRAME MAIN] on 4 position by using Frame main lubrication fixture. (Figure 3-7) **<Lubrication type>** • G-58 **<Lubrication amount>** • Quantity for each position is 100mg. • Length of G-58 spread is 350mm. (From Paper Guide Front to Slider Cap hook) • Wide of G-58 spread is 2mm.	• Use clean Cotton stick to avoid dirt on G-58. • Be careful when rubbing the grease, don't drop or dirt the grease to other parts.
5	**<Lubrication point>** • Lubricate [GROUNDING SPRING ROLLER PF] touch side to of [ROLLER PF]. (Refer to Figure 3-8.) **<Lubrication type>** • G-58 **<Lubrication amount>** • Φ1 x 0.5Φ of [ROLLER PF].	• Don't spread G-58 to other parts. • G-58 must spread out and touch to [ROLLER PF] and [GRANDING SPRING PF].
6	**<Lubrication point>** • Lubricate G-26 to center of cam [LEVER PAPER RETURN]. (Refer to Figure 3-9.) **<Lubrication type>** • G-26 **<Lubrication amount>** • Φ1 x 1mm	• Make sure G-26 doesn't spread to other parts.

Table 3-2. Lubrication point

No.	Lubrication type/point	Remarks
7	**<Lubrication point>** • Lubricate G-58 around small circle of [PULLEY EJECT DRIVE ; B]. (Refer to Figure 3-10.) **<Lubrication type>** • G-58 **<Lubrication amount>** • Φ1 mm x 2 position	• Don't spread G-58 to other parts.
8	**<Lubrication point>** • Lubricate G-58 onto U-shape of [HOLDER IDLE ROLLER] on 2 positions. (Refer to Figure 3-11.) **<Lubrication type>** • G-58 **<Lubrication amount>** • Φ1 x 1 circle	• G-58 shouldn't spread out to [MOTER ASSY PF] Pinion surface, and [TIMING BELT].

