

# SERVICE MANUAL



Color Large Format Inkjet Printer  
**EPSON Stylus PRO 7500**



**EPSON®**

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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.

## **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 EPSON EPSON Stylus PRO 7500. 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.

## **Contents**

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**

Provides the step-by-step procedures for the troubleshooting.

### **CHAPTER 4. DISASSEMBLY AND ASSEMBLY**

Describes the step-by-step procedures for disassembling and assembling the product.

### **CHAPTER 5. ADJUSTMENTS**

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
- Parts list
- Electric circuit boards components layout
- Exploded diagram
- Electrical circuit boards schematics

## ***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 WARNING, CAUTION or NOTE 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.



Indicates a reassembly procedure, practice, or condition that, if not strictly adhered to, could result in damage to, or nonoperability of, the equipment.

# Revision Status

Revision	Issued Date	Description
Rev. A	August 31, 2000	First Release

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**CHAPTER**

**1**

**PRODUCT DESCRIPTION**

## 1.1 Features

The EPSON Stylus Pro 7500 is an 24-inch wide, 6-color ink jet printer with professional color output. It has the same printheads as the EPSON Stylus Pro 9000. The EPSON Stylus Pro 7500 provides the following major features and more.

- Large Format
  - A1, full size
  - 24 inch-full size printing (A1+size supported)
- High-speed throughput

**Table 1-1.**

Paper	Image Quality	Resolution	Mode	Throughput
Medium Glossy Paper	Fast	720x720dpi	Bi-D MW/MF,240cps	9min
	Beautiful	720x720dpi	Bi-D FOL,333cps	14min
	High Precision	1440x720dpi	Bi-D FOL,4pss, 333cps	27min

- High Image Quality
  - Pigment ink in 6 colors is used. Image quality and color reproduction are at the same level as with the Stylus Pro 9500.
- Low running cost
  - Six separate ink cartridges so you only have to replace the empty ink cartridge (each cartridge holds 100ml of ink)
- Applicable various media
  - Auto cutter provided in addition to the standard roll paper feeder.
- Complete Software Compatibility With EPSON Stylus Pro 9000
  - Stylus Pro 9000 commands and Stylus Pro 7000 commands are upward compatible and can be interchanged with the Stylus Pro 9500 commands.
- Latest RIP Technology
  - CPSI Pro (software)
  - PS Server (Scheduled to go on sale in September, 2000)
- Compact, Low in Cost
  - Can be used on a desktop (The stand is an option)

## 1.1.1 Consumable Products & Options

The consumables and options that can be used with the Stylus Pro 7500 are shown below.

**Table 1-2. Consumables & Options**

Name	Code	Product
Ink cartridges	T460***	Black Ink
	T463***	Cyan Ink
	T462***	Magenta Ink
	T461***	Yellow Ink
	T465***	Light Cyan Ink
	T464***	Light Magenta Ink
Stand	C844022	Optional stand
Paper cutter blade	C815131	Consumable item
Roll Feed Spindle 2"	C811092	For two-inch diameter roll paper
Roll Feed Spindle 3"	C811102	For three-inch diameter roll paper
Doubleweight Matte Paper	S041385	24 in wide/25m long
Glossy Paper - PhotoWeight	S041388	22 in wide/20m long
Premium Glossy Photo Paper	S041390	24 in wide/30.5m long
Premium Semium Semigloss Photo	S041393	24 in wide/30.5m long
Watercolor Paper - Radiant White	S041396	24 in wide/18m long
	S041352	A3 Wide / B
	S041351	A3 Wide / B
Glossy Film	S041314	610mm wide/20m long
Synthetic Paper	S041399	24 in wide/45m long
Adhesive Synthetic Paper	S041402	24 in wide/30m long
Rip Station 5100 PS Server Series II	EAI - C850092 Other - C850093	Fiery Adobe® PostScript® 3™ Server
Software RIP (CPSI Pro)		Software RIP (CPSI Pro)
Multi-protocol Ethernet interface card	C82362*	Type-B 10Base-T
100Mbps Multi-protocol Ethernet interface card	C82363*	Type-B 100Base-T
IEEE 1394 interface card	C82372*	IEEE 1394 interface card

\* Signifies a number that varies by market.

## 1.2 Print Specifications

### PRINTING SPECIFICATIONS

- Printing System: Ink jet
- Head nozzle arrangement: black = 64 nozzles (32 nozzles x 2 rows)  
Color = 320 nozzles (Cyan, magenta, yellow, light cyan and light magenta, 64 nozzles each (32 nozzles x 2 rows))
- Print direction = Bi-direction (high-speed return, high-speed skip only)
- Print Speed and Printable Area
  - Character mode
 

Character Quality	High Quality
Character pitch	10cpi (Pica)
Printable area	237 characters
Printing speed	240cps
  - Graphic mode  
See the table below.

**Table 1-3. Print Area and Speed**

Horizontal resolution (dpi)	Printable area	Max. printable dots	Speed
360	604mm 23.78 inches	8561	24 IPS
720	604mm 23.78 inches	17,123	33.3 IPS/FOL 33.3 IPS/4pass
1440	604mm 23.78 inches	34,246	24 IPS/FOL 33.3 IPS/4pass

### CHARACTER SPECIFICATIONS

- Character Code:  
PC437(US, Standard Europe)  
PC850(Multilingual)
- Type Faces:  
Bitmap LQ font : EPSON Courier 10 CPI
- Control Code: ESC/P Raster

### PAPER FEEDING

- Paper feeding method: Friction feed
- Line spacing: 1/6" or programmable at 1/720"
- Paper path: Roll paper/manual
- Feed speed: 1/6" 200±10m seconds  
Continuous 2.5" (63.5mm)/second

**PAPER SPECIFICATION**

Roll Paper:

[Compatible papers]

The following papers can be loaded in this machine, but it is not guaranteed that they will go through or that the print quality will be good.

- Paper Size = Width: 210 ~ 610 mm  
Length: 279 mm ~ 202 m

\* However, it should be within the roll size.

- Roll size = 2" or 3" core  
Outer diameter: within 150 mm

- Paper thickness = 0.08 ~ 0.05 mm

\*1 There should be no wrinkles, fuzz, tearing or folding, of the paper, etc.

\*2 The exclusive option (3" roll paper spindle) is necessary when using 3" core roll paper.

[Plain Paper]

Only paper feed operation is guaranteed for the following papers.

- Paper Size = Width: 210 ~ 610 mm  
Length: 279 mm ~ 202 m

\* However, it should be within the roll size.

- Roll size = 2" or 3" core  
Outer diameter: within 150 mm

- Paper thickness = 0.08 ~ 0.11 mm

- Paper weight = 64~90 gf/m<sup>2</sup>

- Paper Quality =Plain paper, Recycled paper

\*1 There should be no wrinkles, fuzz or tearing of the paper, etc.

\*2 The peel strength of the first part of the paper roll should be within 300 ~ 500 gf.

\*3 The exclusive option (3" roll paper spindle) is necessary when using 3" core roll paper.

\*4 This product should be used in a place with a normal room temperature environment (Temperature: 15~25°C, Relative humidity: 40~60%)

\*5 The printable area for roll paper is from the core to the point where it is cut off.

The remaining paper length when the paper is cut off from the roll.

(Reference): approx. 30 cm.

[EPSON Special Paper]

The feed through characteristics and print quality of the following genuine exclusive papers are guaranteed.

**Table 1-4. EPSON Special Paper**

Type (US)	Paper Size (W x H)	Roll Size
Doubleweight Matte Paper	610mm x 25m (24" x 83')	2" core, maximum 103mm external diameter
Glossy paper - Photo Weight	559mm x 20m (22" x 66.4')	
Premium Glossy Photo Paper	610mm x 30.5m (24" x 101.3')	
Premium Semigloss Photo paper	610mm x 30.5m (24" x 101.3')	
Watercolor Paper - Padiant White	610mm x 18m (24" x 59.8')	
Glossy Film	610mm x 20m (24" x 66.1')	
Synthetic Paper	610mm x 45m (24" x 149.4')	
Adhesive Synthetic Paper	610mm x 30m (24" x 99.6')	

\*1: Use at normal room temperature (15~25°C (59~77°F) 40~60% humidity)

\*2: At the point where the rear edge comes free from the core (approx. last 30 cm.), print quality is no longer guaranteed.

\*3: The printable area for roll paper is from the core to the point where it is cut off. The remaining paper length when the paper is cut off from the roll. (Reference): approx. 30 cm.

Cut Sheet Paper:

[Papers that can be loaded]  
 Loading of the following papers into this printer is possible, but for papers other than the following plain paper and exclusive paper, feed through characteristics and print quality are not guaranteed.  
 • Paper Size: See the table below.

[Plain Paper]

For the following specifications, only the lack of hindrance for paper feed through is guaranteed.  
 • Paper Size: See the table below.

**Table 1-5. Specifications of Papers which can be Loaded**

Size Name	Dimensions (H x W)	Size Name	Dimensions (H x W)
B2	515 x 728mm	?????	22" x 36"
A4	210 x 297mm	?????	20" x 24"
Super A1	24" x 36"	?????	18" x 22"
A1	594 x 841mm	ANSI D	22" x 34"
A2	420 x 594mm	ANSI C	17" x 22"
Super A3	329 x 483mm	ANSI B	11" x 17"
A3	297 x 420mm	Letter	8.5" x 11"

- Paper Width: Paper length = 297 ~ 728 mm...  
0.08 ~ 1.5 mm  
Paper Length = 728 ~ 915 mm (36") ...  
0.08 ~ 0.5 mm

\*1 There should be no wrinkles, fuzz, tearing or folding, of the paper, etc.

**Table 1-6. Specifications of Papers which can be Loaded**

Size Name	Dimensions (H x W)	Size Name	Dimensions (H x W)
B2	515 x 728mm	?????	22" x 36"
A4	210 x 297mm	?????	20" x 24"
Super A1	24" x 36"	?????	18" x 22"
A1	594 x 841mm	ANSI D	22" x 34"
A2	420 x 594mm	ANSI C	17" x 22"
Super A3	329 x 483mm	ANSI B	11" x 17"
A3	297 x 420mm	Letter	8.5" x 11"

- Paper Thickness = 0.08 ~ 0.11 mm
- Paper Weight = 64 ~ 90 gf/m<sup>2</sup>
- Paper Quality = Plain paper, recycled paper

- \*1 The paper should be loaded longitudinally.
- \*2 There should be no wrinkles, fuzz, or tearing, of the paper, etc.
- \*3 This product should be used in a place with a normal room temperature environment (Temperature: 15~25°C, Relative humidity: 40~60%).

[EPSON Special Papers]  
Shown below.

Printable Area: See the table and figure below.

**Table 1-7. Specifications of EPSON Special Papers**

Size Name	Dimensions (H x W)	Super Fine *1	Photo Print Paper 2	Photo Quality Glossy Film	Art Board
A4	210 x 297mm	○	○	○	—
A3	297 x 420mm	○	○	○*2	—
Super A3	329 x 483mm	○	○	○	—
A2	420 x 594mm	○	—	—	—
LTR	216 x 279mm	○	○	○	—
B	279 x 432mm	○*2	○*2	○*2	—
C	431 x 558mm	○*2	—	—	—
B2	515 x 728mm	—	—	—	○

○: Compatible Paper, —: Nonexistent Type of Paper

\*1: Guaranteed for Uni-D printing.

\*2: Paper that exists overseas only.

\*3: The paper should be loaded longitudinally.

\*4: There should be no wrinkles, fuzz or tearing of the paper, etc.

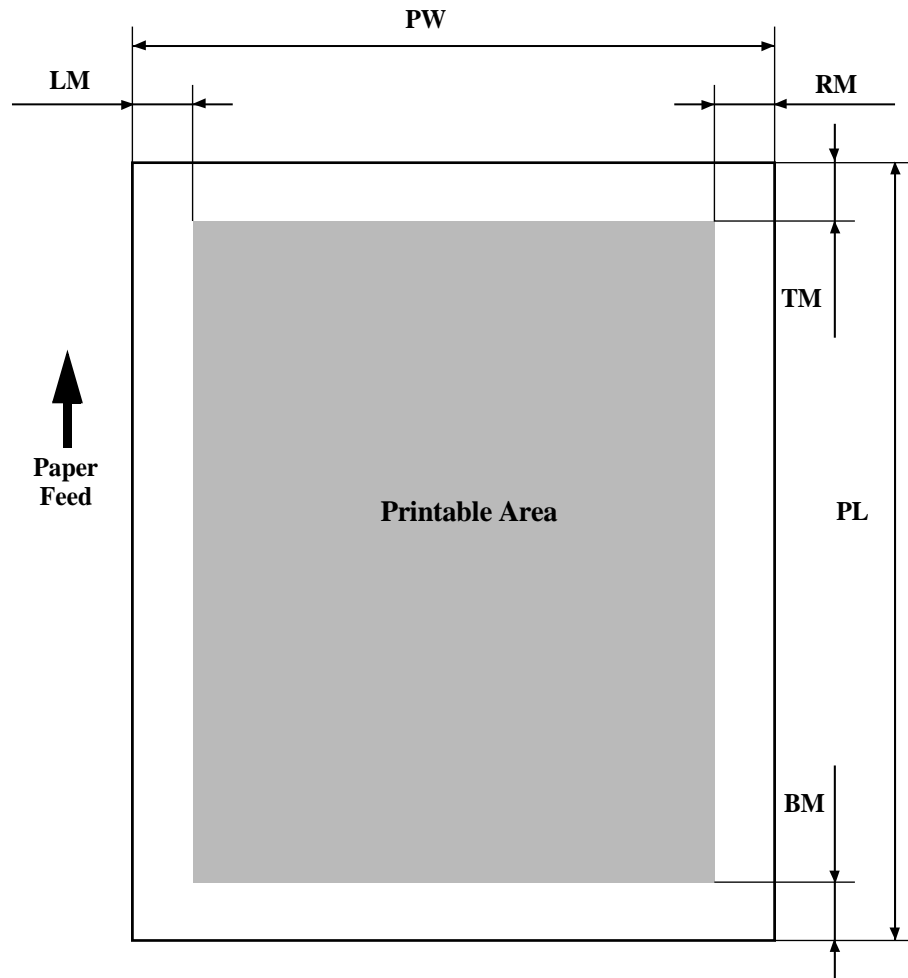
\*5: This product should be used in a place with a normal room temperature environment (Temperature: 15~25°C, Relative humidity: 40~60%).

**Table 1-8. Printable Area**

Heading	Roll Paper	Cut Sheets
PW (width)	210 ~ 610mm (8.27 ~ 24")	210 ~ 610mm (8.27 ~ 24")
PL (length)	Max. 90m (298.8')	297~915mm (11.8~36.4")
LM (left margin)	3mm/15mm* (0.12~0.59")	3mm
TM (top)	3mm/15mm*	3mm
RM (right)	3mm/15mm*	3mm
BM (bottom)	3mm/15mm*	14mm

- The printer detects the paper width when the paper is set.
- Any image that exceeds the detected paper width, or the printable area specified by the paper size setting, is not printed.
- The size of the margin of roll paper can be changed from the panel as shown below.  
Top and Bottom: 15 mm Left and Right: 3 mm / Top, Bottom, Left and Right: 3 mm / Top, Bottom, Left and Right: 15 mm.





**Figure 1-1. Printable Area**

Paper Set Lever:

- By opening the paper Set lever, paper support is canceled and the paper can be set.
- By closing the paper Set lever, the set paper is held in place and printing is enabled.
- If the paper Set lever is opened during printer operation, the "SECURE PAPER LEVER" error occurs.

**INK (DYE INK CARTRIDGE)**

- Form: Exclusive Ink Cartridge
- Ink Colors: Black, Magenta, Light Magenta, Cyan, Light Cyan, Yellow
- Quantity: 110 ml
- Effective Ink Volume: 83.0g or more
- Life:
  - A1: Approx. 28 pages (720 dpi, when the printed share of the paper surface used by each color is 40%.)
  - A1: Approx. 11 pages (720 dpi, when the printed share of the paper surface used by each color is 100%.)
  - D Size: Approx. 26 pages (720 dpi, when the printed share of the paper surface used by each color is 40%.)
  - A4: Approx. 3800 pages (360 dpi, when the printed share of the paper surface used by each color is 5%.)
- Dimensions: 25.1 x 141.1 x 105.3 mm (Width x Depth x Height)
- Weight: Approx. 200 g
- Effective Period: Approx. 2 years from manufacture.
- Storage Temperature: See the table below.

**Table 1-9. Ink Cartridge Storage Environment**

Condition	Temperature	Cautions
During transport when loaded	-30~60°C	<ul style="list-style-type: none"> <li>• If 60°C, within 120 hrs.</li> <li>• If 40°C, within 1 month</li> </ul>
Storage when packed	-30~40°C	If 40°C, within 1 month
When loaded in the printer	-20~40°C	If 40°C, within 1 month

Usable ink cartridges: For Stylus Pro 7500 100 ml Ink Cartridge  
 For Stylus Pro 9500 200 ml Ink Cartridge \*1

**NOTE:** If the above ink cartridge \*1) uses, it is necessary to set it according to 1.9 “Ink Cartridge Size Select.”

**ELECTRICAL SPECIFICATIONS**

**Table 1-10. Electrical Specifications**

	120V Model	220-240V Model
Rated voltage range	AC120V	AC220~240V
Input voltage range	AC90~132V	AC198~264V
Rated frequency range	50~60Hz	
Input frequency range	49.5~60.5Hz	
Rated current	1.0A (Max. 1.6A)	0.5A (Max.0.8A)
Power consumption	standby mode = 15W or less Energy Star Compliant	
Insulation resistance	10MΩ minimum (between AC line and chassis, DC 500 V)	
Dielectric strength	AC 1,000V rms per minute or AC 1,200V rms per second (between AC line and chassis)	AC 1,500V rms per minute (between AC line and chassis)

**CONFORMITY/SAFETY APPROVALS**

## Safety Standards:

US Model	UL 1950, CSA 22.2 No. 950
European Model	EN60950 (VDE)

## EMC:

US Model	FCC part 15 subpart B class B CSA C108.8 class B
European Model	EN 55022 (CISPR Pub. 22) class B EN 61000-3-2 EN 61000-3-3 EN 50082-1 IEC 801-2 IEC 801-3 IEC 801-4

Australian Model AS/NZS 3548 class B

International Energy Star Compliant  
(EPA MOU2.1 Category Large Format Printer)

**RELIABILITY**

- Life
  - [Body] 20,000 Pages (A1)
  - [Print Head] 2 billion dots/nozzle
  - [Cutter] 2,000 Sheets (A1)
- Periodic Replacement Parts
  - Maintenance Kit, Stylus Pro 7500 (No. 1054038)
  - This kit consists of the following parts.
  - Waste ink absorbent, pump assembly, cap assembly, flushing box assembly, head cleaner (approximately 12,000 sheets (A1, criterion))

**ENVIRONMENTAL CONDITIONS**

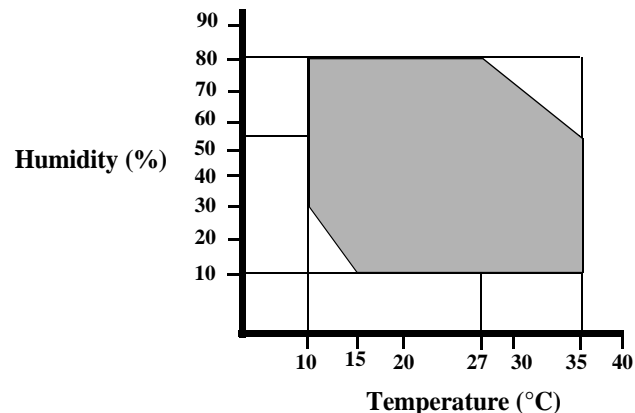
Temperature&Humidity

See the following table.

**Table 1-11. Environmental Conditions**

Condition	Temperature	Humidity	Notes
Operating	10~35°C (50~95°F)	20~80%	<ul style="list-style-type: none"> <li>• Less than a month at 40°C (104°F)</li> <li>• Less than 120 hours at 60°C (140°F)</li> <li>• With no freezing</li> </ul>
Storage	-20~40°C (-4~104°F)	20~85%	
Transportation	-20~60°C (-4~140°F)	5-85%	

- \*1 When storing the printer, make sure the printheads are in the home (capped) position. If necessary switch power on, wait for the printheads to move to the home position, and then switch power off.
- \*2 Before transporting the printer, remove the ink cartridges and turn the ink valves screws to the closed position. Also make sure the printheads are in the home, capped, position. After transporting the printer, install new ink cartridges.
- \*3 If the temperature drops below -15°C (5°F), the ink in the cartridges and printheads freezes. The ink thaws completely after three hours at 25°C (77°F).
- \*4 If kept in an environment with a temperature of -15°C or lower, the ink inside the print head and the ink cartridge will freeze. Once ink is frozen, a period of approximately 3 hours in a 25°C environment is required until the ink can be used again.



**Figure 1-2. Environmental Conditions: Temperature / Humidity**

Vibration&Shock

See the following table.

**Table 1-12. Vibration and Shock**

Condition	Vibration Resistance	Shock Resistance	Notes
Operating	0.15G 10~55Hz	1G maximum 1ms	X/Y/Z directions
Storage	0.5G 10~55Hz	2G maximum 2ms	

**CONTROLLER SPECIFICATIONS**

- CPU  
Hitachi SH7043 33 Mhz
- ROM  
[Program]: CPU internal = 128 KB, External = 1 MB  
[Fonts]: Not Loaded
- RAM  
10 MB (Fixed)
- Interface  
[Standard] IEEE 1284 Interface  
USB Interface  
Option Type B Interface Card Slot (x 1)

**CUTTING SPECIFICATIONS**

- Mechanical Conditions
  - Distance between Cutting Position and Cutter Marks  
L1 = 47.5 mm
  - Shortest cutting length L2 during 3-stage cutting = 100 mm  
\* (Paper width detection = OFF and) during manual cutting, L2 = 47.5 mm
  - Shortest cutting length L3 = 20 mm
  - Let the distance the paper is pulled out from the cut position by printing and paper feed in the forward paper feed direction be (L+).
  - Let the distance the paper is pulled back from the cut position by reverse paper feed be (L-).
  - L1 should be greater than L3.

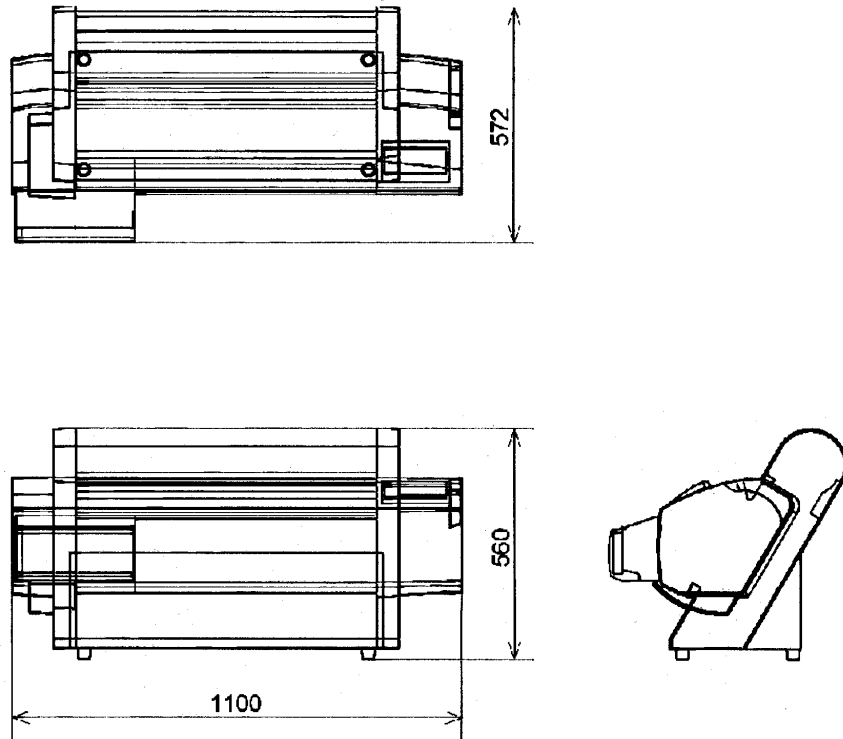
Cutting conditions and cutting system: See the table below.

**Table 1-13. Cutting Conditions and Cutting System**

Cutting Conditions	Cutting System
Initial cut (Manual cutting when the paper is on the top edge sensor and the lever is down, and the "Cut/Eject" button is pressed.)	When paper width sensor = ON. 4-stage cutting with the paper fed distance L1. When paper width sensor = OFF. 3-stage cutting with the paper fed distance L2.
Auto cutting after printing is finished and reset is activated during printing.	3-stage cutting. However, if (L+) is shorter than L2, 3-stage cutting after feeding the paper distance L2.
Manual cutting during printing.	Same as above.
Manual cutting while in the normal standby state.	When paper width sensor = ON. 4-stage cutting with the paper fed distance L1. When paper width sensor = OFF. 3-stage cutting with the paper fed distance L2.
Manual cutting after paper feed in the forward paper feed direction.	Same as above.
Manual cutting after printing with Auto cutting OFF and with Auto cutting ON.	If $L1 + (L+) \geq L2$ , 3-stage cutting with the paper fed distance L1. If $L1 + (L+) < L2$ , 3-stage cutting with the paper fed distance $L2 - (L+)$ .

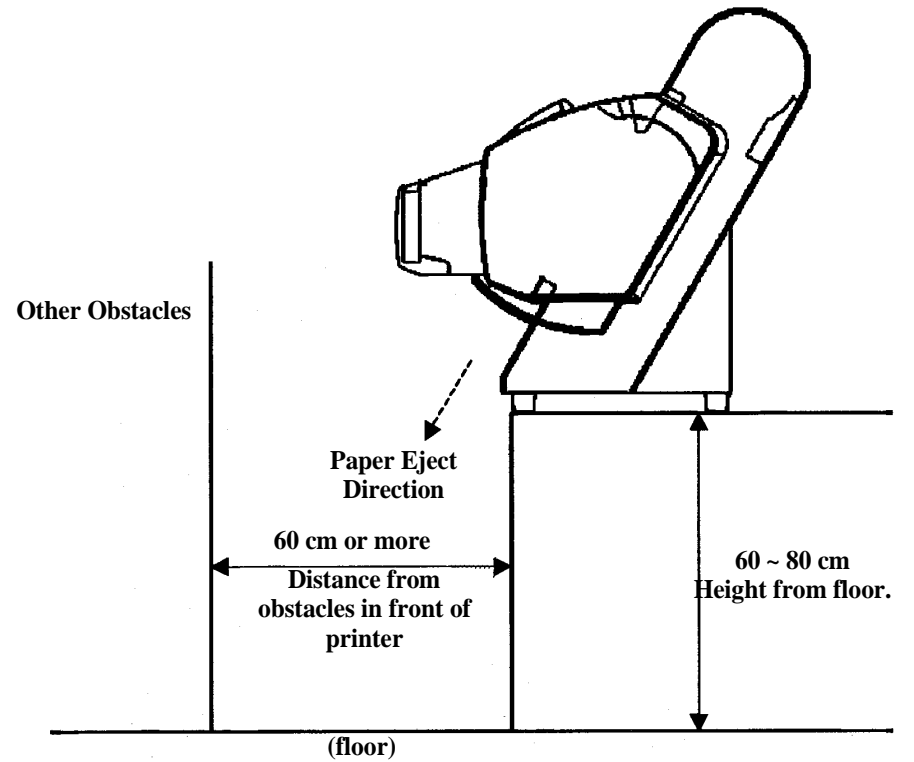
**EXTERNAL DIMENSIONS / INSTALLATION ENVIRONMENT / WEIGHT**

- External Dimensions  
1100 x 572 x 560 (Width x Depth x Height)  
See the figure below.



**Figure 1-3. External Dimensions**

- Installation Environment.  
See the figure below.



- \* Consideration should be given so that printed matter falling during paper Eject is not damaged.
- \* The distance between the rubber feet on the front of the printer and the edge of the desk should be insignificant.

**Figure 1-4. Installation Environment**

- Weight  
Approx. 43.5 kg (Not including consumables and the optional stand.)

## 1.3 Interfaces

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This printer is equipped with a parallel and a USB interface as standard equipment. As an option, it can also be equipped with a Type B Interface.

### 1.3.1 Parallel Interface

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#### COMPATIBILITY MODE

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- Data transfer format: 8-bit parallel, IEEE-1284 interchangeable
- Synchronization Method: External supply / by Strobe pulse.
- Handshake: By BUSY and /ACKNLG signals.
- Logic Level: TTL compatible level  
(IEEE-P1284 Level 1 device)
- Applicable Connector: 57-30360 (Amphenol) 36-pin or comparable product.  
\* It is recommended that the shortest possible interface cable be used.
- Signal Arrangement and Signal Names: See the table below.

Table 1-14. Parallel Interface (Compatibility Mode)

Pin No.	Signal Name	Return Pin No.	Source	Function
1	/STROBE	19	Center Machine	Strobe pulse (When Low, data can be read. When High, data cannot be received from the PC.)
2	DATA1	20	Center Machine	Data Signal
3	DATA2	21	Center Machine	
4	DATA3	22	Center Machine	
5	DATA4	23	Center Machine	
6	DATA5	24	Center Machine	
7	DATA6	25	Center Machine	
8	DATA7	26	Center Machine	
9	DATA8	27	Center Machine	
10	/ACKNLG	28	Printer	When Low, it indicates that data processing is finished and preparation for reception of the next data is completed.
11	BUSY	29	Printer	When High, it indicates that the state is such that data reception is impossible.
12	PE	28	Printer	When High, it indicates that the printer has no paper.
13	SLAC	28	Printer	Normally High Level 1.0 K ohms, pulled up to 5 v.
14	/AFXT	30	Center Machine	Not used.
31	/INIT	30	Center Machine	At a Low pulse with a pulse width of 50_ or greater, it is set in the initialization state.

Table 1-14. Parallel Interface (Compatibility Mode)

Pin No.	Signal Name	Return Pin No.	Source	Function
32	/ERROR	29	Center Machine	When Low, it indicates that the printer is in an error state.
36	/SLIN	30	----	Not used.
18	Logic H	----	----	Normally High Level 3.9 K ohms, pulled up to 5 V.
35	+5V	----	----	Normally High Level 1.0 K ohms, pulled up to 5 V.
17	Chassis GND	----	----	Chassis GND.
16,33, 19-30	GND	----	----	Signal GND.
15,34	NC	----	----	Not connected.

**NOTE:** If it is active in the Low state, a "/" is included with the signal name.



\*1 The return side means the twisted pair return and is connected to the signal ground level. Furthermore, when interfacing, a twisted pair cable should definitely be used for each signal and the return side should definitely be connected. Also, use of a shielded cable and connection to the chassis ground of the center machine and the printer, respectively are effective countermeasures against noise.

\*2 All the interface conditions are TTL level standard conditions. The rise and fall time of each signal is 0.2  $\mu$ s or less.

\*3 For details on the timing of each signal, see the “Data Transmission Timing” diagram in the figure below.

\*4 There must not be any data transfer with disregard of the /ACKNLG or BUSY signals. (Data transfer to this printer must be performed when /ACKNLG is confirmed or when BUSY is in the “LOW” state.)

\*5 If appropriate character codes are set for DATA 1~8 of the interface connector (as opposed to “1” for GND open and “0” for short circuit), and BUSY and /STROBE are connected, an external device is not used and a printing test can be performed, which includes the interface circuits.

\*6 The printer is in the following states when the PE signal line enters the Assert state (“L” Level).

- Out of paper error occurring (ST:00 ER:06 state)
- Other paper errors occurring (ST:00 ER:0E, 12, 13, 14, 15, 16 state)

□ Data Transmission Timing

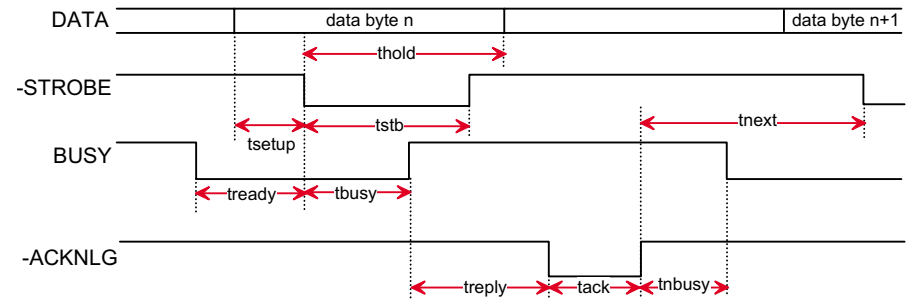


Figure 1-5. Data Transmission Timing

Table 1-15. Timing Chart Parameter

Parameter	Minimum	Maximum
tsetup	500 ns	-
thold	500 ns	-
tstb	500 ns	-
tready	0	-
tbusy	-	500 ns
tt-out*	-	120 ns
tt-in**	-	200 ns
treply	0	-
tack	Typical 2 $\mu$ s	
tnbusey	0	-
tnext	0	-

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**NIBBLE MODE**


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- Data Transfer Format: IEEE-1284 Nibble Mode
- Synchronization System: Compatible with IEEE-1284 Specifications
- Handshake: Compatible with IEEE-1284 Specifications
- Logic level: TTL level (IEE-P1284 Level 1 device)
- Data transfer timing: Compatible with IEEE-1284 Specifications
- Expansion Request Data: If the expansion request data value is 00H or 04H, the request is received. The meanings of these values are as shown below.  
 00H: Request to carry out reverse channel transfers in the Nibble mode.  
 04H: Request to return the ID of the device using the Nibble mode for reverse channel transfers.
- Device ID: [00H] [47H]  
 MFG: EPSON  
 CMD: ESCPL2, BDC;  
 MDL: Stylus [SP] Pro [SP] 7500  
 CLS: PRINTER  
 DES: EPSON [SP] Stylus [SP] Pro [SP] 7500;  
 \*: [SP] is code 20<H>.
- See the table below for the signal layout and signal names.

Table 1-16. Parallel Interface-Nibble Mode

Pin No.	Signal Name	Return Pin	In/Out	Functional Description
1	HostClk	19	I	Host side clock signal.
2-9	Data1-8	20-27	I	Data signal
10	PtrClk	28	O	Printer side clock signal
11	PtrBusy/ DataBit-3,7	29	O	Printer side BUSY signal and data bit 3 or data bit 7 in the reverse channel.
12	AckDataReq/ DataBit-2,6	28	O	ACK data request signal and data bit 2 or 6 in the reverse channel.
13	Xflag/DataBit- 1,5	28	O	Xflag signal and data bit 1 or 5 in the reverse channel.
14	HostBusy	30	I	Host side BUSY signal.
31	-INIT	30	I	Not used.
32	-DataAvail/ DataBit-0,4	29	O	Data available signal and data bit 0 or 4 in the reverse channel.
36	1284-Active	30	I	1284 Active signal.
18	Logic-H	----	O	Normally High Level 3.9 K ohms, pulled up to 5 V.
35	+5V	----	O	Normally High Level 1.0 K ohms, pulled up to 5 V.
17	Chassis GND	----	----	Printer chassis ground.
16,33, 9-30	GND	----	----	GND for twisted pair return.
15,34	NC	----	----	Not used.

**NOTE:** In (I) and Out (O) refer to the direction of signal flow from the printer's point of view.

## ECP MODE

- Data Transfer Format: IEEE-1284 ECP Mode
- Synchronization System: Compatible with IEEE-1284 Specifications
- Handshake: Compatible with IEEE-1284 Specifications
- Logic level: TTL level (IEE-P1284 Level 1 device)
- Data transfer timing: Compatible with IEEE-1284 Specifications
- Expansion Request Data: If the expansion request data value is 10H or 14H, the request is received. The meanings of these values are as shown below.  
10H:Request to carry out transfers in the ECP mode.  
14H:Request to return the ID of the device using the ECP mode.
- Device ID: [00H] [47H]  
MFG: EPSON  
CMD: ESCPL2, BDC;  
MDL:Stylus [SP] Pro [SP] 7500  
CLS: PRINTER  
DES: EPSON [SP] Stylus [SP] Pro [SP] 7500;  
\*: [SP] is code 20<H>
- See the table below for the signal layout and signal names.

Table 1-17. Parallel Interface (ECP Mode)

Pin No.	Signal Name	Return Pin	Source	Function
1	HostClk	19	Center Machine	Transfers data or address information from the host to the printer.
2	DATA1	20	Center Machine	Each signal indicates parallel data information from the first bit to the 8th bit. "HIGH" is shown by a "1" in the data and "LOW" is shown by a "0" in the data. These show the address from the host to the printer or from printer to the host, or data.
3	DATA2	21	Center Machine	
4	DATA3	22	Center Machine	
5	DATA4	23	Center Machine	
6	DATA5	24	Center Machine	
7	DATA6	25	Center Machine	
8	DATA7	26	Center Machine	
9	DATA8	27	Center Machine	
10	PeriphClk	28	Printer	Transfers data from the printer to the host.
11	PeriphAck	29	Printer	The printer uses this signal for forward direction flow control. Also, this signal offers data bit 9, used in judging whether the information output in the reverse direction data signals contains command information or data information.

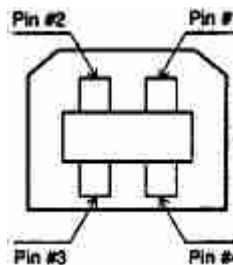
Table 1-17. Parallel Interface (ECP Mode)

Pin No.	Signal Name	Return Pin	Source	Function
12	nAckReverse	28	Printer	Drives the printer in the Low state and approves nReverseRequest.
13	Xflag	28	Printer	X-flag signal and data bit 1 or data bit 5 in the reverse channel.
14	HostAck	30	Center Machine	The printer uses this signal for reverse direction flow control. Also, this signal offers data bit 9, used in judging whether the information output in the forward direction data signals contains command information or data information.
31	nReverseRequest	30	Center Machine	Sets this signal "LOW" to switch the channel to the reverse direction.
32	nPeriphRequest	29	Printer	This signal is used for generating host interrupts.
18	PeriphLogicH	29	Printer	Normally High Level 3.9 K ohms, pulled up to 5 V.
35	+5V	----	Printer	Normally High Level 1.0 K ohms, pulled up to 5 V.
17	Chassis	----	O	Printer chassis ground.
16,33,19-30	GND	----	----	Ground for twisted pair return.
15,34	NC	----	----	Not used.
36	1284-Active	30	Center Machine	1284 active signal. "HIGH" while in the ECP mode.

NOTE: If it is active in the Low state, a "/" is included with the signal name.

### 1.3.2 USB Interface

- Standard :“Universal Serial Bus Specifications Revision 1.0”  
“Universal Serial Bus Device Class Definition for Printing Devices Version 1.0”
- Bit rate :12Mbps (Full speed device)
- Data encoding :NRZI
- Adaptable connector :USB series B
- Suggested cable length :2 meters
- Device ID <00H><4EH>  
MFG: EPSON  
CMD: ESCPL2, BDC  
MDL: Stylus[SP] Pro[SP] 7500  
CLS: PRINTER  
DES: EPSON [SP] Stylus [SP] Pro [SP] 7500
- Signal Arrangement and Signal Names: See the table below.



**Figure 1-6. Pin Assignment**

**NOTE:** When connecting to the USB interface, e sure to set the parallel interface item in the printer’s settings menu on “PARA.I/F = COMPAT”

**Table 1-18. USB Interface**

Pin no.	Signal name	In/Out	Description
1	VCC	-	Cable power, max. power consumption is 100mA
2	-Data	bi-directional	data
3	+Data	bi-directional	data, pull up to +3.3V via 1.5K Ω resistor
4	Ground	-	Cable ground

### **1.3.3 TYPE-B Optional Type B Interface**

- Installable Option:      A Type B interface (Level 2, 1200 mA type) can be used.

### 1.3.4 Supplementary Items

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#### RECEIVING BUFFER OPERATION

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When receiving data via the parallel interface or Type B interface while in a state where no error has occurred (including the Pause state), if the available capacity of the buffer drops to 4 KB or less, the printer receives at 1 byte/sec. and prevents the host from issuing a time out.

If the available capacity of the buffer becomes 8 KB or higher, 1 byte/sec. reception is canceled and reception stops when the available capacity is 32 bytes or less. When the available capacity becomes 1K-byte or higher, reception at 1 byte/sec. is resumed.

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#### INTERFACE SELECTION

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It is possible to switch between the manual fixed selection function or auto selection function to select the parallel, USB or optional interface.

However, if the USB interface is connected, it becomes impossible to use the parallel interface, For this reason, only one of these interfaces, either the parallel interface or the USB interface, can be connected to the host computer and they cannot be used in combination.

- **Manual Fixed Selection:**  
One interface, the Parallel/USB interface, or the optional interface, can be selected.
- **Auto Selection Function:**  
After the power is turned on, the interface from which data are first received is selected. After that, if a predetermined period of time (fixed at 10 seconds) passes during which the reception of data is stopped, the printer enters the idle state (a state where no interface is selected), then selects the interface from which it first receives data next.

- Concerning interface selection and interface state:
  - When an interface other than the parallel/USB interface is selected, the parallel interface enters the BUSY state. At this time, the LH signal goes “L.” The meaning of LH = L is that the power is cut off. That is, it means that the 1284 interface cannot respond. Therefore, a host computer requesting reverse transmission must first check LH. In addition, the USB interface is in a state where it sends a NACK response and refuses to receive data.
  - When an interface other than the optional interface is selected, the OFF-LINE bit is set in the Main Status Register (MNSTS).
  - After the printer has been initialized, or when in the idle state (with no interface selected), with the parallel interface in the ready state, the USB interface in the state where it does not send a NACK response, set the OFF-LINE bit of the Main Status Register (MNSTS) for the optional interface.
  - The interrupt signal, like the /INIT signal of the parallel interface, is disregarded while that interface is not selected and while in the Nibble mode or ECP mode.

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#### INITIALIZATION

---

This printer is initialized by the following three methods.

1. **Hardware Initialization**  
This is the method of initialization that is carried out when the power is turned on.  
<Initialization Operation>
  - Printer mechanism initialization
  - Input data buffer cleared.
  - Print buffer cleared.
  - Setting of default values.
2. **Software Initialization**  
Initialization is performed by executing the Initialize command (ESC@).  
<Initialization Operation>
  - Print buffer cleared.
  - Setting of default values.
3. **Panel Initialization**  
This is the initialization operation when the Pause button is pressed for 2 seconds or longer, or when the /INIT signal is input.  
<Initialization Operation>
  - Paper is ejected (in the case of roll paper, the printed portion is skipped and if the panel setting's paper select is set on Auto cut, the paper is cut, and if the cutter is OFF, the

paper is not cut).  
Print heads capped.  
Input data buffer cleared.  
Print buffer cleared.  
Setting of default values.

#### 4. Initial Settings

The initial settings which are set when the printer is first turned on are as shown below.  
Also, as for panel settings, default settings and items which can be saved as remote commands, the values for those items stored in memory become the default values.

Page Position: The current paper position is made the top of page position

Line Feed Amount: 1/6 inch

Right Margin Position: Column 237

Left Margin Position: Column 1

Character Pitch: 10 CPI

Print Mode: Text Mode (Non-raster graphics mode)



## 1.4 Control Panel

This section describes the control panel, the buttons, the lights, and the way you make settings.

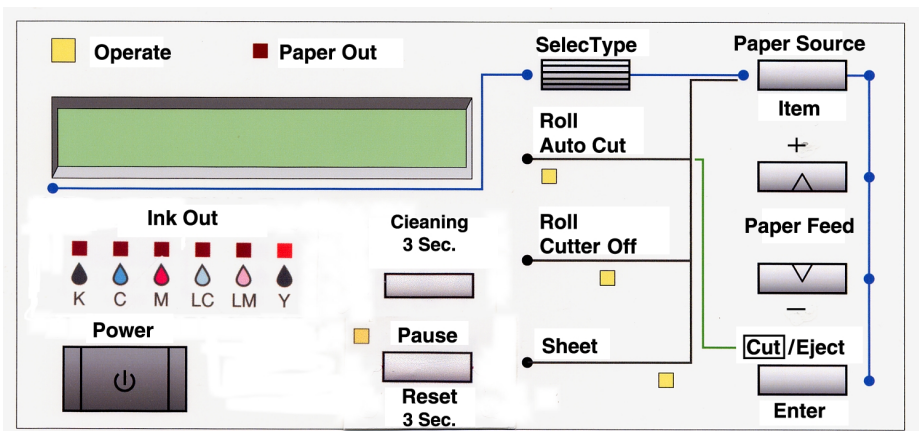


Figure 1-7. Control Panel

## BUTTONS

The function of each button in the operation panel is as shown in the following table.

Table 1-19. Operation Panel Button Functions

Button (Operation when pressed)	Function (Single)	Function (During panel setting)	Function (+ Power ON)
Power	Turns the power on and off.	—	—
Pause(rESET)	<ul style="list-style-type: none"> <li>• Toggles between Print Ready and Print Not Ready</li> <li>• Reset (Press for 2 seconds.)</li> </ul>	—	Starts the Maintenance Mode
SelectType	<ul style="list-style-type: none"> <li>• Starts the panel setting mode.</li> <li>• Cutter replacement menu (Press for 5 seconds.)</li> </ul>	Selects Setting Menu (Major category)	Ink quantity setting mode
Cut/Eject (Enter)	*3 <ul style="list-style-type: none"> <li>• Cut sheet paper Paper Eject.</li> <li>• Roll paper auto cut (Feeds paper from the cutter mark to the cutter position and cuts it.)</li> <li>• Roll paper cutter OFF (Feeds paper the height of the head.)</li> </ul>	Fixes setting values and stores them in memory.	—
Paper Feed (Paper Feed +)	Paper feed (Reverse) *1	Adds to the set value.	—
Paper Feed (Paper Feed -)	Paper feed (Forward) *2	Subtracts from the set value.	—
Paper Source (Setting Items)	Selects the paper type.	Selects the setting item (Minor category)	—
Cleaning	Full head cleaning (press for 2 seconds).	—	—

**Table 1-19. Operation Panel Button Functions**

Button (Operation when pressed)	Function (Single)	Function (During panel setting)	Function (+ Power ON)
Paper Source + Eject + Paper Feed —	-----		Starts Maintenance Mode 2.
Paper Source + Eject + Cleaning	-----		Firmware Reload Mode

- \*1 For 2 seconds after the button is pressed, the paper is fed at 1.27 mm/sec. (5.0 cps). If the button is pressed for 2 seconds longer, the paper is fed at 12.7 mm/sec. (50.0 cps). However, the paper can be reversed up to a maximum of 200 mm when the button is pressed once.
- \*2 For 2 seconds after the button is pressed, the paper is fed at 1.27 mm/sec. (5.0 cps). If the button is pressed for 2 seconds longer, the paper is fed at 12.7 mm/sec. (50.0 cps).
- \*3 During the ink drying time, ink drying is interrupted and the specified operation is performed.

**LED INDICATORS**

The functions of the LED's located in the operation panel are as shown in the table below.