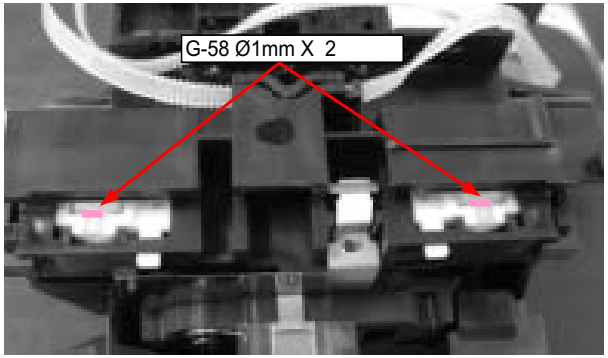


Figure 3-4. Lubrication point 1

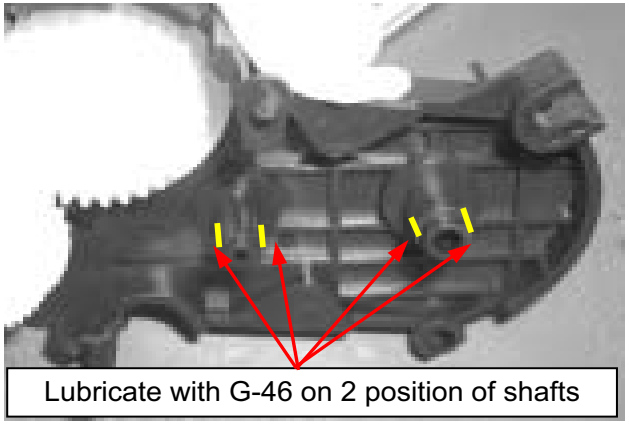


Figure 3-5. Lubrication point 2

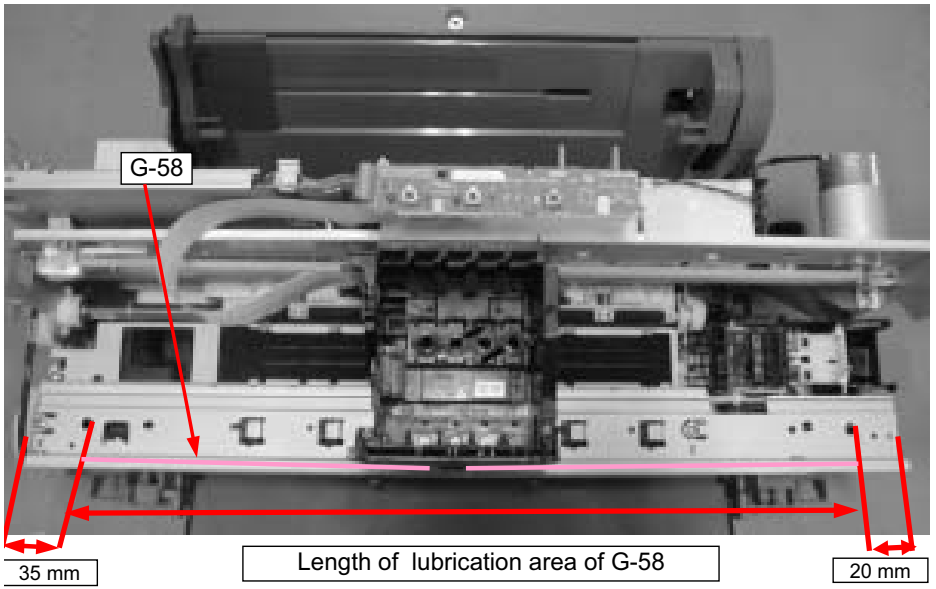
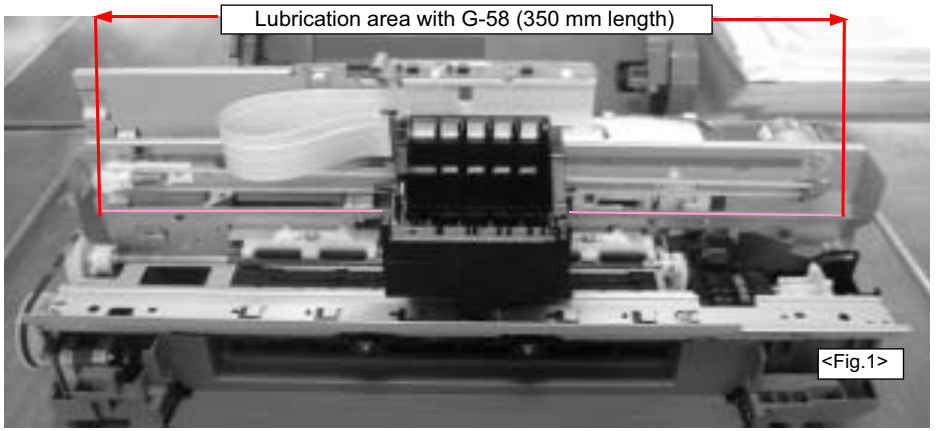