**Table 1-20. Operation Panel LED**

LED	Display	Status
Operate (Green)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> </ul>	<ul style="list-style-type: none"> <li>• Power On state, reset, timer IC reset / NVRAM Clear</li> <li>• Processing data, processing power off, fatal error</li> </ul>
Paper Out (Red)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> </ul>	<ul style="list-style-type: none"> <li>• Out of paper, roll paper end, different roll paper/cut sheet paper settings, cleaning impossible error, reset, timer IC reset / NVRAM clear</li> <li>• Paper jam, paper cutting error, paper skew error, paper recognition error, cut sheet Eject failure, fatal error</li> </ul>
Pause (Green)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> <li>• Off</li> </ul>	<ul style="list-style-type: none"> <li>• Pause state, reset timer IC reset / NVRAM clear</li> <li>• Ink drying time, ink processing underway, fatal error</li> <li>• Panel setting mode, pause state, other errors</li> </ul>
Ink Out (Y) (Red)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> </ul>	<ul style="list-style-type: none"> <li>• Ink out, no cartridge, reset, timer IC reset / NVRAM clear</li> <li>• Ink low (Y), fatal error</li> </ul>
Ink Out (LM) (Red)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> </ul>	<ul style="list-style-type: none"> <li>• Ink out, no cartridge, reset, timer IC reset / NVRAM clear</li> <li>• Ink low (LM), fatal error</li> </ul>
Ink Out (LC) (Red)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> </ul>	<ul style="list-style-type: none"> <li>• Ink out, no cartridge, reset, timer IC reset / NVRAM clear</li> <li>• Ink low (LC), fatal error</li> </ul>
Ink Out (M) (Red)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> </ul>	<ul style="list-style-type: none"> <li>• Ink out, no cartridge, reset, timer IC reset / NVRAM clear</li> <li>• Ink low (M), fatal error</li> </ul>
Ink Out (C) (Red)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> </ul>	<ul style="list-style-type: none"> <li>• Ink out, no cartridge, reset, timer IC reset / NVRAM clear</li> <li>• Ink low (C), fatal error</li> </ul>
Ink Out (K) (Red)	<ul style="list-style-type: none"> <li>• On</li> <li>• Flashing</li> </ul>	<ul style="list-style-type: none"> <li>• Ink out, no cartridge, reset, timer IC reset / NVRAM clear</li> <li>• Ink low (K), fatal error</li> </ul>

Table 1-20. Operation Panel LED

LED	Display	Status
Roll Auto Cut	• On	• Auto cut selected. reset, timer IC reset/NVRAM clear
	• Flashing	• Roll paper not set or roll paper and cut sheet sizes are different. Fatal error
Roll Cutter Off	• On	• Cut off selected. reset, timer IC reset/NVRAM clear
	• Flashing	• Roll paper not set or roll paper and cut sheet sizes are different. Fatal error
Sheet (Green)	• On	• Cut sheet paper printing mode. reset, timer IC reset/NVRAM clear
	• Flashing	• Roll paper not set or roll paper and cut sheet sizes are different. Fatal error

## 1.5 Panel Display

Messages corresponding to the printer status, error occurrence and other states are displayed in the operation panel LCD. The messages displayed are shown in the following table. Furthermore, the messages are shown in their display processing priority order, from the highest priority messages to the lowest.

**Table 1-21. List of Panel Display Messages**

Display	Content
SERVICE REQ nnnnnnnn *2	Fatal error occurrence state.
MAINTENANCE REQ nnnn *3	Indicates an error occurrence state that requires maintenance by a service man (such as the end of the waste ink pad's service life).
WAIT *1	Resetting the timer IC. Clearing NVRAM. Resetting. Executing the ink sequence. Executing initialization processing. Processing paper initialization.
POWER OFF	Executing power off processing.
INK OUT	Ink out.
COVER OPEN	Cover open state.
OPTION I/F ERROR	A Type B interface error occurred.
TRANSPORT PREP	Executing ink discharge sequence for transport between users.
SECURE PAPER LEVER	The paper support lever was released during operation.
LOAD xxx PAPER	The roll paper and cut sheet paper settings are different.
PAPER JAM	A paper jam occurred.
PAPER NOT CUT	A paper cutting error with the auto cut settings.
PAPER NOT STRAIGHT	Paper is being fed at a slant.
LOAD PAPER	The paper support lever is released.

**Table 1-21. List of Panel Display Messages**

Display	Content
RELOAD PAPER	Paper Eject failed. (in the case of cut sheets) Paper recognition error.
REMOVE PAPER	Impossible to carry out cleaning.
NO INK CARTRIDGE	The ink cartridge is not set.
PRESS PAUSE BUTTON	Waiting for the paper initialization processing start trigger.
PAUSE	Pause state (standby)
INK DRY xx MIN	Ink is drying ("xx min." = time remaining)
INK LOW	Remaining ink is low. (replacement preparations are necessary)
INK CHARGING nnn%	Initial filling in progress *4
PRINTING *1	Processing data (printing operation in progress)
READY *1	Printer is ready to receive data
PAPER OUT	Paper not set state End of roll paper.
RESET	Reset processing in progress
TURN PWR OFF AND ON	Instruction to turn the power on again. (Turn it off, then turn it on again.)

\*1: If "Widen" is selected in the "Platen Gap" item in the panel settings, a "H" is displayed in the 20th column.

\*2: See Chapter 3, "Troubleshooting"

\*3: See Chapter 3, "Troubleshooting"

\*4: "Initial filling in progress" displays the processing progress conditions. Initial filling ends at the point when this value becomes 100%.

## 1.6 Panel Setting Menu

---

When the printer is not printing, pressing the “SelcType” button changes the printer to the panel setting mode and automatically disables printing while the printer is being set. The panel setting mode includes the following menu items. Each time the “SelcType” button is pressed, the setting menu changes to the next menu in the sequence, which is then displayed in the LCD.

To return to the Pause state, press the “SelcType” button until “Pause” is displayed in the LCD panel or press the “Pause” button.

Menu Selection: “SelcType” Button

Menu Item Setting: “Paper Source” Button

Mode End: “Pause” Button

**Table 1-22. Panel Setting Menu Items**

Menu Item	Panel Display
Printer Setting Menu	PRINTER SETTING MENU
Test Print Menu	TEST PRINT MENU
Printer Status Menu	PRINTER STATUS MENU
User Paper Setting Menu	PAPER CONFIG. MENU
Cutter Replacement Menu	CUTTER REPLACE MENU
Gap Adjustment Menu	HEAD ALIGNMENT MENU

Setting items for each of the above setting menus, with their contents, are shown below.

## 1.6.1 Printer Setting Menus

In the printer setting menus, it is possible to change the set values in the setting items in the following table. Each setting is made by operation of the following panel buttons.

- Printer setting menu selection: See the panel setting menu procedure.
- Printer setting item selection: “Paper Source” button
- Change the set value: “+” or “-” button
- Set the settings: “Enter” button
- Mode End: “Pause” button

A list of setting items in the printer setting menu is shown below.

**Table 1-23. List of Setting Items in the Printer Setting Menu**

Display	Setting Value	Contents
PLATEN GAP	AUTO *1 WIDE	Adjusts the platen gap. (Ordinarily, this is done automatically.)
PAGE LINE	ON*2 OFF	While in the “Roll Paper Cutter Off” selection state, this sets whether or not to print a cutting line (solid line) at the bottom edge of the sheet when the roll paper is ejected.
INTERFACE	AUTO *3 PARA./USB OPTION	Interface receiving setting (Auto select or fixed on a single interface)
PARA. I/F	COMPAT ECP	Sets the parallel interface receiving rate. (Ordinarily, it is used with the “Compatible” setting.)
CODE PAGE	RC437*5 PC850	Character code set selection. (PC437: Expanded graphics / PC850: multi-lingual.)
ROLL MAGE	T/B 15MM *6 3MM 15MM	Sets the margin on roll paper *2 Vertical 15 mm: Leaves 15 mm on the left and right edges of the printable area, and a 3 mm margin at the top and bottom. / Leaves a 3 mm margin at the top, bottom, left and right. / 15 mm: Leaves a 15 mm margin at the top, bottom, left and right.

**Table 1-23. List of Setting Items in the Printer Setting Menu**

Display	Setting Value	Contents
PAPER SIZE CHK	ON*7 OFF	Perform / Don't perform automatic sensing of the paper width.
PAPER ALIGN CHK	ON*8 OFF	Perform / Don't perform automatic sensing of a paper skew error.
INIT. PANEL	EXEC.	Returns the panel setting contents to their initial values.

\*1:By running this mode, the width of the platen gap can be set. The relationship between the panel setting and command setting (SN command), and the actual platen gap position is as shown below.

**Table 1-24. Panel Setting Menu Items**

Panel Setting	Command Setting	Paper Width Detector	Actual PG Position	Gap Width	Use
WIDE	Platen Gap Wide	Thick Paper	Wide	2.7mm	Platen gap for thick paper
		Thin Paper	Wide	2.7mm	Platen gap for thick paper
	Default Platen Gap	Thick Paper	Wide	2.7mm	Platen gap for thick paper
		Thin Paper	Medium	2.2mm	Platen gap for the tin paper setting if it is dirty
AUTO	Platen Gap Wide	Thick Paper	Wide	2.7mm	Platen gap for thick paper
		Thin Paper	Wide	2.7mm	Platen gap for thick paper
	Default Platen Gap	Thick Paper	Wide	2.7mm	Platen gap for thick paper
		Thin Paper	Small	1.3mm	Platen gap for thin paper

\*2:By running this mode, the cutting line print mode can be set. The setting contents are equivalent to the setting for turning Print Horizontal Line ON (AC 02H 00H 00H 02H) in the auto cutting state. The printed cutting line's type is a solid line.

\*3:By running this mode, the interface can be selected automatically, with parallel / USB or the optional interface selected.

\*4:By running this mode, the parallel interface's operating mode can be switched to the ECP / Compatible Mode.

\*5:By running this mode, the Code Page can be switched between PC437 and PC850.

\*6:Through this panel setting, switching between a top, bottom left and right roll paper margin of 3 mm, a top, bottom, left and right margin of 15 mm and a top and bottom margin of 15 mm and a left and right margin of 3 mm can be done. This setting is effective only with roll paper. Cut sheet paper is not influenced. This setting does not change the image size, but changes the margin only.

(1)Margin Setting = 3 mm

The vertical line and horizontal printing position is the same as the logical paper size.

(2)Margin setting = 15 mm or Vertical margin setting = 15 mm

The vertical line and horizontal line printing position becomes 12 mm wider than the logical paper size in the top, bottom, left and right margins or in the top and bottom margins only.

\*7:By setting the paper width sensor on OFF, occurrence of the error "set the paper correctly" is suppressed if the paper width detection is not completed normally. Printing is executed with the following settings.

- The paper's left edge position becomes the guide mark position on the paper guide.
- The printable area becomes the printable area specified by the command.

If printing is being done on tracing paper, etc., which has a low reflection rate and cannot be detected, this setting is used. Through this setting, if an image which is larger than the set paper is printed, printing may be done on the platen, so the user must take the responsibility for the possible consequences. (However, if detection of the top edge of the paper fails, it results in an error.)

\*8:If the paper skew sensor is set on "OFF," the occurrence of the error "Paper is skewing from the paper feed path" is suppressed and printing continues. By this setting, even if the printed image overflows the edge of the paper as a result of the paper skewing from the feed path, the printer will not inform the user of the error, so the user must take responsibility for the possible consequences.

\*9:By running this mode, all the values set from the panel are returned to the default values.

### 1.6.2 Test Print Menu

In the test print menu, the test printing shown in the following table can be done. Each test is set by operating the following panel buttons. When each test printing operation is completed, the printer returns automatically to the Pause state.

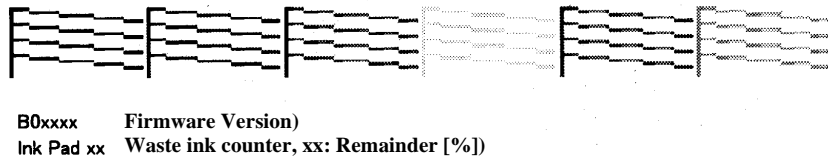
- Test print menu selection: See the panel setting menu procedure.
- Test Print item selection: "Paper Source" Button
- Set print execution: "Enter" button

A list of the setting items in the printer setting menu is shown below.

**Table 1-25. Printer Test Print Menu Setting Item List**

Display	Set Value	Content
NOZZLE CHECK	PRINT * 1	Prints the nozzle check pattern.
STATUS CHECK	Print * 2	Prints the printer setting contents.

\*1: By running this mode, the head (all 6 colors) nozzle check pattern is printed and the firmware version and waste ink counter (remainder [%]) are printed.



**Figure 1-8. Nozzle Check**

\*2: The status sheet is printed out with the following specifications.

- Output paper size: A4
- Font used: Internal font (alphanumeric characters)
- Output Contents:
  - Printer ID (= Head ID XX - XX - XX - XX - XX - XX)  
In XX, the parameters IwAB-A ~ IwEF-B stored in NVRAM are printed out in decimal numbers.  
The order, from the left to right, is K - C - M - Y - Lc - Lm.
  - Type B Interface Connection Condition  
When installed ..... Installed  
When not installed ..... None
  - List of Panel Settings (including the printer status)  
See the figure below.

50-52-48-48-50-52

Type B : None

```

===== Current Setting =====
Head Gap           : Auto
Border Line        : ON
Interface           : Auto
Parallel I/F       : Compat
Code Page          : PC437
Version            : B0129C
Ink Left K         : E*****F
Ink Left C         : E*****F
Ink Left M         : E*****F
Ink Left LC        : E*****F
Ink Left LM        : E*****F
Ink Left Y         : E*****F
Cutter Life        : E*****F
Page Count         : 31
Ink Pad            : E*****F
CR Motor           : E*****F
PF Motor           : E*****F
Head               : E*****F
Cleaner            : E*****F
    
```

**Figure 1-9. Status Sheet**



### 1.6.3 Printer Status Menu

The status of the status items of the printer status menu listed in the following table can be displayed in the LCD. Each type of status can be displayed by operating the following panel buttons.

- Printer status menu selection: See the panel setting menu procedure.
  - Status item selection: "Paper Source" Button
- Mode End: "Pause" Button

The list of setting items in the printer status menu is shown below.

**Table 1-26. List of Setting Items in the Printer Status Menu**

Display	Contents
VERSION	Displays the firmware version (B 0 [ ] [ ] [ ] [ ] )
INK LEFT - K	Displays the remaining ink level (Black) *1
INK LEFT - C	Displays the remaining ink level (Cyan) *1
INK LEFT - M	Displays the remaining ink level (Magenta) *1
INK LEFT - LC	Displays the remaining ink level (Light Cyan) *1
INK LEFT - LM	Displays the remaining ink level (Light Magenta) *1
INK LEFT - Y	Displays the remaining ink level (Yellow) *1
CUTTER LIFE	Displays the remaining life on the paper cutter. *2
TOTAL PRINTS	Displays the cumulative total number of sheets printed.
WASTE INK	Displays the waste ink counter value. *3
CR MOTER	Displays the CR motor life monitor value. *4
PF MOTER	Displays the PF motor life monitor value. *5
HEAD UNIT	Displays the head unit life monitor value. *6
CREANER	Displays the cleaning unit life monitor value. *7

\*1 The remaining amount of each color of ink is displayed as follows.

**Table 1-27. Remaining Ink Counter Display List**

Remaining Ink	Panel Display	INK End LED
100 ~ 81% remaining	E ***** F	Off
80 ~ 61% remaining	E **** F	Off
60 ~ 41% remaining	E *** F	Off
40 ~ 20% remaining	E ** F	Off
20% ~ Up to just before near end	E * F	Off
Near end up to just before ink end	n n%	Flashing
Ink End	0%	Lights up

\*2 Calculation Method: The number of cuts is summed and calculated.  
 (Life (A1) = 2,000 times)  
 The counter is cleared by the cutter replacement operation.  
 Display: The display is as follows.

**Table 1-28. Cutter Remaining Times Counter Display List**

Cutter Remaining Times	Panel Display
100 ~ 81% remaining	E ***** F
80 ~ 61% remaining	E **** F
60 ~ 41% remaining	E *** F
40 ~ 20% remaining	E ** F
20% ~ 1% remaining	E * F
Less than 1% remaining	E F

\*3 Calculation Method: The bi-directional remaining amount of main pad A/B is counted and the smallest remainder is displayed. The display format is as shown below.

**Table 1-29. Waste Ink Pad Remaining Capacity Counter Display List**

Waste Ink Pad Remaining Capacity	Panel Display
100 ~ 81% remaining	E ***** F
80 ~ 61% remaining	E **** F
60 ~ 41% remaining	E *** F
40 ~ 20% remaining	E ** F
20% ~ 1% remaining	E * F
Less than 1% remaining	E F

When the remaining capacity reaches less than 1%, the message “Maintenance Call 0100” is generated. When the remaining capacity becomes 0, the message “Service Call 00000100” is generated. After replacing the waste ink pad and other parts included in the Maintenance Kit Stylus Pro 7500, clear the counter in Maintenance Mode 2.

\*4:Calculation Method: The CR motor and carriage drive mechanism are not parts which need to be replaced within the period of the product’s service life, so this item is used for troubleshooting and preventing faults from occurring if the product is used beyond the length of its normal service life. The life of the CR motor is virtually the same as the life of the supply tube (when A1 paper is printed on), and it is thought that the wear and failure of the supply tube has an influence on its breakdown, and is therefore shown by the supply tube life. The supply tube’s life is calculated by summing the number of CR round trips. (Life =  $4.6 \times 10^6$  times)

The display format is as shown below.

**Table 1-30. CR Motor Life Counter Display List**

CR Motor Remaining Life	Panel Display
100 ~ 81% remaining	E ***** F
80 ~ 61% remaining	E **** F
60 ~ 41% remaining	E *** F
40 ~ 20% remaining	E ** F
20% ~ 1% remaining	E * F
Less than 1% remaining	E F

In consideration of tube damage, when the remaining life reaches 0, the error “Service Call 00000101” is generated. Check around the ink tube, and if no damage or wear can be confirmed, clear the counter in Maintenance Mode 2. If damage or wear is confirmed, replace that part, then clear the counter in Maintenance Mode 2.

\*5 Calculation Method: The PF motor and paper feed drive mechanism are not parts which need to be replaced within the period of the product’s service life, so this item is used for troubleshooting. The life of the PF rollers, which wear as the PF motor operates, is shorter than that of the PF motor, so this display shows a comparison index for wear of these rollers. Since the life of the PF rollers is defined as the total paper feed distance (forward and reverse directions), the total paper feed distance is summed, then the roller life calculated. (Life =  $21 \times 10^6$  mm) The display format is as shown below.

**Table 1-31. PF Motor Life Counter Display List**

PF Motor Remaining Life	Panel Display
100 ~ 81% remaining	E ***** F
80 ~ 61% remaining	E **** F
60 ~ 41% remaining	E *** F
40 ~ 20% remaining	E ** F
20% ~ 1% remaining	E * F
Less than 1% remaining	E F

If the PF motor is replaced, clear the counter in Maintenance Mode 2.

\*6:Calculation Method: The total number of dots sprayed is summed for each color, then the head unit's life is calculated as the guaranteed number of dots sprayed per nozzle x 61 nozzles and the maximum number of cumulative dots in each color is calculated. (The maximum number of guaranteed dots sprayed per nozzle is  $2 \times 10^9$  dots, and the total is a value rounded to 1000 dots for each page printed.

The display format is as shown below.

**Table 1-32. Head Unit Life Counter Display List**

Head Unit Remaining Life	Panel Display
100 ~ 81% remaining	E ***** F
80 ~ 61% remaining	E **** F
60 ~ 41% remaining	E *** F
40 ~ 20% remaining	E ** F
20% ~ 1% remaining	E * F
Less than 1% remaining	E F

If you are replacing print heads B and C, clear the counter in Maintenance Mode 2.

\*7:Calculation Method: The calculation method is the same as that for the waste ink count. The cleaning unit life is virtually the same as that of the waste ink count and it is replaced at the same time during servicing.

The display format is as shown below.

**Table 1-33. Cleaning Unit Life Counter Display List**

Cleaning Unit Remaining Life	Panel Display
100 ~ 81% remaining	E ***** F
80 ~ 61% remaining	E **** F
60 ~ 41% remaining	E *** F
40 ~ 20% remaining	E ** F
20% ~ 1% remaining	E * F
Less than 1% remaining	E F

After replacing the parts provided in the Maintenance Kit Stylus Pro 7500, clear the counter in Maintenance Mode 2.

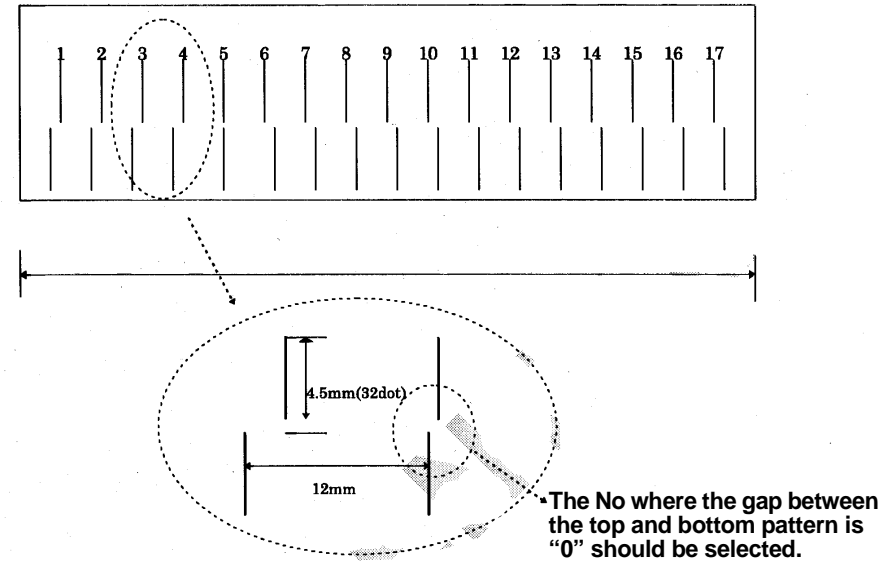
## 1.6.4 User Paper Setting Menu

It is possible to set the values of the following setting items in the user paper setting menu. However, in this item, if “Standard” is selected, the following “Paper Thickness Sensing Pattern” and “Paper Thickness No.” are not displayed. Each setting is accomplished by operating the following panel buttons.

- User Paper Setting Menu Selection: See the Panel Setting Menu procedure.
- User Paper Setting Item Selection: “Paper Source” Button
- Changing the Setting Value: “+” or “-” Button
- Setting the Set Value: “Enter” button
- Mode End: “Pause” Button

by running this mode, the user can have the printer sense the thickness of the paper he or she has selected and can register up to 4 types of paper as user defined paper. The ink drying time and the suction force during suction can also be registered for each paper. the setting method is shown below.

- 1) Enter the User Paper Setting Menu by the panel.
- 2) Select a paper type. When “Standard” is selected, proceed to (5), and when “1” ~ “4” is selected, proceed to 3).
- 3) Print the paper thickness sensing patterns. (See the figure below.)
- 4) Look at the patterns and select the number of the pattern which has the least deviation.
- 5) Input the ink drying time.
- 6) Select the suction force (Standard / Weak).



**Figure 1-10. Paper Thickness Sensing Patterns**

The user papersetting menu item list is shown below.

**Table 1-34. User Paper Setting Menu Setting Item List**

Display	Set Value	Contents
PAPER NUMBER	<u>STD</u> 1~4 *1	Epson genuine paper is used at the “Standard” setting. If you are using paper with the user set paper thickness, “1 ~ 4,” specify the relevant No.
THICK. PAT.	PRINT *3	Prints patterns for confirming the sensing of the set paper thickness. (This item is not displayed if “Standard” is selected for the “Paper No.”)
PAPER THICK. NO.	1~17*2	This displays a number which is the default value for paper thickness set in the “Paper Thickness” item in the Gap Adjustment menu. (0.0 mm = 1/1.6 mm = 17) (This item is not displayed if “Standard” is selected for “Paper No.”)
DRYING TIME	<u>0 MIN.</u> ~ 30 MIN.	Sets the ink drying time. When auto cutting roll paper, the printer waits the set period of time after finishing printing.
SUCTION	<u>NORM</u> LOW *4	Selects the suction force at the paper platen.

\*1: If “STD” is selected in the paper selection, the paper thickness sensing pattern printing and paper thickness No. selection items are not displayed. These are displayed only if papers “1” to “4” are selected. Paper setting and operations at that time are as shown in the table below.

**Table 1-35. Paper Setting and Operation**

Paper Setting	Operation
STD	The paper thickness is in accordance with the paper thickness setting command (PH Command). If the paper thickness setting command is not sent, the printer’s default value is used. The ink drying time is the ink drying time set by the user except in cases where a command is not sent. Also, the suction force set by the user is always used for suction.
1	These are user registered papers.
2	In the case of these settings, the paper thickness setting command is disregarded and the paper thickness is set by the user.
3	
4	As for the ink drying time, the ink drying time set by the user is used except in cases where the command is not sent. Also, the suction force set by the user is always used for suction.

\*2:The paper thickness No. selection default display is the number corresponding to the paper thickness when the gap adjustment was carried out.

\*3:During printing of the pattern, the message “PAT. PRINTING.” is displayed.

\*4:By setting the suction force setting on “LOW” the suction force during printing is reduced by (TBD%) when printing is carried out. In the case of extremely thin film, etc., the film will get stuck on the platen and it may not be possible to print under the normal suction force.

## 1.6.5 Cutter Replacement Menu

Replacement of the cutter is determined by the settings in the cutter replacement menu. Each setting is made using the following panel button operations.

- Cutter Replacement Menu Selection: See the panel setting menu procedure.
- Replacing the cutter: Paper Source button
- Changing the Setting Value: “+” or “-” button.
- Setting the Set Value: “Enter” button
- Mode End: “Pause” button.

By running this mode, the cutter can be replaced. The setting method is as shown below.

- 1) Enter the Cutter Replacement Menu by the panel. (You can also enter the cutter replacement menu by pressing the SelecType button for 5 seconds or longer.)
- 2) Open the front cover.
- 3) Replace the cutter.
- 4) Close the front cover.

The cutter replacement procedure is shown in the following table.

**Table 1-36. Cutter Replacement Operation Procedure**

Display	Setting Value	Contents
CUT. REPLACE	EXEC.	Sets the printer in a state where it is possible to perform the cutter replacement operation.
OPEN LOWER COVER	-	Open the lower cover and carry out the replacement operation.
REPLACE CUTTER	-	Cutter replacement.
CLOSE LOWER COVER	-	Close the lower cover. That terminates the operation.

## 1.6.6 Gap Adjustment Menu

By running this mode, the contents of the following table are displayed and adjustment of each item can be performed.

- Gap Adjustment Menu Selection: See the panel setting menu procedure.
- Item Selection: Paper Source button
- Changing or Selecting Setting Values: “+” or “-” button.
- Setting the Set Value: “Enter” button
- Mode End: “Pause” button.

The paper thickness setting, Bi-D, gap (adjustment of the Bi-d deviation between the left and right heads), and printing of the adjustment pattern as well as adjustment are executed in the gap adjustment menu.

Each setting is made by the following panel button operations. If you select the Gap Adjustment Menu, you cannot proceed to selection of the other items without performing the “Paper Thickness” setting. After setting the paper thickness (using the Enter button), the menu automatically changes to the adjustment mode.

**Table 1-37. Gap Adjustment Menu**

Display	Setting Value	Contents
PAPER THICK	Standard or 0.0 ~ 1.6 mm	Specify the paper thickness used in the gap adjustment in 0.1 mm units. Ordinarily, the printer is used with the “Standard” specification, and in this case, the paper thickness becomes as follows: Paper Thickness Detection Sensor detection results = If [ON / Thin Paper] : 0.2 mm If [OFF / Thick Paper] : 1.2 mm
ADJUST. PATT.	Print All #1 ~ #6	Specifies the gap adjustment pattern to be printed. (All patterns or the desired pattern.)
#1	1 ~ 7 ~ 15	Bi-D Adjustment (240 cps, Normal dot, Left)
#2	1 ~ 7 ~ 15	Bi-D Adjustment (240 cps, Normal dot, Right)
#3	1 ~ 7 ~ 15	Bi-D Adjustment (240 cps, Normal dot, Left)
#4	1 ~ 7 ~ 15	Bi-D Adjustment (240 cps, Normal dot, Right)

**Table 1-37. Gap Adjustment Menu**

Display	Setting Value	Contents
#5	1 ~ 7 ~ 15	Gap Adjustment 1 (240 cps, Normal dot)
#6	1 ~ 7 ~ 15	Gap Adjustment 3 (333 cps, Normal dot)

The setting method is shown below.

- 1) Set A1 roll paper.
- 2) Enter the Gap Adjustment Menu by the panel.
- 3) If the paper thickness is set on 0.2 mm or 1.2 mm by the panel, it is recognized as being the same as “Standard.” If you are setting other values, input the paper thickness for the paper you are using in 0.1 mm units, in accordance with the paper’s specifications. The purpose for inputting the paper thickness at the first is to enable the printing of a pattern right from the first that is thought to be close to the correction value that is already being maintained by the printer, and thus to reduce the number of times the operation has to be repeated.
- 4) Select an adjustment pattern to print (either all or individually) and print it. After printing, the adjustment value input menu for that pattern will be displayed in the LCD.
- 5) Input the pattern No. for the printed pattern that has the smallest deviation in each adjustment item displayed in the LCD.
- 6) Repeat steps 4) ~ 5) until adjustment of all the items has been completed.

**NOTE:** If you are carrying out gap adjustment printing, printing paper with the following lengths is necessary.

- When selecting and printing 1 pattern: Approx. 7 cm.
- When selecting and printing all printing patterns (6 patterns): Approx. 40 cm.

**NOTE:** Always, in printing of each pattern, 1 block of 15 patterns is printed 6 times. Pattern No. 8 of the 15 patterns in one block shows the current setting value.

The correction values set by the above adjustment are saved in NVRAM. The purpose of maintaining the paper thickness (set during the adjustment) is for the sake of making corrections in 0.1 mm units with respect to the paper thickness from the paper thickness setting command PH.

### 1.6.7 Maintenance Mode

Starting Method

While pressing the following panel button, turn the power switch On to start the Maintenance Mode.

- Pause button

Operation Method:

(1) Pressing the Paper Source button once causes you to enter the setting item selection mode. At this time, the item at the top of the setting menu is displayed, with the display format as follows.

[Setting Item] = [Current Setting Value] \*

The "\*" at the end shows that the value is the current setting value.

(2) Each time the Paper Source button is pressed, the next setting item in the sequence is displayed in the format [Setting Item] = [Current Setting Value] \*, with the "\*" at the end showing that the value is the current setting value.

(3) With a setting item displayed, each time the Paper Feed + button or Paper Feed – button is pressed, the values that can be set are displayed in sequence with the format [Setting Item] = [Current Setting Value] \*. The "\*" at the end is displayed only when the displayed setting value is the current setting value.

If the Paper Feed – button is pressed, the items are displayed in reverse order. If you continue to press the Paper Feed + button or the Paper Feed – button a predetermined length of time, the setting values change in sequence at a predetermined interval, either in forward sequence or reverse sequence. If you continue to press the button, after a predetermined period of time, the display interval for the consecutive display values will be speeded up.

(4) If the "Enter" button is pressed, the currently set value is set as the current setting value and registered. Execution of the items accompanying this operation is also started. However, nothing happens in the case of those items with a "\*" displayed after them already.

(5) If the SelecType button is pressed while in the Setting Item selection mode, the printer returns to the maintenance mode display.

End Method:

(1) to change the panel display language selection, carry out Reset after setting, then the printer will automatically change to the ready to print state.

(2) Turn the power OFF, then ON.

The following Maintenance Mode Setting Item List will be displayed.

**Table 1-38. Maintenance Mode Setting Item List**

Item	Panel Display	Setting Value
HEX Dump Print	HEX DUMP	Print *1
Panel display language selection (for Domestic)	LANGUAGE	ENGLISH, FRENCH, ITALIAN, GERMAN, SPANISH, PORTUGUE
M/W Mode Setting	MW7	A/B

\*1: During HEX dump mode execution, the message "HEX MODE" is displayed.



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## HEX DUMP

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The HEX dump function is a function which prints out data transferred to the printer in hexadecimal form. 16 data items are displayed in HEX form on a single line and in addition, an ASCII character corresponding to those data is printed on the right side. If there are no characters which correspond to the data, a “.” (period) is printed for control codes, etc. Printing of each 16 items of data is done, then finally, if the last 16 items of data remain, printing is done by pressing the Pause button.

Furthermore, the panel settings cannot be set while the printer is in the HEX dump mode. By using this function, you can confirm whether or not the data sent from the host computer to the printer are correct.

To end this function, first stop printing by operating the Pause button, then turn the power switch off.

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## PANEL DISPLAY LANGUAGE SELECTION

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By running this mode, the language displayed in the LCD screen can be select English, French, Italian, German, Spanish, Portuguese.

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## M/W MODE SETTING

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The 720 x 720 dpi M/W operation mode can be selected from the following two choices.

- A: Operating mode that reduces banding in Bi-D printing.
- B: Stylus Pro 9000 / Stylus Pro 7000 720 dpi x 720 dpi interchangeable operating mode.

When you are using the Stylus Pro 7500 to print in the monochrome(black) mode at 720 x 720 dpi, if banding is prominent, by selecting this mode, there is a possibility that banding will be reduced.

## 1.6.8 Maintenance Mode 2



The operation described here is a special function for the sake of service support and public disclosure to the end user is prohibited.

- Starting Method  
While pressing the following panel buttons, turn the power switch On to start Maintenance Mode 2.
  - [Paper Source Button] + [Eject Button] + [Paper Feed – Button]

The top menu of this mode consists of the following items.

**Table 1-39. Maintenance Mode 2 Top Menu**

Item	Panel Display
Counter Display Menu	VIEW COUNTERS MENU
Counter Initialization Menu	CLEAR COUNTERS MENU
Adjustment, Setting Menu	SERVICE CONFIG MENU

- Operation Method:
  - (1) By pressing the SelecType button, the screen changes to the above item display.
  - (2) When the necessary item is displayed, press the Paper Source button once to enter the display menu for that item.
    - When the Counter Display Menu is displayed.  
Press the Paper Source button to switch display items.
    - When the Counter Initialization Selection menu is displayed.  
Press the Paper Source button to switch display items, then press the Enter button to carry out initialization of that item.
    - When the Adjustment Menu is selected.  
By pressing the Paper Source button, change the display items and display the necessary item. An asterisk is displayed at the end of the displayed setting value as shown below.

$$[\text{Setting Item}] = [\text{Current Setting Value}] *$$

The “\*” on the end shows that this is the current setting value.

With the setting item displayed, press the Paper Feed + button, or the Paper Feed – Button. Each time these buttons are pressed, the settable values are displayed one at a time in sequence with the format “[Setting Item] = [Setting Value] (\*).

The values are displayed in reverse sequence when the Paper Feed – Button is pressed. If you continue pressing the Paper Feed + Button or the Paper Feed – Button, the setting values will be displayed at predetermined intervals in forward or reverse sequence. If you continue to press these buttons, the values displayed will change continuously and will become faster.

If the Enter button is pressed, the setting value that is currently displayed will be set as the current setting value and registered. The items that accompany this operation will also be started. However, nothing happens if a “\*” is already displayed by the item.

(5) In the Setting Item selection mode, if the SelecType button is pressed, the printer returns to display of Maintenance Mode 2.

- End Method:
  - (1) Turn the printer OFF, then ON.

☐ Maintenance Mode 2 Counter Display Menu Item List

**Table 1-40. Maintenance Mode 2 Counter Display Menu**

Item	Panel Display	Setting Value
Remaining Ink (K) counter Value Display	INK K	0~42949672967295 (Decimal number)
Remaining Ink (C) counter Value Display	INK C	0~42949672967295 (Decimal number)
Remaining Ink (M) counter Value Display	INK M	0~42949672967295 (Decimal number)
Remaining Ink (LC) counter Value Display	INK LC	0~42949672967295 (Decimal number)
Remaining Ink (LM) counter Value Display	INK LM	0~42949672967295 (Decimal number)
Remaining Ink (Y) counter Value Display	INK Y	0~42949672967295 (Decimal number)
Cutter Service Life Counter Value Display	CUTTER	0~42949672967295 (Decimal number)
Total Printed Sheet Counter Value Display	TTL PAGES	0~42949672967295 (Decimal number)
Waste Ink Counter A Value Display	WAST. INK A	0~42949672967295 (Decimal number)
Waste Ink Counter B Value Display	WAST. INK B	0~42949672967295 (Decimal number)
CR Motor Service Life Counter Value Display	CR MOTER	0~42949672967295 (Decimal number)
PF Motor Service Life Counter Value Display	PF MOTER	0~42949672967295 (Decimal number)
Head Unit (K) Service Life Counter Value Display	HEAD K	0~42949672967295 (Decimal number)
Head Unit (C) Service Life Counter Value Display	HEAD C	0~42949672967295 (Decimal number)
Head Unit (M) Service Life Counter Value Display	HEAD M	0~42949672967295 (Decimal number)

**Table 1-40. Maintenance Mode 2 Counter Display Menu**

Item	Panel Display	Setting Value
Head Unit (LC) Service Life Counter Value Display	HEAD LC	0~42949672967295 (Decimal number)
Head Unit (LM) Service Life Counter Value Display	HEAD LM	0~42949672967295 (Decimal number)
Head Unit (Y) Service Life Counter Value Display	HEAD Y	0~42949672967295 (Decimal number)
Cleaning Unit Life Counter Value Display	CLEANER	0~42949672967295 (Decimal number)

☐ Counter Initialization Menu

**Table 1-41. Counter Initialization Menu**

Item	Panel Display	Setting Value
NVRAM / Timer / Service Life Counter / Mechanism Counter Initialization	INIT. ALL *1	EXEC.
NVRAM Initialization	NVRAM INIT *2	EXEC.
Timer Initialization	INIT *3	EXEC.
CR Motor Service Life Initialization	INIT. CR MTR *4	EXEC.
PF Motor Service Life Initialization	INIT. CR MTR *5	EXEC.
Head Unit Service Life Initialization	INIT. HEAD *6	EXEC.
Cleaning Unit Service Life Initialization	INIT. CLEANER *7	EXEC.
Total Printed Page count Initialization	INIT. TTL PR *8	EXEC.
Ink Level Initialization	INIT. INK *9	EXEC.
Waste Ink Capacity Initialization	INIT. WA. INK *10	EXEC.

\*1: By running this mode, the NVRAM, timer, service life counters and mechanism counters are initialized.

\*2: By running this mode, the NVRAM is initialized.

\*3: By running this mode, the timer setting value is initialized.

\*4: By running this mode, the CR motor service life counter is initialized.

\*5: By running this mode, the PF motor service life counter is initialized.

\*6: By running this mode, the head unit service life counter is initialized.

\*7: By running this mode, the cleaning unit service life counter is initialized.

\*8: By running this mode, the total number of printed sheets counter is initialized.

\*9: By running this mode, the ink level counter is initialized.

\*10: By running this mode, the waste ink capacity counter is initialized.

☐ Adjustment Setting Menu

**Table 1-42. Adjustment Setting Menu**

Item	Panel Display	Setting Value
Bi-d adjustment pattern #3 offset (333cps, Normal dot)	Bi-d offset *1	-4 - 0 - +4
MW2 Balance	MW7 Balance *2	-31 - 0 - +31

\*1: This sets the desired offset for reducing uneven printing (against the CR movement direction) with respect to the Bi-D adjustment value adjusted by the user. This mode is a function for reducing irregular color that occurs in the 720 dpi x 720 dpi and 1440 dpi x 720 dpi printing modes due to setting of the desired offset with respect to the adjustment values for Bi-D adjustment values (Bi-D adjustment pattern No. #3) for these printing modes. However, since there are cases where there is no effect even when the desired offset is set in this function, adequate caution should be exercised when changing the setting values

2 : This function is to improve the micro banding which may appear in the 720dpi x360 dpi, or 720dpi x 720dpi mode. Changing this setting value, the micro banding may be improved a little. However, since there are cases where there is no effect even when the desired offset is set in this function, adequate caution should be exercised when changing the setting values

## 1.7 Ink Cartridge Size Select

The size the ink cartridges installed in this printer are selected manually. Automatic detection of their size is not performed. It is necessary that the ink cartridge size decided here match the size of the actual ink cartridge, and further, it is necessary that all the ink cartridges installed in the printer be the same size. Also, calculation and display of the remaining ink volume is based on the values set here.

Starting Method:

The ink cartridge size selection mode starts if the power switch is pressed while the following panel button is being pressed.

■ SelecType Button

Operation Method:

(1) Each time the [Setting Value + Button] or the [Setting Value – Button] is pressed, the settable ink cartridge size value is changed in sequence in the display with the format “Ink Cartridge Size” = [Setting Value] (\*). The “\*” on the end is the setting value and is displayed only when the value displayed is the current setting value. Also, pressing the [Setting Value – Button] causes the settable values to be displayed in reverse sequence.

(2) If the Enter button is pressed, the displayed setting value is set and registered as the current setting value.

Ending Method

(1) Turn the power OFF, then ON again.

(2) Reset the printer after setting. It will automatically change to the Pause state.

Ink Cartridge Size Setting Menu:

**Table 1-43. Ink Cartridge Size Setting Menu Item**

Item	Panel Display	Setting Value
Ink Cartridge Size Selection	Ink Cartridge Size Setting	<u>100ml</u> 200ml

## 1.8 Inter-User Transport Mode

This is a mode to discharge the ink that the printer is filled with and make it possible to transport the printer. It is necessary for the user to perform the following operations before transporting the printer and make it possible for the printer to be transported.

(1) At a time when the printer’s power is turned on,. the ink cartridges of each color should be removed.

(2) Turn the printer’s power off.

(At this time, the printer will execute the ink discharge sequence for transport automatically. The message “TRANSPORT PREP n n %” will be displayed, and the [n n %] will indicate the progress condition.)

\*1: The paper support lever should be in the returned position and the power should be turned Off. (When the paper support lever is in the backward state, even if the power is turned Off, the sequence of discharging the ink for transport is not performed.)

\*2: If the “Inter-user Transport Mode” ends without any trouble, the “Initial Filling” flag is set (the same state as when the printer was shipped from the factory). When the printer is refilled with ink, the same operation as the initial filling operation should be carried out.

## 1.9 Firmware Reload

---

**CAUTION**

The operation described here is a special function for the sake of service support and public disclosure to the end user is prohibited.

This writes this printer's firmware to the Flash ROM on the MAIN board. If the main board has had to be replaced due to repairs, or when upgrading the firmware version, reload the firmware in accordance with the explanation on "5.2.2 Reloading Firmware."

## 1.10 Self-diagnostic Function Mode

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**CAUTION**

The operation described here is a special function for the sake of service support and public disclosure to the end user is prohibited.

The self-diagnostic function mode starts if the power switch is turned ON while pressing the following panel buttons.

- [Setting Value + Button] + [Setting Value – Button] + [Enter button]

This mode is used primarily in adjustment operations, etc. when making repairs accompanying parts replacement. For details, see "5.2.3.2 Self-Diagnostic Mode Menus".

## 1.11 Jumper Settings

The standard settings for the jumpers/DIP-Switches on the main board (C299MAIN) are as shown below.

**Table 1-44. Jumper Settings**

No.	Setting
JP1	Short
JP2	Short
SWD1 1	ON
SWD1 2	OFF



- The above jumper settings are used only when making settings at the factory. they should not be changed during servicing. These jumper settings determine matching between the firmware, CPU and ASIC, etc., so if they are changed needlessly, the printer will not operate.
- When installing the ASP board, the DIP-Switch settings should be changed as shown below.
  - DIP Switch SettingDIP SW1DIP SW2
  - ASP BoardOFF OFF
  - When Circuit Board is InstalledONOFF

## 1.12 Maintenance/ Service Calls

There are two types of errors which it is necessary for a service man to check and respond to, as shown below.

- Maintenance Call n n n n
- Service Call n n n n n n n n



**The maintenance and service calls explained here are special functions for service and support, and public disclosure to the end user is prohibited.**

### 1.12.1 Maintenance Call

Some of the mechanical units used in this printer have counters which count down the remaining service life based on the proper service life for each unit, and when the predetermined value is reached, a “Maintenance Call nnnn” message is displayed. If this message is displayed, it indicates that the end of the service life of the affected unit is nearing, so it is necessary to replace the affected unit as soon as possible.

If this message is displayed, the “Print?” or “Printing” display message is replaced with the “Maintenance Call nnnn” message, and after replacing the affected part, it is not cleared but continues to be displayed until the counter is cleared.

**Table 1-45. Maintenance Call / Code List**

Error Code	Error Content
0100	<input type="checkbox"/> Waste ink pad service life (less than 1% of capacity remaining) (for treatment, see concerning the procedure when the previously mentioned “Service Call” is issued.)

## 1.12.2 Service Call

If an error occurs for which service is required, the message “Service Call nnnnnnn” is displayed in the panel LCD and the printer’s operation stops. The error code corresponding to the content of the error that was detected is displayed in the nnnnnnnn portion of the message.

**Table 1-46. Service Call / Error Code List**

Error Code	Error Content
00000100	Waste ink pad service life *1 (Replacement of the specified part and clearing of the counter are necessary.)
00000101	Ink supply tube wear *2 (This is equivalent to using the printer beyond the product’s service life, so an error is displayed in consideration of damage due to ink supply tube wear.)
00010000	PF Motor/ encoder check error
00010001	PF Motor / Motor out of synch
00010002	PF Motor / Overcurrent
00010003	PF Motor / In Position Time Out
00010004	CR Motor / Encoder check error
00010005	CR Motor / Motor out of synch
00010006	CR Motor / Overcurrent
00010007	CR Motor / In Position Time Out
00010008	Servo interrupt WD time out error
00010009	System interrupt WD time out error
0001000A	CR home position sensor failure
0001000B	PF home position sensor failure
0001000C	Head slide (SLID) home position sensor failure
0001000D	Cover sensor failure (00)
0001000E	Cover sensor failure (01)
0001000F	CR Motor / PWM output abnormal
00010010	PF Motor / PWM output abnormal

**Table 1-46. Service Call / Error Code List**

Error Code	Error Content
00020000	NVRAM error
00020001	Internal RAM Check Error
00020002	SRAM Check Error
00020003	DRAM Check Error
0002000B	Mail BOX or acquisition failure
10000004	CPU Vector 4 / General improper command issued.
10000006	CPU Vector 6 / Slot improper command
10000006	CPU Vector 9 / CPU address error
1000000A	CPU Vector 10 / DMAC / DTC address error
1000000B	CPU Vector 11 / WD time out error
100000**	CPU Vector 32 ~ 63 Illegal trap

\*1: The following parts should be replaced and the relevant service life counter cleared by “Maintenance Mode 2.”  
 [Parts Needing Replacement]  
 - Waste ink pad (Left and right)  
 - F box R  
 - Pump assembly  
 - Cap assembly  
 - Cleaner, head  
 [Counters to Clear] (Clear them in “Maintenance Mode 2.)  
 - “Waste Ink Initialization”  
 - “Cleaning Initialization”  
 Furthermore, a periodic replacement parts kit containing these parts as a set, “Maintenance Kit Stylus Pro 7500 (No. 1054038)” is available.

\*2: After replacing all the ink tubes (6 tubes) and the CR motor, reset the CR motor counter in “Maintenance Mode 2.”



**CHAPTER**

**2**

**OPERATING PRINCIPLES**

## **2.1 Component List & Illustrations**

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This section explains the print mechanism and operating principles for the EPSON Stylus Pro 7500.

## 2.2 Print Mechanism Components

The major electrical parts used in the printer mechanism of this printer are as shown below. Hereafter, we will explain each printer mechanism focusing on these parts.

**Table 2-1. Printer Mechanism Components**

Part	Drive voltage	Description
Carriage components		
B printhead C printhead	+42VDC, +28VDC, -2VDC	B/C/M printhead, LC/LM/Y printhead
Head thermistor	+5VDC	One in each printhead, B and C
CR motor	+42VDC	DC motor
CR_HP sensor	+5VDC	Photo interrupter active= CR out of HP interrupted = CR in HP
CR encoder sensor	+5VDC	Linear encoder two channel A phase/B phase
Pump motor (PG adjustment)	+42VDC, +5VDC	4 phase 200 cycle HB type stepping motor with internal encoder sensor -also used for cleaning
PG (HD_SLID) sensor	+5VDC	Photo reflector reflected = in PG HP unreflected = out of PG HP
P_Edge sensor	+5VDC	Photo reflector over threshold = paper exists under threshold = no paper
Cutter solenoid	+28VDC	solenoid, cutter drive

**Table 2-1. Printer Mechanism Components (continued)**

Part	Drive voltage	Description
Paper feed components		
PF motor	+42VDC	DC Servo motor
PF encoder sensor	+5VDC	Rotary encoder two channel A phase/B phase in PF motor
Paper suction fans (x2)	+28VDC	DC motor fan
P_Front sensor	+5VDC	Photo reflector over threshold = paper exists under threshold = no paper
P_Rear sensor	+5VDC	Photo reflector over threshold = paper exists under threshold = no paper
P_Thick sensor	+5VDC	Photo interrupter active= thick paper interrupted = normal paper
Paper set lever position sensor	+5VDC	Photo interrupter active= thick paper interrupted = normal paper
Ink delivery components		
Pump motor (cleaning)	+42VDC, +5VDC	4 phase 200 cycle HB type stepping motor with internal encoder sensor also used for PG adjustment
Clwaing components		
I/C sensors (B/C/M/lc/lm/Y)	+5VDC	Microswitch 1/ slot Open = no I/C Closed = I/C installed

Table 2-1. Printer Mechanism Components (continued)

Part	Drive voltage	Description
Ink end sensors (B/C/M/lc/lm/Y)	+5VDC	Mechanical switch 1/ slot Open = near end Closed = ink remains
Other components		
Cover open sensor	+5VDC	Mechanical switch Open = cover open Closed = cover closed
Panel unit	+5VDC	
C299MAIN board	+42VDC, +28VDC, +5VDC, -2VDC	Printer control/drive circuit board
Power supply board	-	

### 2.2.1 Carriage (CR) Mechanism

This printer is equipped with a unique carriage mechanism to enable movement and printing with stable, high precision on-carriage heads in the A1 extended paper (24 inch) width printing range (= carriage movement range).

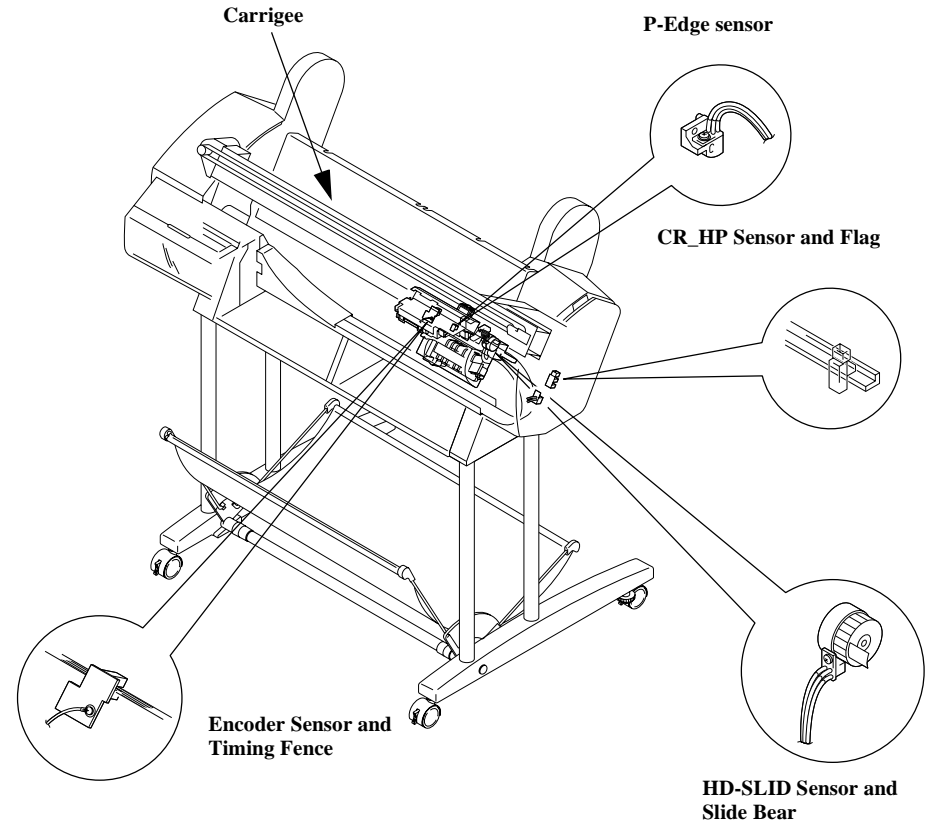


Figure 2-1. Carriage Mechanism

## CARRIAGE MOVING UNIT

In place of the carriage holding system in which 2 CR guide shafts extending in the column direction were used, as in the previous models, a structure with the carriage mounted via multiple rollers (bearings) on a CR guide rail made from a square extruded aluminum pipe is used. Steel rails are incorporated in the roller contact and running surface, and the result is a reduction in friction in the direction of movement, reduced vibration and improved durability.

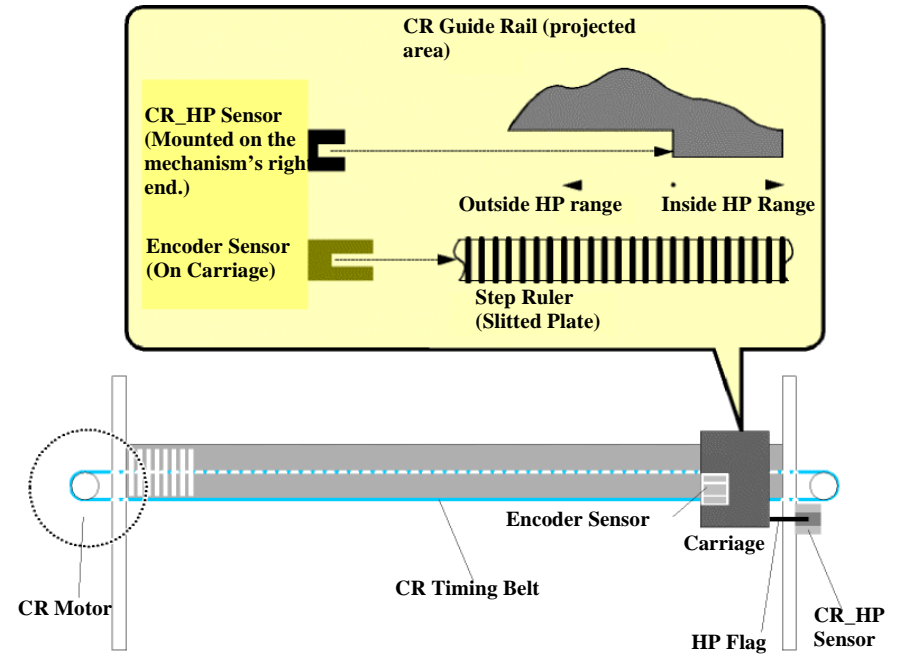
**NOTE:** The screws used to fasten the CR guide rail should not be taken out and the carriage should not be removed. These are adjusted and assembled to the nearest 1/100 mm at the factory.

A DC motor is used for the CR motor and the slit in the timing fence affixed on the bottom of and parallel with the CR guide rail is read by the encoder sensor mounted on the carriage (linear encoder system), and this signal is compared to logical control values in the control circuit on the C299 MAIN board, which carries out feedback speed control. Through this control, high print precision is maintained.

Drive transmissions from the CR motor to the carriage use the easy-to-maintain, durable timing belt.

The sensors used in the carriage moving unit are described below.

- CR\_HP Sensor**  
This is a transmissive photosensor which is mounted on the right end of the printer mechanism and detects the entry position of the flag (projection) provided on the carriage as the carriage moving home position. Outputs from this sensor are “OFF” in the HP range and “ON” outside the HP range.
- Linear Encoder**  
This encoder is mounted on the back of the carriage and outputs pulses (2 channels) corresponding to the position of the slit on the timing fence that is incorporated into the CR guide rail which are used for CR motor servo control and PTS (Print Timing Signal) generation. The resolution is 1/180 inch.



**Figure 2-2. Carriage Mechanism Unit, Carriage Moving Unit**

## PLATEN GAP ADJUSTMENT UNIT

In order to maintain the print precision, it is necessary to maintain the carriage (= head) mounting position so that it is always a constant distance from the surface of the paper.

In this printer, the print head nozzle surfaces and platen surface are variable mechanisms so that the gap between the paper printing surface and the head nozzle surface can be kept constant.

The carriage has a 2-body construction with a sub-carriage on which the print heads are mounted attached to the carriage which forms the base. The sub-carriage moves in the vertical direction with respect to the paper surface. This movable system uses a cam. The sub-carriage to paper surface distance changes linearly from the cam (= PG) home position.

When the carriage is in the HP position (= right end), the pump motor and the gear mounted on the cam shaft engage, the motor's rotation (reverse) drives the cam and the sub-carriage is positioned at the proper gap position.

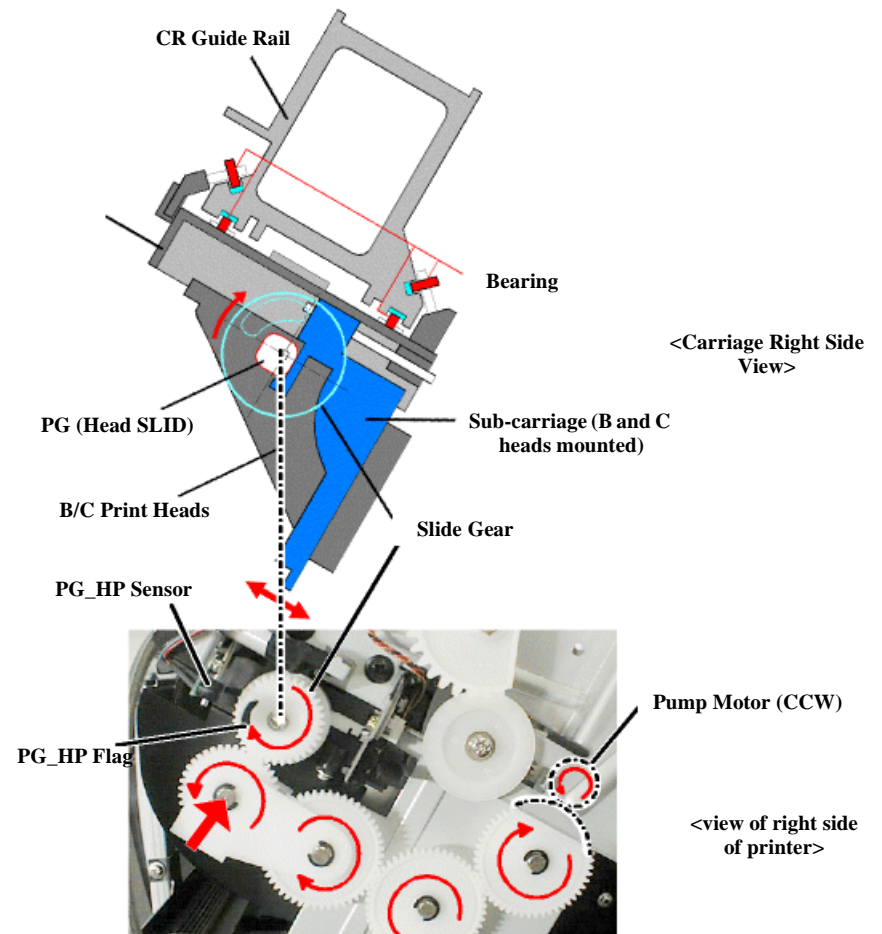
In order to maintain the distance between the print head nozzle surfaces and the paper, the thicknesses of the paper used are classed into 3 levels, PG small (1.3 mm) / Medium (2.2 mm) / and Large (2.7 mm) when carrying out PG setting.

**Carriage**  
**NOTE:** It is also possible to set the PG value manually. For details, see the item "Platen Gap" in 1.6.1, "Printer Setting Menu."

The print heads consists of two heads, the dark type ink (B) head and the light type ink (C) head.

Ink viscosity is influenced by temperature. In order to control the ink discharge rate and discharge volume so that they are the same even if the temperature changes, each respective print head has a built-in thermistor for detecting the head temperature.

**NOTE:** The B and C print heads used in this printer are the same model No. as those used in the Stylus Pro 5000/9000.



**Figure 2-3. Carriage Mechanical Unit and PG Adjustment Unit**

The sensors used in the platen gap adjustment unit are explained below.

- HD-SLID (Head Gap Home Position Detection) Sensor  
 This sensor detects the mechanical home position when the position of the sub-carriage (head height from the paper surface) on the carriage undergoes change. A reflective type photosensor is used and the position of the flag on the gear mounted on the camshaft is detected. When the sub-carriage has dropped down to its lowest

position, the sensor is configured to go “Off”, and during a sensing operation, and the point where the head changes from moving up to moving down and the sensor output switches from “OFF” to “ON” is recognized as the mechanical home position.

□ P\_EDGE (Paper Width Detection) Sensor

This sensor is mounted on the left rear of the carriage. It detects the left and right edges of the paper and carries out paper width recognition and skew judgment. A reflective type photosensor is used and the paper edge (presence or absence of paper) is judged with the sensor output in the form of an 8-bit A/D converted value.

*NOTE: It is possible to turn this sensor off in 1.6.1, “Printer Setting Menus.”*

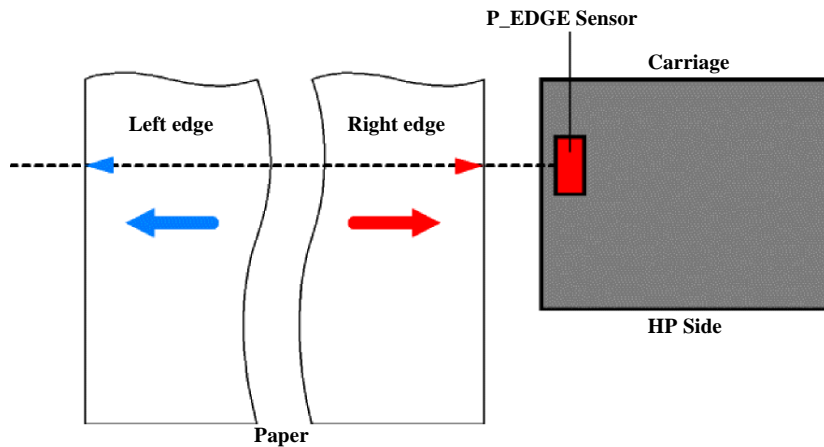


Figure 2-4. Carriage Unit Paper Width Detection Sensor

The Paper width detection sequence is shown in the figure at right.

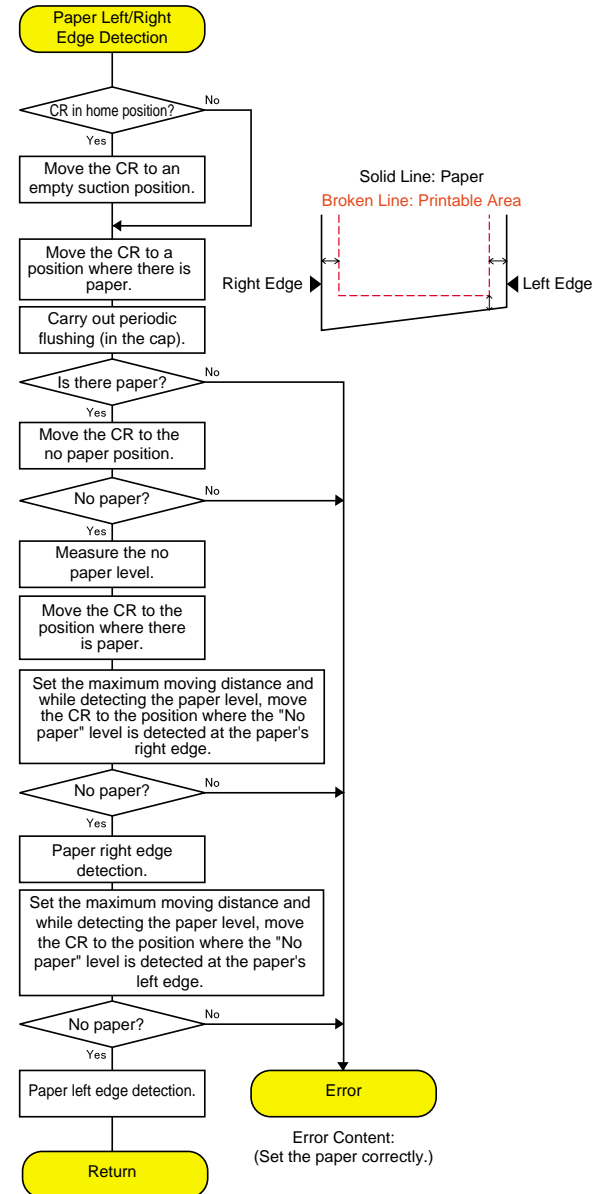


Figure 2-5. Paper Width Detection Sequence

□ Cutter Solenoid

This solenoid is mounted on the left side of the carriage, and by activating the cutter which performs cutting of roll paper while moving together with the carriage, it causes the roll paper to be cut.

This function can be set On or Off using the Panel buttons.

*NOTE: See 1.2, "Print Specifications."*

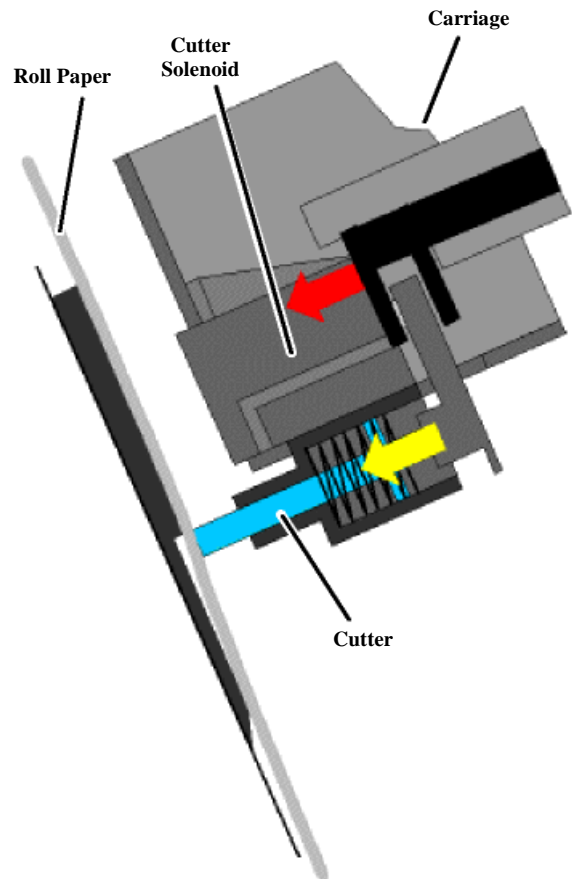


Figure 2-6. Carriage Unit Cutter Solenoid



### 2.2.2 Paper Feed Assembly

This printer uses friction feed to carry out highly precise feeding of roll paper and cut sheets, and comprises a unique paper feed mechanism.

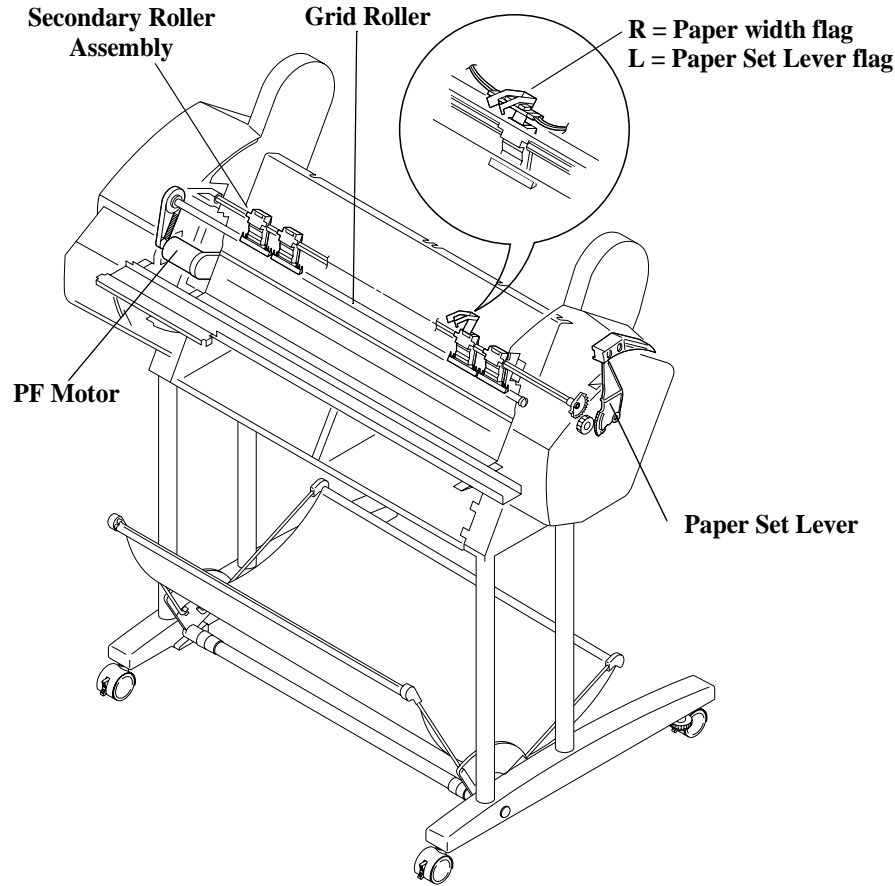


Figure 2-7. Paper Feed Mechanism Unit 1/2

The paper feed mechanism unit is configured from a grid roller (one piece construction), and pressurizing and follower roller assemblies mounted on the back of the CR guide rail opposite the front surface.

A DC servomotor is used for the PF motor and feedback control is carried out based on pulses output by a rotary encoder sensor built into the motor, thus maintaining high printing precision.

Driving of the grid roller is accomplished by the PF motor via the PF timing belt which attaches to a reduction pulley that is connected to the grid roller.

Pressure and follower roller assembly

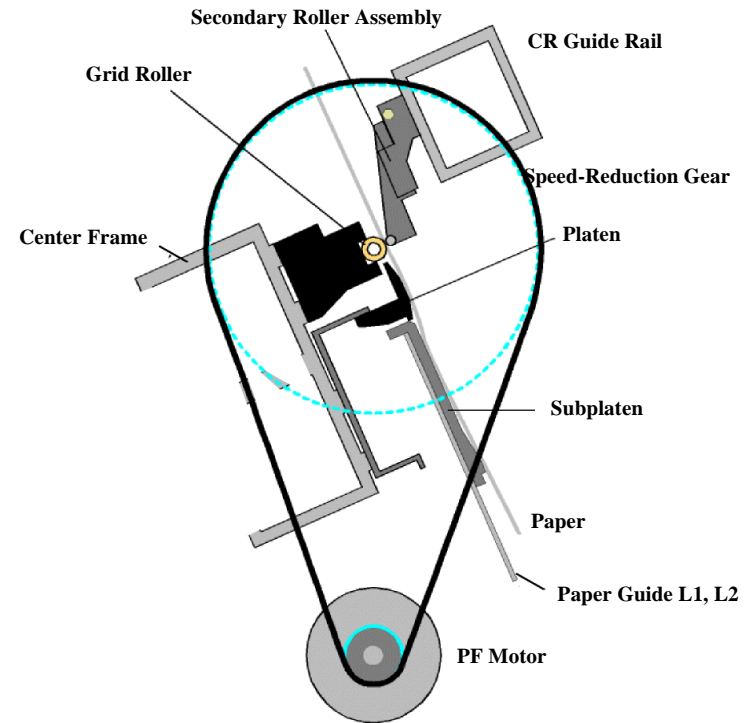


Figure 2-8. Paper Feed Mechanical Unit PF Rail Unit

Two suction fans are mounted behind Paper Guide L2. The space in the column direction behind Paper Guide L2 is divided into 2 compartments, and one fan is mounted in each compartment. By drawing air through multiple holes punched in Paper Guide L2 in the back surface of the paper path and blowing it out through the rear of the printer housing, suction is applied to the surfaces of Paper Guides L1 and L2 and the paper is stabilized

(prevented from flying up) as it passes through the printer. The suction fans undergo air flow control (fan rotation duty control), which is carried out by firmware control based on the printer's operating state (when paper is set and during printing, etc.) and the type of paper used.

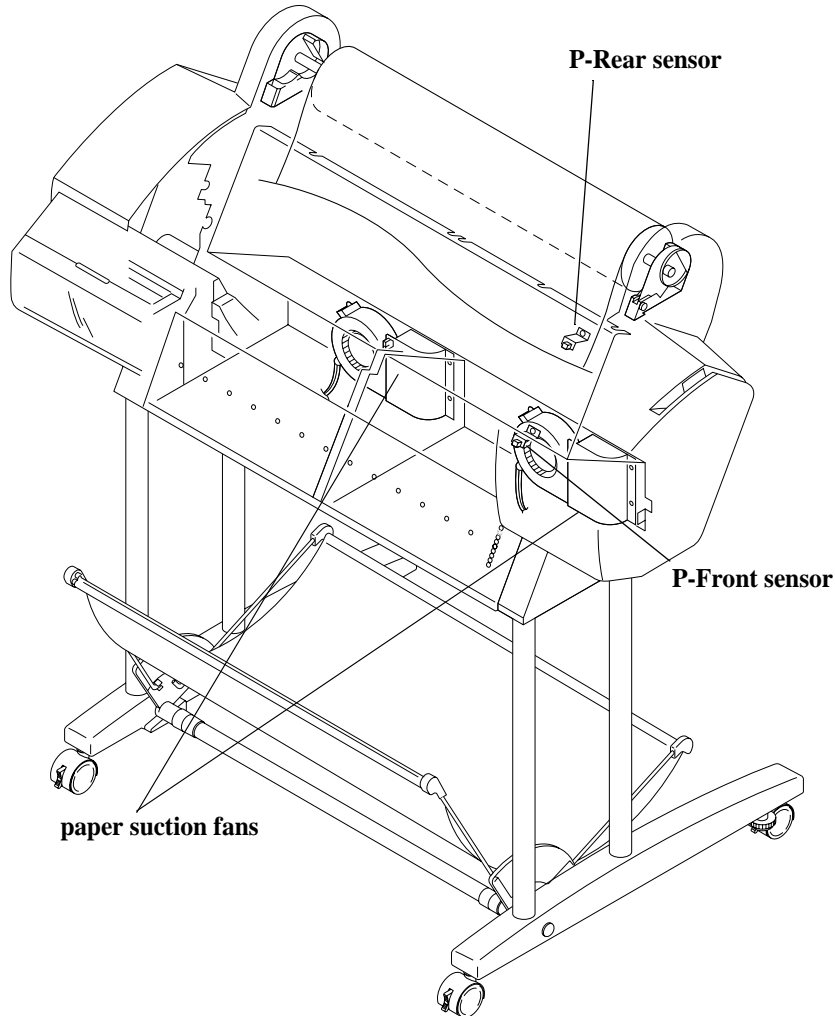


Figure 2-9. Paper Feed Mechanical Unit 2/2

The next page shows suction fan control during paper feed.

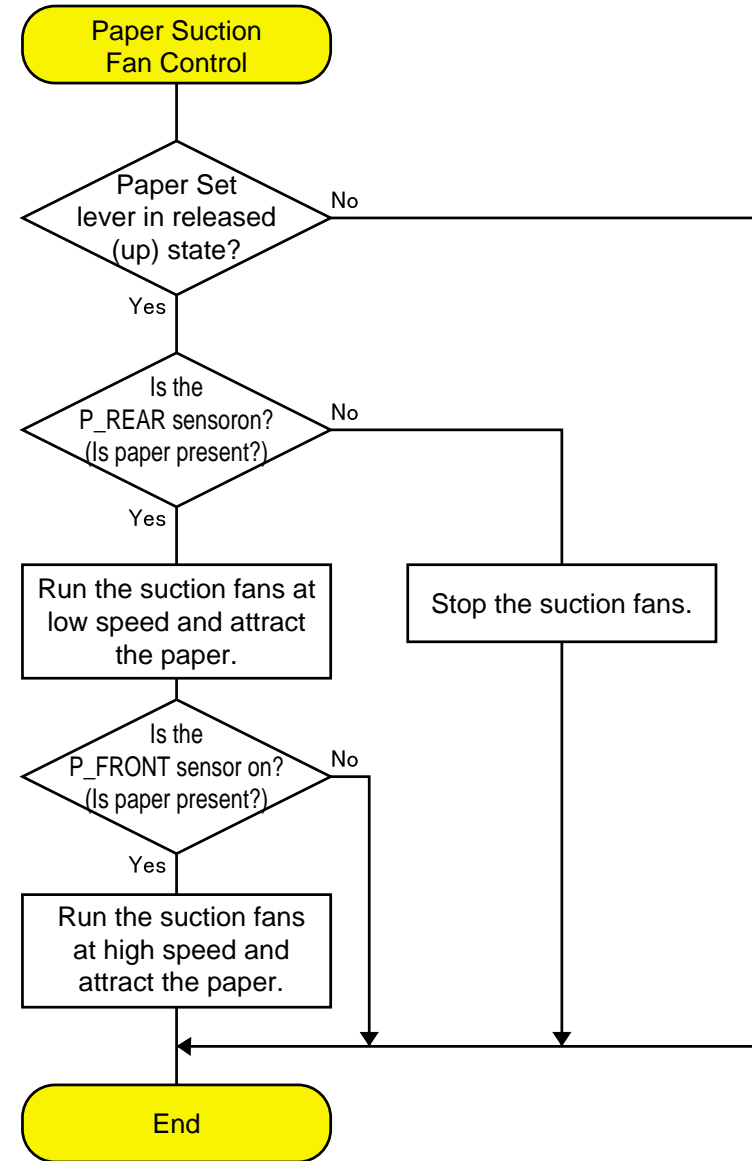


Figure 2-10. Paper Suction Fan Control

The following sensors aid in the paper feeding process.

- ❑ P\_FRONT sensor  
This sensor is attached to the subplaten and is an optical (photo-reflective) sensor. This sensor detects the front edge of the paper after paper has been loaded but before it is set and ready to print.
- ❑ P\_REAR sensor  
This sensor is attached to the Upper Paper Guide and is an optical (photo-reflective) sensor. This sensor detects the rear edge of the paper and detects the front edge when the paper is first loaded in the paper path. The position of this sensor is stored in EEPROM.
- ❑ P\_THICK sensor  
This optical sensor physically gauges whether the paper falls into the normal/thin category or the thick category.

**Table 2-2. Paper Thickness Detection**

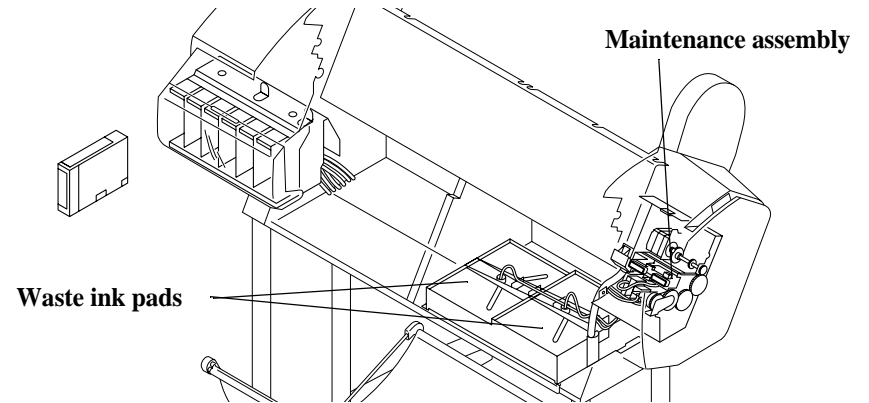
Paper Type	Detected Thickness	Sensor Signal	Output Signal Strength
Thin Paper	0.6mm or less	On	0.7V or more
Thick Paper	0.7mm or more	Off	2.4V or more

\*1:When the paper thickness is 0.6 ~ 0.7 mm, it is not definite which will be detected.

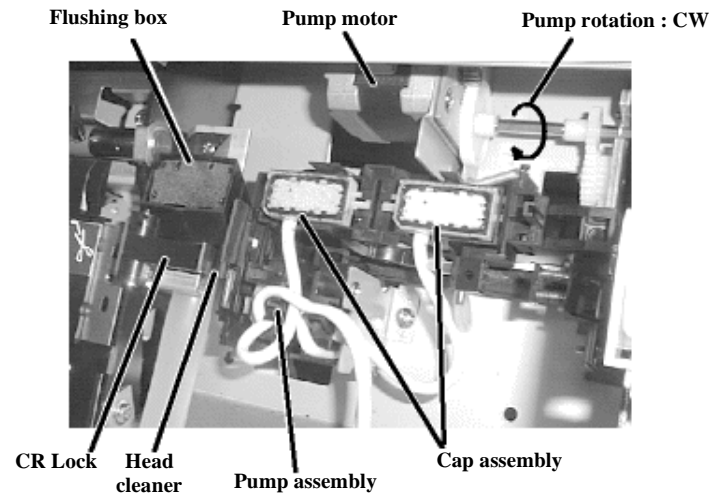
- ❑ Release Sensor  
A transmissive photosensor is used and it is mounted on the H top cover rear side (right). It is constructed so that the sensor detection lever is linked to the paper support lever's operations. When the paper support lever is in the forward position, it is in the set state (Fixed position). Also, when the release sensor is in the "Release" state, the CR motor and PF motor are stopped.

### 2.2.3 Cleaning Mechanism

The cleaning mechanism in this printer is compatible with the cleaning mechanism in the Stylus Pro 5000/9000. The cleaning mechanism is located on the right side of the printer. The waste ink from the cleaning mechanism is channeled to the waste ink pad in the lower right side via 2 thin tubes and 1 pipe. (See the figure below.)



**Figure 2-11. Cleaning Mechanism**



**Figure 2-12. Cleaning Mechanism Components**

The cleaning mechanism components are installed above the subframe and some are fixed on the main frame as shown below.

Pump assembly (head cleaner)

When the head is in the capped position (valve closed), the pump motor creates a vacuum that sucks ink from the nozzles. This is used for removing ink from the nozzles and nozzle plate, initial ink charge, as well as cleaning. The waste ink flows through two small tubes to the waste ink pads.

Head cleaner

The head cleaner has felt on one side and rubber on the other, and is used to wipe or rub off ink and foreign materials from the nozzle surface.

Pump motor

Clockwise rotation = pump assembly drive for cleaning and so on

Counter clockwise rotation = platen gap adjustment

Cap assembly (one pad for each printhead)

When not printing, the printheads (should) rest on the cap assembly to make sure the nozzles don't clog. Also, the printheads are in the capped position during ink charging, cleaning, and so on.

Flushing box

Flushing (dummy printing) is performed over the flushing box, and the flushed ink flows through the large diameter tube to the waste ink pads.

CR Lock Mechanism

If the carriage moves from the printable area to beyond the capping (CR\_HOME) position to the right, the carriage moving prevention lock is engaged. The CR lock mechanism uses the cutter solenoid in common. When the cutter solenoid goes ON in the capping position, the CR lock is released.

**NOTE:** The "Ink System Terms" used in the above text are explained in the following table.

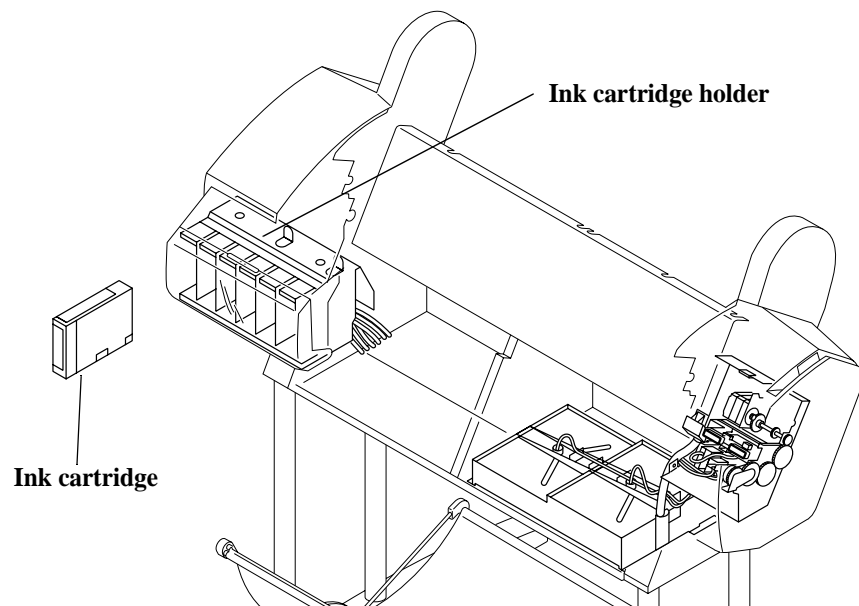
**Table 2-3. Explanation of Operation**

Operation	Explanation
Carriage (CR) Lock	<ul style="list-style-type: none"> <li>• This is the carriage stop position when the power is Off.</li> <li>• The time when the carriage is in the standby position (home position) with the power On and with no paper loaded and no print data to print.</li> </ul>
Ink Initial Filling	<ul style="list-style-type: none"> <li>• This is the operation where the head is filled with ink for the first time. When the first ink cartridge is inserted (after all 6 colors have been inserted), the ink initial filling operation is performed automatically.</li> <li>• The initial filling flag is set when the printer is shipped from the factory, then after this operation, the initial filling flag is reset. The initial filling flag is also set after the "Inter-User Transport Mode" is run.</li> </ul>
Flushing	<ul style="list-style-type: none"> <li>• In order to prevent the viscosity of the ink inside the head nozzles from increasing, the ink inside the flushing box is flushed out.</li> <li>• Flushing is done when paper is set, when printing from the standby state, during continuous printing, during paper Eject, during paper cutting, etc.</li> </ul>
Empty Suction Operation	<ul style="list-style-type: none"> <li>• After ink is sucked up, the remaining ink inside the cap is sucked up and the ink adhering to the head nozzle surface is removed.</li> <li>• Through flushing, etc., the ink that has accumulated in the cap is sucked up and discharged.</li> </ul>
Wiping Operation	<ul style="list-style-type: none"> <li>• After ink is sucked up, any dust, etc. adhering to the head nozzle surface is removed and tight fitting of the cap is assured.</li> <li>• Any ink or dust, etc. that has adhered to the head nozzle surface after ink suction is removed, and the normal ink spray state is recovered.</li> </ul>
Rubbing Operation	<p>The head nozzle surface is wet with a tiny amount of ink, then the head nozzle surface is cleaned off, with any tightly adhering dirt, etc. being removed, thus assuring that the cap will fit tightly.</p>
Capping	<p>In order to prevent the ink viscosity from increasing while it is being kept, a rubber cap is placed over the print head nozzles when entering a shutdown operation.</p>

## 2.2.4 Ink Supply Mechanism

In this printer, there is an ink holder on the left side (I/H) where 6 ink cartridges, one of each color, (from the left), K, C, M, Lc, Lm and Y, are installed. A projection and unique markings are placed on each color ink cartridge case to prevent wrong insertion so that the wrong color cartridge is not inserted and so the cartridge is inserted in the right direction.

**NOTE:** This printer does not use the ink valves which are used in the Stylus Pro 9000 and Stylus Pro 9500. Therefore, if you are transporting the printer, in order to prevent ink from leaking from the ink channel, all the ink should be discharged by running the Inter-User Transport Mode, then carrying out parking and transport.



**Figure 2-13. Ink Supply Mechanism**

The ink flow is as shown below.

Each color's ink cartridge -> Each color's I/H (Ink Holder) -> Each color's ink tube -> Each color's head dumper (carriage) -> B and C Print Heads

The following sensors are mounted in each color's I/H (Ink Holder).

- Ink Cartridge (I/C) Detection Sensor  
This sensor uses a microswitch to detect when the ink cartridge is installed.  
I/C Installed state (Present): Switch closed  
I/C Not Installed state (None): Switch open
- Ink End Detection Sensor  
This sensor uses a mechanical switch to detect the amount of ink remaining in each ink cartridge. Through a detection flag which changes according to the amount of ink remaining in the ink pack inside the ink cartridge, the switch is turned ON or OFF, and thus carries out detection.

Amount of ink remaining low (near end): Switch open  
 Amount of ink remaining sufficient (Normal): Switch closed

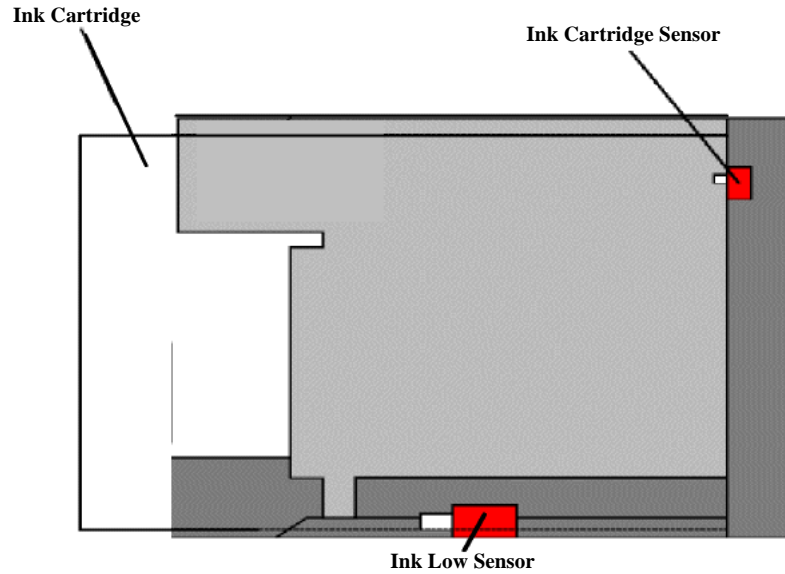


Figure 2-14. Ink Supply Mechanism Sensors (from right side)

## 2.2.5 Other

### COVER SENSOR

In order to detect whether the front cover on the lower front of this printer is open or closed, a cover sensor is mounted on the printer on the left side where the front cover opens and closes.

This sensor carries out control of operating and stopping of the CR motor and PF motor drive circuits via the C299MAIN board's logic circuit after detecting the cover's status. This control is the same when the paper support level is in the release state.

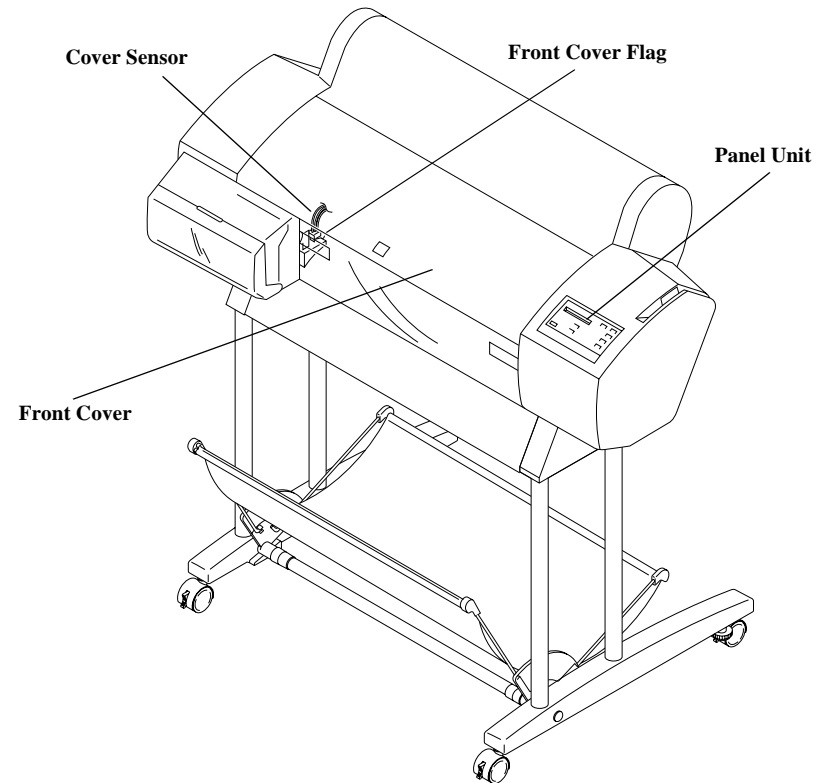


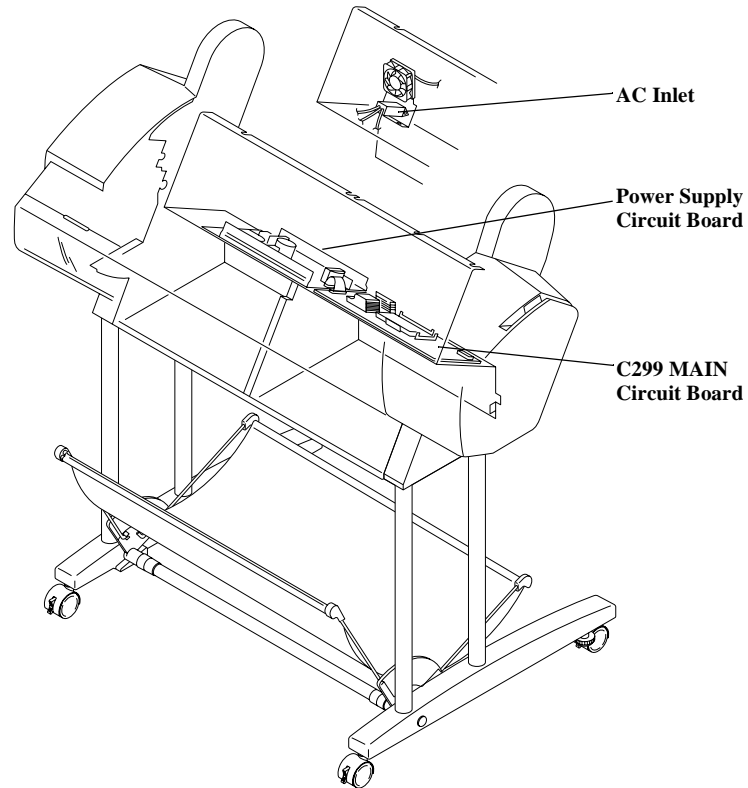
Figure 2-15. Cover Sensor Panel Unit

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**CIRCUIT BOARD PLACEMENT**

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The panel unit is located in the right front of the printer and the AC inlet, power supply circuit board and the C299MAIN circuit board are mounted in the compartment on the printer's rear side.



**Figure 2-16. Circuit Board Layout**

## 2.3 Control Circuit (C299MAIN Board) Outline

Here, we give a brief explanation of the operation of the C299MAIN board which performs printer mechanism control and driving in this printer.

A block diagram of this main control circuit is shown in the figure at right. The major IC's on the C299MAIN board are also explained in Table 2-4.

[Note] For details of each circuit, see the "C299MAIN Board Circuit Diagrams" at the back of this manual.