Figure 3-6. Lubrication point 3



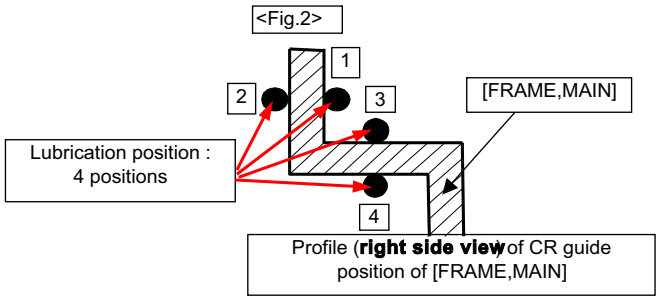


Figure 3-7. Lubrication point 4

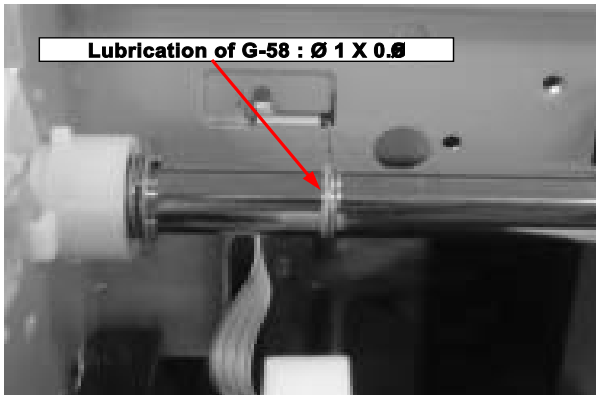


Figure 3-8. Lubrication point 5

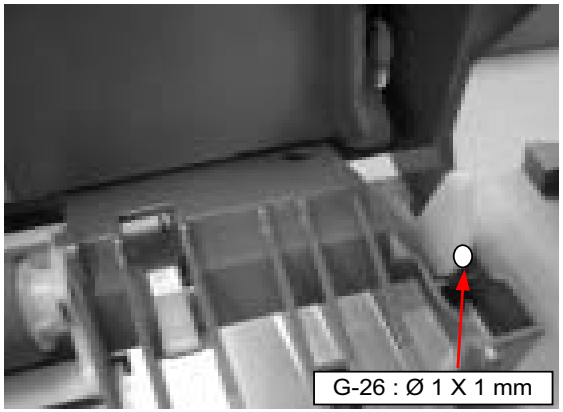


Figure 3-9. Lubrication point 6

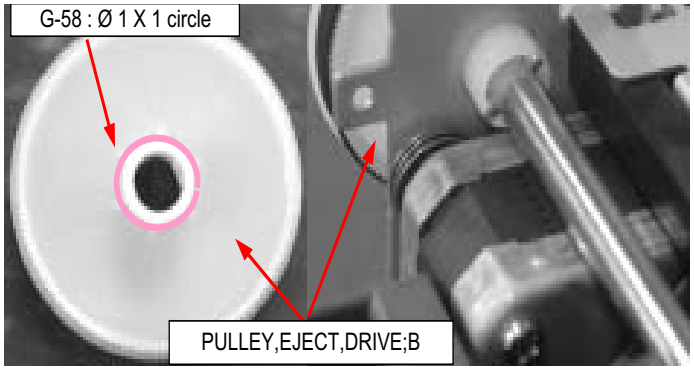


Figure 3-10. Lubrication point 7

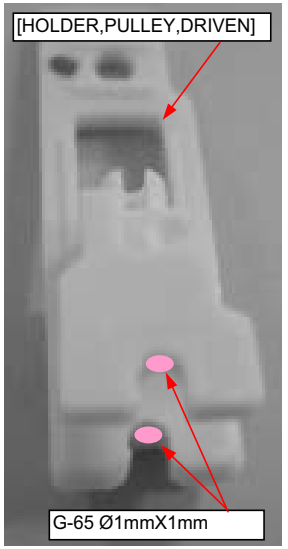


Figure 3-11. Lubrication point 8

CHAPTER

4

APPENDIX

4.1 Electrical Circuits

The electric circuit diagrams below are shown at the following pages:

- C528/C529 Main control circuit board
- C528/C529 PSH power supply circuit board

4.2 Parts List

This Service Manual has not indicated Part List.
Please refer to Service Part Information in Tech Exchange about Part List.