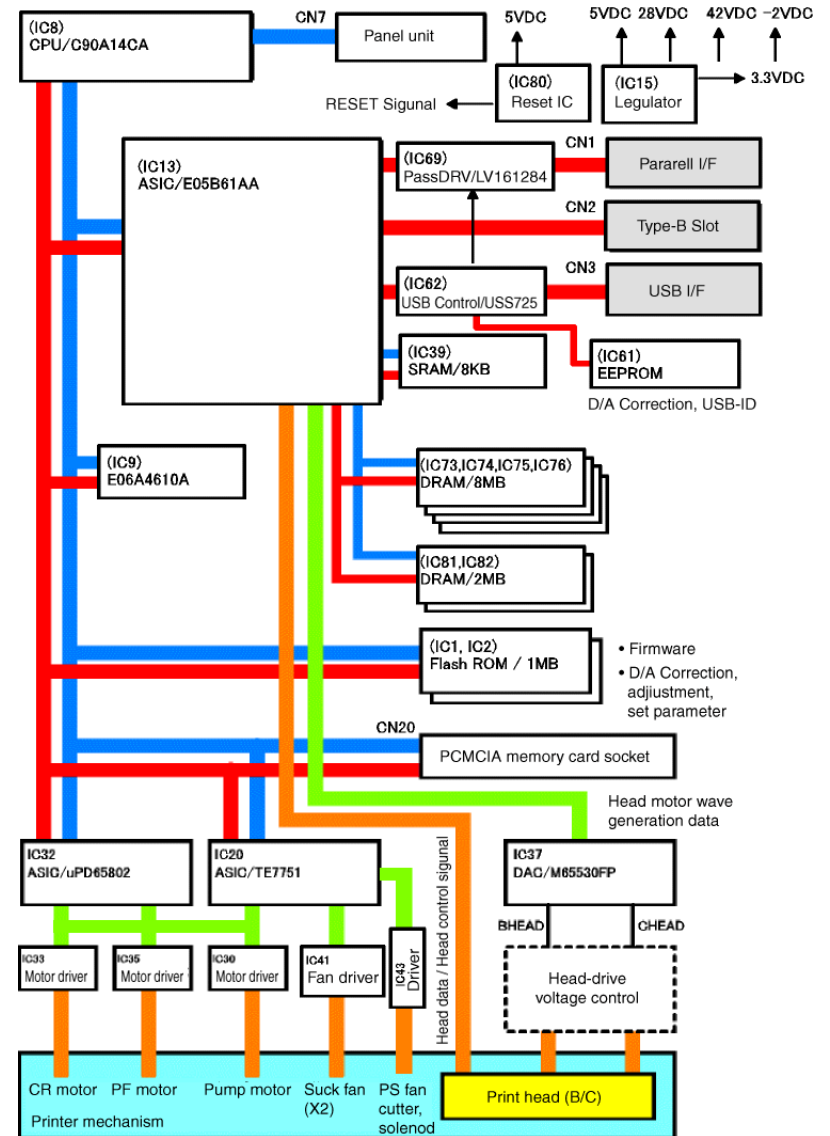


Figure 2-17. C299MAIN Board-Circuit Block Diagram



Table 2-4. Control Circuit Operation

Name/Code	Location	Function
CPU (C90A14CA) SH7043	IC8	32 bit RISC-CPU <ul style="list-style-type: none"> <li>• Clock speed = 32.768MHz</li> <li>• 128KB PROM (IPL) internal</li> </ul>
ASIC (E06A4610A)	IC9	I/O port expansion
ASIC (E05B61AA)	IC13	1) Regulates print data <ul style="list-style-type: none"> <li>• Command handling</li> <li>• Rasterizer (image data handling)</li> <li>• Head drive regulation (DAC control)</li> <li>• Print timing regulation</li> </ul> 2) Memory (DRAM/SRAM) 3) I/F Circuit Control <ul style="list-style-type: none"> <li>• Parallel interface (IEEE1284)</li> <li>• USB interface</li> <li>• Type-B</li> </ul>
ASIC (TE7751)	IC20	Motor regulation <ul style="list-style-type: none"> <li>• Pump Motor (pump/PG)</li> <li>• Cutter solenoid</li> <li>• Fan (Paper suction) x2</li> </ul>
ASIC (uPD65802)	IC32	Motor regulation (PWM regulation) <ul style="list-style-type: none"> <li>• CR Motor</li> <li>• PF Motor</li> </ul>
DAC (M65530FP)	IC37	3 channel 10 bit DA converter <ul style="list-style-type: none"> <li>• head-drive voltage control</li> </ul>
Flash Memory (MBM29F400TC)	IC1, IC2	Flash Memory (1Mbyte) <ul style="list-style-type: none"> <li>• Save firmware</li> <li>• Register D/A, user defined, and factory default setting parameters</li> </ul>
DRAM (EDO)	IC73~76 IC81, IC82	EDO RAM <ul style="list-style-type: none"> <li>• 10Mbyte (onboard)</li> </ul>
SRAM (LC3564SM-10)	IC39	64Kbit SRAM <ul style="list-style-type: none"> <li>• External data ring buffer type</li> </ul>

Table 2-4. Control Circuit Operation (continued)

Name/Code	Location	Function
EEPROM	IC61	Serial EEPROM Head drive D/A factory adjustment parameters USB-ID factory settings
M51953BFP	IC80	Reset IC
Driver IC (L6203)	IC33, IC35	CR/PF Motor Drivers
Driver IC (LB1845)	IC30	Pump Motor Driver
Driver IC (MMDF205ZR2)	IC41, IC43	Suction fan x2 and cutter solenoid driver
PQ3RD13	IC15	+3.3V regulator

## 2.4 Power Supply Board Summary

Depending on the printer model, either 100V AC or 220V AC is supplied to the printer when the printer is plugged into an liveoutlet.

The power switch consists of a secondary power switch system. A secondary power switch system is a system where the power supply board operates with a minuscule power level as long as the power cable is connected, even when the power switch is turned off.

**NOTE:** *The power supply board is configured so that it does not stop immediately even after the power switch is turned Off, but after the ink system's end sequence has been performed, the power goes Off. Therefore, the printer should not be operated by turning a power supply tap switch On and Off.*

The power supply board is equipped with an overcurrent protection fuse for protecting it against overcurrent. The fuse rating is shown in the following table.

**Table 2-5. Fuse Rating**

Input Voltage Range [V AC]	Fuse Rating
100V AC ± 10%	125V AC/6.3A

The C299MAIN board has three control signals, described in detail in the table below.

**Table 2-6. PS Board Signal Summary**

Signal Name	Condition	Function
+28V/+42V REM_ON (MAIN ->PS)	During operation	On and Off is controlled by the C299MAIN board. • If this terminal is shorted, the drive system power supply, 28 V DC and 42 V DC, becomes active.
	Printer off	• If this terminal is cleared (= L), the drive system power supply, 28 V DC and 42 V DC, becomes 0 V DC. • The 5 V DC power supply is not controlled by this terminal.
AC_OFF (MAIN<-PS)	During operation (= H)	The power switch goes On, the power supply board unit starts and each output becomes active. Afterward, the "H" signal is sent to the C299MAIN board.
	Printer off (= L)	The power switch goes Off, and the each output of the power supply board unit becomes inactive, or if the input voltage drops below the rated voltage value, the "L" signal is sent to the C299MAIN board.
POWER_SW (Panel/MAIN -> PS)	Turning on	This is connected to the panel unit's power switch. • When the switch is in the On state, this terminal is shorted. the power supply board changes to the operating state.
	Turning off	• When the switch is in the Off state, this terminal is cleared. After waiting in the operating state for 10 plus seconds and up to several minutes, the power supply unit goes off.

**CHAPTER**

**3**

**TROUBLESHOOTING**

## 3.1 Outline

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This section explains procedures for rapid and efficient troubleshooting if trouble occurs in the printer.

### 3.1.1 Introduction

First of all, when performing troubleshooting, the following basic parts should be checked.

1. Look in the printer for any foreign matter and make sure there is nothing there to hinder normal operation.
2. Carry out printing by setting the printer in the "Pause" state, then press the [SelecType] button 2 times. Next using the [Paper Feed] switch in the "TEST PRINT MENU," select "ATATUS CHECK", then press the [Enter] switch and print.

From the status sheet, you can check if the cause of the trouble is that the printer (either the printer unit itself or some major unit) is at the end of its service life, and check the user inherent panel settings, etc.

3. There should be no market soiling of the outside or the inside of the printer. If it is extremely soiled, carry out cleaning.
4. Each of the units and parts in the printer should not be missing or damaged, and should have the normal shape and configuration.
5. Each of the harnesses should be undamaged, and should be correctly connected to the relevant connector (perpendicularly and in the correct direction).
6. Each cam and gear in the printer mechanism should have no uneven wear or be overly worn, and the combinations should be correct.
7. Each type of rubber roller in the printer mechanism should be cleaned and it should be ascertained whether the cause of the trouble is because of dirt or due to some other cause.
8. Each type of rubber roller in the printer mechanism should not be unevenly worn or excessively worn, and their combinations should be correct.

9. As necessary, initialize the NVRAM on the C299MAIN board (return the individual customer settings and panel settings to the factory settings).

Carry out initialization by executing "INIT. NVRAM" from the "CLEAR COUNTERS MENU" in "Maintenance Mode 2."



**When disassembling the printer, turn the printer's power switch Off, then after making sure that the panel display is off, pull out the power cable from the outlet and disconnect the interface cable.**



1. **Only the specified printer tools should be used so as to maintain the printer's quality.**
2. **Only the specified lubricants and adhesives should be used.**
3. **The specified adjustments should definitely be carried out.**

### 3.1.2 Troubleshooting Practice

Here, the troubleshooting check points and check contents in the case that trouble occurs in this printer are explained. Troubleshooting is divided into the following items.

- Troubleshooting based on an Error Display
  - 3.2 Troubleshooting Based on Error Display (Object: User, Service Man.)
  - 3.3 Errors handled by the service man (Object: Service Man)
- Troubleshooting Based on Printing Results
  - 3.4 Troubleshooting Based on Printing Results (Object: Service Man)

Hereafter the check points and check contents in the above troubleshooting items are explained.

## 3.2 Troubleshooting Based on Error Display

This printer executes self-diagnosis based on the status detected by each sensor, detects abnormal states by the results of the self-diagnosis and displays the error status by means of error messages.

If any error display occurs, check the relevant error items from the panel display list shown below and take the appropriate action. (refer to the check points and the treatment content and take measures to correct the trouble.)

For methods of treating errors that require a service man which are not covered in the “User’s Manual” which was supplied with the printer, see the item “Errors That Require a Service Technician” in 3.3. \*1

### \*1: Errors that Require a Service Man

The necessary error occurrence states for treatment accompanying checks or replacement of the relevant parts by a service man are shown.

**Table 3-1. LCD Panel Error Messages**

LCD message	Status	Type	Refer to page
INK OUT	Ink End, Wrong Ink Cartridge	Error	
INK DRY nn MIN	Ink drying	Status	
INK LOW	Ink low	Warning	80
INK CHARGING nnn	Initial Ink Charge	Status	
LOAD INK CARTRIDGE	Performing ink cartridge replacement	Status	83
PRESS PAUSE BUTTON	Waiting for the paper-initialization trigger	Status	
READY	Printer is ready	Status	
ANABLE TO PRINT	Cannot perform test print.	Error	85
PRINTING	Printing the current print job.	Status	

**Table 3-1. LCD Panel Error Messages**

LCD message	Status	Type	Refer to page
OPTION I/F ERROR	Type-B interface error	Error	84
NO INK CARTRIDGE	One or more ink cartridges not installed	Error	84
COVER OPEN	The cover is open	Error	82
TURN PWR OFF AND ON	The printer needs to re-initialize.	Status	
SERVICE REQ. nnnnnnnn	Fatal error occurred	Error	85
WAIT	Initializing printer, initializing paper, charging ink, resting timer IC, or clearing NVRAM	Status	
POWER OFF	Performing power-off sequence	Status	
PAUSE	Printer paused	Status	
MAINTENANCE REQ. nnnn	Maintenance required (waste ink pad replacement)	Warning	80
TRANSPORT PREP nn%	Draining transport fluid (100% = end)	Status	
PAPER NOT CUT	Paper cut error	Error	82
PAPER NOT STRAIGHT	Paper fed at a slant	Error	82
PAPER JAM	Paper jam occurred	Error	82
PAPER OUT	No paper loaded or roll paper end	Error	81
SECURE PAPER LEVER	The Paper Set Lever was moved to the Released position during printing and must be returned to the Set position.	Error	83
LOAD PAPER	Paper is loaded but the Lever is not in the Set position. Move to the Set position.	Error	
RELOAD PAPER	Paper recognition error or paper feed/exit error (cut sheets only)	Error	83

**Table 3-1. LCD Panel Error Messages**

LCD message	Status	Type	Refer to page
REMOVE PAPER	Paper is too thick for cleaning and must be removed for cleaning.	Error	
RESET	Re-initializing the printer	Status	
LOAD xx PAPER	Roll paper/cut sheet size error	Error	81

\*1: The PG setting panel display shows a “H” in the 20th column in the LCD only when the PG setting is major.

\*2: The progress of treatment is shown by %. (100% signifies completion.)

\*3: The display priority order in the case of multiple occurrences of errors is shown below.

**Table 3-2. Printer Status Display Priority Order List**

Priority Order	Displayed Function
High	Fatal Error / Restart Request
↑	Resetting Timer IC / Clearing NVRAM / Resetting
	Executing power off sequence / Inter-User Transport mode
	Replacing ink cartridges
	Cover open
	Paper support lever released during operation
	Paper support lever currently released
	Type B Interface error
	No ink cartridge
	Ink end
	Roll paper / Cut sheet settings different
	Paper jam
	Paper cutting error

**Table 3-3.**

Priority Order	Displayed Function
	Paper skew error
	Paper recognition error
	Roll paper end
	Paper Eject error
	Initialization operation in progress
	Cleaning impossible error
	Executing ink sequence
	Waiting for paper initialization start trigger
	Pausing
	Paper initialization in progress
	Ink drying
	Ink low / Maintenance request
↓	Processing data / Pause
Low	No paper

**WARNINGS**

Warning messages appear on the LCD display to warn users that a problem may occur. The printer can still print and there is no effect on print quality; however the messages do not go away until the possible problem is taken care of or the printer enters the corresponding error condition. For example, the Waste Ink Pads Near Full message will remain until the pads are replaced and the counter is reset or until the pads become full and the printer enters an error state.

**Table 3-4. Ink Low**

Item	Description
LCD message	INK LOW
LED indicator status	The LED indicator for the ink cartridge that is low flashes.
Details	<p>If the standard 100 cc ink cartridge is installed: The printer detected that the soft counter for one of the ink cartridges was at Near-End. When the soft counter's Near-End signal is generated, it means that the cumulative number of dots is counted by software, and that the remaining amount of ink has been calculated to be less than 10%. After Ink Low is displayed, it means, as a criterion, that the area of an A1 sheet can be printed with 100% duty, but the ink cartridge should be replaced as quickly as possible.</p> <p>When replacing an ink cartridge, a new cartridge which is full of ink should be installed. (A partially filled ink cartridge that has been removed should not be installed a second time.) If this is not strictly observed, the correct operation of the remaining ink indicator cannot be guaranteed.</p>
	<p>If the large capacity 200 cc ink cartridges are installed: The printer detected the Near-End signal for one of the ink cartridges. The Near-End state is detected by the position of the sensor plate inside the cartridge, and judgment made. After Ink Low is displayed, as a criterion, it means, as a criterion, that the area of an A1 sheet can be printed with 100% duty, but the ink cartridge should be replaced as soon as possible.</p> <p>When replacing ink cartridges, a new cartridge which is full of ink should be installed. (A partially filled ink cartridge that has been removed should not be installed a second time.) If this is not strictly observed, the correct operation of the remaining ink indicator cannot be guaranteed.</p>
Recovery	Replace the old ink cartridge with a new one.



If it is necessary to replace the ink cartridges before Ink Low or Ink End is detected, and when replacing all the ink cartridges with new ones, the counters should definitely be reset. Reset the counters by “Maintenance Mode 2” -> “Counter Initialization Menu” -> “Ink Initialization.”

**Table 3-5. MAINTENANCE REQ. nnnn**

Item	Description
LCD message	MAINTENANCE REQ. nnnn nnnn = the replacement part code *1
LED indicator status	No change.
Details	Maintenance required. The corresponding part described by the nnnn has almost reached the end of its effective life. Service is required.
Recovery	Replace the old part(s) with new ones (Maintenance Kit 1054038) and reset the corresponding counters (Waste Ink and Cleaning).

- \*1: 0100  
[Parts Subject to Replacement]  
 - Waste ink pad  
 - Flushing box  
 - Pump assembly  
 - Cap assembly  
 - Cleaner, head  
 \* A periodic replacement parts kit containing these parts as a set, “Maintenance Kit Stylus Pro 7500 (No. 1058463)” is available.  
 [Counters to be Cleared]  
 Clear the counters by “Maintenance Mode 2” -> “Counter Initialization Menu.”  
 - Waste Ink Initialization  
 - Cleaning Initialization

**ERRORS**

Error messages appear on the LCD to notify the user that the printer cannot print properly under the current conditions. When an error message appears, printing stops and data transfer from the host PC stops. (The parallel interface signal = /ERROR -> “LOW” and BUSY -> “HIGH” and data cannot be entered.)



**Table 3-6. PAPER OUT**

Item	Description
LCD message	PAPER OUT
LED indicator status	Paper Check indicator is on
Details	No paper loaded or the end of the roll paper. When printing on roll paper, if the Paper End sensor detects the end of the roll paper, paper feeding stops and the paper is held in place. When printing on cut sheets, if the Paper End sensor detects the end of the paper, printing as well as feeding stop and the paper is held in place.
Recovery	Load paper. For cut sheets, remove the printed sheet and load a new one. After loading the new sheet, the error is cleared. If data from the previous print job remains, the data is printed on the new sheet according to the original paper-size data. If this error occurs even if paper is properly loaded, check the P-REAR sensor for obstruction or dust. Also make sure there is no foreign material blocking the hole in the Paper Guide U where the P-Rear sensor is located.



**If you are cleaning the sensor, water or organic solvents should not be used.**

**Table 3-7. LOAD xxx PAPER**

Item	Description
LCD message	LOAD xxx PAPER
LED indicator status	Paper check indicator is on and the currently selected paper path indicator flashes. The paper path information is supplied by the PP remote command.*1
Details	Roll paper and cut sheet size settings differ. The PP remote command determines the paper path, and when this setting and the paper setting made via the control panel differ, this (paper mismatch) error occurs.
Recovery	Load the correct paper size, or change the setting in the control panel/driver to match the size of the paper loaded in the printer. When this error clears, printing begins.

\*1: See the table below.

**Table 3-8. Paper Path Command and LED Indicators**

PP Command	Roll Auto Cut	Roll No Cut	Sheet
Roll Paper	Flashing	Flashing	On
Cut Sheets	On	On	Flashing

**Table 3-9. LOAD PAPER**

Item	Description
LCD message	LOAD PAPER
LED indicator status	The Paper Check indicator in on.
Details	The Paper Set Lever is in the release position. While loading paper, the Paper Set Lever was pushed to the release position.
Recovery	Pull the Lever forward to the paper set position to clear the error. If the error doesn't clear, check the Paper-Set-lever position sensor for dust or foreign material. Also make sure the sensor is properly connected to the Main board.

**Table 3-10. PAPER JAM**

Item	Description
LCD message	PAPER JAM
LED indicator status	Paper Check sensor flashes
Details	There is a paper jam. During a printing, feeding, or cutting operation the paper jammed on a printer part. A paper jam is detected when one of the paper-edge sensors is on and the CR motor has an out-of-step error or an overcurrent error is detected.
Recovery	Remove the paper from the printer, turn the printer off and back on, and try to print again. If the error recurs, make sure nothing blocks the carriage path and there are no foreign objects inside the printer.

**Table 3-11. COVER OPEN**

Item	Description
LCD message	COVER OPEN
LED indicator status	N/A
Details	The front cover is open. When the cover is open the CR cannot move and no printer operations such as cleaning can be performed. If the cover is left open for a long period of time, the printheads may be affected adversely.
Recovery	Close the front cover. The printer automatically returns to the pre-error state; i.e. "Ready" or "Paused". If the cover is opened during printing, printout quality may suffer. If you have to open the cover for some reason while the printer is printing, first press the Pause button to decrease the chance of adversely affecting printout quality. If this error occurs even though both sides of the cover are securely closed, check the cover-open sensor (interlock switch) on the left side for proper operation and position.

**Table 3-12. PAPER NOT CUT**

Item	Description
LCD message	PAPER NOT CUT
LED indicator status	Paper Check indicator flashes.
Details	Paper cut error occurred. The page was not cut entirely or the page was cut unevenly and part of it still covers the P-FRONT sensor.
Recovery	Open the front cover and remove any cut paper that has not fallen. If necessary, cut the paper above the P-FRONT sensor with scissors. The LCD will display the "RELOAD PAPER" message. Move the Paper Set Lever to the release position and after making sure the leading edge is even, properly reload the paper. If the error is due to a worn cutter blade, replace the blade. Make sure the cutter and cutter solenoid are installed and working properly. Also make sure the cutter positioning adjustment is being carried out appropriately. See "5.2.4.7 Cutter Positioning Adjustment".

**Table 3-13. PAPER NOT STRAIGHT**

Item	Description
LCD message	PAPER NOT STRAIGHT
LED indicator status	Paper Check indicator flashes.
Details	Paper skew error occurred. The lateral (horizontal) position of the leading edge and rear edge are off by over 3mm. When this error occurs, there is the possibility that ink has been fired onto the platen; make sure the platen is clean. Also, you may need to reprint your print job if the degree of skew is too much.
Recovery	Set the paper correctly to clear this error. Follow the directions in the user's guide carefully. If the roll paper is curved or bent near the edge, line up the leading edge on both sides. If reloading the paper correctly does not clear the error, turn the printer off and back on.

**Table 3-14. RELOAD PAPER**

Item	Description
LCD message	RELOAD PAPER
LED indicator status	Paper Check indicator flashes.
Details	<p>There was a paper recognition error or cut sheet feeding error, which can happen under the following conditions:</p> <ol style="list-style-type: none"> <li>1) The user loaded the leading edge of the paper too far into the printer. The printer can only reverse feed the paper a set distance, and if the paper is loaded too far, it will not reverse feed far enough.</li> <li>2) The printer detected that the paper was loaded outside of the printable area/carriage path.</li> <li>3) After printing, the printer detected that the paper is outside of the cutting area/carriage path.</li> <li>4) The printer detected that the cut sheet loaded in the printer is too long/ unsupported and could not be fully ejected. This may occur if roll paper is loaded but the control panel is set to cut sheets.</li> <li>5) This error may occur after a Paper Not Cut error.</li> </ol>
Recovery	<p>1-3 above) Correctly set the paper as described in the user’s guide. If the front edge is not clean and straight, cut it evenly.</p> <p>4-5 above) For roll paper cut off the section of the paper that has been ejected and properly reload the paper. For cut sheets eject the remaining paper and select Sheets on the control panel or load supported paper depending on the cause of the error.</p> <p>If after correctly reloading paper the same error occurs, check the operation and connection of the P-EDGE sensor located on the carriage.</p>

**Table 3-15. SECURE PAPER LEVER**

Item	Description
LCD message	SECURE PAPER LEVER
LED indicator status	N/A
Details	The Paper Set Lever was moved to the release position during operation. Similar to leaving the front cover open for long periods of time, leaving the Paper Set Lever in the release position (during operation) can have an adverse affect on the printheads.
Recovery	<p>Return the Paper Set Lever to the set (forward) position. The printer automatically returns to the pre-error state; i.e. “Ready” or “Paused”.</p> <p>Moving the Paper Set Lever during printing may cause a decline in printout quality and is not supported by EPSON.</p> <p>If after returning the Lever to the set position this error does not clear, check the operation and connection of the Paper Set Lever sensor.</p>

**Table 3-16. LOAD INK CARTRIDGE**

Item	Description
LCD message	LOAD INK CARTRIDGE
LED indicator status	<p>N/A</p> <p>The Ink End indicators only function when the ink is low/empty, when there is no ink cartridge, or when an ink cartridge is loaded in the incorrect slot.</p>
Details	Only occurs during ink cartridge replacement.
Recovery	Finish replacing the ink cartridge(s) and close the ink cartridge holder door. The printer automatically returns to the pre-error state; i.e. “Ready” or “Paused”.

**Table 3-17. INK OUT**

Item	Description
LCD message	INK OUT
LED indicator status	The Ink End indicator for the incorrect slot (if an ink cartridge is installed in the wrong slot) or empty ink cartridge is on.
Details	The ink-end error appears after the ink-end sensor detects the near-end condition and then a predetermined amount of ink is ejected. Also, if an ink cartridge that is already in the near-end condition is loaded, the printer will automatically produce this error. In cases where an ink cartridge is loaded in the wrong slot or an unsupported ink cartridge is loaded, this error also occurs.
Recovery	If an ink cartridge is empty, replace it with a new cartridge. Do not load a previously used ink cartridge; otherwise the ink counter will not work properly. If the wrong cartridge is loaded, replace it with the correct cartridge. If this error occurs even after replacing the old cartridge with a new cartridge, check the operation and connection of the corresponding ink-out sensor. See “4.2.3.6 Removing the I/H Assembly”.



**Do not insert used ink cartridges into the printer. Doing so will cause the ink counter to function improperly.**

**Table 3-18. NO INK CARTRIDGE**

Item	Description
LCD message	NO INK CARTRIDGE
LED indicator status	The Ink End indicator is on for the ink cartridge that is missing or improperly installed.
Details	No ink cartridge installed or the ink cartridge is not fully installed.
Recovery	Open the ink cartridge holder and install a new cartridge in the empty slot. Do not use cartridges after removing them even one time. If the cartridge is installed, and installed correctly, check the operation and connection of the I/C detection sensor. See “4.2.3.6 Removing the I/H Assembly”.



**Do not insert used ink cartridges into the printer. Doing so will cause the ink counter to function improperly.**

**Table 3-19. OPTION I/F ERROR**

Item	Description
LCD message	OPTION I/F ERROR
LED indicator status	N/A
Details	An unsupported optional interface card is installed but cannot be used.
Recovery	Turn off the printer, remove the unsupported option card, and turn the printer back on. Install a supported option card if necessary.

**Table 3-20. REMOVE PAPER**

Item	Description
LCD message	REMOVE PAPER
LED indicator status	Paper Check LED is on.
Details	Paper is too thick to allow for head cleaning. The currently loaded paper is too thick to allow for timed cleaning.
Recovery	Move the Paper Set Lever to the release position, remove the paper, and return the Lever to the set position. Cleaning starts and “Please Wait” appears on the LCD panel. When “No Paper Loaded/Load Paper” appears, reload the thick paper to begin printing.

**Table 3-21. ANABLE TO PRINT**

Item	Description
LCD message	ANABLE TO PRINT
LED indicator status	Same as before this error arose.
Details	Cannot perform test print. Due to one or more of the following reasons the printer cannot print a nozzle check pattern, status sheet, PG adjustment pattern, or paper thickness pattern: 1) No paper loaded 2) Ink cartridge missing 3) Paper recognition error This error appears on the LCD panel for about three seconds, and then the display returns to its previous state.
Recovery	Exit SelecType mode and clear the error that appears on the LCD panel. Then return to SelecType mode and print.

**FATAL ERRORS**

Fatal error messages appear on the LCD panel to warn users that an unrecoverable error has occurred. However, in some cases the printer may recover if turned off and back on.

**Table 3-22. Fatal Error**

Item	Description
LCD message	SERVICE REQ. nnnnnnnn (“nnnnnnn” indicates the type of fatal error.)
LED indicator status	All LED indicators flash.
Details	A fatal error occurs for one of the following reasons. 1) A problem occurred that the user cannot solve by himself. 2) A maintenance part has exceeded its useful life and if not replaced may cause damage to the printer or printer parts. 3) An illegal function was attempted or illegal command received and the operation is impossible.
Recovery	Turn off the printer and turn it back on. If the error does not recur, continue normal operation. If the same fatal error occurs when you turn the printer back on, see the following table and perform the necessary service.
Type of Fatal Error	See the following table.

**Table 3-23. Fatal Error Code List**

Code	Description	Refer to page
00000100	The waste ink receptacle is at the end of its service life. *1 (It is necessary to replace the specified part and clear the counter.)	87
00000101	The ink supply tube is worn. (This is equivalent to using the product longer than the product’s specified service life, so the ink supply tube is considered to be damaged by wear and an error message is displayed.)	87
00010000	PF motor/ encoder check error (out of step error)	87
00010001	PF motor/motor out of step	88
00010002	PF motor/overcurrent	88
00010003	PF motor/ in position time-out error	88

Table 3-23. Fatal Error Code List (continued)

Code	Description	Refer to page
00010004	CR motor/ encoder check error (out of step error)	89
00010005	CR motor/motor out of step	89
00010006	CR motor/overcurrent	89
00010007	CR motor/ in position time-out error	89
00010008	Servo watchdog time-out error	89
00010009	System watchdog time-out error	90
0001000A	CR home position sensor error	90
0001000B	PF home position sensor error	90
0001000C	Head slide (PG) home position sensor error	90
0001000D	Cover open sensor error (00)	91
0001000E	Cover open sensor error (01)	91
0001000F	CR motor/PWM output malfunction	91
00010010	PF motor/PWM output malfunction	91
00020000	NVRAM error	91
00020001	Internal RAM check error	91
00020002	SRAM check error	91
00020003	DRAM check error	91
0002000B	Mail box error (memory error)	87
10020004	CPU vector 4 general illegal instruction	87
10020006	CPU vector 6 slot illegal instruction	87
10020009	CPU vector 9 CPU address error	87
1002000A	CPU vector 10 DMAC/DTC address error	87
1002000B	CPU vector 11 watchdog time-out error	87
100200**	CPU vector 32~63 (incorrect trapping)	87

### 3.3 Errors That Require a Service Technician

Here, of the warnings and fatal errors mentioned in the previous item, the contents and methods of treatment of those errors which require a service man are explained.

---

#### MAINTENANCE CALL 0100

---

- Problem  
The waste ink pads are almost full, causing a warning error. The printer can continue printing, but this messages overrides status messages such as Ready or Printing.
- Solution  
Replace the following parts and reset the counters as described below
  - Waste Ink Pads
  - F Box
  - Pump Assembly
  - Cap Assembly
  - Cleaner, Head

**NOTE:** *The above 5 parts can be supplied in the periodic parts kit "Maintenance Kit Stylus Pro 7500 (No. 1058463)."*

---

#### SERVICE CALL 00000100

---

- Problem  
The waste ink pads are completely full, causing a fatal error. The printer stops printing.
- Solution  
Same as "Maintenance Call 0100."

---

#### SERVICE CALL 00000101

---

- Content  
The carriage drive system has reached the end of its service life.
- Treatment
  - Check if the bends and joints of the ink supply tubes have damage, cracks or ink leakage.
  - Check if the CR timing belt, driven pulley and CR motor are normal.
  - Check if the CR timing belt's tension is normal.
  - If no abnormalities could be confirmed, carry out initialization of the CR motor's service life counter in Maintenance Mode 2.

---

#### SERVICE CALL 00010000

---

- Problem  
PF motor encoder check error  
The PF motor makes small revolutions clockwise and counter-clockwise. When it turns, the printer checks the rotary encoder (inside the motor) output signals to make sure the motor is turning at the correct speed/distance. If the encoder sends an incorrect signal, an error occurs.
- Solution  
Check if there is an abnormal load, etc. on the rotation of the grid rollers. They there is no abnormality and the error is still not cleared, check the PF motor encoder. If it is abnormal:
  - Check and adjust the PF timing belt tension
  - Replace the PF motor
  - Replace the PF motor extension cable
  - Replace the C299MAIN Board

---

**SERVICE CALL 00010001**

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- Problem  
PF Motor out of Synch  
Abnormal PF motor internal encoder output pulse width detected (Long or short with respect to the specified time).
- Solution  
Check if there is an abnormal load, etc. on the rotation of the grid rollers. They there is no abnormality and the error is still not cleared, check the PF motor encoder. If it is abnormal:
  - Check and adjust the PF timing belt tension
  - Replace the PF motor
  - Replace the PF motor extension cable
  - Replace the C299MAIN Board

---

**SERVICE CALL 00010002**

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- Problem  
PF motor overcurrent  
Feedback from the PF motor (IC35) driver's 10-pin output (sensor signal) indicates that the PF motor's current is irregular.
- Solution
  - Replace the PF motor
  - Replace the PF motor extension cable
  - Replace the C299 MAIN Board

---

**SERVICE CALL 00010003**

---

- Problem  
PF motor in position time out  
In the PF motor control, position control did not finish within the regular position stabilization time (in position time) during stop processing.
- Solution
  - Replace the PF motor
  - Replace the PF motor extension cable
  - Replace the C299 MAIN Board



---

**SERVICE CALL 00010004**

---

- Problem  
CR motor encoder check error  
The CR motor makes small revolutions clockwise and counter-clockwise. When it turns, the printer checks the encoder output signals to make sure the motor is turning at the correct speed/distance. If the encoder doesn't send the correct signal or output data, an error occurs.
- Solution  
Make sure there is nothing blocking the carriage. If that does not solve the problem, check the CR motor encoder connection. If there still is a problem, try the following.  
  
If there are abnormalities:
  - Check if the T fence for detection of the encoder pulse is removed
  - Check for dirt, paper dust or damage to the T fence
  - Replace the CR\_ENC (carriage encoder) sensor
  - Replace the CR motor
  - Replace the C299 MAIN Board

---

**SERVICE CALL 00010005**

---

- Contents  
CR Motor out of Synch  
Abnormal CR encoder output pulse width detected (Long or short with respect to the specified time).
- Solution  
Check if there is not some abnormal load during carriage movement. If there is no abnormality, but the error is not cleared, check the CR motor encoder. If there are abnormalities:
  - Check if the T fence for detection of the encoder pulse is removed
  - Check for dirt, paper dust or damage to the T fence
  - Replace the CR\_ENC (carriage encoder) sensor
  - Replace the CR motor
  - Replace the C299 MAIN Board

---

**SERVICE CALL 00010006**

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- Problem  
CR motor overcurrent  
Feedback from the CR motor (IC33) driver's 10-pin output (Sense signal) indicates that the CR motor's current is irregular.
- Solution
  - Replace the CR motor
  - Replace the C299 Main Board

---

**SERVICE CALL 00010007**

---

- Contents  
CR Motor In Position Time Out  
In the CR motor control, position control did not finish within the regular position stabilization time (in position time) during stop processing.
- Solution
  - Replace the CR\_ENC (carriage encoder) sensor.
  - Replace the CR motor
  - Replace the C299 Main Board

---

**SERVICE CALL 00010008**

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- Problem  
Servo interrupt watchdog time-out error due to motor-drive control related error
- Solution  
Replace the C299 Main Board

---

**SERVICE CALL 00010009**

---

- Problem
  - System interrupt watchdog time-out error due to sensor-related error
- Solution
  - Replace the C299 Main Board

---

**SERVICE CALL 0001000A**

---

- Problem
  - CR origin sensor malfunction
  - CR home position sensor malfunction
- Solution
  - Replace the CR\_HP detection sensor
  - Replace the C299 Main Board

---

**SERVICE CALL 0001000C**

---

- Problem
  - The head SLID home position sensor is faulty
- Solution
  - Check if there is ink or dirt, etc. adhering to the sensor surface and hindering the detection operation. If there is no abnormality and the error is not canceled, check the SLID home position sensor.
  - If there are abnormalities:
    - Replace the head SLID detection sensor
    - Replace the C29 9 MAIN board

---

**SERVICE CALL 0001000D**  
**SERVICE CALL 0001000E**


---

- Problem  
Cover Sensor Failure (00)/(01)
- The cover open detection sensor (interlock switch) is abnormal.
- (00): Right side sensor ..... Not installed in the Stylus Pro 7500.
  - (01): Left side sensor
- Solution
- Check the sensor mounting position. If the error is not canceled by adjusting the position to the proper place, check the cover open detection sensor. If there are abnormalities:
- Replace the malfunctioning cover sensor
  - Replace the C299 MAIN Board

---

**SERVICE CALL 0001000F**


---

- Problem  
CR motor PWM output error
- Solution
- Replace the C299 MAIN Board

---

**SERVICE CALL 00010010**


---

- Problem  
PF motor PWM output error
- Solution
- Replace the C299 MAIN Board

---

**SERVICE CALL 00020000** (NVRAM ERROR)  
**SERVICE CALL 00020001** (INTERNAL RAM ERROR)  
**SERVICE CALL 00020002** (SRAM ERROR)  
**SERVICE CALL 00020003** (DRAM ERROR)
 

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- Problem  
Unusual condition detected.
- Solution
- Make a note of the error code that was generated, turn on the power again and check if the same error is generated again. If there is reproducibility, replace the C299 MAIN Board.

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**SERVICE CALL 10000004**  
 (CPU VECTOR 4 / GENERAL IMPROPER COMMAND ISSUED)  
**SERVICE CALL 10000006**  
 (CPU VECTOR 6 / SLOT IMPROPER COMMAND)  
**SERVICE CALL 10000009**  
 (CPU VECTOR 9 / CPU ADDRESS ERROR)  
**SERVICE CALL 1000000A**  
 (CPU VECTOR 10 / DMAC/DTC ADDRESS ERROR)  
**SERVICE CALL 1000000B**  
 (CPU VECTOR 11 / WD TIMER OUT ERROR)  
**SERVICE CALL 10000\*\*** (CPU VECTOR 32 ~ 63)
 

---

- Problem
- Make a note of the error code of the error that occurred, turn on the power again and check if the same error is generated again. If there is reproducibility, replace the C299MAIN board.
  - Check if there are differences in the occurrence of errors according to print data (size, print mode, etc.).

### 3.4 Troubleshooting Based on Your Printout

This section describes conceivable print quality problems that may occur with this printer and the troubleshooting points for those errors.

**Table 3-24. Diagnosing trouble based on printout**

Description	Refer to
Dot missing	page 92
Uneven printing/poor resolution	page 93
Smudged or marred printout on front side	page 93
Smudged or marred printout on reverse side	page 94
White/black banding	page 94

#### DOT MISSING

If the printer is kept for a long time without being used, the viscosity of the ink on the nozzle surfaces of the print heads, and in the nozzles themselves, increases, and may cause skipping of dots during printing. After cleaning, (clean several times), if the printer still doesn't recover from skipping dots, the following points should be checked.

1. After executing the "Inter-user Transport Mode," set the "Transport Liquid Cartridges (x 6 cartridges)" in place of ink cartridges and carry out initial filling. (The ink passages will be completely cleaned by the transport liquid.)  
After initial filling with the transport liquid, discharge the transport liquid from the printer in the "Inter-User Transport Mode." After that, set new ink cartridges and carry out initial filling, then carry out "Nozzle Check Pattern Printing."



**Initial filling causes a large amount of fluid to be discharged into the waste ink pad, so the "Waste Ink A," "Waste Ink B" and "Cleaner" counters will show considerable consumption. (approximately 10%).**

2. If the operation in "1" fails to bring recovery, check the following points.
  - a) If trouble occurs in all the ink colors:
    - Are the print heads and cap assemblies sealed during ink filling?

- If the cap assembly / pump tubes have come off.
  - If the gear train between the pump motor and pump unit has been misassembled.
  - If the cap assembly has failed. (The tension spring has come off, the cap rubber is damaged, etc.)
  - If the pump unit has failed. (The tubes are crushed, etc.)
- b) If the trouble occurs with a specific ink color:
- Abnormal connections between the ink cartridge, ink holder, tube, damper, print head. (Fastening nuts loose, or the O-ring deformed or damaged, causing ink to leak, etc. could occur.)
  - Print head failure
    - Left side (B Head) Black, Cyan, Magenta
    - Right Side (C Head) Light Cyan, Light Magenta, Yellow
- c) If the trouble still has not been recovered from with the items up to this point, replace the following electric system related parts and check again.
- Check the connections to the CR cable (FFC long) and if there is any damage to it or not.
  - Check the connections to the head cables (FFC short; x 2), and if there is any damage to them or not.
  - The C299MAIN board.



- **If you replace the C299MAIN board or the print heads, the connection state of the connection cables (FFC) should be checked. Particularly in cases where the connector is inserted at a slant, etc., when the power is turned on, it could cause destruction of the circuit and the insides of the heads, so sufficient caution should be exercised.**
- **During head replacement, care should be taken not to mistake the B head and C head.**

## UNEVEN PRINTING/POOR RESOLUTION

If the print quality is abnormal (uneven printing, diffused image, etc.), the following items should be checked.

1. Adjust the gap  
Using panel settings or the self-diagnostic function, carry out gap adjustment (“round trip print position adjustment” and “gap adjustment”).
2. If the trouble occurs only when the user is using a specific type of paper (thick paper), carry out “User Paper Setting” using the panel setting procedure.  
(By setting the information concerning the thickness of the paper the user is using and correcting the print position (correction of changes in the position where ink hits the paper surface due to differences in paper thickness), avoid influencing the print position.)
3. Try changing the Bi-D offset #1 (speed priority) / #2 (quality priority) correction values in [Maintenance Mode 2].
4. If this trouble occurs immediately after replacing the C299MAIN board with a new one, transfer the backup parameters from the old C299MAIN board to the new one. Execute “Write D/A Correction Values” in the diagnostic mode.
5. If the printer’s condition is not improved by the above items (adjustments), check the following items using the self-diagnostic function.
  - Head tilt adjustment
  - Head height adjustment



If you have performed the “Head tilt adjustment” or “Head height adjustment,” be sure to carry out the “Round trip print position adjustment” and “Gap adjustment.”

## SMUDGED OR MARRED PRINTOUT (FRONT)

If smudging or marring occurs due to rubbing by the head, etc. on the paper’s printed surface, check the following items.


1. If smudging is occurring at the front end of the roll paper or at the rear end, widen the margins at the front end and rear end. (Set the “Roll Paper Margin” front end and rear end on “15 mm”).  
  
(If high duty printing was done close to the front end and rear end (margin = 3 mm), the paper will contain a large amount of ink and deformation of the paper will be accelerated, and depending on the case, the paper will touch the heads.)
2. If paper with weak edges which cannot move smoothly along the paper path is being used, Select “NORM” for “SUCTION” in the “PAPER CONFIG. MENU”, which is in the “Panel Settings”.
3. If there is rubbing and smudging due to slow drying in printing of user paper.
  - Set the stand basket paper Eject direction on Front.
  - In the item “DRYING TIME” in the User Paper Setting Menu”, in “Panel Settings,” set the drying time (the time until auto paper cutting is carried out after printing is finished (the default is 0 min. The maximum is 30 min.).
4. If the trouble cannot be resolved by the above methods, check the following.
  - The cap assembly / tension spring is off.  
(If this spring comes off, cap will collect inside the cap and ink that adheres around the head nozzle surface ends up adhering to the paper.

---

**SMUDGED OR MARRED PRINTOUT (REVERSE SIDE)**


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If smudging or marring of the paper back surface with ink occurs, the following items should be checked.

1. Check if there isn't ink adhering to the paper feed path. If there is ink adhering, it should be wiped off.
    - Sub-platen A/B Surface
    - Grid roller surface
    - Paper guide L surface
    - Paper guide L2 surface
  2. One likely cause of ink adhering to the above parts is the following cause.
    - Paper feeding at a slant during printing (at the point when 1 page is finished)
- 
**■ If the Paper Skew Detection setting is off in “Printer Settings” -> “Panel Setting Menu” -> “Paper Width Detection,” if the user’s paper size setting is not correct, the surface of the platen will be printed.**

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**WHITE OR BLACK BANDING**


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If white or black banding (lines across the page) appear on your printout, try the following.

1. Print the “Nozzle Check Pattern.”
  - If it is normal, carry out the “Head Slant Adjustment.”
  - If skipping of dots occurs, carry out “Cleaning.”
2. If skipping of dots is not the cause, carry out adjustments of the print heads.
  - Head slant adjustment (B head / C head)
    - If each of the nozzle rows on the B head or C head is not positioned so that it is perpendicular to carriage travel direction, overlapping of the raster lines which are printed and compose the print will occur, and this will cause dense portions and white streaks between raster lines.
    - Head height adjustment (B and C heads)
    - Round trip print position adjustment.
    - Gap adjustment.
    - In the self-diagnostic mode, check if the value written for the head ID.

**CHAPTER**

**4**

**DISASSEMBLY & ASSEMBLY**

## 4.1 Summary

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This section describes the disassembly and assembly methods for the EPSON Stylus Pro 7500. However, full assembly instructions are not given apart from following the disassembly instructions in reverse order, and where special instructions are necessary, reassembly points are provided.

Where “Caution” and “Reassembly” notes are given, be sure to confirm these contents BEFORE starting the corresponding procedure. Where adjustment procedures are necessary, “Adjustment Required” notes describe what you need do to. These adjustment procedures are absolutely necessary and are described in detail in Chapter 5.

### 4.1.1 Warnings

Before proceeding with any disassembly or assembly work, make absolutely sure of the following.



- **The power switch is located on the control panel. Any time the printer is plugged into a power outlet, power is flowing through the PS board. Unless otherwise stated, always turn off the printer, wait several seconds, and then unplug the power cable from the outlet before servicing a printer.**
- **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.**
- **Wear a pair of gloves to protect your hands than the sharp edge in the printer mechanism.**
- **For safety reasons, the front cover position is automatically detected by the cover-open sensor which is an interlock switch. Do not block or modify this sensor.**
- **A lithium battery is installed on the MAIN Board of this printer. Be sure to observe the following instructions when servicing the battery:**
  - **Keep the battery away from any metal or other batteries so that electrodes of the opposite polarity do not come in contact with each other.**
  - **Do not install the battery in the wrong direction. (This may cause burning or explosion.)**
  - **Do not heat the battery or put it near fire.**
- **If ink gets on your hands, wash them thoroughly with soap and water. If ink gets in your eyes, rinse them immediately with water.**



**CAUTION**

- Before servicing or performing maintenance on the printer, make sure you have enough space. If you need to move the printer, be sure the space you move to is safe.
- Because the printer is much heavier than most printers (about 43.5Kg for the printer body/ 52Kg for the printer and stand), you need to take extra care. If you need to take apart the printer and stand or lift the printer, two people are necessary.
- If you remove the ink path system parts and replace them, run the “Inter-User Transport Mode” and discharge the ink.
- As necessary, after discharging the ink using the above method, carry out ink initial filling using the “Transport Fluid Cartridges (x 6 cartridges), then discharge the transport fluid in the Inter-User Transport Mode to clean the ink system even more thoroughly.
- After removing any of the ink related parts, double check to make sure all parts are secured; otherwise you’re going to be in big trouble.
- Ink may leak onto other printer parts or the printer basket when removing printer parts, so it is recommended to put a sheet or cloth under the printer, especially when working on or near ink-related parts.
- When working on the electrical circuit boards, be careful concerning static electricity which can cause damage to the board. It is recommended you use an anti-static wrist band or similar grounding device to prevent static electricity buildup.
- When removing/re-inserting the flat-cable (FFC) from/to a connector, make sure to pull/insert the cable at a 90 degree angle to the connector. Otherwise, internal contact of the leads may be damaged and this can cause a short-circuit.
- When replacing connector wires, be careful to replace the entire length of the wire exactly as you found it; rubbing against edges or moving parts can cause noise in the wires.
- As necessary, if you remove each cover operate the printer, care should be taken not to get injured by the operation of the drive system units.

- The cutter blade is extremely sharp, so care should be taken not to injure yourself when handling it.
- An ultra-hardened blade is used for the cutter blade, and physically, it is extremely brittle material, so care should be taken not to bump it against any of the metal parts of the printer, etc. and damage it.
- When performing service operations on items which are controlled as after service parts but which no procedures have been provided for, the state of the parts should be observed closely before beginning the operation to get a thorough idea of how to proceed.
- See the drawing at right concerning directions during repair operations.
- If you have to loosen a screw that has blue screw-lock applied to its head, make sure you apply blue screw-lock again when reassembling.

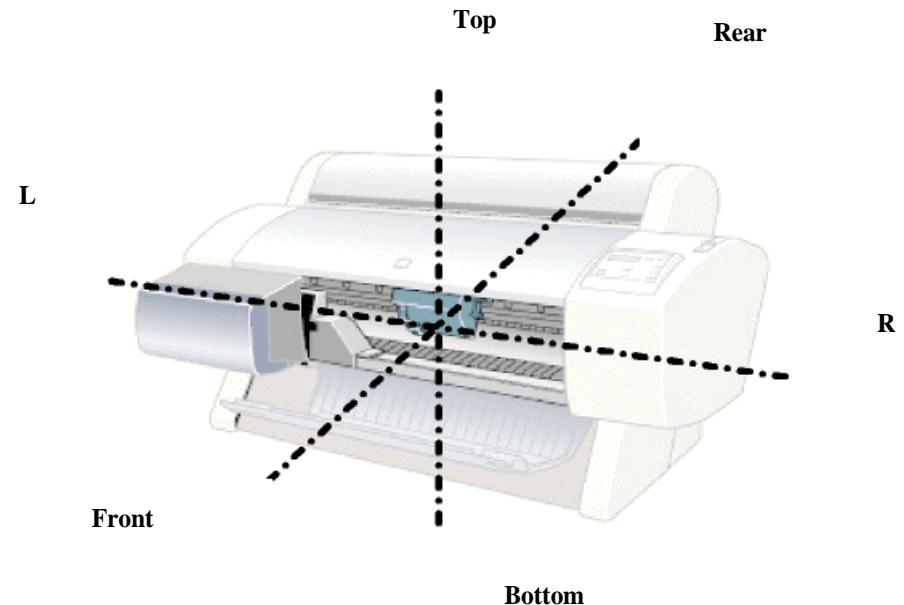


Figure 4-1. Directional View of the Printer

## 4.1.2 Tools

This section lists the tools necessary to disassemble or assemble the printer.

**Table 4-1. Necessary Tools**

Tool	Part Code	Notes
(+) Phillips screwdriver #2	commonly available tools, no special tools necessary	longer than 250mm is helpful
(+) Phillips screwdriver #1		
(-) Standard screwdriver		-
Round-nosed pliers		-
Tweezers		-
#E 589 Torque Wrench (6 mm x 1.0 kg) or #f760 Torque Wrench	B765106901 1059914	For tube and joint screws.
Hex Wrench	Part with Exclusive Stand (Commercially available part)	5.5mm*1
PF Loop Scale ASSY Assembly tool	1051765	Exclusive tool No. #f730
PF Loop Scale Attachment tool	1051767	Exclusive tool No. #731
Ink Cartridge L Transport Fluid, S46, Recycled	1045585	Transport liquid cartridge *2
Maintenance Kit, Stylus Pro 7500	1058463	Periodic Replacement Parts Kit

**NOTE:** This hex wrench is necessary only when removing the stand.

**NOTE:** 6 of these cartridges are necessary for one operation.

### 4.1.3 Screw List

The following table lists all the screws used in this printer.

**Table 4-2. Screws**

Type	Color	Description
CB M3x6	white	(+) Bind
CBP M3x6	silver	(+) Bind P-tight
CBP M4x10	black	(+) Bind P-tight
CBS M3x10	white	(+) Bind S-tight
CBS M4x6	white	(+) Bind S-tight
CBS M2x8	white	(+) Bind S-tight
CBS M3x6	white	(+) Bind S-tight
CBS M4x8	white	(+) Bind S-tight
CBS M3x10	white	(+) Bind S-tight
CUPS M3x6	white	(+) Cup S-tight
CUPS M4x6	white	(+) Cup S-tight
CUPS M4x8	white	(+) Cup S-tight
CPP M3x8	white	(+) Crosshead Pan P-tight
CPS M3x12	white	(+) Crosshead Pan S-tight
CP M3x6	white	(+) Crosshead Pan
CP(W) M2x12	silver	(+) Crosshead Pan, washer
CP(W) M2x8	silver	(+) Crosshead Pan, washer
CP(W) M3x6	silver	(+) Crosshead Pan, washer
CP(W)M3x8	silver	(+) Crosshead Pan, washer
CP(W)M3x25	silver	(+) Crosshead Pan, washer
CP(W)M4x8	silver	(+) Crosshead Pan, washer
CP(W)M4x10	silver	(+) Crosshead Pan, washer
CP(W)M4x40	silver	(+) Crosshead Pan, washer
Dish screw M3x6	white	(+) Dish

**Table 4-2. Screws (continued)**

Type	Color	Description
Truss screw M4x6	white	(+) Truss screw
Toothed washer M3	white	outer teeth
Toothed washer M4	white	outer teeth

## 4.2 Disassembly Flow

Refer to the following flowchart when determining the disassembly flow.

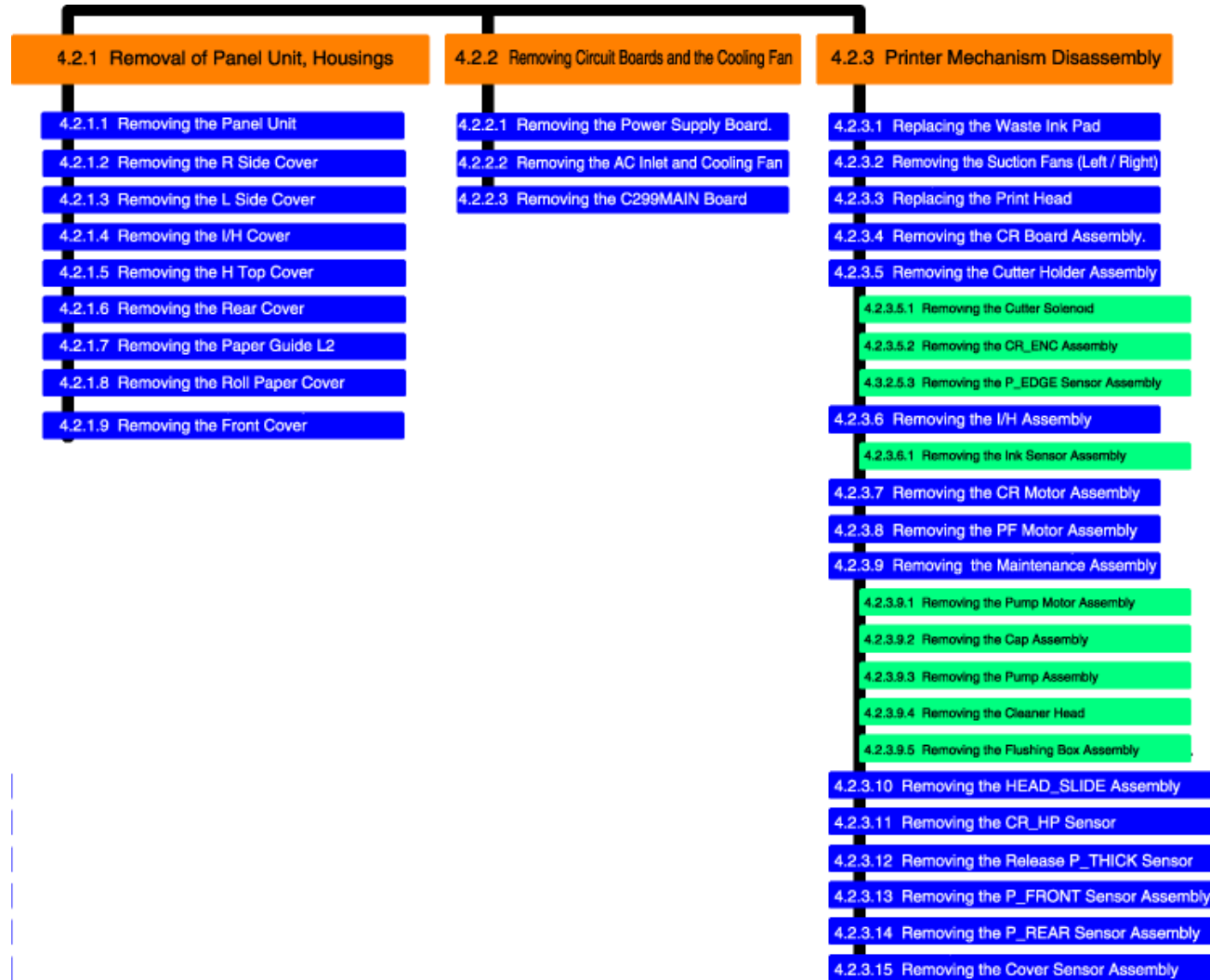


Figure 4-2. Disassembly Process Flowchart

## 4.2.1 Removing the Housing

This section describes the removal procedure for printer housing parts. See below for an illustration of the housing parts.

### Roll Cover Assembly

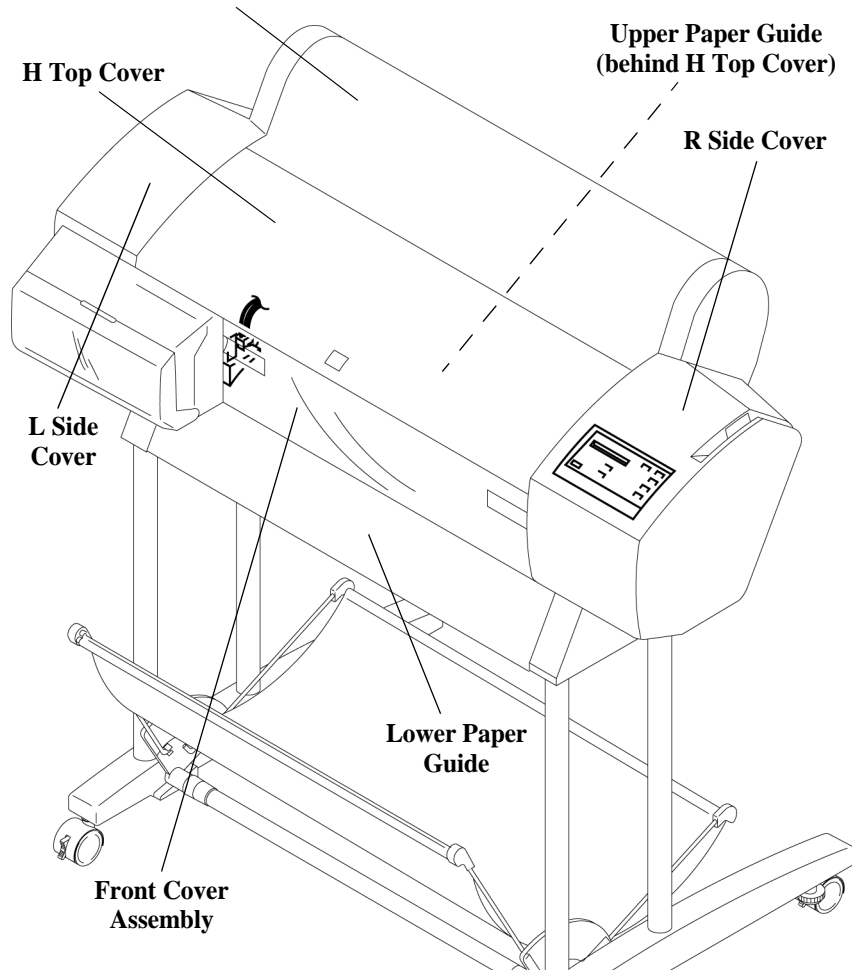


Figure 4-3. Housing Part Diagram

### 4.2.1.1 Panel Unit Removal

1. Release the clips on both sides of the control panel unit and pull slightly away from the R Side Cover.

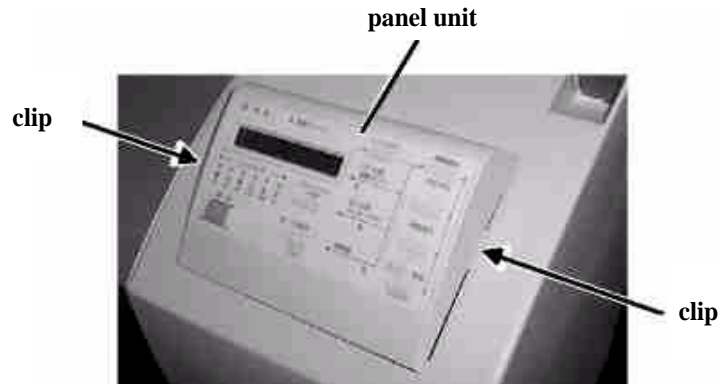


Figure 4-4. Panel Unit Removal 1/2

2. Remove the FFC cable from the connector and hook.

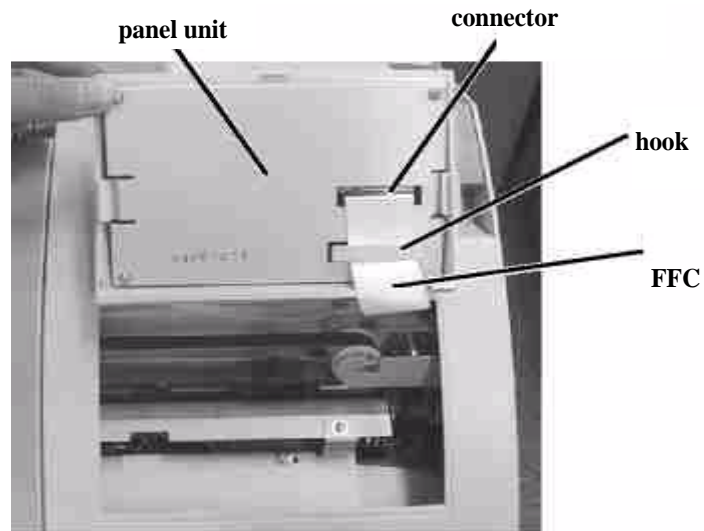


Figure 4-5. Panel Unit Removal 2/2



When replacing the control panel and FFC, make sure you push the FFC cable slack inside and towards the rear of the printer to avoid interfering with carriage movement.

### 4.2.1.2 R Side Cover Removal

1. Remove the control panel unit as described in 4.2.1.1 "Panel Unit Removal".
2. Open the roll paper cover.
3. Push back the Paper Set Lever to the released position, remove two black screws (CBP: M4x10) from the lever handle, and remove the handle.
4. Using a (-) driver or similar tool, remove the lever opening cap. The cap may fall through the hole, so it is recommend you secure the cap between your finger and the driver as you remove the cap.

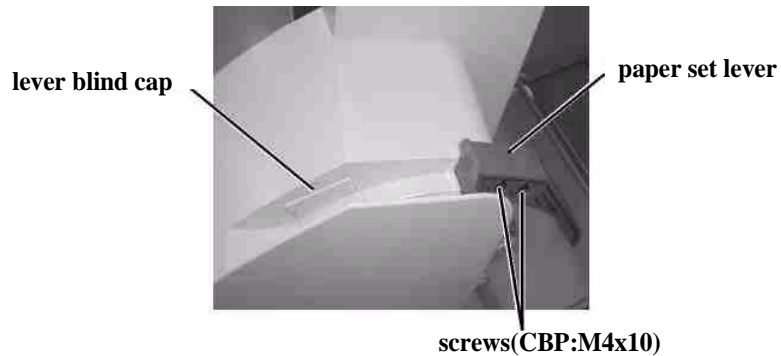


Figure 4-6. R Side Cover Removal 1/4

5. From the rear side, remove one white screw (CUPS:M4x8) and from the right side remove two white screws (CUPS:M4x8).



Figure 4-7. R Side Cover Removal 2/4

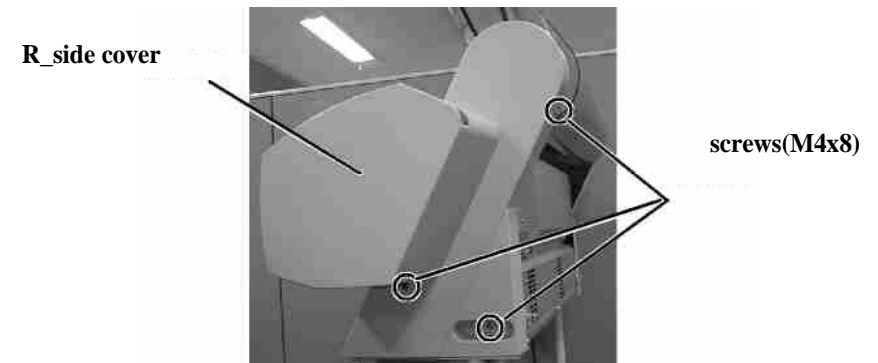


Figure 4-8. R Side Cover Removal 3/4

- Return the Paper Set Lever to the set position, and pull off the R Side Cover to the right.

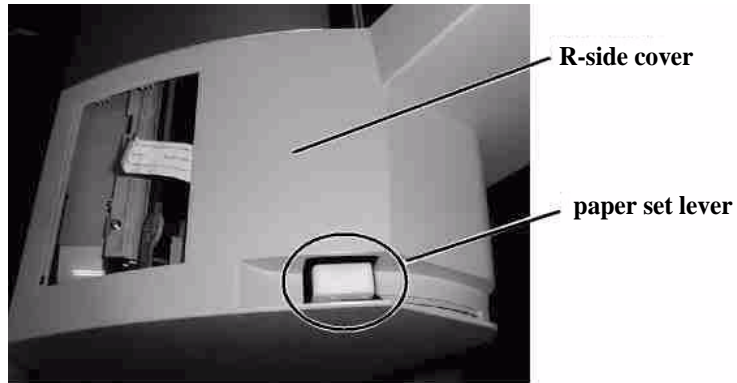


Figure 4-9. R Side Cover Removal 4/4

#### 4.2.1.3 L Side Cover Removal

- Open the roll paper cover.
- From the middle, remove one black screw (CBP: M4 x 10), from the back side, remove 1 white screw (CUPS: M4 x 8), then from the left outside, remove 2 white screws (CUPS: M4 x 8) and remove the L side cover.

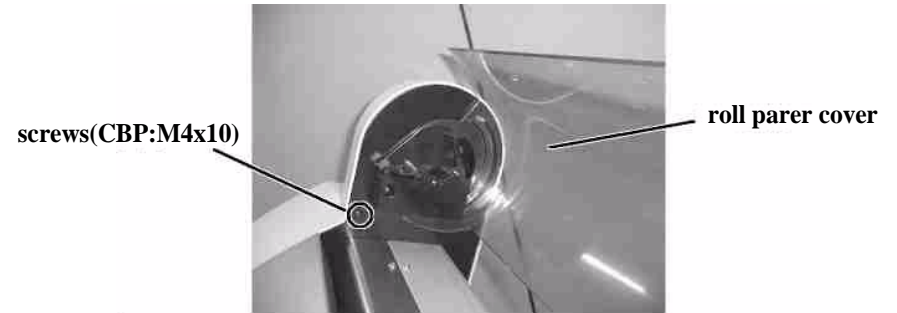


Figure 4-10. L Side Cover Removal 1/2

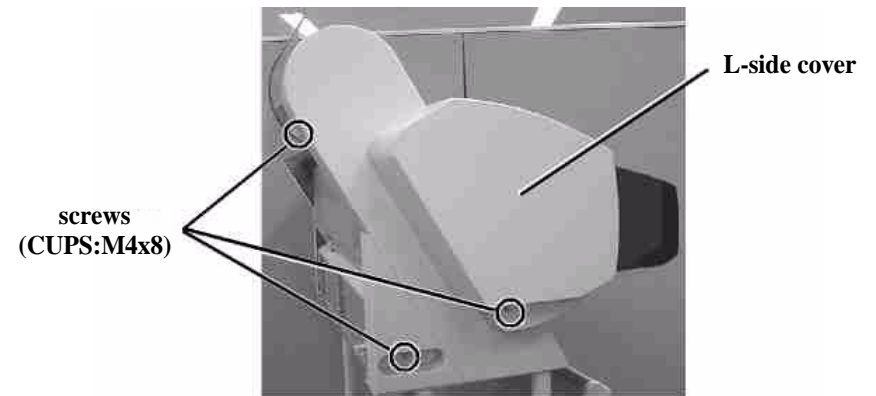


Figure 4-11. L Side Cover Removal 2/2

- Pull off the L Side Cover to the left.



#### 4.2.1.4 I/C Holder Cover Removal

1. Open the I/C Holder Cover.
2. Remove 2 white screws (CBS: M3 x 10), then remove the I/H cover and I/H cover lid.

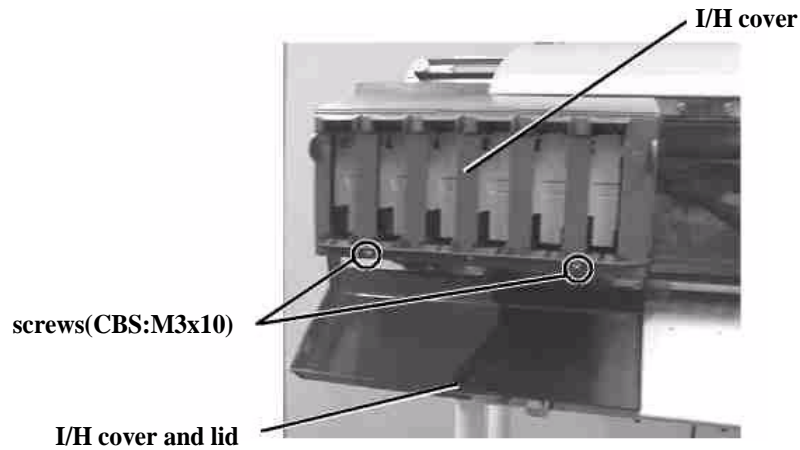


Figure 4-12. I/C Holder Cover Removal

#### 4.2.1.5 H Top Cover Removal

1. Remove the R Side Cover as described in 4.2.1.2 “R Side Cover Removal”.
2. Remove the L Side Cover as described in 4.2.1.3 “L Side Cover Removal”.
3. Remove the I/C Holder Cover as described in 4.2.1.4 “I/C Holder Cover Removal”.
4. Open the Front Cover
5. From the right side, remove two screws (CUPS:M4x8) and from the left side, remove three screws (CUPS:M4x8).

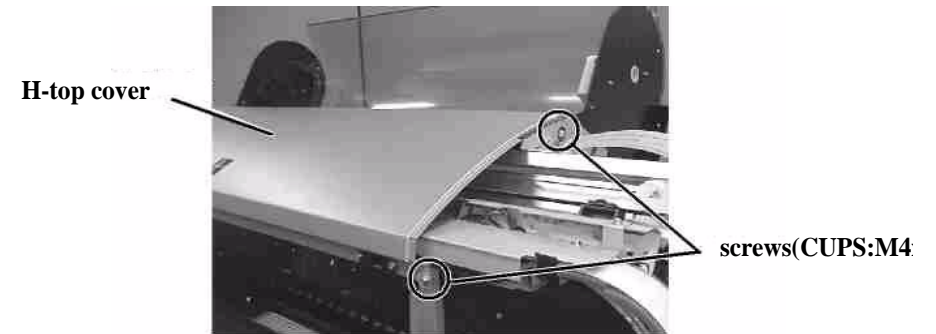


Figure 4-13. H Top Cover Removal on right side



Figure 4-14. H Top Cover Removal on left side

#### 4.2.1.6 Rear Cover Removal

1. From the rear, remove two white screws (CPS:M3x12) securing the optional interface cover, and remove the optional interface cover.
2. Remove the two white screws (CP:M3x6) securing the parallel interface and remove the one white screw (CBS:M3x6) securing the USB interface.
3. Remove one white screw (CBS: M3 x 6) holding the AC inlet top and the white screws (CBS: M4 x 8) holding the rear cover bottom.
4. Open the roll paper cover, then remove the 3 white screws (CBS: M4 x 8) holding the rear cover top, then remove the rear cover, while pulling it downward.

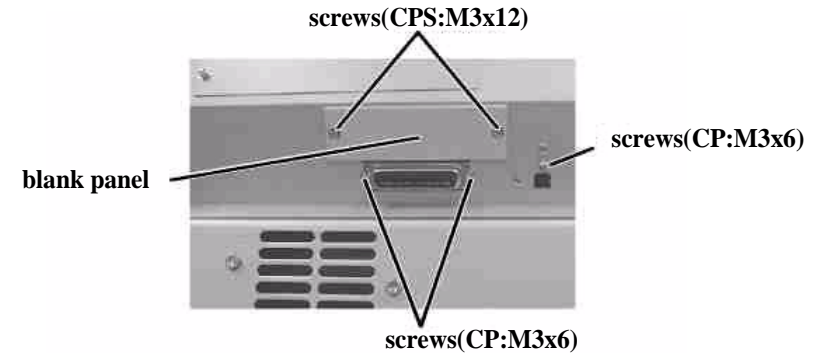


Figure 4-15. Rear Cover Removal 1/2

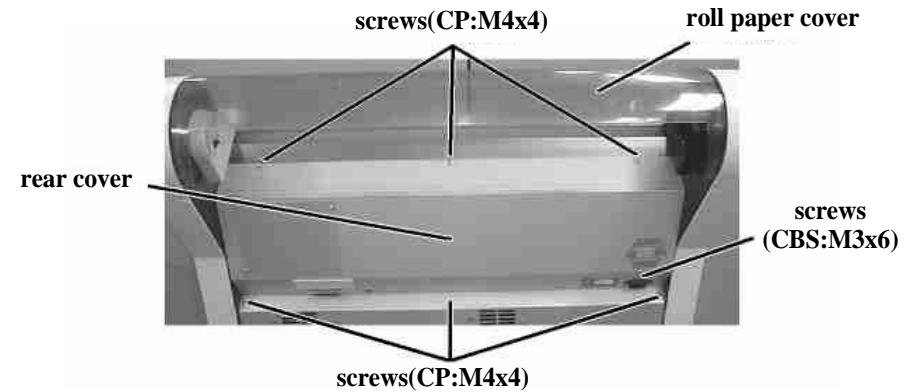


Figure 4-16. Rear Cover Removal 2/2

### 4.2.1.7 Paper Guide L2 Removal

1. From the front, remove four white screws (Truss:M4x6), and remove the Paper Guide L2.

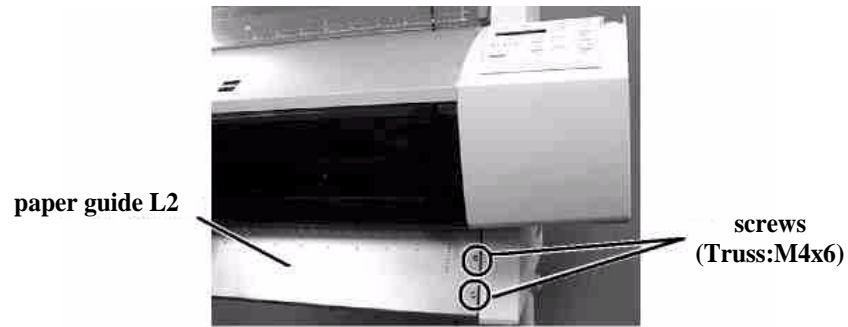


Figure 4-17. Paper Guide L2 removal on right side

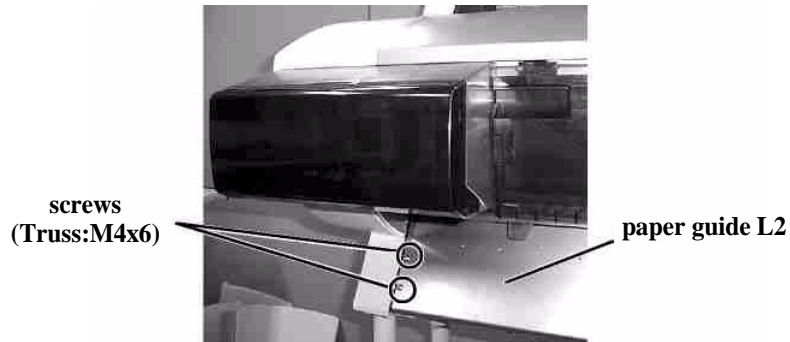


Figure 4-18. Paper Guide L2 removal on left side

#### CAUTION



Assemble the paper guide L2 using the following assembly procedure.

1. Fit all five of the projections on the paper guide L2 in the notches (5 notches) in the cushion tape on the paper guide L. (See the figure below.)
2. Fasten the paper guide L2 using 4 screws.

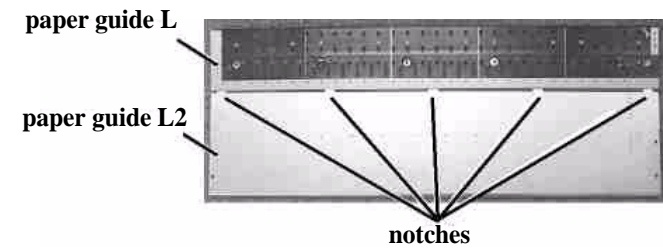


Figure 4-19. Paper Guide L2 assembly

### 4.2.1.8 Roll Paper Cover Removal

1. Open the Roll Paper Cover.
2. Remove two white screws (CPS:M4x8) securing the black spindle support on the left, and then remove the spindle support.
3. Remove two white screws (CPS:M4x8) securing the gray spindle support on the right, and then remove the spindle support.
4. Remove the cover brake pin from either the left or right side, and remove the cover.

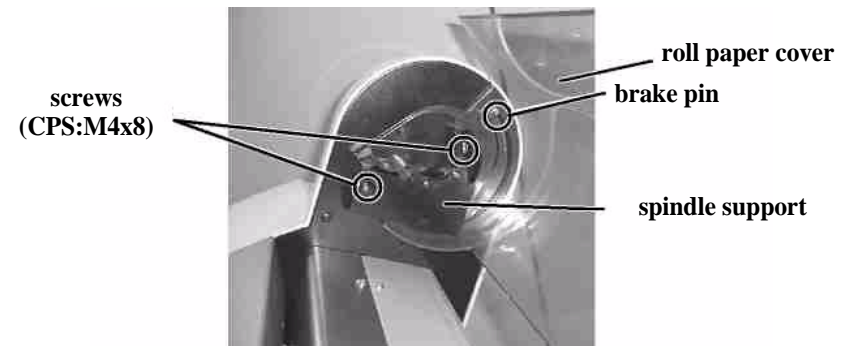


Figure 4-20. Roll Paper Cover removal on right side

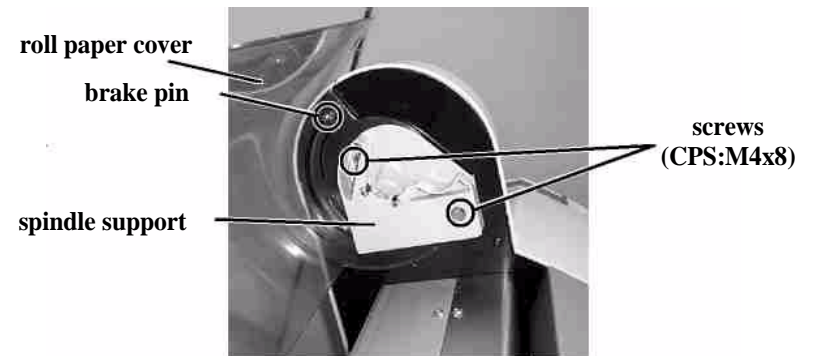


Figure 4-21. Roll Paper Cover removal on left side

### 4.2.1.9 Front Cover Removal

1. Open the Front Cover.
2. Push in the two hooks to the left of the cover and remove the front shaft cover.

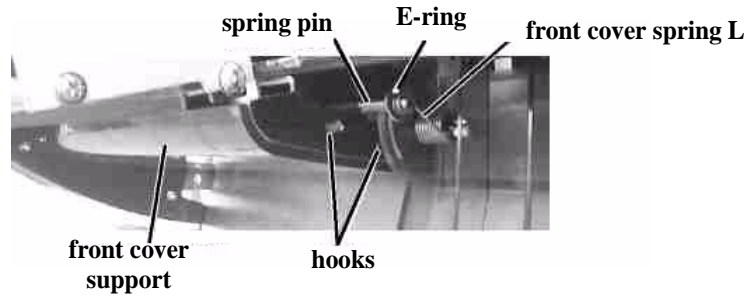


Figure 4-22. Front Cover Removal 1/3

3. On the right, remove the E-ring and the spring.

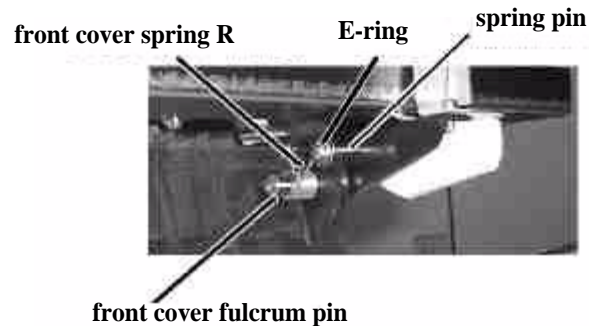


Figure 4-23. Front Cover Removal 2/3

4. Remove the 2 plastic stop wheels E5, and remove the front cover fulcrum pin L on the left outside. (At this time, the front cover and front cover spring L can be removed from the front cover fulcrum pin.)

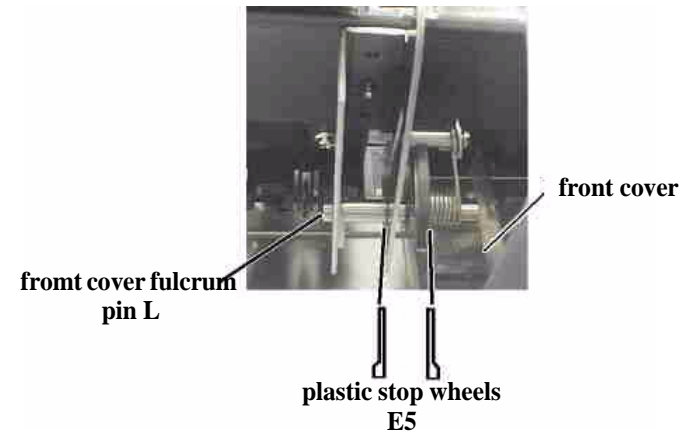


Figure 4-24. Removing the Front Cover 3/3

5. Remove the front cover spring R and front cover from the front cover fulcrum pin R, then remove each respective part.



The front cover springs R/L should be installed correctly.



The cover switch holder installation position should be checked so that the cover sensor assembly is linked to the front cover when it opens and closes.

- 5.2.5.4 Cover Sensor Assembly Mounting Position Adjustment. Refer to Page223.

## 4.2.2 Circuit Board Removal

This section explains how to remove the Circuit Board (C299MAIN) and the Main Board (C299MAIN).

### 4.2.2.1 Power Board Removal



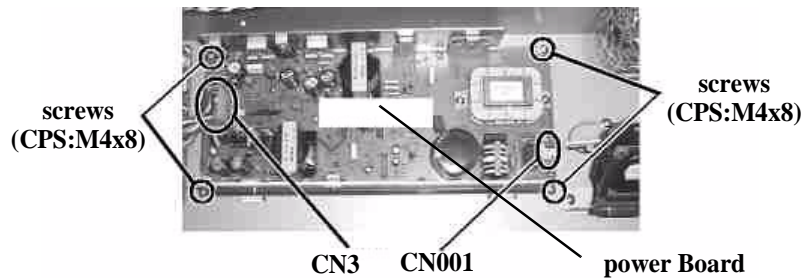
**Unplug the AC power cable and wait at least five minutes before removing the power supply board to make sure there is no residual power left in the board's condensers.**

1. Remove the Rear Cover as described in "Rear Cover Removal" on page 106.
2. Remove the two cables connected to the Power Board as shown below.

**Table 4-3. Power Supply Board Connectors**

Connector #	Pins	Color	Connection	Notes
CN001	3	white	AC inlet	lock type
CN3	12	white	C299MAIN	lock type

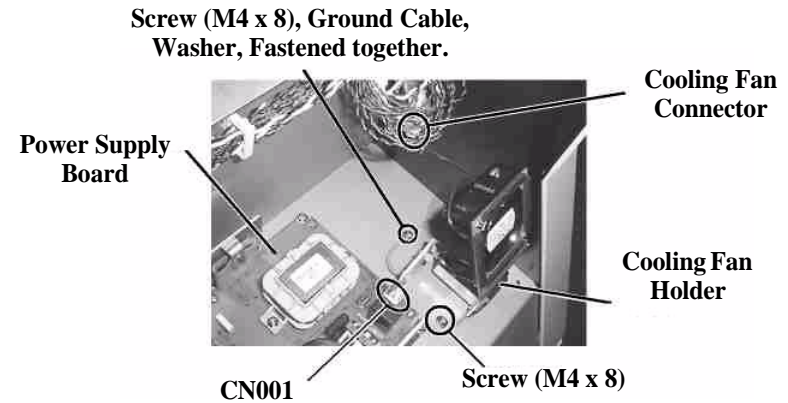
3. Remove the four white screws (CPS:M4x8) securing the Power Board, and then remove the Power Board.



**Figure 4-25. Power Supply Board Removal**

### 4.2.2.2 Removing the AC Inlets and Cooling Fan

1. Carry out "Rear Cover Removal."
2. Disconnect CN001 from the power supply board.
3. Disconnect the cooling fan harness connector from the junction connector (2-pin, white).
4. Take out the white screw (CUPS: M4 x 8) which fastens the AC inlet, then remove the AC inlet ground cable, and finally the toothed washer (M4).
5. Take out the white screw used to fasten the cooling fan holder (CUPS: M4 x 8) then slide the cooling fan holder to the right side and after unhooking the hook from the printer base, remove the cooling fan holder.



**Figure 4-26. Removing the Cooling Fan Holder**

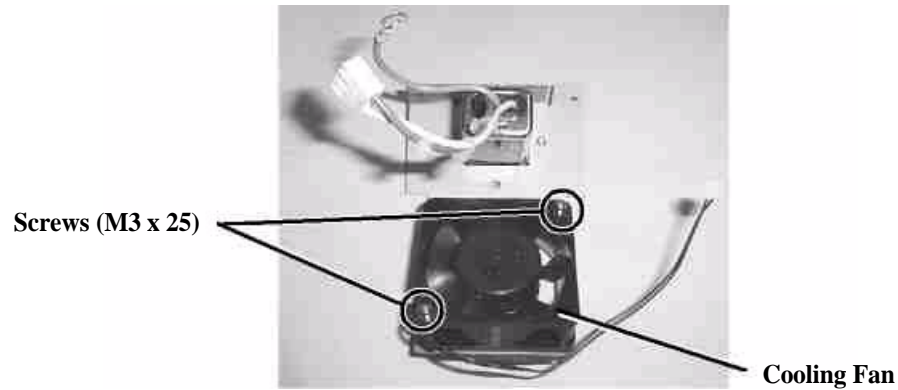
---

**REMOVING THE COOLING FAN**

---

1. Take out the 2 white screws (CP(W): M3 x 25) used to fasten the cooling fan, then remove the cooling fan.

**NOTE:** The cooling fan's installation direction (the sticker surface and harness routing direction) is fixed, so caution should be exercised.



**Figure 4-27. Removing the Cooling Fan**

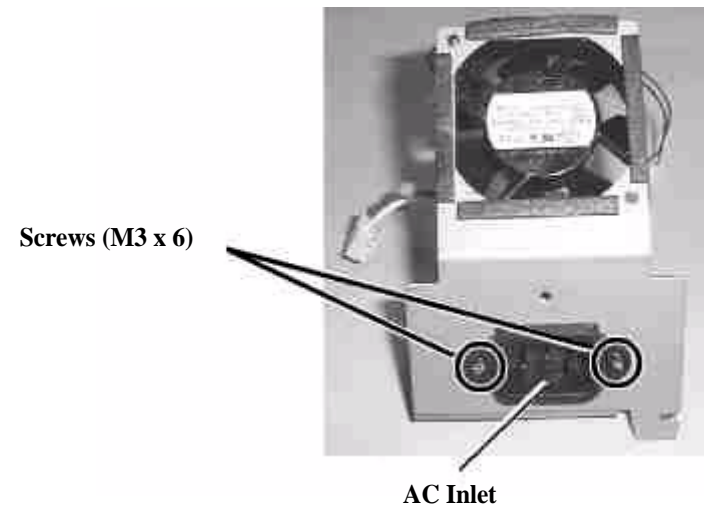
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**DISCONNECT THE AC INLET**

---

1. Take out the 2 white screws (countersunk head screws: M3 x 6) used to fasten the AC inlet, then remove the AC inlet.

**NOTE:** The AC inlet's installation direction is fixed, so caution should be exercised. (The sticker surface faces up).



**Figure 4-28. Removing the AC Inlet**

### 4.2.2.3 C299MAIN Board Removal

1. Remove the Rear Cover as described in “Rear Cover Removal” on page 106.
2. Disconnect the following connectors and harnesses from the main board.

**Table 4-4. C299MAIN Board Connectors**

Connector #	Pins	Color	Clamp location	Connection	Notes
CN~7	28	white	special	Panel Unit	lock type
CN25	6	white	-	unused	-
CN43	2	black	1	suction fan	-
CN44	2	yellow	1	suction fan	-
CN36	3	black	1	Paper Set Lvr snsr	-
CN37	3	red	1	P_Thick snsr	-
CN38	3	yellow	1	Front cover snsr	-
CN41	3	white	2	CR_HP snsr	-
CN42	4	red	1	PG_HP snsr (Head_Slide)	-
CN39	4	yellow	2	P_Front snsr	-
CN11	4	red	2	P_Front snsr	-
CN13	5	white	3	PF Motor encoder	-
CN32	4	blue	3	ink snsr M	-
CN35	5	red	3	ink snsr Y	-
CN9	30	white	special	CR board Assy 2	lock type
CN8	30	white	special	CR board Assy 1	lock type
CN31	4	yellow	4	ink snsr C	-
CN34	5	red	3	ink snsr LM	-
CN30	4	white	4	ink snsr Bk	-
CN33	5	blue	3	ink snsr LC	-
CN10	2	white	4	PS fan	-

**Table 4-4. C299MAIN Board Connectors**

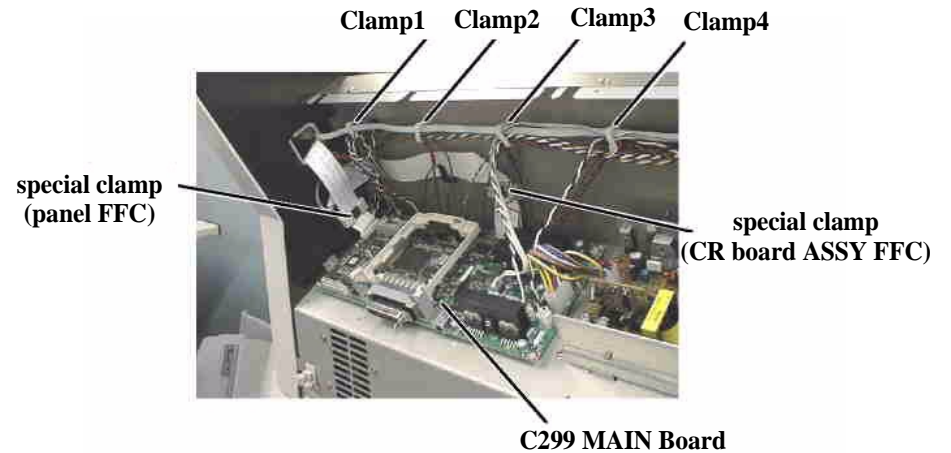
Connector #	Pins	Color	Clamp location	Connection	Notes
CN24	4	white	3	Pump motor	lock type #1 pin=blue-
CN18	2	white	3	PF motor	-
CN17	3	white	4	CR motor	-
CN6	12	white	-	PS board	lock type

\*1: From the R side frame side. See the following figure.

\*2: It should not be inserted backwards. (If it is inserted backwards, the PUMP motor will not operate correctly.)



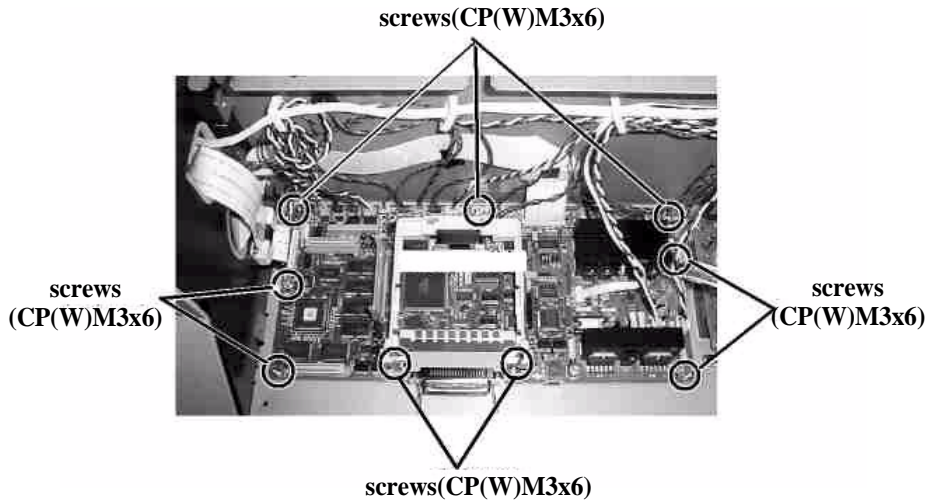
**When removing or replacing the FFC cables, always do so carefully. Tearing or folding of the leads can damage the circuit boards. Check the leads and never insert at an angle.**



**Figure 4-29. Connector Harness/Clamp Locations**



- Remove the two screws (CP(W) M3x8) securing the Type-B Option Slot Cover, and remove the cover. Then remove seven screws (CP(W) M3x6) securing the Main board and remove the board.



**Figure 4-30. C299MAIN Board Removal**



After replacing the main board, various adjustments are required. For details about these adjustments, refer to Chapter 5, Adjustment. Refer to Page172 .

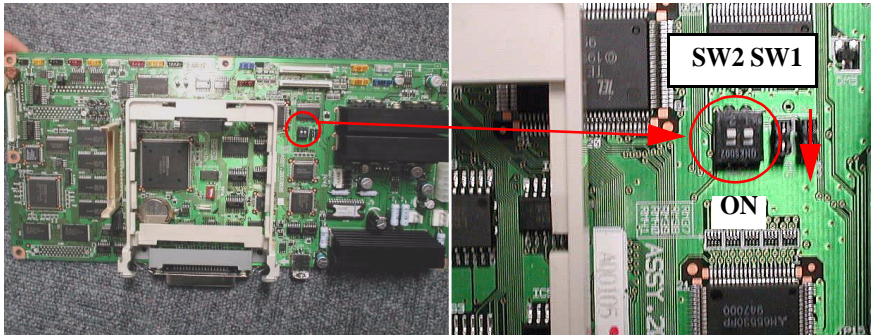
**CHANGING THE C299MAIN BOARD DIP-SW SETTINGS**

The C299MAIN board’s ASP is common with that of the Stylus Pro 7000, but due to the mechanical configuration, the DIP-Switch settings on the MAIN board differ as shown below.

**Table 4-5. C299MAIN Board DIP-SW Settings**

	DIP SW 1	DIP SW 1	Affected Product	Mechanical Configuration
1	OFF	ON	Stylus Pro 7000	PF Roller: 1 roller configuration PF Motor: Built-in encoder
2	ON	OFF	Stylus Pro 7500	PF Roller: 1 roller configuration PF Motor: Encoder is mounted externally.
3	OFF	ON	No affected product	Spare Setting
4	ON	ON	No affected product	Spare Setting

The DIP switch factory setting for the ASP C299MAIN board is setting No. 1 above, so if it is used in the Stylus Pro 7500, the setting should be changed to No. 2 in the table above. The location of the DIP Switch is as shown in the following figure.



**Figure 4-31. C299MAIN DIP Switch Settings**

**NOTE:** Jumpers J1 and J2 should be used with the short setting as is. If the setting is changed, the printer will cease to operate.

### 4.2.3 Printer Mechanism Disassembly

This section describes the Printer Mechanism components and the procedure for disassembly.



**Do not remove or loosen the screws that secure the CR guide rail, also do not remove the carriage. These parts are adjusted to 1/100th of a mm at the factory.**

**Do not attempt any kind of service or adjustment to the frame or parts attached directly to the frame. See the Parts List in Chapter 7 for a list of parts that you can service/replace. Other parts can only be assembled and adjusted at the factory.**

### 4.2.3.1 Replacing the Waste Ink Pads

To keep the printhead clean and maintain quality, the printer drains waste ink away from the printhead surface and nozzles into the Waste Ink Pads. Once a predetermined amount of waste ink has been drained, the printer displays the “Maintenance Call 0100” message to indicate the pads are 99% full and then displays the “Service Call 00000100” message to indicate the pads are completely full and need to be replaced before printing can continue.



**When the waste ink counter indicates the ink pads need to be replaced, the following parts all need to be replaced at the same time.**

- Flushing Box ASSY
- Pump Assembly
- Cap Assembly
- Head Cleaner

*NOTE: These units are available in the form of a periodic replacement parts kit “Maintenance Kit, Stylus Pro 7500 (No. 1058463).”*



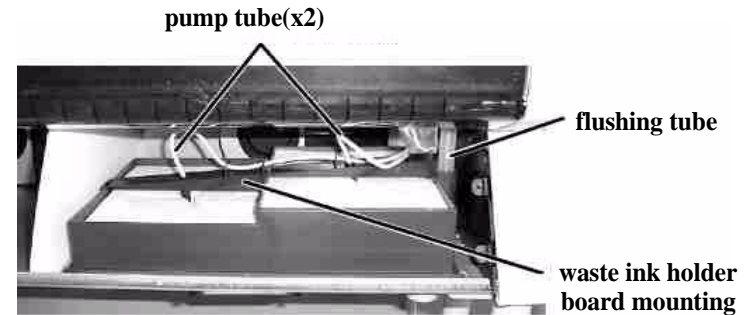
**If an error occurs (“Service Call 00000100”) and each unit in the maintenance assembly \*1) is replaced together with the waste ink pad, be sure to carry out the following counter clear processing.**

- “Waste Ink Initialization” See “5.4 Maintenance Mode2“. Refer to Page216
- Cleaning Initialization See “5.4 Maintenance Mode2. Refer to Page216.

Each Unit:

Pump motor, Cap assembly, Pump assembly, Cleaner head, Flushing box assembly

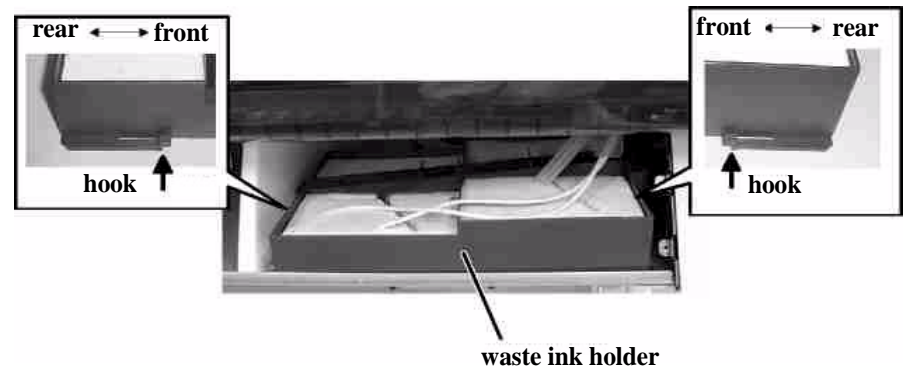
1. Remove Paper Guide L2 as described in “Paper Guide L2 Removal” on page 107.
2. Remove the two waste ink tubes (white, small diameter) and the one flushing tube (clear, large diameter) from the tubes clamps.