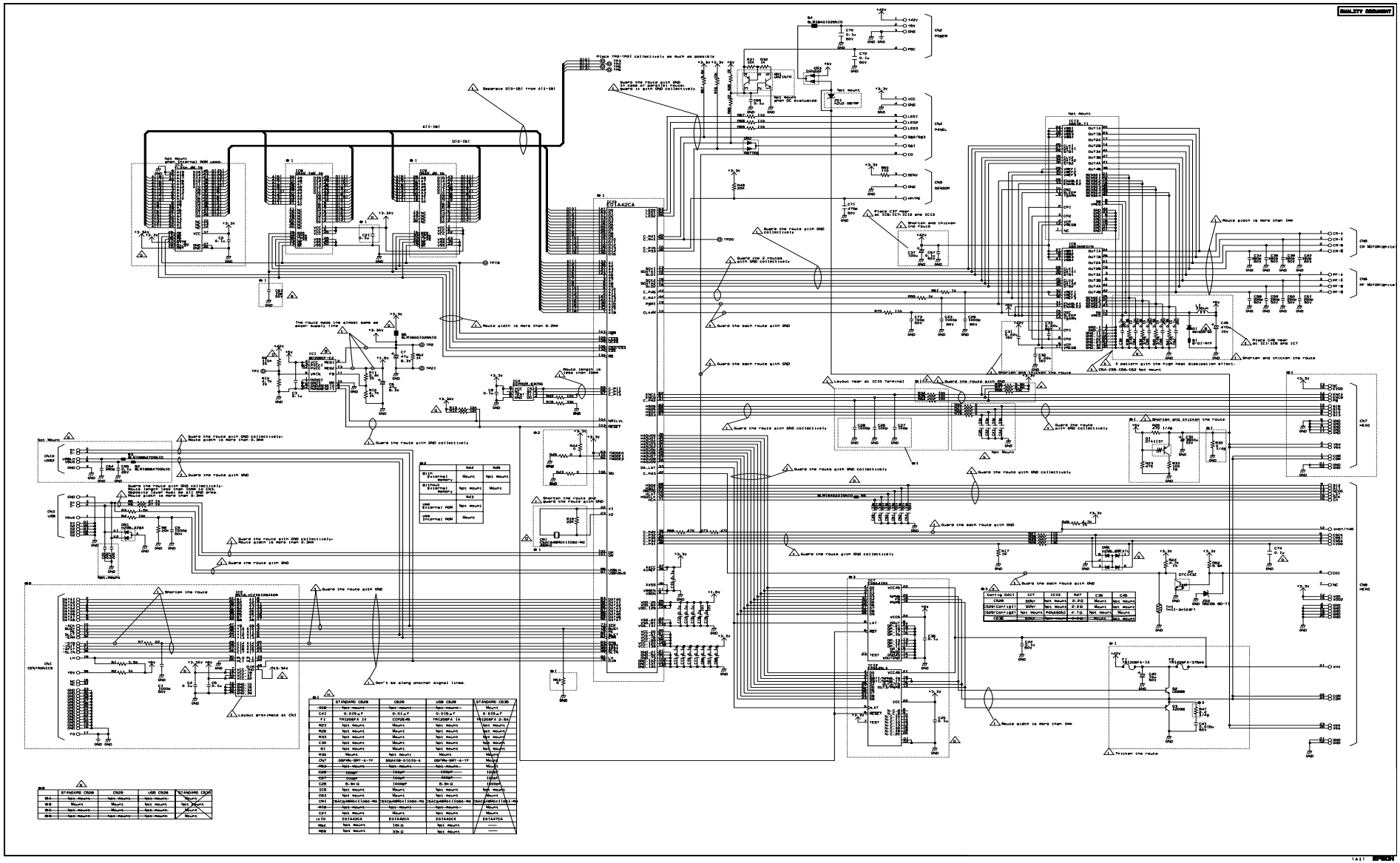


Figure 4-1. C528/C529 Main control circuit board

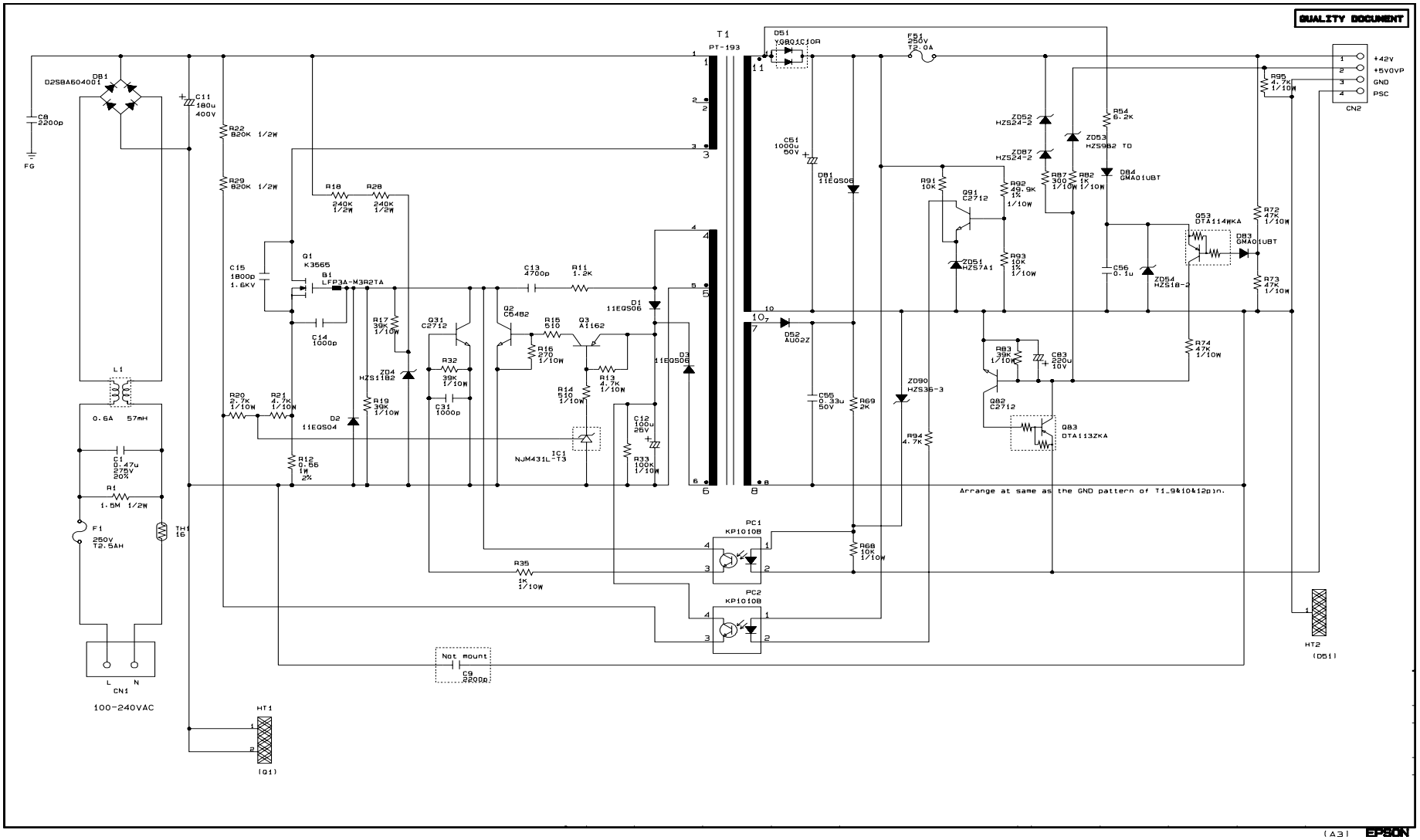


Figure 4-2. C528/C529 PSH power supply circuit board