**Figure 4-32. Remove the tubes**

*NOTE: During this operation, ink remaining inside the tubes may be dripping from the discharge outlet of each tube, so take adequate caution during handling not to let the ink drip on the outside of the printer.*

3. While raising the hooks on both the left and right waste ink holder sides, move the waste ink holders slowly toward you, then after disengaging them from their receptacle in the base frame, remove them.



**Figure 4-33. Waste Ink Box**

4. While spreading the waste ink holder mounting plate hooks toward the outside, disconnect the waste ink holder mounting plate from the waste ink holders.
5. Remove the waste ink pads from the waste ink holders.
6. Place new waste ink pads (Left: x 4; Right: x 6) in the waste ink holder, then install the waste ink holder mounting plate. Then assemble the printer, following the disassembly sequence in reverse order.

**NOTE1:** When setting each tube in the waste ink holder mounting plate, the tubes should be set in the waste ink holder mounting plate hooks so that their ends are positioned about 20 mm higher than the bottom of the waste ink holder's bottom. (If they are not set correctly, ink discharge may not be accomplished correctly.)

**NOTE2:** All the ink tubes should be installed so that there is no undue bending or crushing.



- During waste ink pad replacement, only the pads are replaced, so plastic bags, etc. should be prepared in advance and these should be used for recovering the replaced ink pads.

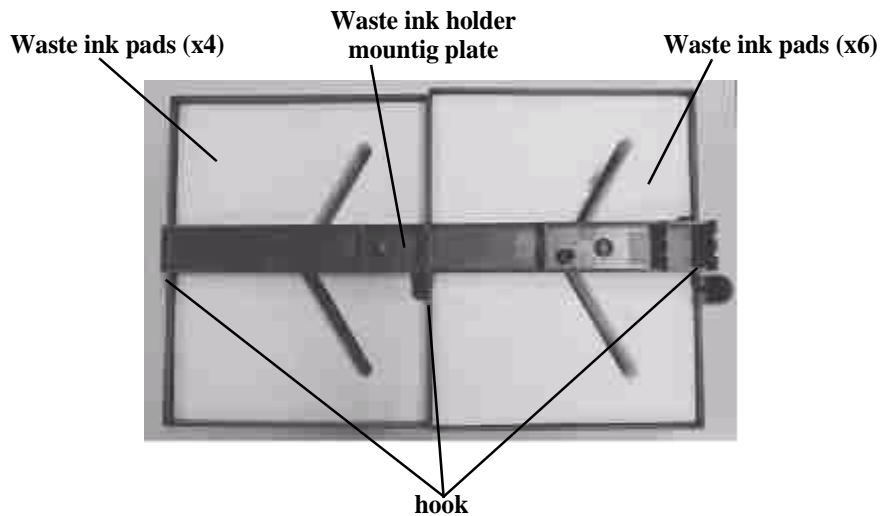


Figure 4-34. Waste Ink Holder Disassembly

### 4.2.3.2 Removing the Suction Fans (Left / Right)

1. Remove Paper Guide L2 as described in “Paper Guide L2 Removal” on page 107.
2. Remove the Waste Ink Box from the printer as described in steps 1 to 3 only of “Replacing the Waste Ink Pads” on page 115.
3. Remove the two screws (CP(W):M4x8) and one screw (CP(W):M4x40) securing the fan duct, and then remove the fan duct.
4. Disconnect the fan connector and harness.
5. Remove the one screw (CP(W):M4x8) securing the fan, and remove the fan.

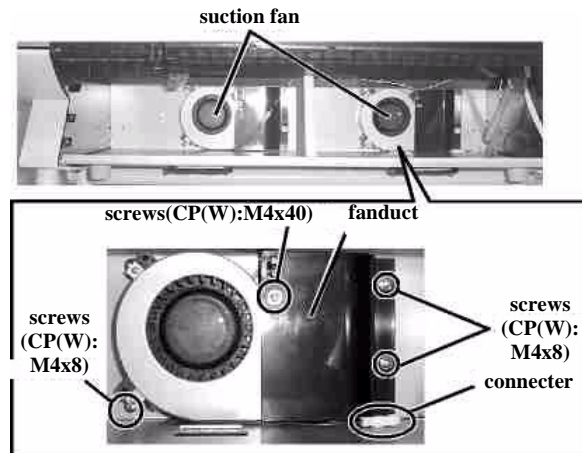


Figure 4-35. Suction Fan Removal

### 4.2.3.3 Replacing the Printheads



The printer uses two printheads, B Head and C Head, and although they are similar you need to make sure you do not mix the heads. One is for dark inks and the other is for light inks. Therefore make sure you prepare and install the correct replacement head.

- B head  
F055040: “Printhead, IJ192-OAD”  
(damper order = B>C>M)
- C head  
F055050: “Printhead, IJ192-OAE”  
(damper order = LC>LM>Y)

The printheads are the same for the EPSON Stylus Pro 9500 and EPSON Stylus Pro 7500.

Before replacing the printheads you will need to drain the ink as described in the Clean Head section of “Adjustment Items” on page 172.

After replacing the printheads, you will need to perform an initial ink charge as described in “Cleaning Menu” on page 211.



When replacing the printheads, the following adjustment procedures are required.

- Self-diagnostic function/adjustment. Refer to Page172
- Head unit counter reset. Refer to Page216.

1. Drain the ink as described in the Clean Head section of “Adjustment Menu” on page 191.
2. Remove the R Side Cover as described in “R Side Cover Removal” on page 103.
3. Press down the cutter to release the carriage lock, and move the carriage away from the home position.
4. Remove the two screws (CP(W):M3x6) securing the carriage cover and remove the carriage cover.

5. Remove one screw (CP(W) M3x6) securing the damper holder, unhook the ink tubes from the damper holder, and then remove the damper holder.

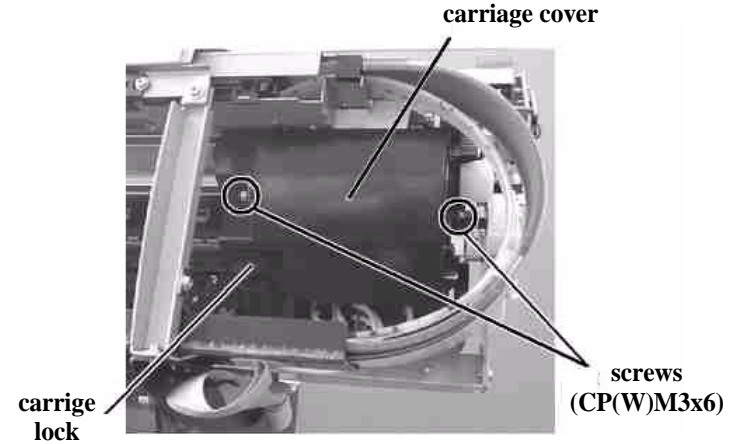


Figure 4-36. Carriage Lock Release & Cover Removal

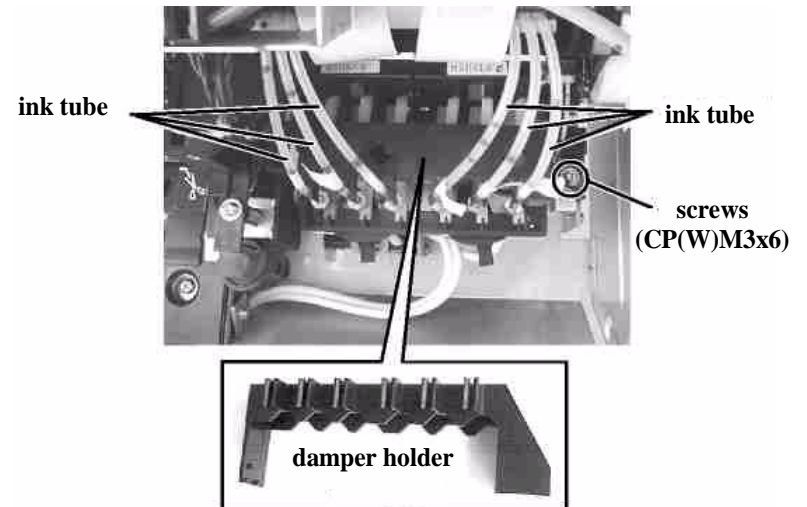


Figure 4-37. Damper Holder

- Take out the damper assembly connected to each print head (there are 3 for one print head).  
As shown in the figure below, inset a flat blade screwdriver, etc. between the carriage and the projection on the damper's left side and pry with it using the lever principle to make it easy to remove.

**NOTE1:** If you press on the transparent film on the damper's right side surface with your fingers, the ink with which the inside is filled will be expelled, so do not press on this part.

**NOTE2:** The transparent film on the damper's side is delicate, so be careful not to damage it while working.

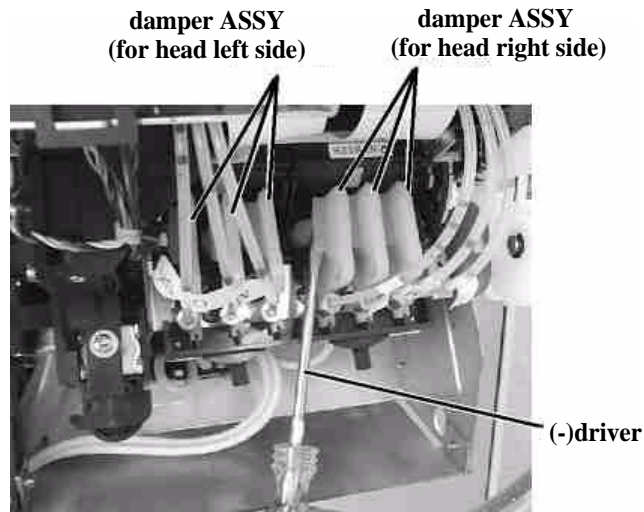


Figure 4-38. Damper Removal

- Using round-nosed pliers, remove the "Tension Spring, 9.9" from the C head on the right.
- Remove one screw (CB M3x6), also called the "H Spacer" screw, and then remove the printhead from the carriage.
- Remove the flat cable from the back of the printhead.

**NOTE:** Care should be taken not to touch the nozzle surface of the print head that you are installing or allow dirt, etc. to adhere to it.

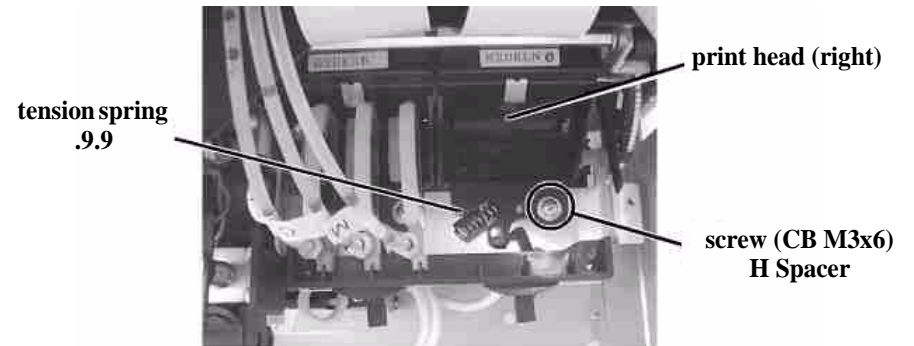


Figure 4-39. Printhead Tension Spring and Screw Removal 1/2

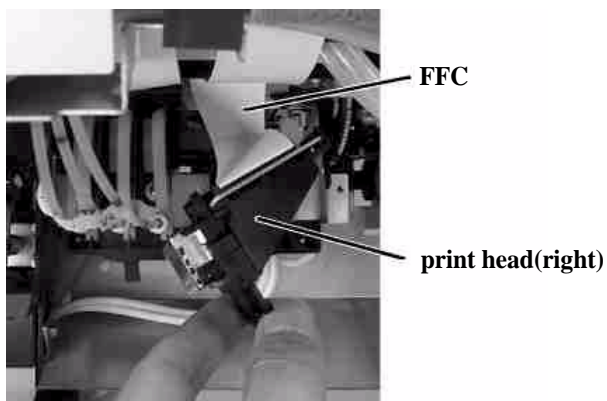


Figure 4-40. Printhead Removal 2/2

#### 4.2.3.4 Removing the CR Board Assembly

1. Remove the R Side Cover as described in “R Side Cover Removal” on page 103.
2. Remove the L Side Cover as described in “L Side Cover Removal” on page 104.
3. Remove the I/C Holder Cover as described in “I/C Holder Cover Removal” on page 105.
4. Remove the H Top Cover as described in “H Top Cover Removal” on page 105.
5. Remove three screws (CPPM3x6) securing the CR board, and remove one screw (CP(W)M3x6) securing the ground line, washer (M3), and CR board guide.

**NOTE:** The screw on the far left side used to fasten the CR board guide plate should be tightened together with the ground wire, toothed washer, CR board guide and CR board assembly, in that order.

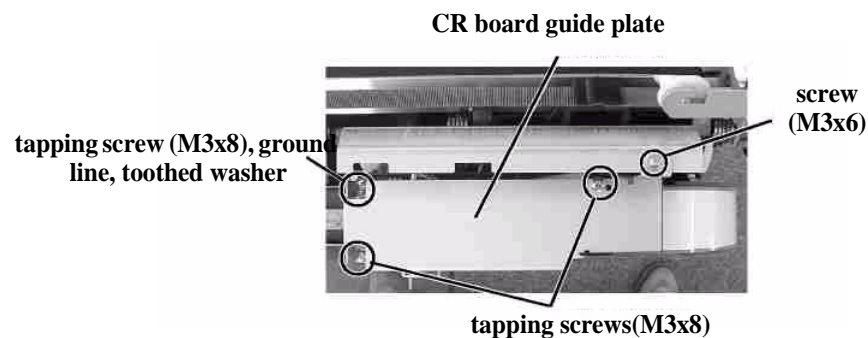
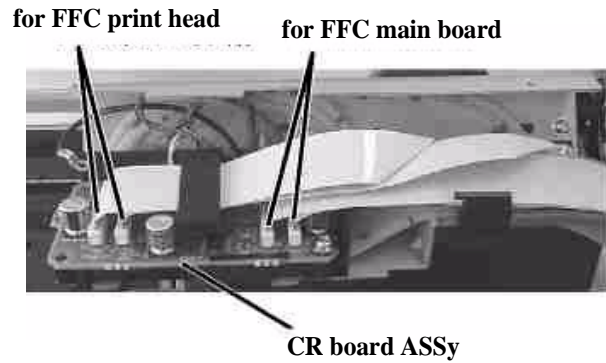


Figure 4-41. CR Board Guide Removal

6. Remove the FFC (lock type connector, to the print head; set of 2) while pressing on the left edge of the CR board assembly.



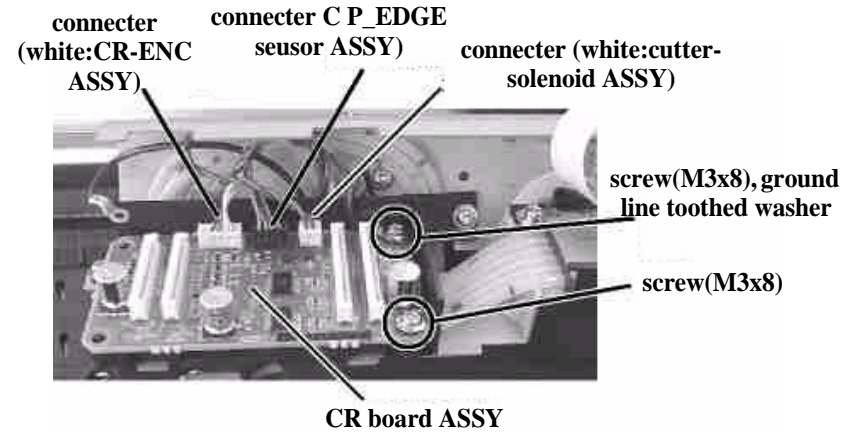
7. Remove the FFC (lock type connector, to the main board; set of 2) while pressing on the left edge of the CR board assembly.



**Figure 4-42. CR Board FFC Removal**

8. Remove two screws (CPP M3x8), then remove the CR Board.
9. Take out the 2 screws (CPP M3 x 8) which are holding the CR board assembly, also removing the ground wire and toothed washer (M3), then remove the CR board assembly.

**NOTE:** The screw on the far left side used to fasten the CR board guide plate should be tightened together with the ground wire, toothed washer, CR board guide and CR board assembly, in that order.



**Figure 4-43. Connector and CR Board Removal**

### 4.2.3.5 Removing the Cutter Housing

1. Follow the procedure for “Replacing the Print Head” up to step 3. (See page 122.)
2. Follow the instructions up to step 8 in “Removing the CR Board Assembly” on page 120.
3. Cut the plastic band near the front of the cutter housing and pull the sensor cables free.

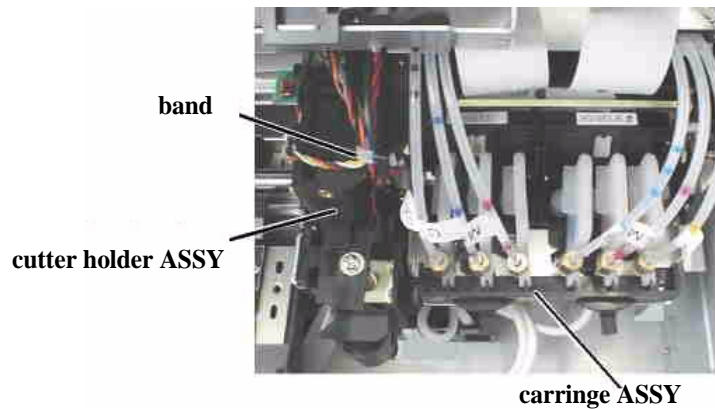


Figure 4-44. Cutter Housing Removal 1/2

4. Take out the 4 screws (CP(W) M3 x 8) holding the cutter holder, then remove the cutter holder assembly from the carriage while gently releasing the key which engages the cutter holder with the carriage (See Fig. 4-46) toward the left.

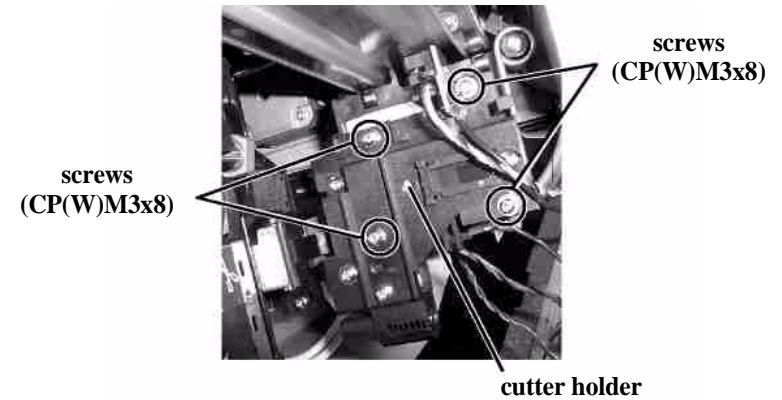


Figure 4-45. Cutter Housing Removal 2/2



Figure 4-46. Cutter Holder Assembly (Front)

Key which engages the cutter holder with the carriage

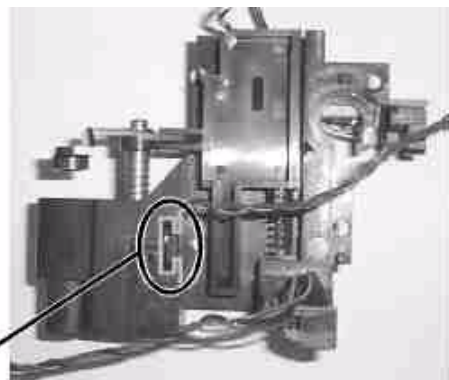


Figure 4-47. Cutter Holder Assembly (Rear)



After installing the cutter holder assembly, the following adjustment should be done.

- The cutter positioning adjustment should be done. Refer to Page226.

#### 4.2.3.5.1 Removing the Cutter Solenoid

1. Remove the cutter housing as described in “Removing the Cutter Housing” on page 122.
2. Release the engagement between the cutter cap and the CR lock kicker, then remove the cutter cap + cutter solenoid iron core and cutter solenoid spring.

*NOTE: During assembly, the cutter cap and the CR lock kicker should be engaged. (If they are not engaged, the carriage cannot be moved from the home position to the left when the power switch is turned on.)*

3. Take out the 2 screws (CP(W) M3 x 6) holding the cutter solenoid, then remove the cutter solenoid while pushing out the cutter holder assembly from the bottom with the shaft of a (+) screwdriver, etc.

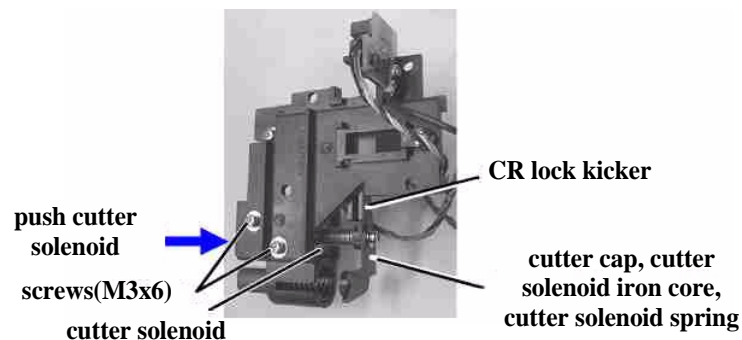


Figure 4-48. Cutter Solenoid Removal

#### 4.2.3.5.2 Removing the CR Encoder Sensor

1. Remove the cutter housing as described in “Removing the Cutter Housing” on page 122.
2. Remove one screw (CPP M3x8) securing the CR Encoder Sensor, ground, and washer (M3). Then remove the CR Encode Sensor.

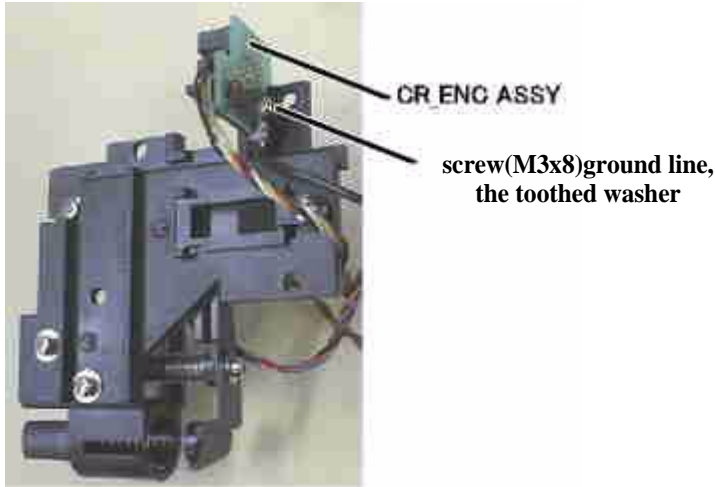


Figure 4-49. CR Encoder Sensor Removal



- After assembling the CR ENC, the following adjustments should be made.
- The CR ENC installation position adjustment should be made. Refer to Page224.
  - The Cutter positioning adjustment should be made. Refer to Page226.

#### 4.2.3.5.3 Removing the P\_EDGE Sensor Assembly

1. Carry out the procedure for “Removing the Cutter Holder Assembly.”
2. Take out the one screw (CBP M3 x 6) holding the P-EDGE sensor assembly and remove the P\_EDGE sensor assembly.

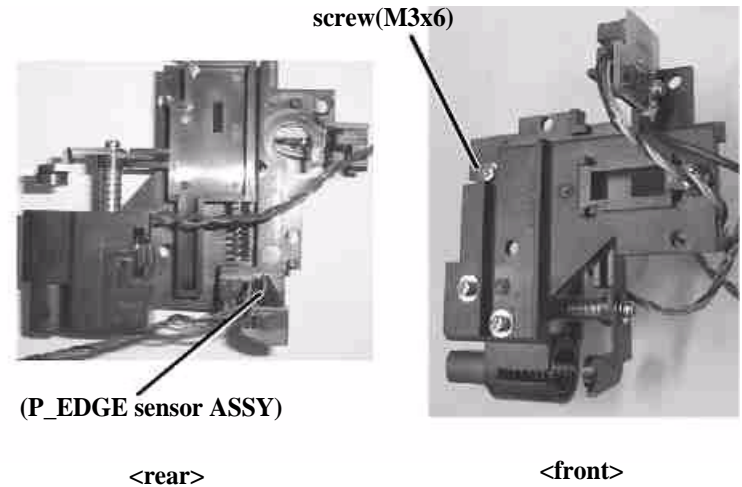


Figure 4-50. Removing the P\_EDGE Sensor Assembly



- After replacing the P\_EDGE sensor, the following adjustment operation should be performed.
- Self-diagnostic function / Adjustments, Sensor Adjustments. Refer to Page172.

### 4.2.3.6 Removing the I/H (Ink Holder) Assembly

There are a total of 6 I/H assemblies installed, one for each ink color. Here, the procedure for removing one I/H assembly will be explained.

**CAUTION**



1. Before and after removing an I/H assembly, it is necessary to carry out ink discharge and initial filling (do again). See Chapter 4, "Adjustments."
2. The parts which make up each color's I/H assembly, except for a single part, are all interchangeable. The only non-interchangeable part is the ink sensor assembly.

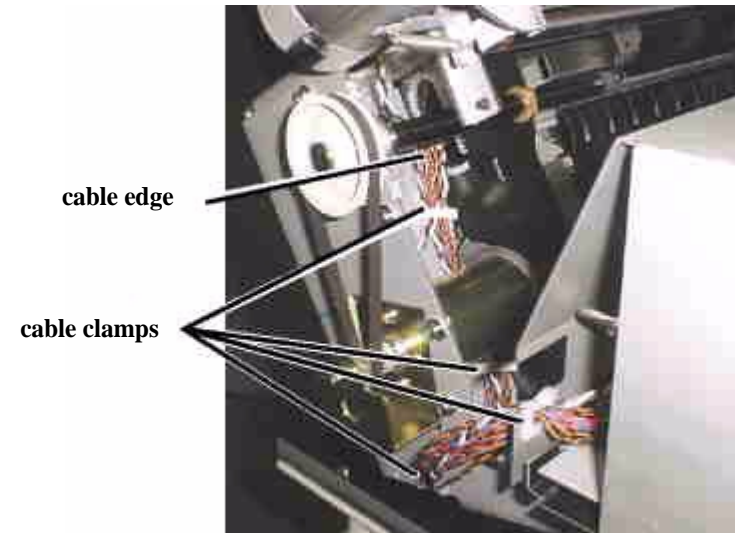
**ADJUSTMENT  
REQUIRED**



When removing and installing the front cover switch holder, the following adjustment should be made.

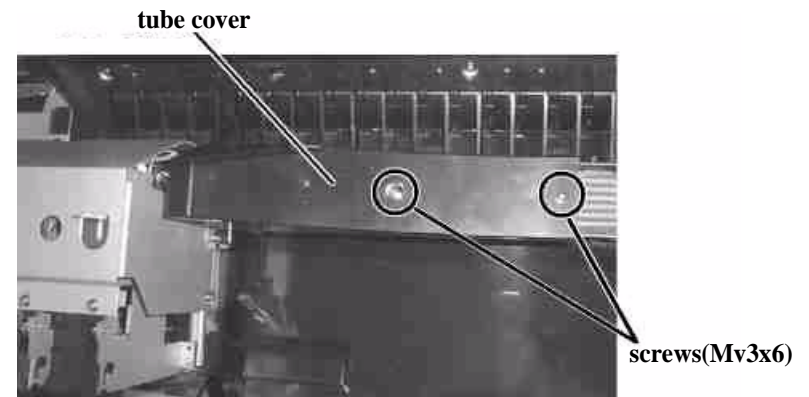
- Cover sensor assembly installation position adjustment. Refer to Page223

1. Carry out the ink discharge operation, discharging all the ink from inside the ink channel.
2. Carry out the procedure for "Removing the R Side Cover."
3. Carry out the procedure for "Removing the L Side Cover."
4. Carry out the procedure for "Removing the I/H Cover."
5. Carry out the procedure for "Removing the H Top Cover."
6. Carry out the procedure for "Removing the Rear Cover."
7. Disconnect the ink sensor assembly (B / C / M / LC / LM / Y) harness connectors (x 6) and the cover sensor harness connector from the Main board, remove the harnesses from the clamps, then take them out of the cable hole in the left side frame. (See "Removing the C299 MAIN Board.")
8. Remove all the harness connectors (x 6) in the ink cartridge sensor system from the clamps (total 4) on the L side frame side surface.



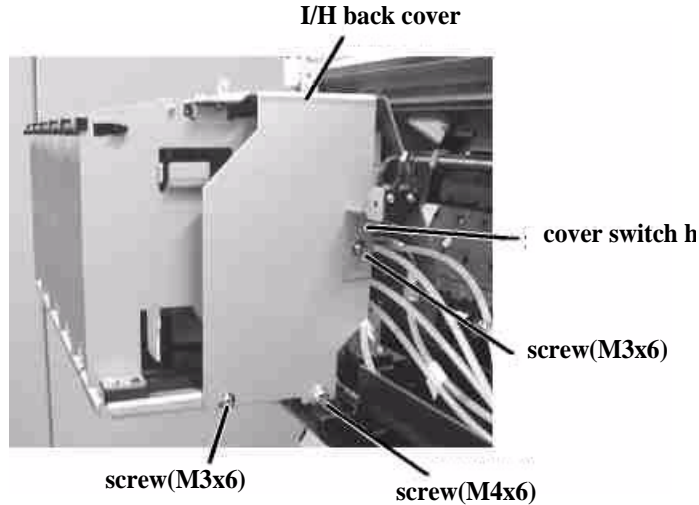
**Figure 4-51. Ink Sensor Harness Removal**

9. Remove two screws (CPP M3x8) securing the ink tube cover and remove the cover.



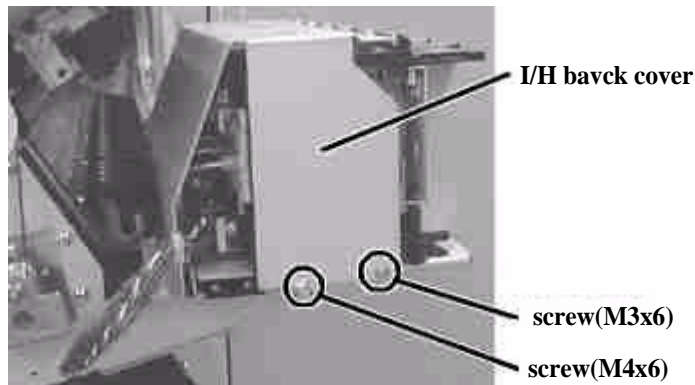
**Figure 4-52. Ink Tube Cover Removal**

10. Remove one screw (CUPS M3x6) securing the Cover-open sensor to the rear of the I/C Holder Frame. Then remove the Cover-open sensor.
11. Remove one screw (CUPS M3x6) and one screw (CUPS M4x6) securing the I/C Holder Frame on the right side.



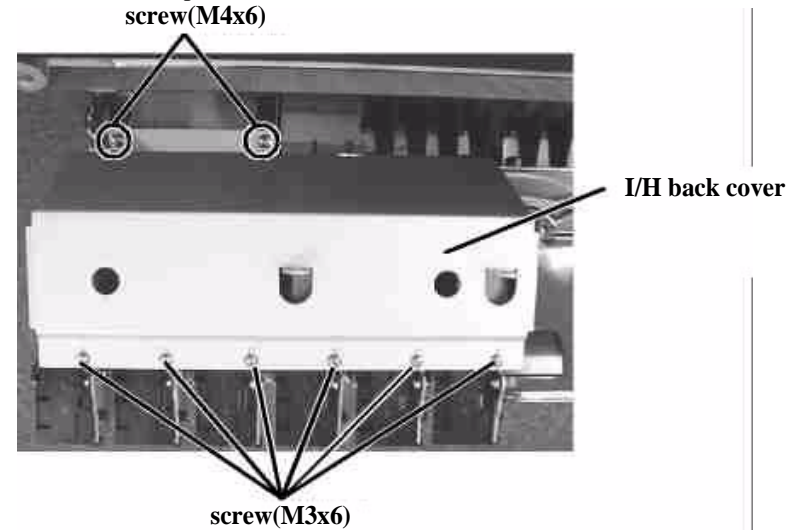
**Figure 4-53. Cover-Open Sensor & Holder Frame Removal - R side**

12. Remove one screw (CUPS M3x6) and one screw (CUPS M4x6) securing the I/C Holder Frame on the left side.



**Figure 4-54. Holder Frame Removal - L side**

13. Remove six screws (CUPS M3x6) and two screws (CUPS M4x6) securing the I/C Holder Frame on the top.



**Figure 4-55. Holder Frame Removal - top**

14. Separate out the harness of the ink holder assembly (ink sensor assembly) that you are removing from the harness connectors (x 6) in the ink cartridge sensor system.

- Remove the screw in the joint connecting the ink holder assembly and the pipe (M6), then remove the O-ring from its inside.

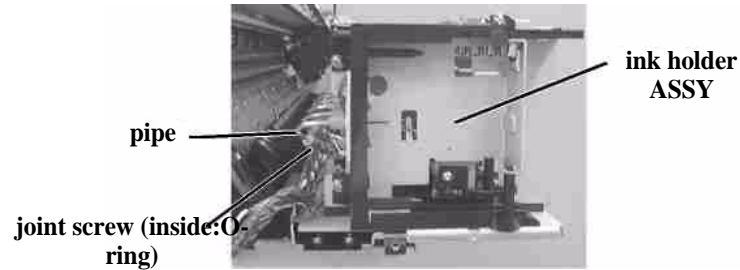


Figure 4-56. Removing the I/H Assembly (Left)

- Take out the 2 screws (CPS: M3 x 12) holding the ink holder assembly to the I/H base, then remove the ink holder assembly.

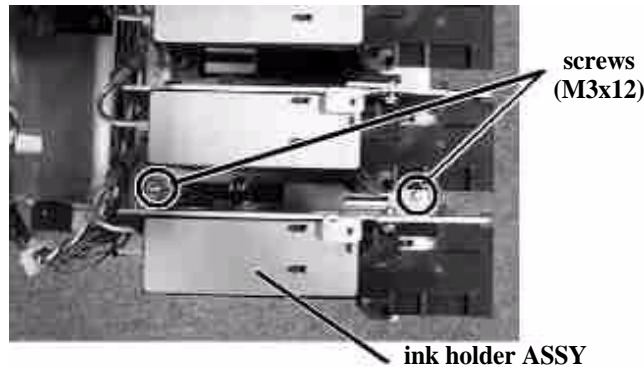


Figure 4-57. Removing the I/H Assembly (Top)

#### 4.2.3.6.1 Removing the Ink Sensor Assembly

- Carry out the procedure for “Removing the I/H (Ink Holder) Assembly.”
- Remove the ink assembly cable from the hook on the back of the I/H assembly.

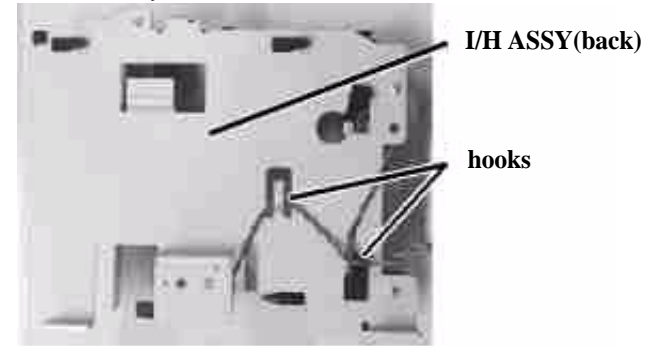


Figure 4-58. Removing the Ink Sensor Assembly 1/3

- Remove the I/C holder frame bottom.
- Take out the one screw (CBS: M3 x 10) holding the ink sensor assembly's Ink Low sensor, then remove the Ink Low sensor.
- Take out the 2 screws (CUPS: M3 x 6) holding the needle frame assembly, then release the clew on the needle frame assembly slide it and remove the needle frame assembly.

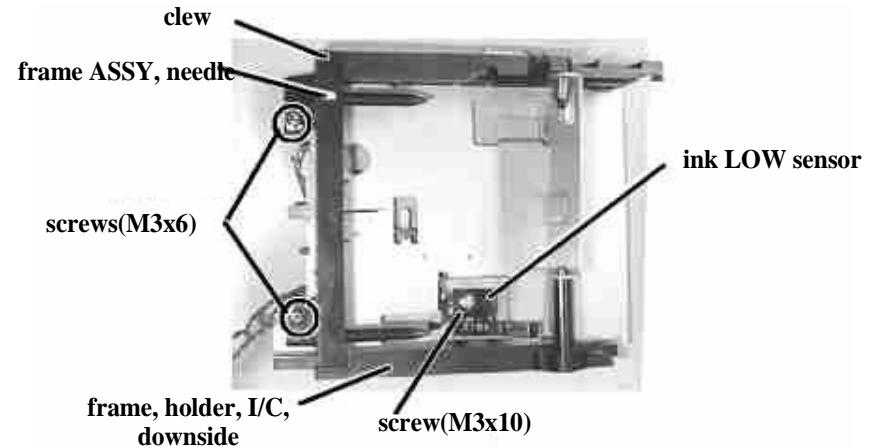
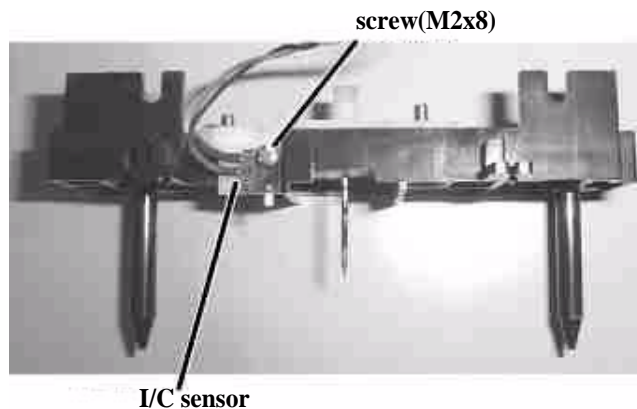


Figure 4-59. Removing the Ink Sensor Assembly 2/3

- Take out the one screw (CBS: M2 x 8) holding the I/C sensor in the needle frame assembly, then remove the ink sensor assembly.



**Figure 4-60. Removing the Ink Sensor Assembly 3/3**

#### 4.2.3.7 Remove the CR Motor Assembly

- Carry out “R Side Cover Removal.”
- Carry out “L Side Cover Removal.”
- Carry out “Rear Cover Removal.”
- Disconnect the CR Motor Harness connector from the main board, remove the CR motor harness from the clamp then take it out through the hole in the left side frame.
- Release the carriage lock by hand and move the carriage from the capping position.
- Loosen the CR tension mounting shaft on the R side frame side, then release the tension on the CR timing belt.

**NOTE:** A record should be taken of the tension scale reading of the CR tension bracket before disassembly.



**Figure 4-61. Loosening the CR Tension Belt**

- Remove the timing belt from the CR Motor assembly pulley on the L side frame.



8. Take out the 4 screws (CP(W) M4 x 10) holding the CR motor assembly, then remove the CR motor assembly.

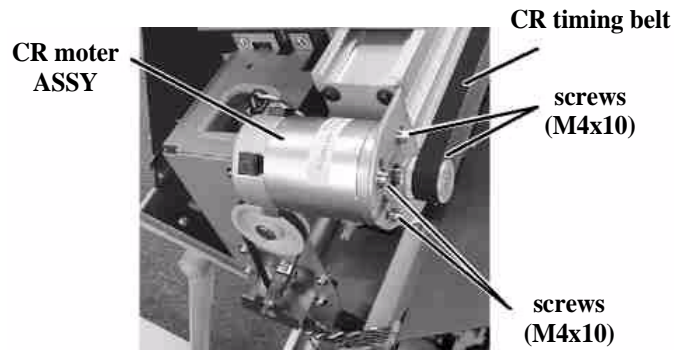


Figure 4-62. Removing the CR Motor Assembly



During assembly, move the carriage by hand to the left and right and make sure that the CR timing belt is attached uniformly in the center of the pulley.



If the CR motor is removed, the following adjustments should be performed.

- Self-diagnostic function / Adjustment (5.1.3 Adjustment Item Table 5-2 on Page172, see “CR Motor Replacement”)

#### 4.2.3.8 Remove the PF Motor Assembly

1. Carry out “L Side Cover Removal.”
2. Carry out “Read Cover Removal.”
3. Disconnect the PF motor connector from the main board, then release the clamp on the inside of the L side frame as necessary, disconnect the PF motor assembly’s connector cable and take it out through the hole in the L side frame.

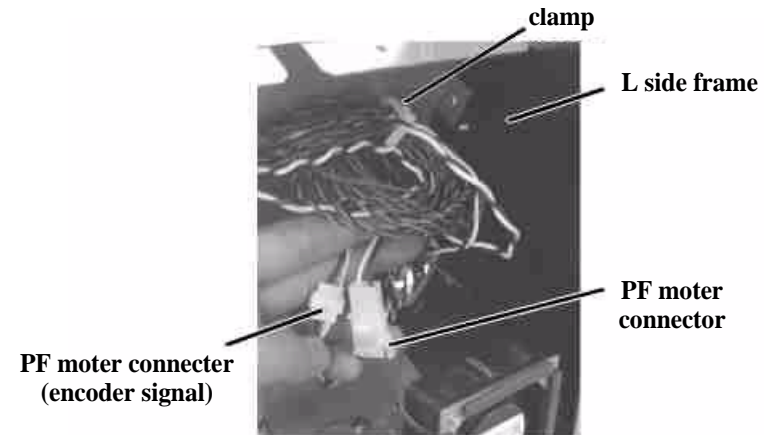


Figure 4-63. Removing the PF motor assembly harness connector.

4. Release the clamp on the outside of the left side frame, then remove the PF motor harness.

- Take out the 2 screws holding the PF encoder sensor mounting plate, then remove the PF encoder sensor mounting plate.

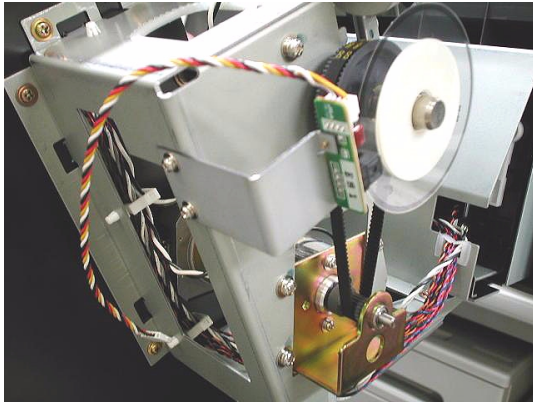


Figure 4-64. Fig. 4-64. Removing the PF encoder sensor.

- Take out the 4 screws (CP(W): M4 x 10) holding the PF motor mounting plate in the side of the L side frame.
- Remove the 2 screws (CP(W): M3 x 8) holding the PF motor assembly on the PF motor mounting plate.

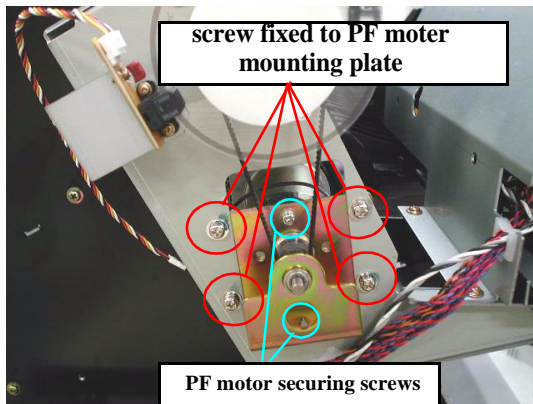


Figure 4-65. Removing the PF Motor Mounting Plate

- Rotate the PF motor mounting plate 90 degrees clockwise, then remove the PF motor mounting plate from the left side frame outside, bottom first, as shown in the figure below.

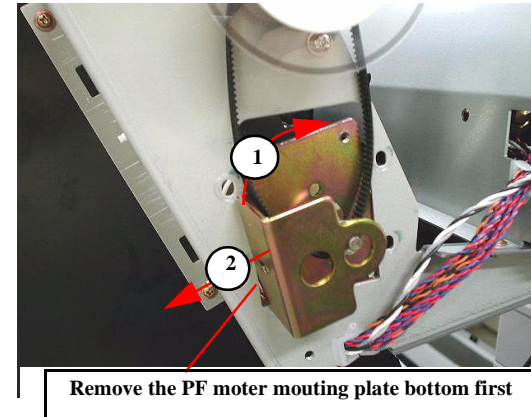


Figure 4-66. Removing the PF motor fastening screws.

- Remove the PF motor, taking care not to damage the PF motor pinion gear or bearing.



**CAUTION** During assembly, move the PF deceleration pulley by hand and make sure the PF timing belt is attached uniformly in the center of the pulley.



If the PF motor is removed, the following adjustments should be performed.

- Self-diagnostic function / Adjustment (5.1.3 Adjustment Item Table 5-2, see “PF Motor Replacement”). Refer to Page172.
- PF encoder mounting position adjustment 2. Refer to Page230.

### 4.2.3.9 Cautions when replacing the PF Loop Scale

- Assembly Procedure for the PF Loop Scale Assembly

When assembling the PF loop scale unit, the following exclusive tool should be used.

- Exclusive tool No. #F730:PF Loop Scale Assembly Base  
(Code: 1051765)

The assembly procedure is shown below.

1. Set the exclusive tool, #F730 as shown in the figure below, then set the PF loop scale base part with the double sided tape side facing up.
2. Peel the protective backing off the double sided tape to the the PF loop scale base.

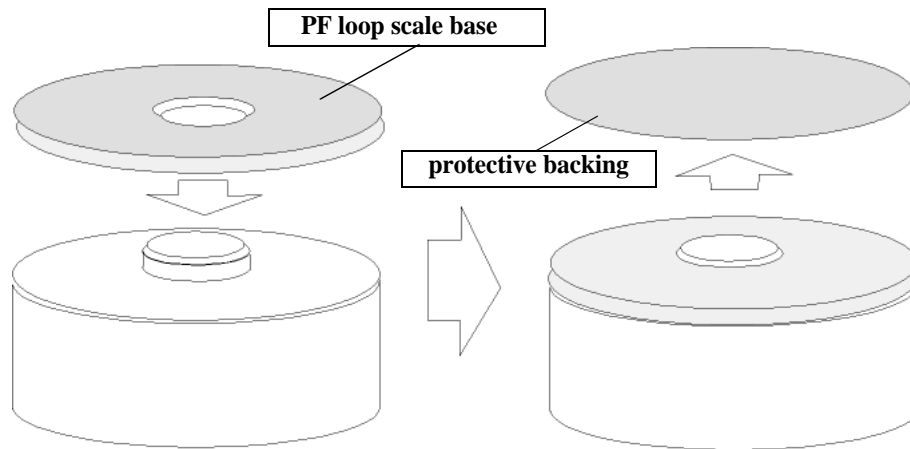


Figure 4-67. #F730 tool and PF Loop Scale Base

3. Affix the PF loop scale carefully to the PF loop scale base with the PF loop scale printed surface downward, aligning it precisely with the PF loop scale base.

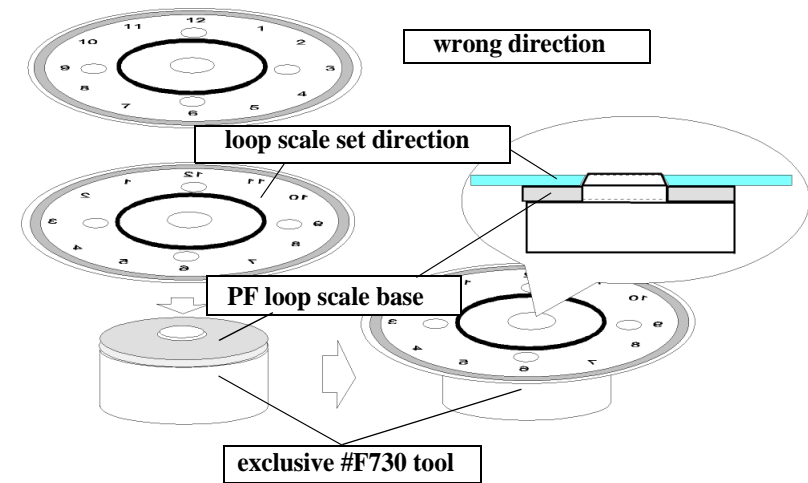
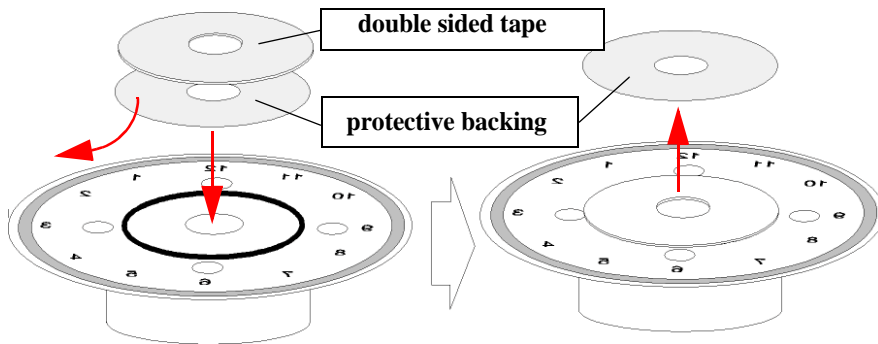


Figure 4-68. PF Loop Scale Set



- Care should be taken so as not to damage the internal diameter of the PF loop scale.
- There is no problem if the PF loop scale's affixing position on the PF loop scale base deviates somewhat. The important control point is that the inside diameter of the PF loop scale not be damaged.

4. Peel the protective backing off the other side of the double sided tape and affix the tape so that it is within the black circle on the unprinted side of the PF loop scale assembly.



**Figure 4-69. Affixing the Double Sided Tape to the PF Loop Scale**

□ PF Loop Scale Assembly Affixing Procedure

When assembling the PF loop scale unit, the following exclusive tool should be used.

- Exclusive tool No. #F731:PF Loop Scale Affixing tool  
(Code : 1051767)

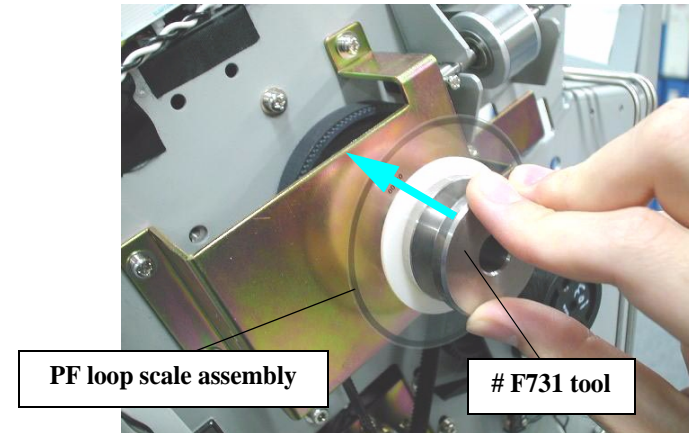
The assembly procedure is given below.

1. Set the PF loop scale assembly's double sided tape side on the grid roller side, align the internal diameter of the PF loop scale with the left end of the grid roller (PF roller) and set it lightly.



■ At this point, the PF loop scale assembly should not be fitted on the grid roller as far as it can go. If the PF loop scale assembly is placed on the grid roller by hand, it could damage the PF loop scale assembly's internal diameter and the distance from the center of the grid roller to the scale reading part would not be the same all around any more, resulting in a drop in the encoder sensor's reading accuracy.

2. Press the exclusive tool #F731 against the PF loop scale assembly from the outside, then insert the grid roller in as far as the base plate carefully, and affix it.



**Figure 4-70. Affixing the PF Loop Scale Assembly**

### 4.2.3.10 Removing the Maintenance Assembly



If you replace the waste ink absorbers because the service call error 00000100 occurs, you need to replace the specified parts\* in the Maintenance Assembly. After replacing them, be sure to initialize the following counters:

- Waste ink counter . Refer to Page216.
- Cleaning unit counter. Refer to Page216.

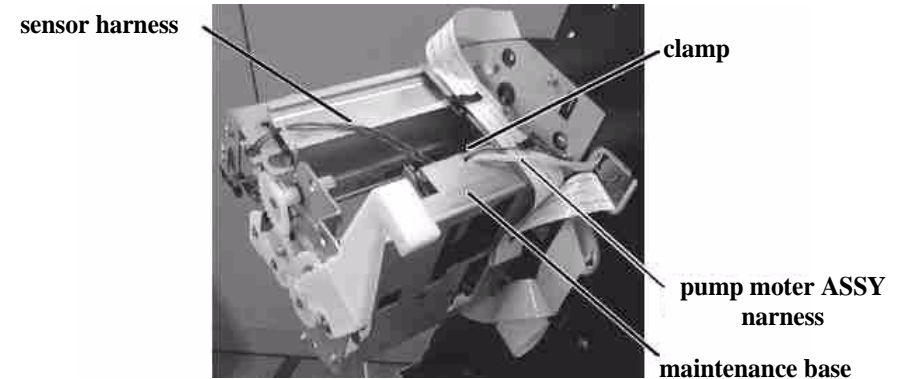
\* *Parts to be replaced: Pump Motor, Cap Assembly, Pump Assembly, Cleaner Head, and Flushing Box Assembly*

**NOTE:** *The above mentioned parts are available as a kit:  
[Description] MAINTENANCE KIT  
[Parts code] 1058463*



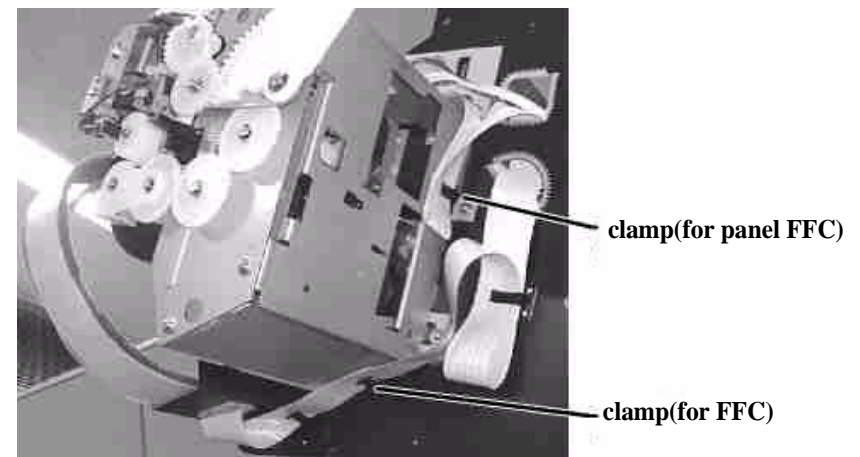
When you replace the Maintenance Assembly, ink may spill from the ink tube connected to the pump assembly. Therefore, wipe the ink around the ends of the ink tubes preliminarily.

1. Remove the R Side Cover as described in “R Side Cover Removal” on page 103.
2. Remove the Rear Cover as described in “Rear Cover Removal” on page 106.
3. Disconnect the harness for the Pump Motor Assembly from its connector on the main board, and take the harness out from the hole in the R side frame.
4. Release the one Pump Motor Assembly harness and two sensor harnesses from the clamp on the Maintenance Base Assembly.



**Figure 4-71. Removing the Harnesses - 1**

5. Release the panel FFC and CR FFC from the cable clamps at the back and bottom of the Maintenance Base Assembly, respectively.



**Figure 4-72. Removing the Harnesses - 2**

6. Perform steps 1 and 2 of the “Replacing the Waste Ink Pads” on page 115.
7. Remove the four (CUPS M4x6) screws securing the Maintenance Base Assembly to the printer main body and remove the Maintenance Base Assembly.

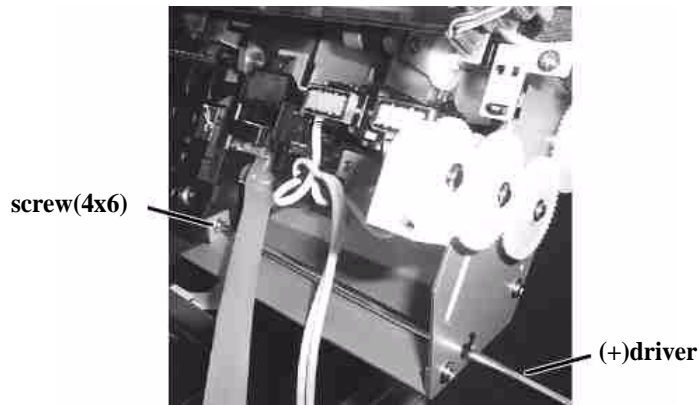


Figure 4-73. Removing the Maintenance Base Assembly - 1

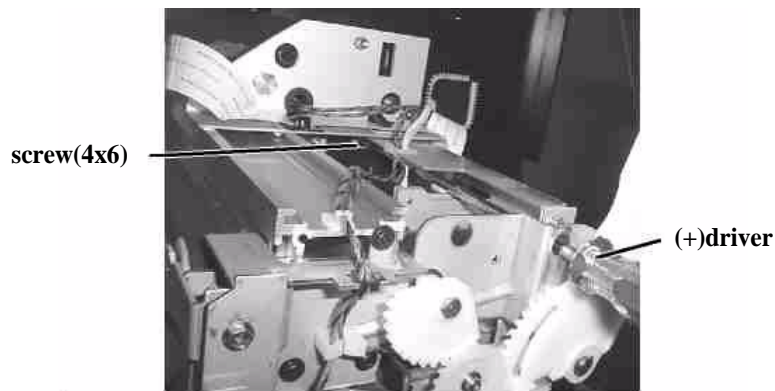


Figure 4-74. Removing the Maintenance Base Assembly - 2



Figure 4-75. Removing the Maintenance Base Assembly - 3

8. Shift the Maintenance Base Assembly to the left to release the joint with the R Side Frame. Then, watching out for the harnesses, lower the Maintenance Base Assembly and remove it.

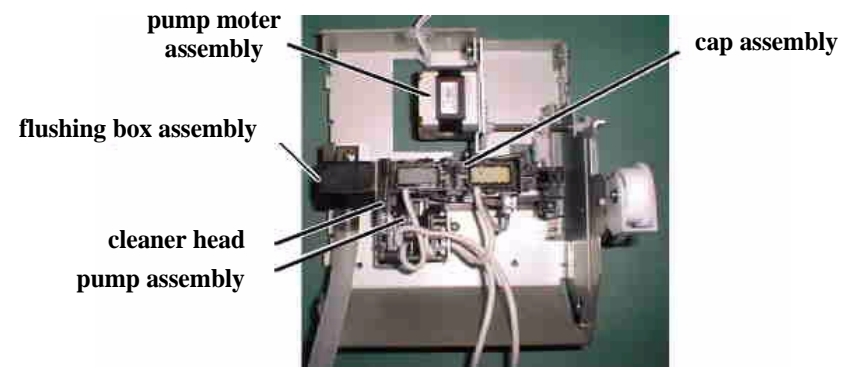
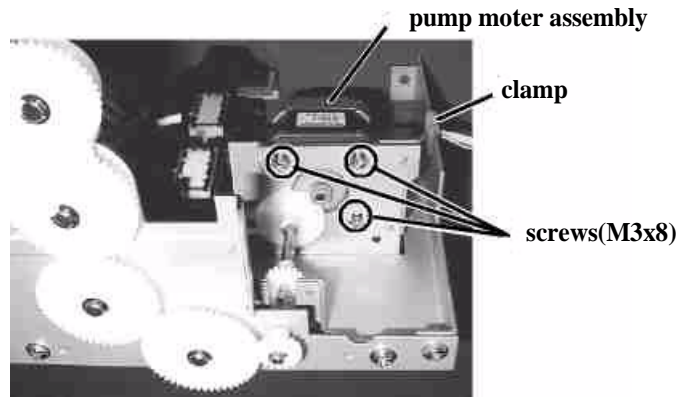


Figure 4-76. Maintenance Base Assembly

#### 4.2.3.10.1 Removing the Pump Motor Assembly

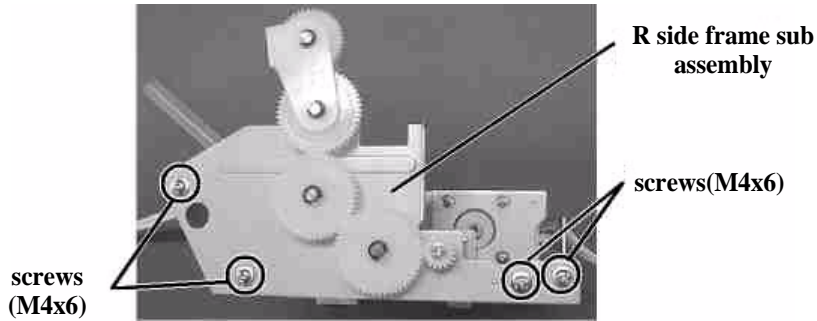
1. Remove the Maintenance Assembly as described in “Removing the Maintenance Assembly” on page 133.
2. Release the harness for the Pump Motor Assembly from the cable clamp.
3. Remove the three (CP(W) M3x8) screws securing the Pump Motor Assembly to the Maintenance Base Assembly and remove the Pump Motor Assembly.



**Figure 4-77. Removing the Pump Motor Assembly**

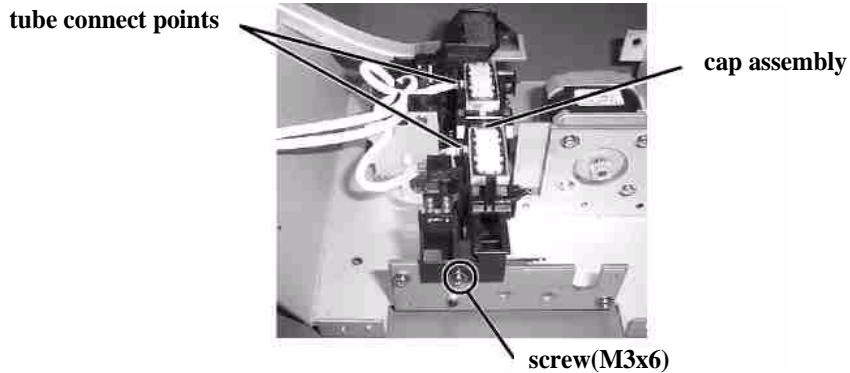
**4.2.3.10.2 Removing the Cap Assembly**

1. Remove the Maintenance Assembly as described in “Removing the Maintenance Assembly” on page 133.
2. Remove the four (CUPS M4x6) screws securing the R Side Frame Sub Assembly and remove the R Side Frame Sub Assembly.



**Figure 4-78. Removing the R Side Frame Sub Assembly**

3. Remove the one (CUPS M3x6) screw securing the Cap Assembly, disconnect the two tubes from the Pump Assembly, and remove the Cap Assembly.

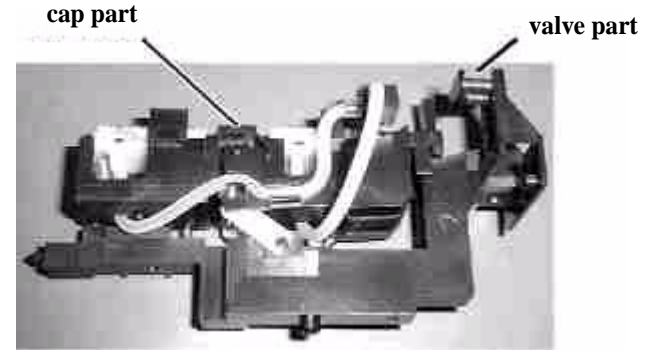


**Figure 4-79. Removing the Cap Assembly**



Check for the points below when removing/mounting the Cap Assembly.

- Push the cap part down to the valve part and check that the cap part rebounds with spring force.
- Check that the valve part is not dislocated.



**Figure 4-80. Cap Assembly**



#### 4.2.3.10.3 Removing the Pump Assembly

1. Remove the Maintenance Assembly as described in “Removing the Maintenance Assembly” on page 133.
2. Remove the Cap Assembly as described in “Removing the Cap Assembly” on page 136.
3. Remove the two (CUPS M3x6) screws securing the pump reduction gear bracket and remove the pump reduction gear bracket and pump gear.

**NOTE:** When mounting the pump reduction gear, make sure the reduction gear mesh with the corresponding gear.

4. Remove the one (CUPS M3x6) screw securing the Pump Assembly and remove the Pump Assembly.

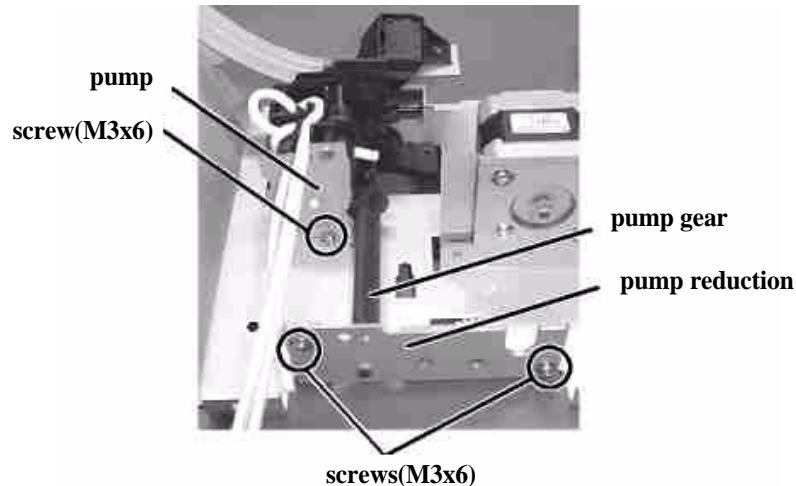


Figure 4-81. Removing the Pump Assembly

#### 4.2.3.10.4 Removing the Cleaner Head

1. Remove the Maintenance Assembly as described in “Removing the Maintenance Assembly” on page 133.
2. Remove the Cap Assembly as described in “Removing the Cap Assembly” on page 136.
3. Using tweezers, release the joint for the concave part of the Cleaner Head and the convex part of the Cleaner Head support part in the Pump Assy. Then remove the Cleaner Head by pulling it upward.

**NOTE:** Set the Cleaner Head in the correct direction, and do not touch the Cleaner Head with your bare hands.



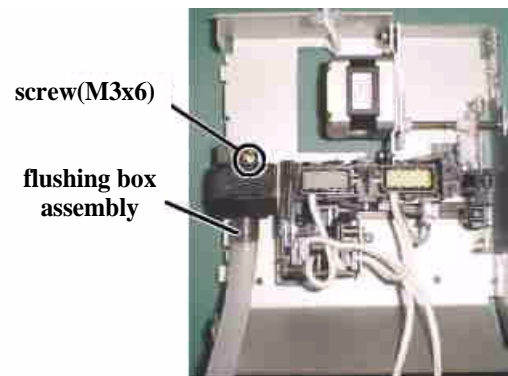
Figure 4-82. Removing the Cleaner Head

#### 4.2.3.10.5 Removing the Flushing Box Assembly

1. Remove the Maintenance Assembly as described in “Removing the Maintenance Assembly” on page 133.
2. Using tweezers, remove the Cleaner Head from the Pump Assembly.

**NOTE:** Make sure the Cleaner Head surface is free from any dirt, dust, or grease. Also, when mounting it, use tweezers to keep the wiping side of the Cleaner Head clean.

3. Remove the one (CUPS M3x6) screw securing the Flushing Box Assembly and remove the Flushing Box Assembly.



**Figure 4-83. Removing the Flushing Box Assembly**

#### 4.2.3.11 Removing the HEAD\_SLIDE Sensor Assembly

1. Remove the R Side Cover as described in “R Side Cover Removal” on page 103.
2. Remove the Rear Cover as described in “Rear Cover Removal” on page 106.
3. Disconnect the harness for the HEAD\_SLIDE Sensor Assembly from its connector on the main board and take the harness out from the hole in the R Side Frame.
4. Push the carriage lock using your finger to unlock the carriage and move the carriage from the home position to the left.
5. Remove the one (CP(W) M3x6) screw securing the HEAD\_SLIDE Sensor Assembly and remove the HEAD\_SLIDE Sensor Assembly.
6. Release the harness for the HEAD\_SLIDE Sensor Assembly from the four cable clamps on the Maintenance Assembly and CR Rail Assembly.

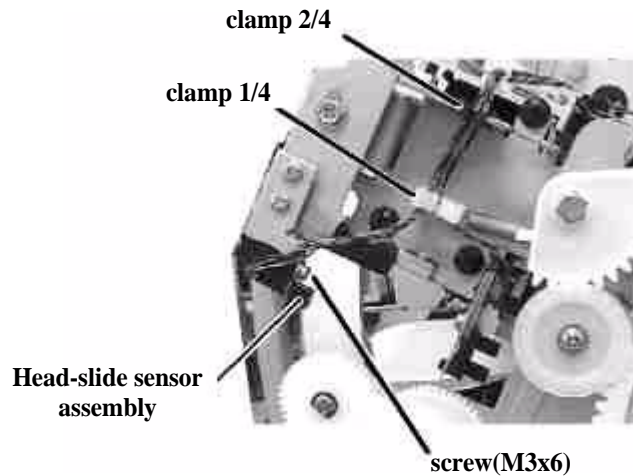


Figure 4-84. Removing the HEAD\_SLIDE Sensor Assembly-1

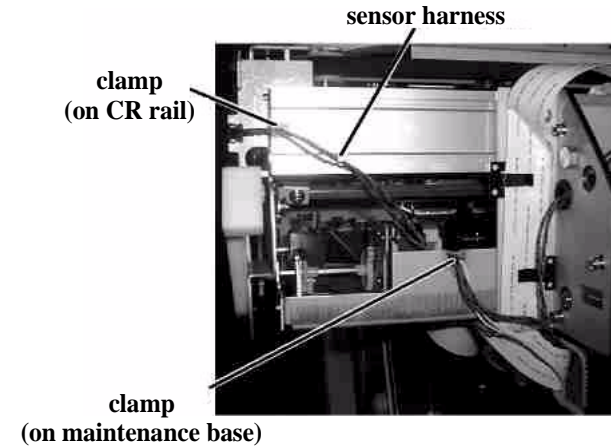


Figure 4-85. Removing the HEAD\_SLIDE Sensor Assembly-2

#### 4.2.3.12 Removing the CR\_HP Sensor

1. Remove the R Side Cover as described in “R Side Cover Removal” on page 103.
2. Push the carriage lock using your finger to unlock the carriage and move the carriage from the home position to the left.
3. Disconnect the harness from the CR\_HP Sensor connector.
4. Release the hook fixing the CR\_HP Sensor and remove the CR\_HP Sensor.

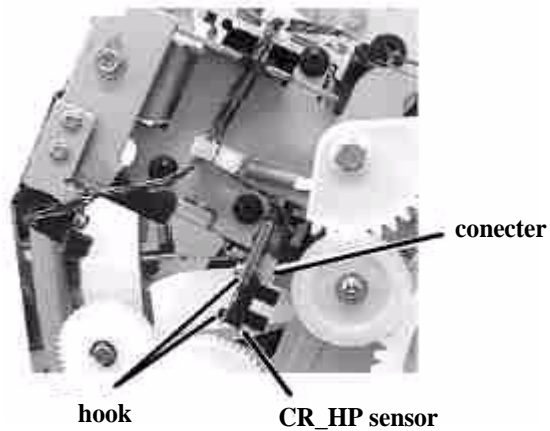


Figure 4-86. Removing the CR\_HP Sensor

### 4.2.3.13 Removing the Release Sensor/P\_THICK Sensor

Right: Release Sensor that detects the paper hold sensor condition (set or released).

Left: P\_THICK Sensor that detects paper thickness (normal or thick)

1. Remove the R Side Cover as described in "R Side Cover Removal" on page 103.
2. Remove the L Side Cover as described in "L Side Cover Removal" on page 104.
3. Remove the I/C Holder Cover as described in "I/C Holder Cover Removal" on page 105.
4. Remove the H Top Cover as described in "H Top Cover Removal" on page 105.
5. Push the paper hold lever down to the rear.
6. Remove the one (CUPS M3x6) screw securing the sensor bracket and remove the bracket along with the both sensors.

**NOTE:** Sensor bracket position is adjusted at factory. Therefore, be sure to mark its current position before removing the screw.

7. Remove the harness from the connector of the Release/P\_THICK Sensor.
8. Unhook the sensor from the sensor bracket and remove the sensor.

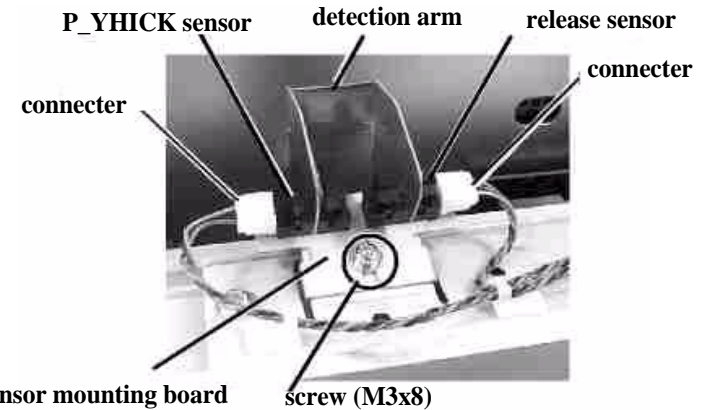


Figure 4-87. Removing the Release Sensor/P\_THICK Sensor-1

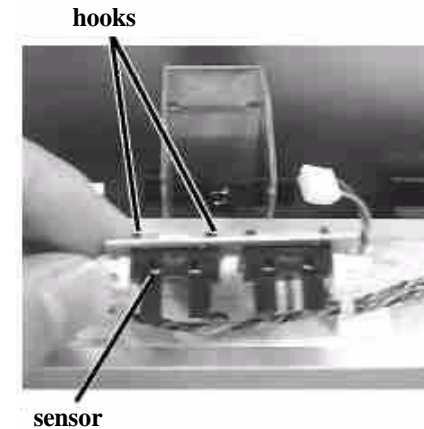


Figure 4-88. Removing the Release Sensor/P\_THICK Sensor-2



If you move the sensor bracket position, perform the necessary adjustment listed in Table 5-2, "Service Parts & Required Adjustments," on page 172.

#### 4.2.3.14 Removing the P\_FRONT Sensor Assembly

1. Remove the R Side Cover as described in “R Side Cover Removal” on page 103.
2. Remove the L Side Cover as described in “L Side Cover Removal” on page 104.
3. Remove the I/C Holder Cover as described in “I/C Holder Cover Removal” on page 105.
4. Remove the H Top Cover as described in “H Top Cover Removal” on page 105.
5. Remove the Rear Cover as described in “Rear Cover Removal” on page 106.
6. Remove the paper Guide L2 as described in “Paper Guide L2 Removal” on page 107.
7. Disconnect the harness for the P\_FRONT Sensor Assembly from the connector on the main board and drop the harness in the hole on the right.
8. Push the paper hold lever down to the front.
9. Remove the three (CUPS M4x6) screws securing the Paper Guide L, and remove the Paper Guide L by slowly taking it out toward upper front.

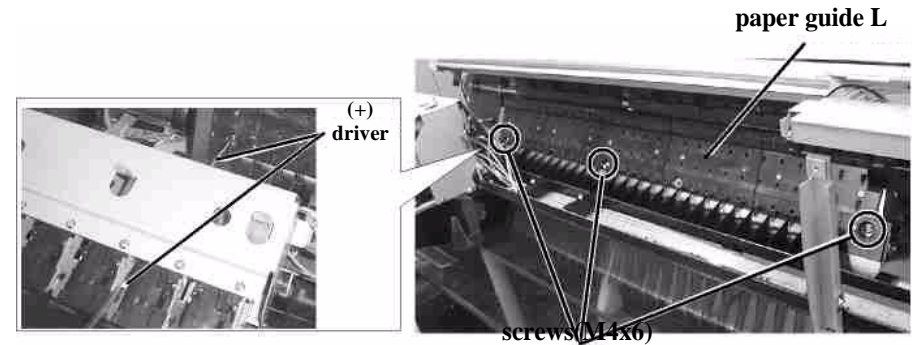
**NOTE:** To remove the left screw, insert a screw driver from the space of the I/H Assembly, the third one from the right.

10. Remove the two (CP(W) M2x8) screws securing the P\_FRONT Sensor Assembly and remove the P\_FRONT Sensor Assembly.

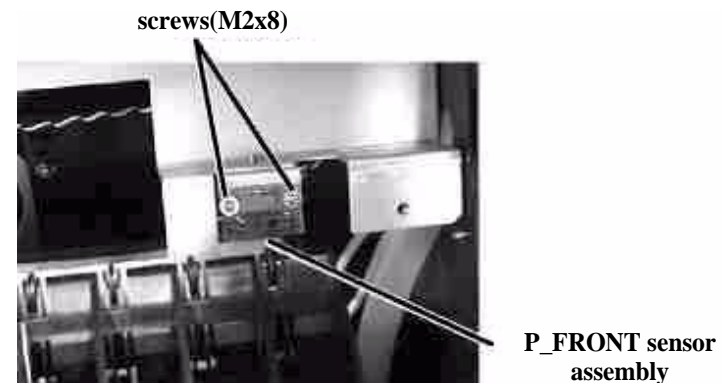
**NOTE:** P\_FRONT Sensor Assembly position is adjusted at factory. Therefore, be sure to mark its current position before removing the screws.



If you replace the P\_FRONT Sensor Assembly, perform the necessary adjustment listed in Table 5-2 in Chapter 5 on Page172



**Figure 4-89. Removing the Paper Guide L**



**Figure 4-90. Removing the P\_FRONT Sensor Assembly**

### 4.2.3.15 Removing the P\_REAR Sensor Assembly

1. Remove the R Side Cover as described in “R Side Cover Removal” on page 103.
2. Remove the L Side Cover as described in “L Side Cover Removal” on page 104.
3. Remove the I/C Holder Cover as described in “I/C Holder Cover Removal” on page 105.
4. Remove the H Top Cover as described in “H Top Cover Removal” on page 105.
5. Remove the Rear Cover as described in “Rear Cover Removal” on page 106.
6. Disconnect the harness for the P\_REAR Sensor Assembly from its connector on the main board and drop the harness in the hole on the right.
7. Push the paper hold lever down to the front.
8. Remove the five (CBS M4x6) screws securing the Paper Guide U, and remove the Paper Guide U by slowly taking it out toward the upper front.

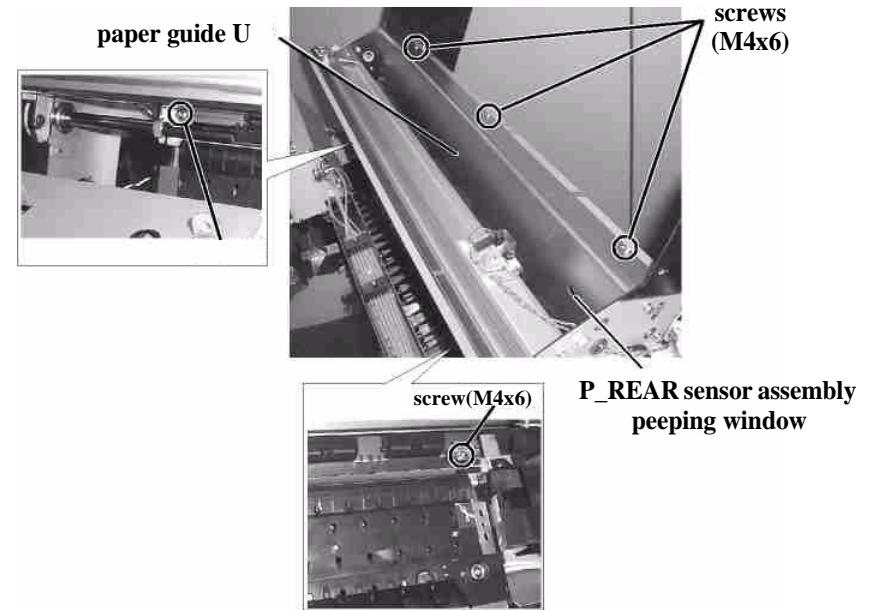
**NOTE:** When removing/installing the Paper Guide U, be careful not to mar the P\_REAR Sensor Assembly with the edge of the sensor inspection window.

9. Remove the two (CP(W) M2x8) screws securing the P\_REAR Sensor Assembly and remove the P\_REAR Sensor Assembly.

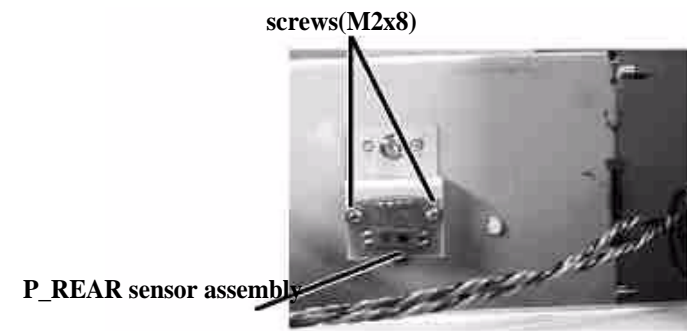
**NOTE:** P\_REAR Sensor Assembly position is adjusted at factory. Therefore, be sure to mark its current position before removing the screws.



If you replace the P\_REAR Sensor Assembly, perform the necessary adjustment listed in Table 5-2 in Chapter 5 on Page172.



**Figure 4-91. Removing the Paper Guide U**



**Figure 4-92. Removing the P\_REAR Sensor Assembly**

#### 4.2.3.16 Removing the Cover Sensor Assembly

1. Perform the Steps 1 to 13 in “I/C Holder Cover Removal” on page 105.
2. Separate the harnesses for the Cover Sensor Assembly from the six harness connectors for the Ink Cartridge Sensor and harness bundle for the Cover Sensor Assembly.
3. Remove the two (CP(W) M2x12) screws securing the Cover Sensor Assembly and Cover SW Holder, and remove the Cover Sensor Assembly.

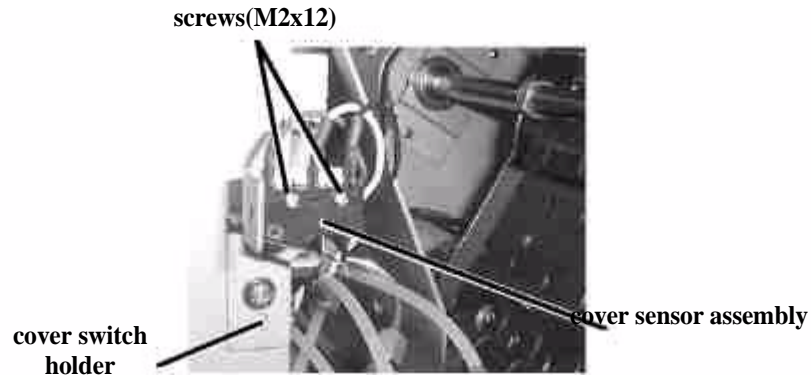


Figure 4-93. Removing the Cover Sensor Assembly



Perform the necessary adjustment listed in Table 5-2 in Chapter 5 on Page172. This adjustment is required to make the Cover Sensor Assembly work interlocking with the close/open status of the Front Cover.



## 4.2.4 Conversion Kit Assembly Procedure

In this item, the procedure for changing the dye based Stylus Pro 7000 to a pigment based ink printer is shown.

### 4.2.4.1 Conversion Kit Component Parts

This kit is a kit which upgrades the Stylus Pro 7000 from a printer that uses dye-based inks to one which uses pigment-based inks, and is configured from the following parts.

**Table 4-6. Conversion Kit Component Parts**

Part Name	Quantity
• Maintenance Kit: 1 Kit	• 1 Kit
• MC Thick Mat Paper roll 24" x 5 m	• 1 Roll
• Stylus Pro 7500 Document Pack	• 1 kit
• Damper Assembly	• 6 pcs.
• O-rings	• 6 pcs.
• Joint Screws M6	• 1 screws
• IH holder cover (The Ink Cartridge No. Label is affixed already.)	• 1 label
• EPSON COLOR Fast Label	• 1 label
• Manual Cutter Cut Position Label	• 1 label
• Ink Cartridges	• 6 cartridges
• Transport Liquid S46 Cartridges	• 6 cartridges

The part code for this kit is different as following table every destination..[

**Table 4-7. Conversion Kit Part Code**

No.	Destination	Part Code	Note
1	EAI, EIB, EFS, EDG, EIS	1058468	Document Box is <b>NOT</b> packed in this kit
2	ETT	1059329	Document Box is packed in this kit.
3	ECC	1059328	Document Box is packed in this kit
4	Other	1059330	Document Box is packed in this kit

**NOTE:** *The Document pack is not packed in the above No.1 kit. So, you have to pack the document pack to this kit before you use this kit.*

**NOTE:** *A PC card or CD-ROM with the latest firmware written to it is not packed with this kit, so when implementing the upgrade service, a PC card or CD-ROM with the latest firmware written to it should be brought together with this kit.*

**NOTE:** *This kit does not include a CPS Soft Ripper or Postscript Server system disk, so a system disk or materials which are compatible with the customer's use environment should be brought together with this kit.*

### 4.2.4.2 Adjustment Item Outline

In the upgrade service, if the necessary parts are assembled, the necessary adjustment items are as shown below.

**Table 4-8. Adjustment Items**

No	Adjustment Item
1	Bi-d Adjustment
2	Head GAP adjustment

### 4.2.4.3 Upgrade Service Preliminary Cautions

The following contents concerning this service should be adequately explained to the user and the service performed after the user gives his or her consent.

- Most of the print media used with the Stylus Pro 7000, with the exception of the following media, will no longer be usable with the printer.
  - MC thick mat roll paper
  - Glossy film roll paper
- When the upgrade service has been performed, the dye-based ink cartridges used with the Stylus Pro 7000 cannot be used.
- The OLFA manual cutter is not packed with this conversion kit. Also, the paper guide L with auxiliary grooves for use with the OLFA manual cutter, is not packed with this kit. Therefore, even after this service is performed, the OLFA manual cutter which could be used with the Stylus Pro 7500 cannot be used on machines that have undergone this upgrade.
- If this upgrade service is performed, CPS Ripper - Pro and Postscript Server PS6100 also need to be upgraded.

#### 4.2.4.4 Upgrade Service Preliminary Check Items

- It should be confirmed whether CPS Ripper Pro and Postscript Server are installed in the system environment that uses the Stylus Pro 7000. If this service is performed for users which are using the Stylus Pro 7000 under these environments, the following system disks and materials should be brought together with this kit when the service is performed.

- Users who are using Postscript Server PS6100.

- PS6300 System Software CD-ROM
- Boot ROM program
- SCSI CD-ROM drive

- Users using CPS Soft Ripper PRO

- Soft Ripper PRO software package.

- The results of the nozzle check of the Stylus Pro 7000 currently in use by the user should be checked. If skipping of dots is occurring, carry out head cleaning 3 times and if it still doesn't recover, use a light system head, regardless of whether the head causing the dot skipping is a dark system head or a light system head (ASP Code: F055050), and this should be brought together with this kit and the other materials when the service is performed.

The purpose of preparing a light system head is that its printing precision is higher compared to that of the dark system head and it is effective in solving the problem of banding when users report banding problems, and prevents it from recurring, thus eliminating customer claims in this area.

- If the customer purchases MC mat synthetic paper or MC mat synthetic paper (with adhesive) when this service is contracted for, depending on the conditions, it is recommended that the optional 2-inch high tension spindle be used together with it.

This paper is structurally weak and has a tendency to deflect more than necessary between the spindle and PF roller during paper feed, so if 4 m or greater lengths of paper are printed on, there is a possibility that wrinkles could occur at the PF roller. Therefore, the optional 2-inch high tension spindle, with its high back tension, is effective when used together with this paper.

- If the customer purchases MC Image paper when this service is contracted for, depending on the conditions, it is recommended that the optional 3-inch high tension spindle be used together with it.

This paper is structurally extremely weak and has a tendency to deflect by

becoming unwound between the spindle and PF roller during paper feed. Therefore, the optional 2-inch high tension spindle, with its high back tension, is effective when used together with this paper.

#### 4.2.4.5 Conversion Kit Assembly Procedure

##### PREPARATION BEFORE ASSEMBLY

1. Open the Conversion Kit case and check if all the parts have been packed. See table 4-6.
  2. Remove the roll paper currently set in the Stylus Pro 7000 the user is using. Install the 24-inch thick mat roll paper packed with the conversion kit in the printer.
  3. By switching the power ON while pressing the following buttons, enter the self-diagnostic mode.
    - Paper Feed – Button + Paper Feed + Button + Enter Button
  4. Press the SelecType button to select the “Check: Print” item, then press the Enter (Cut/Eject) button. (This is, after all, a confirmation operation for the sake of reference.)
  5. Press the Paper Source button to select “Print: Nozzle Check”, then press the Enter (Cut/Eject) button and the nozzle check pattern will be printed. (The nozzle check pattern, Bi-D, Gap pattern and each type of counter value are printed.)
- NOTE:** *The nozzle check pattern is used in the final confirmation of this operation, so after printing, keep this printout as a treasure until the operation is completed.*
6. Check the printed nozzle check pattern, and if there is any skipping of dots, select “Check: Cleaning” and carry out manual cleaning. If the printer does not recover from the problem with skipping of dots, replace the affected head with the previously provided light color head. See Page118.
  7. Set the paper set lever so it is toward the back of the printer and roll up the paper. After that, the paper set lever should be set so it is toward the front of the printer.

##### INK DISCHARGE PROCEDURE

1. Enter the Self-diagnostic mode by turning the printer’s power switch ON while pressing the following buttons.
  - Paper Feed – Button + Paper Feed + Button + Enter Button
2. Select “Check: Adjustment” by pressing the SelecType button, then press the Enter button. After that, press the Paper Source button to select “Adj: Clean Head,” then press the Enter button.



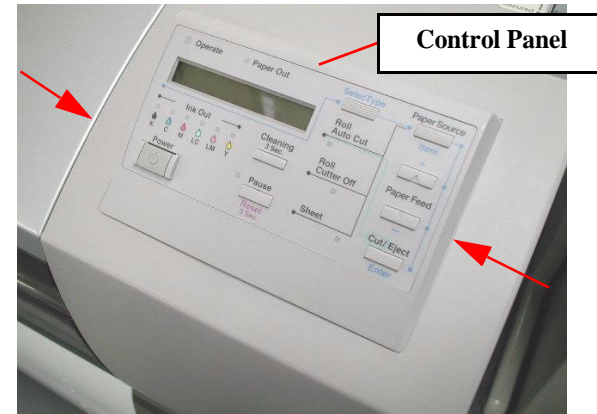
**If you are carrying out manual cleaning by selecting “Ad: Clean Head,” the printer will not function unless the paper set lever is in the paper set position and the front cover is closed.**

3. In accordance with the instruction “Please remove ink” displayed in the LCD panel, remove all the ink cartridges.
4. Press the Enter button to start the ink discharge sequence. This operation ends in approximately 2 minutes.
5. After the ink discharge sequence is completed, the message “Set Cleaning Jig” will be displayed in the LCD panel. remove the 6 cartridges of the S46 transport liquid cartridges form the Conversion Kit and set them in the I/H assembly.
6. Press the Enter button to start the cleaning sequence. While this sequence is running, the message “ Head cleaning” will be displayed in the LCD. This sequence is a process of cleaning the ink supply system, such as the heads and ink tubes, and ends in approximately 2.5 minutes.
7. After the cleaning sequence is completed, the message “Remove cleaning jig” will be displayed in the LCD, so remove the 6 cartridges of S46 transport liquid cartridges from the I/H assembly.
8. Press the Enter button to start the transport liquid discharge sequence. during execution of this sequence, the message “ Head cleaning” is displayed in the LCD. This sequence ends in approximately 2.3 minutes.

9. When the transport liquid discharge sequence is completed, the message “Adj: Counter Clear” will be displayed in the LCD. When the Enter button is pressed, the message “Reset Counters ?” will be displayed in the LCD. By pressing the Enter button, the counters for the above items will be reset. By executing this operation, initial filling will be done automatically when the power is turned ON next.
- Ink cartridge consumption counter
  - Waste ink counter
  - Initial ink filling flag set
10. Turn the printer’s power OFF, then pull the AC plug out of the AC outlet.

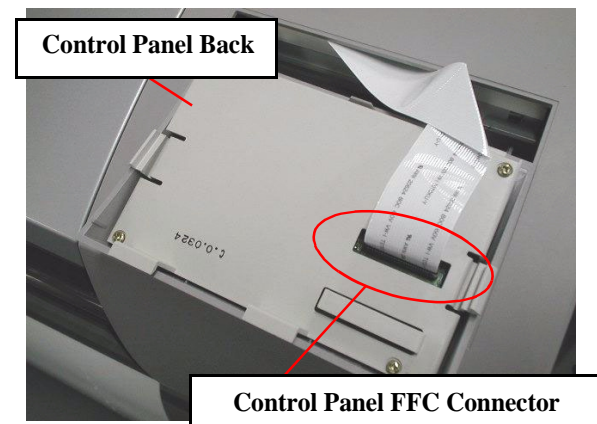
## CONVERSION KIT PARTS REPLACEMENT PROCEDURE

1. Release the 2 hooks fitting into the left and right sides of the control panel and remove the control panel.



**Figure 4-94. Removing the Control Panel**

2. Pull out the FFC that is run from the top of the control panel to the panel board.



**Figure 4-95. Disconnecting the Control FFC**

3. Set the paper set lever so it is toward the back of the printer (paper release position) and loosen the 2 screws (CBP M4 x 10) holding the paper set lever. Then remove the paper set lever.
4. Insert a flat bladed screwdriver's blade in the top edge of the paper lever's cap and release the fastening hook, then remove the lever. At this time, the paper lever's cap can easily fall inside the printer, so caution should be exercised.

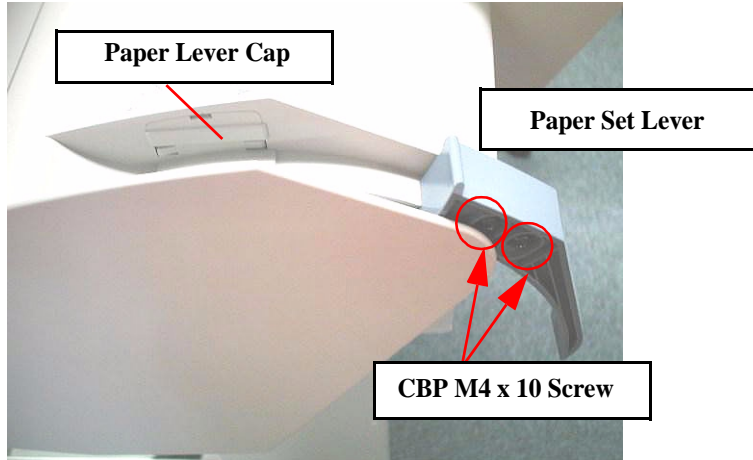


Figure 4-96. Removing the Paper Set Lever and Paper Lever Cap

5. Open the roll paper cover and take out the one screw that is installed from the printer's right inside to the right side cover.

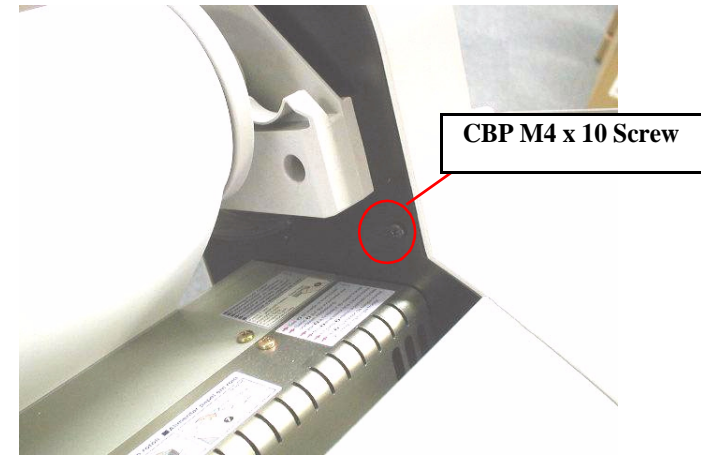


Figure 4-97. Removing the Right Side Cover 1/3

6. Take out the one screw (Silver, CBP M4 x 8) that is installed from the printer's rear to the right side cover. On the printer's right side, take out the 2 installation screws in the right side cover (Silver: CUPS M4 x 10).

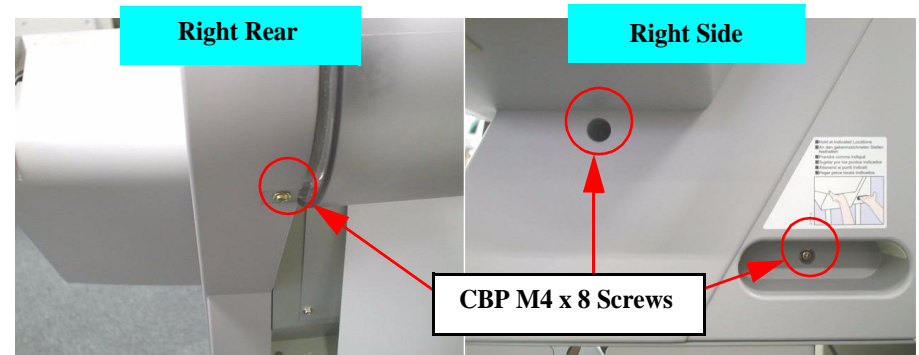


Figure 4-98. Removing the Right Side Cover 2/3

- Open the front cover and take out the screw that holds the right side cover in the opening right inside. (Black: CPP M4 x 12).

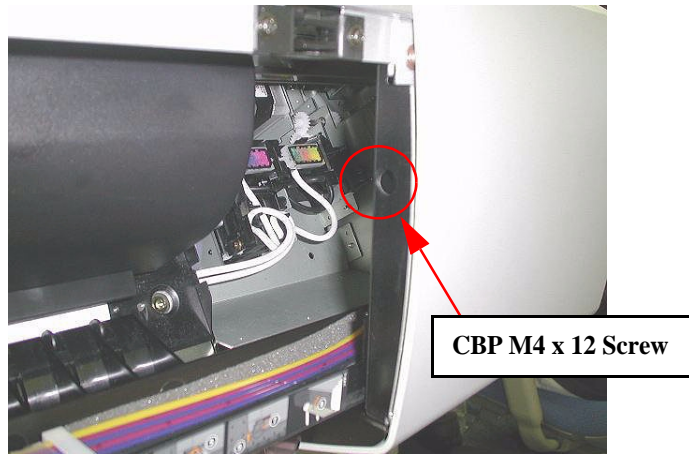


Figure 4-99. Removing the Right Side Cover 3/3

- Set the paper set lever so that it is toward the printer's front (paper setting position), then slide the right side cover toward the right and remove it.

- Close the front cover, then loosen the 4 screws holding paper guide L2 (Silver: M4 x 6) and remove paper guide L2.

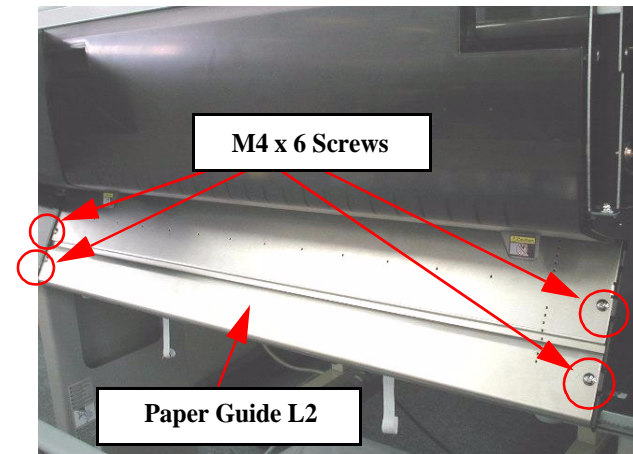


Figure 4-100. Removing Paper Guide L2



When installing paper guide L2, the 5 insertion tabs on the top edge of paper guide L2 should be inserted in the insertion slots in paper guide L, then the screws should be tightened.

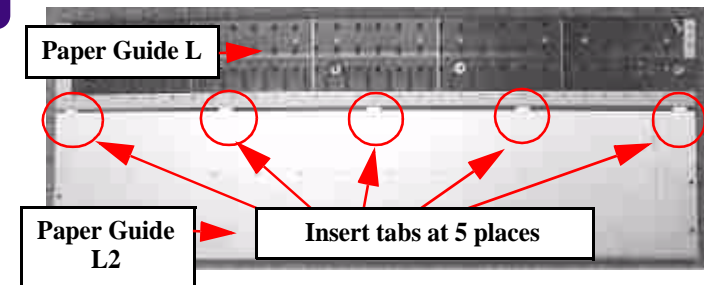


Figure 4-101. Attaching Paper Guide L2.

If the 5 insertion tabs are not inserted securely, it will result in the occurrence of paper jams.

- Take out the 2 waste fluid tubes (Color: White) set in the waste ink pads with deep caution, then wrap the front ends in a piece of cloth or in soft paper, etc. Also, take the flushing tubes (Color: Semitransparent) from the flushing tube clamp on the waste ink pads with extreme care, then wrap their front ends with a piece of cloth or tissue, etc. as with the waste fluid tubes.

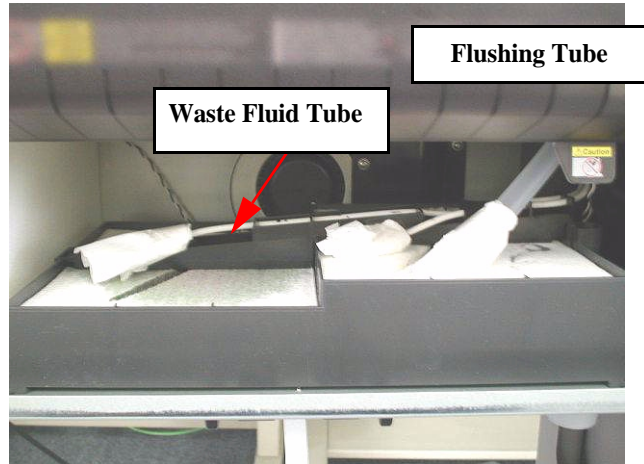


Figure 4-102. Taking out each type of tube.

- Release the two hooks used to fasten the waste ink pad boxes from the printer's bottom surface, then slide the waste ink boxes toward the printer's front.

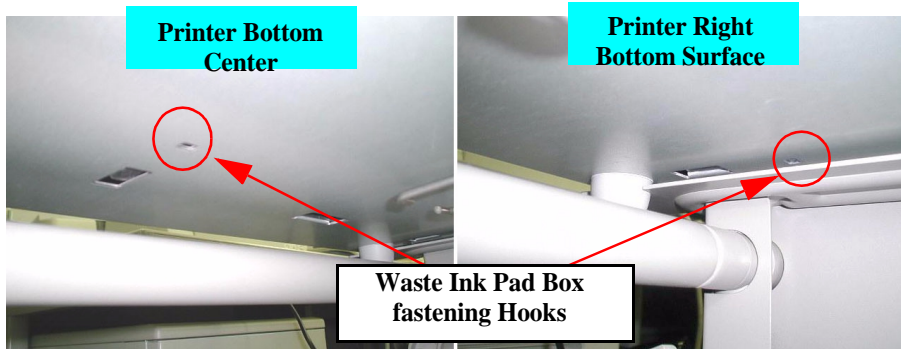


Figure 4-103. Removing the Waste Ink Pad Boxes

- Release the hooks holding the waste fluid tube holders at the left and right ends of the waste ink pad boxes, then remove the waste fluid tube holder together with the tubes.

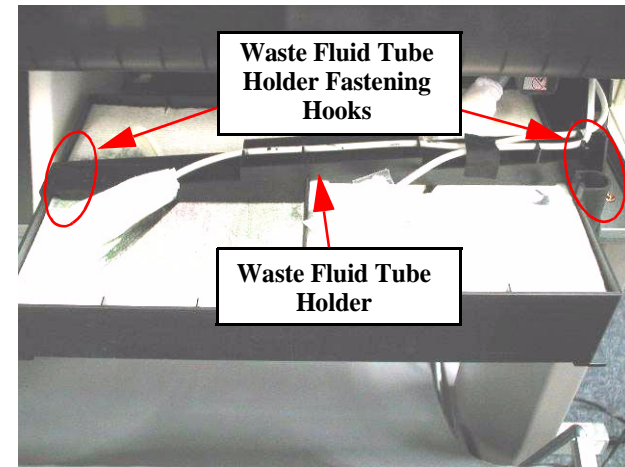


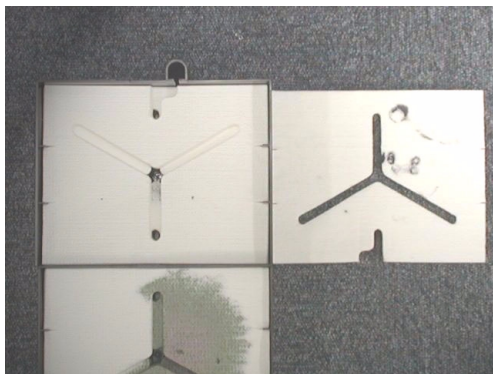
Figure 4-104. Removing the Waste Fluid Tube Holder and Tubes

- Take out new waste ink pads from the conversion kit and replace the old pads that are in the waste ink pad boxes.

- Confirm that a total of 10 waste ink pads are replaced.



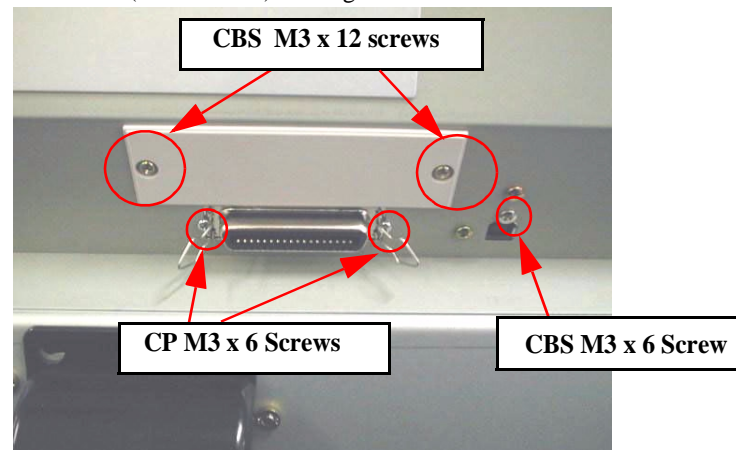
- After replacing the waste ink pads, place the old waste ink pads in the plastic bag packed with the new waste ink pads and packed in the same package with the conversion kit, then dispose of the appropriately by returning with them and bringing them to the Service Center.
- When replacing the waste ink pads, the pads should be stacked up in the proper direction inside the waste ink pad boxes. When stacking the pads, set them with their direction alternating as shown in the figure below.



**Figure 4-105. Waste Ink Pad Stacking Method**

14. Disconnect the waste fluid tubes from the waste fluid tube holder.
15. After replacing the waste ink pads, keep the waste ink pad boxes in their uninstalled state in a place where they will not interfere with the operation.

16. Loosen the 2 screws (CPS M3 x 12) holding the optional interface cover at the printer's rear side, then remove the optional interface cover.
17. Take out the 2 screws (CP M3 x 6) holding the parallel interface connector, then take out the 1 screw (CBS M3 x 6) holding the USB interface connector.

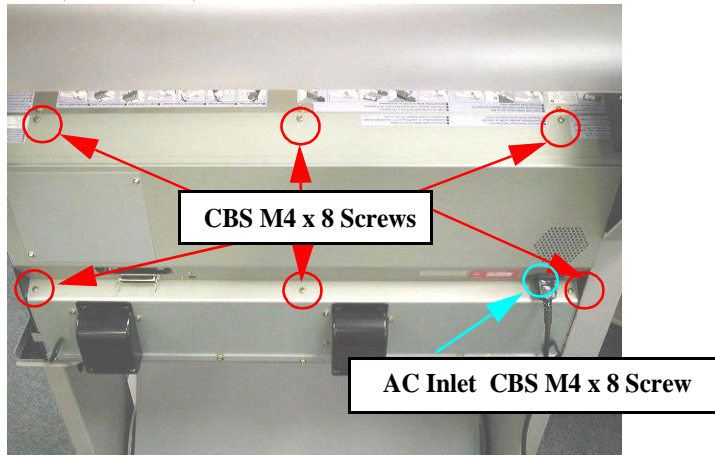


**Figure 4-106. Removing the Installation Screws from Each Interface**

18. Take out the one screw (CBS M3 x 6) holding the AC inlet.



19. At the rear cover on the bottom edge, take out the 3 screws holding the rear cover (CBS: M4 x 8) and take out the 3 screws holding the rear cover at the top edge of the rear cover (CBS M4 x 8).



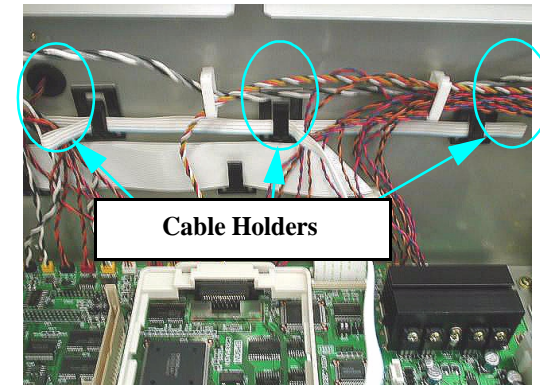
**Figure 4-107. Removing the Rear Cover**

20. Raise up the rear cover slightly and remove the rear cover from the rear side of the printer.

21. Remove the pump assembly cable from connector CN24 on the main board, then remove the cable from the 3 cable holders in the circuit board housing. Take the cable out from the notched hole in the right side frame.



After inserting the connector for the pump assembly cable in connector CN24 on the main board, run the cable through the 3 cable holders in the circuit board housing.



**Figure 4-108. Routing of the Pump Motor Assembly Cable**

22. Take the single pump motor assembly cable and the 2 sensor cables from their clamps in the Maintenance base assembly.

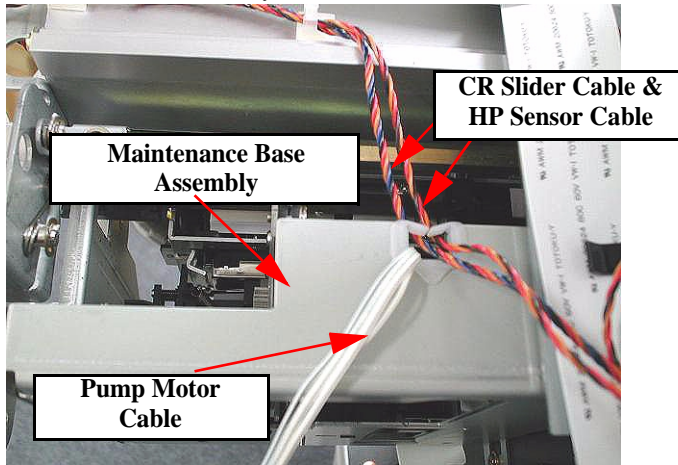


Figure 4-109. Removing Cables 1

23. Remove the CR unit's FFC from the 2 cable holders on the bottom side of the maintenance space assembly.

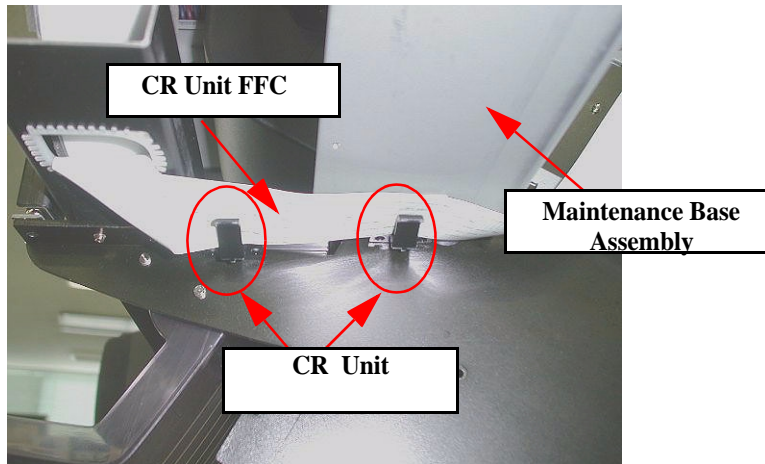


Figure 4-110. Removing Cables 2

24. Take out the 4 screws (CUPS: M4 x 6) holding the maintenance base assembly.

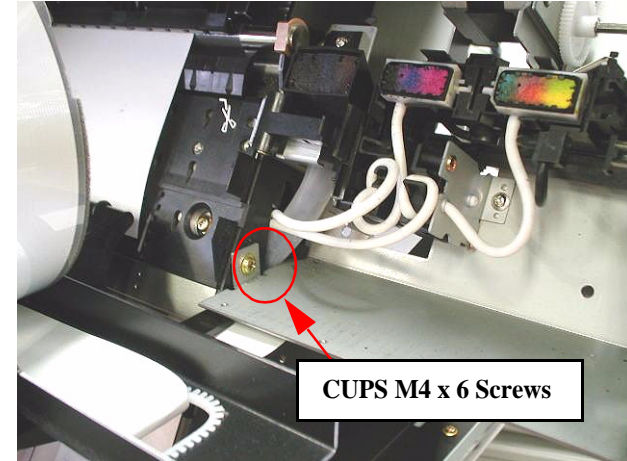


Figure 4-111. Removing the Maintenance Base Assembly 1

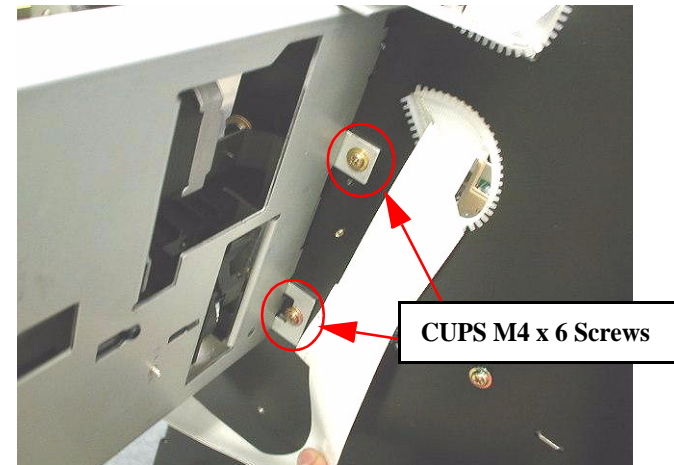


Figure 4-112. Removing the Maintenance Base Assembly 2

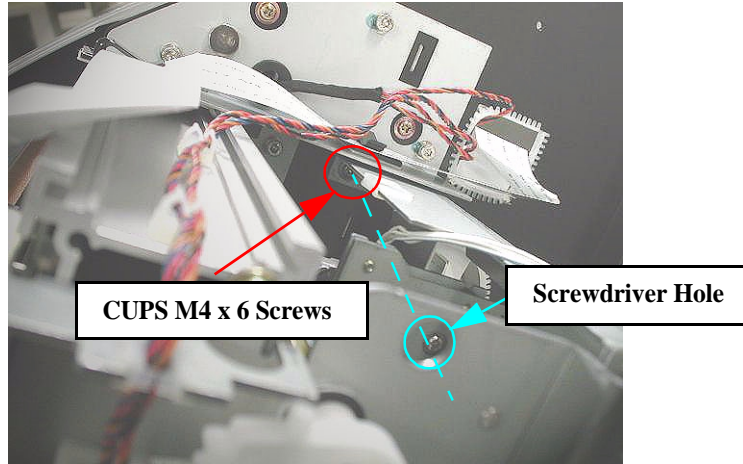


Figure 4-113. Removing the Maintenance Base Assembly 3

25. When removing the maintenance base assembly, first move the maintenance base assembly to the left side temporarily, and release the joint with the right side frame. After that, remove the maintenance base assembly while being careful of the cables.

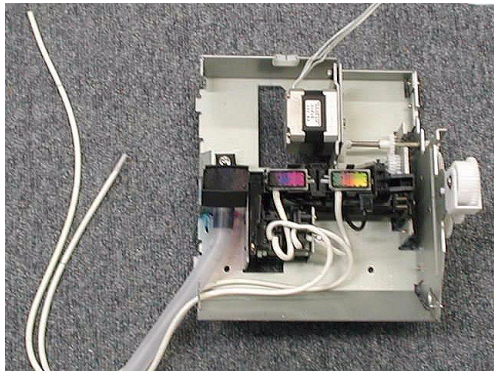


Figure 4-114. Maintenance Base Assembly



- When assembling the maintenance base assembly, it should be installed after moving the CR unit away from the capping position. If it is installed with the CR unit in the capping position, it makes contact with the cap flag on the head surface as in the figure below, and there is a possibility that the head surface could be scratched.

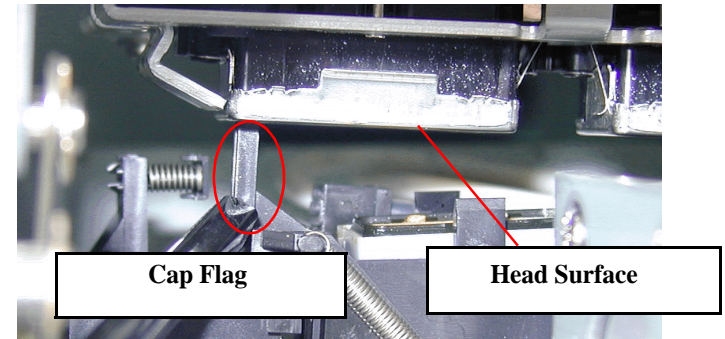


Figure 4-115. Cap Flag

- When assembling the maintenance base assembly, if it is not raised up securely to the screw tightening position and the screws tightened, it will cause a drop in the tight fit between the cap and the head, resulting in leaking ink and leading eventually to skipping of dots, so adequate caution should be exercised.

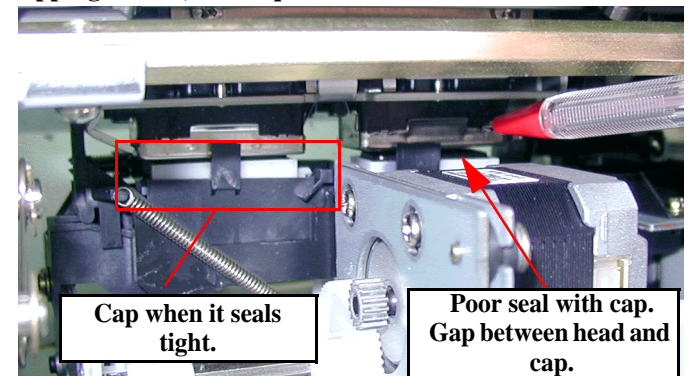


Figure 4-116. Cap Seal Position

26. Loosen the 4 screws (CUPS M4 x 3) holding the right side frame sub-assembly of the maintenance base assembly, then remove the right side frame sub-assembly.

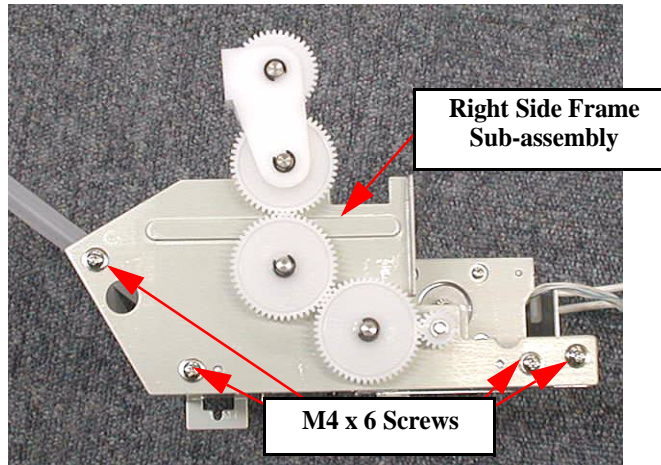


Figure 4-117. Removing the Right Side Frame Sub-assembly.

27. Take out the one screw (CUPS M3 x 6) holding the cap assembly on the maintenance base assembly. Remove the 2 waste fluid tubes from each cap unit, then remove the cap assembly.

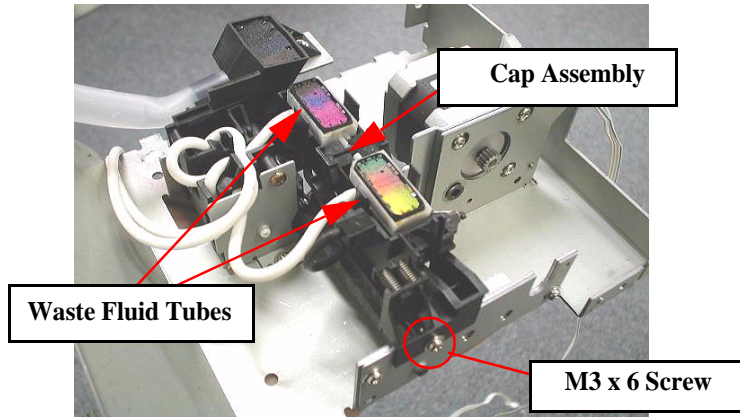


Figure 4-118. Removing the Cap Assembly



When assembling the cap assembly, the following items should be checked.

- When the cap's frame is pushed down, it should be checked whether it returns from the spring force.
- After taking hold of the cap's flag and sliding the cap up in the valve direction, it should return to the original position when the cap flag is let go without getting caught on anything.
- The waste fluid tubes from the pump assembly should be connected to their original connection fittings on each cap.

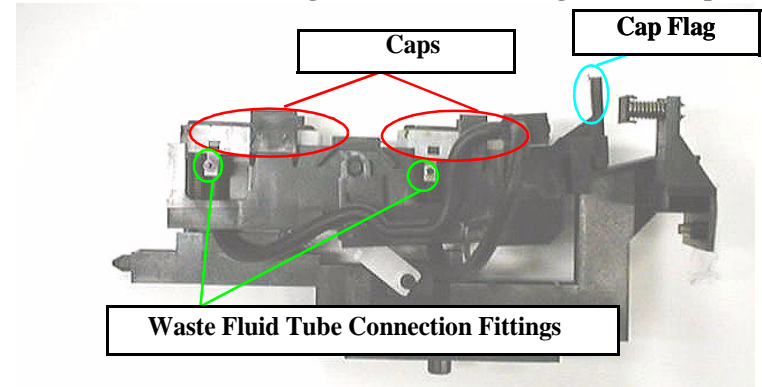


Figure 4-119. Cap Assembly

28. Loosen the one screw (CUPS M3 x 6) holding the pump reduction gear frame, then remove the pump reduction gear frame.

*NOTE: When assembling the pump reduction gear on the maintenance base assembly, it should be assembled in the proper direction.*

29. Loosen the one screw (CUPS M3 x 6) holding the pump assembly, then remove the pump assembly.

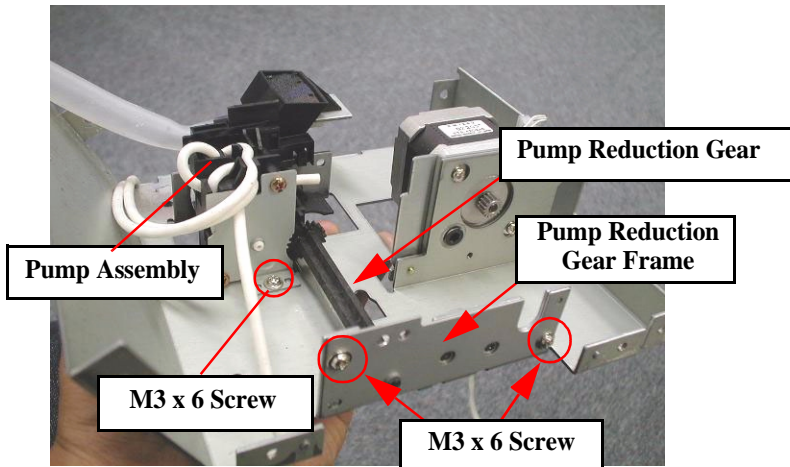


Figure 4-120. Removing the Pump Assembly

30. Remove the new cleaner head and pump assembly from the conversion kit and assemble the cleaner head on the pump assembly using tweezers.

**NOTE:** As shown in the figure below, when assembling the cleaner head on the pump assembly, care should be taken as to the assembly direction. Also, the cleaner head should never be touched with bare hands.

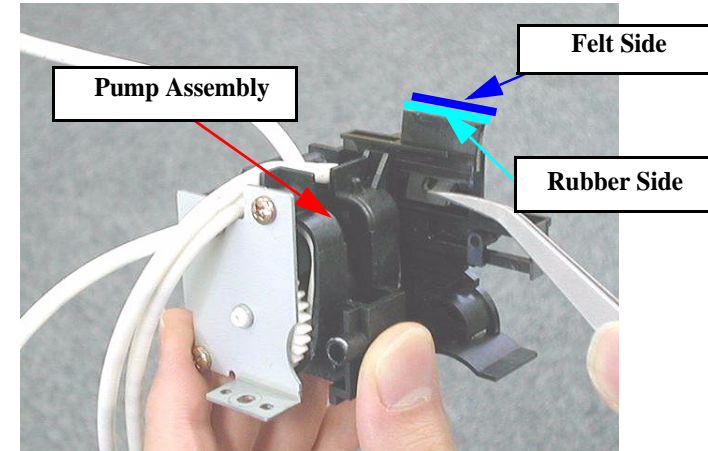


Figure 4-121. Cleaner Head Assembly Direction

31. Loosen the one screw (CP(W2) M3 x 6) holding the flushing box, then remove it. Take out the new flushing box from the conversion kit and assemble it.

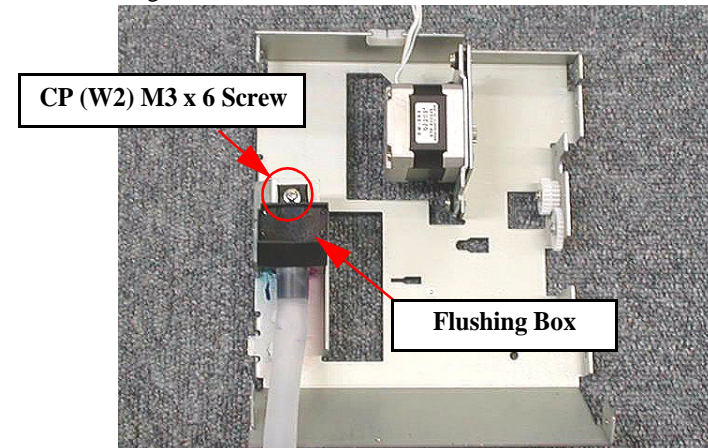


Figure 4-122. Replacing the Flushing Box

32. Assemble the pump assembly with the head assembled on the cleaner and the new cap assembly on the maintenance base assembly following the disassembly procedure in steps 26 to 31 in reverse order (from Step 31 to Step 26).
33. Assemble the maintenance base assembly following the disassembly procedure in Steps 16 to 25 in reverse order (from Step 25 to 16).
34. Assemble the waste ink pad box, with the waste ink pads replaced, in the printer.



The two waste fluid tubes from the pump assembly and tube from the flushing box should be set in the proper places as shown in the following figure.

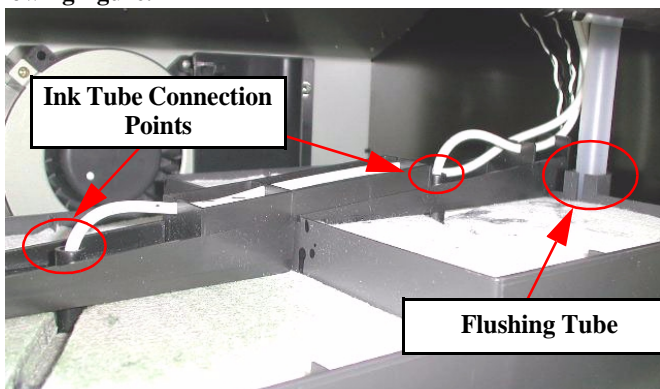


Figure 4-123. Tube Setting Points

35. Take out the one screw (CBP M4 x 10) used to install the left side cover from the inside of the printer's left side.

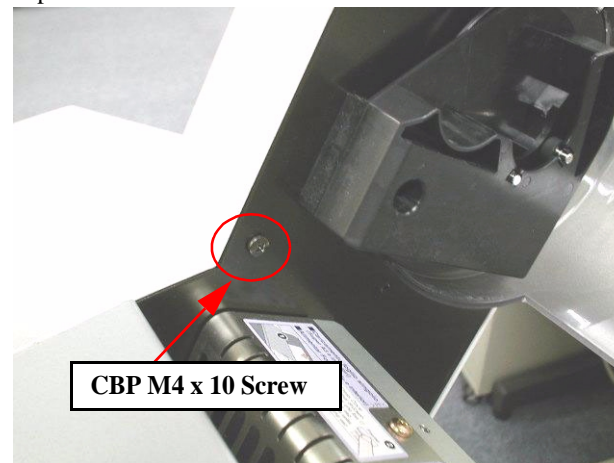


Figure 4-124. Removing the Left Side Cover 1

36. Take out the one screw (CBP M4 x 8) holding the left side cover from the rear of the printer. Take out the 2 screws (CUPS M4 x 10) holding the left side cover from the left side of the printer.

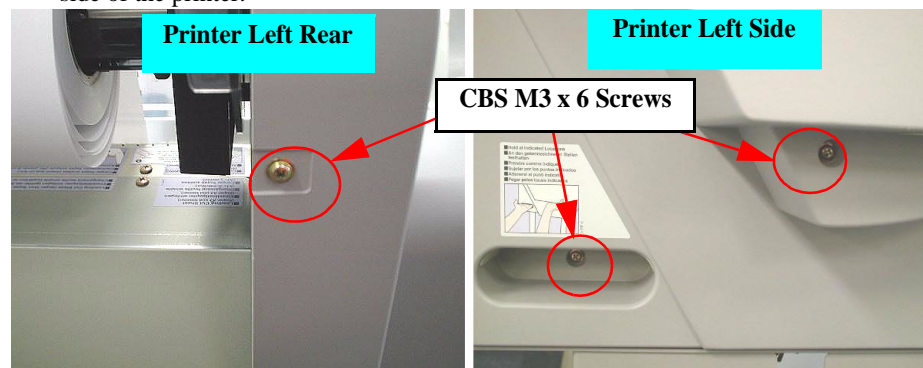


Figure 4-125. Removing the Left Side Cover 2

37. Remove the left side cover.

38. Open the I/H cover and loosen the 2 screws (CBS M3 x 10) holding the I/H holder, then remove the I/H holder from each I/H cover.



Figure 4-126. Removing the I/H Cover

39. Remove the I/H cover from the I/H holder, then assemble the I/H cover taken from the conversion kit on the I/H holder.



Confirm that the 6 ink cartridge No. labels are affixed to the I/H holder.

The ink cartridge No. labels are affixed to the I/H holders at the conversion kit assembly plant.



Figure 4-127. Ink Cartridge No. Labels

40. Assemble the I/H holder with 2 screws (CBS M3 x 10).  
 41. Assemble the left side frame on the printer mechanism.  
 42. Confirm that the CR unit is outside the capping position, then loosen the 2 CR cover installation screws (CP(W) M3 x 6) and remove the CR cover.

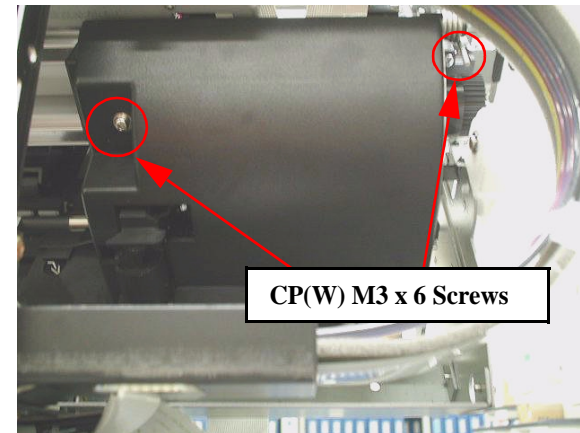


Figure 4-128. Removing the CR Cover

43. Take out the 1 screw (CP(W) M3 x 6) holding the damper holder. Release the fastening hook on the damper holder's left side.

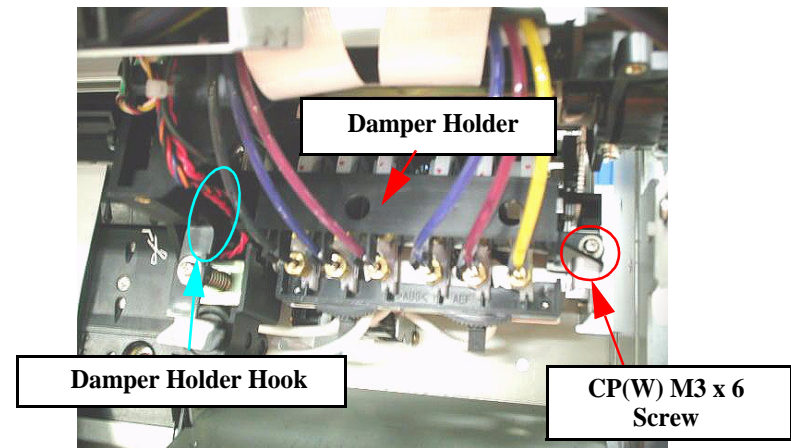


Figure 4-129. Removing the Damper Holder

44. Disconnect the ink tube from the damper holder mount, then remove the damper holder.
45. Remove the 6pcs of the Damprer Assy. from the heads. When removing the dampers, set the blade of a flat-bladed screwdriver under the dampers, then while supporting the damper with your index finger, carefully pull out the damper push with the blade end of the screwdriver so that it is pushed up.

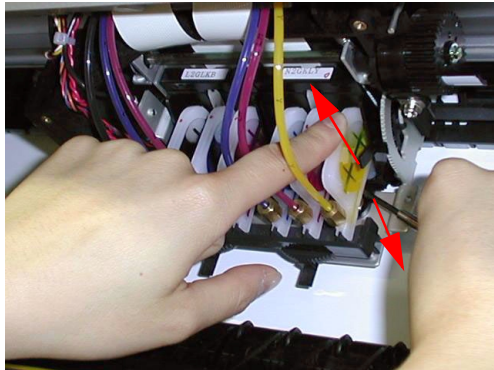


Figure 4-130. Removing Damper Assy.

**CAUTION**



The damper film should not be pushed. If pressure is applied to the film, the ink inside the damper will be discharged forcefully from the damper's connection fitting.

47. After taking out the dampers, wrap them with pieces of cloth or with soft paper to keep the ink from leaking out.
48. Carefully loosen all the hex nuts connecting the dampers and the ink supply tubes.
49. Remove the O-rings between the dampers and the hex nuts.

50. Confirm that the ink supply tubes have been passed through the hex nuts, then install new O-rings from the conversion kit on the front ends of the ink supply tubes.

**CHECK POINT**



When installing the O-rings on the front ends of the ink supply tubes, the following procedure should be used.

- 1) Fit a finger sock on your index finger. (If you are already wearing plastic gloves, the tip of the index finger portion of the glove should be cleaned thoroughly.)
- 2) Set the O-ring on the index finger, then apply some of the S46 transport liquid remaining on the damper or the ink supply tube to the O-ring.
- 3) Fit the O-ring securely on the front end of the ink supply tube.

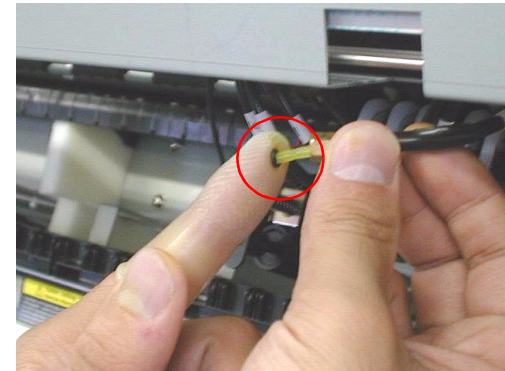


Figure 4-131. Installing O-rings.

**NOTE:** If the S46 transport liquid is not applied to the O-ring, it will be easy for the O-ring to become twisted, and that could cause ink to leak and air bubbles to get mixed into the ink.

**CAUTION**



The O-rings should never be fitted on the ink supply tubes with bare hands. Doing so will cause the O-rings to deteriorate, which will result in ink leaking and air bubbles getting mixed into the ink.



51. Put the front end of the ink supply tube in the damper's connection fitting, then tighten the hex nut with the exclusive torque wrench. If excessive tightening torque is used, it will cause the O-ring to be deformed, resulting in ink leaking and air bubbles getting mixed into the ink.

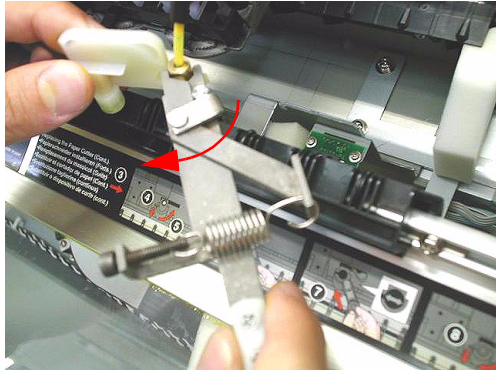


Figure 4-132. Tightening the Hex Nuts



When you are connecting the ink supply tubes to the dampers using the hex nuts, the exclusive tool #F760 should be used.

52. Assemble the damper holder and CR cover.  
53. Install the right side cover.

## AFFIXING LABELS

1. Affix the following labels in the specified locations.

- EPSON COLOR FAST Label  
Affix this label on the bottom of the right side cover panel. (In the EPSON COLOR Fast label position)
- Manual Cutter Cutting Position Labels

Vertical Position: Align the scissors cutting line on the label with a position 12.7 cm down from the bottom of the paper guide L sub-platen.

Horizontal Position: Align the label's left edge with a position 3 cm from the right side frame edge.

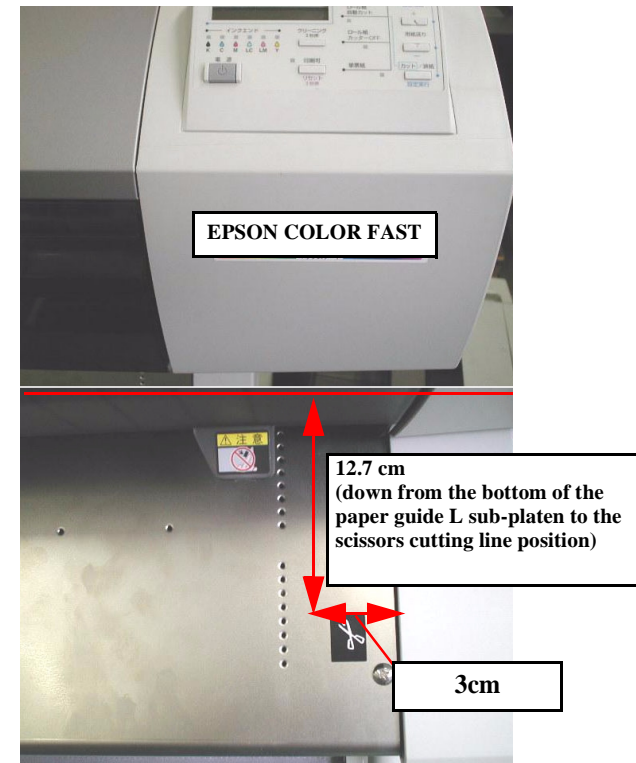


Figure 4-133. Label Affixing Position

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## PIGMENT INK INITIAL CHARGE

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1. Take the 6 pigment ink cartridges from the conversion kit and set them in the I/H holders.
2. Insert the AC cable in the outlet.
3. When the printer's power switch is turned on, the initial filling sequence will start automatically. Approximately 5 minutes is necessary to complete this sequence. The main initial filling flag starts based on the flag set on Page147.

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## UPLOADING PIGMENT INK FIRMWARE

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1. The printer's firmware should be updated to the firmware for pigment ink using the exclusively stipulated PC card or via the parallel interface cable.



- **Whichever method is used, a PC card or the parallel interface cable, if the power is turned off during the firmware update process, this procedure should be repeated from the beginning.**
- **If you are updating the firmware via a PC card, the following PC card should be used.**  
**Tool No. : #F727 Flash Memory**  
**ASP Code: 1050073**
- **If you are updating the firmware via a PC card, it should be used after writing data using the following utility.**  
**ADTEC System Science Card Utility 97**
- **If you are writing firmware via the parallel interface cable, it should not be used in the ECP mode. The compatible mode should be used.**
- **The firmware file extension will differ as follows depending on the means used to write the firmware, so it should be used so as to be incorporated correctly.**
  - **Via the PC: L0XX0X. ipl**
  - **Via a PC Card: L0XX0X. rom****Note): The "X" differs depending on the version.**

Uploading via the Parallel Interface

1. Make sure the BIOS setting of the PC you are using is not the ECP mode setting. This operation runs only in the compatible mode.
2. Start the firmware upload mode while pressing the following buttons. In this mode, the yellow ink LED will light up and "Data Transfer" will be displayed in the LCD.

- Paper Source button + Cut / Eject button + Cleaning button
3. Input the following at the PC's DOS prompt, the press the ENTER key to transfer the firmware data.
    - COPY \_/B\_file name.ipl\_LPT1:
  4. If the firmware update is run correctly, the following messages will be displayed in order in the LCD. During this time, all the ink LED's on the panel will blink repeatedly. This operation will be completed in approximately 2 minutes.
    - Flash Erase → Flash Write → Complete → Program Load End
  5. When the above LCD display ends, turn the printer's power switch off.
- Uploading via a PC Card
1. Turn the printer's power Off.
  2. Remove the access cover on the top paper guide, then insert a PC card with the date already written to it in the PC card slot on the main board.
  3. Turn the printer's power On.
  4. The printer will start uploading the firmware automatically, and the following messages will be displayed in order in the LCD. During this time, all the ink LED's on the panel will blink repeatedly. This operation will be completed in approximately 2 minutes.
    - Flash Erase → Flash Write → Complete → Program Load End
  5. When the above LCD display ends, turn the printer's power switch off, then take the PC card out of the slot.

**REQUIRED ADJUSTMENT ITEMS**

After assembling the component parts in the conversion kit and updating the firmware, the following adjustments should be made.

**Table 4-9. Adjustment Items**

Adjustment Item		Required tool
1	Bi-D Adjustment	Since this adjustment is carried out from the panel, an exclusive tool is not required. However, concerning pattern #4, use the adjustment value check pattern.
2	Head Gap Adjustment	Since this adjustment is carried out from the panel, an exclusive tool is not required.

**BI-D ADJUSTMENT (ROUND TRIP ALIGNMENT)**

This adjustment is performed for the following purpose.

- Together with the updating of the new firmware (for pigment ink), the Bi-D adjustment printing modes have been changed, so it is necessary to make new adjustments.

The following 4 adjustment items are adjusted in the Bi-D adjustment in the pigment ink firmware.

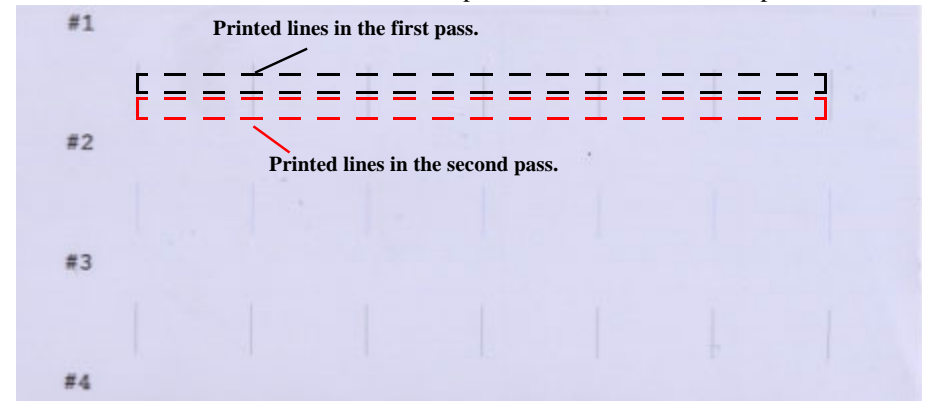
**Table 4-10. Bi-D Adjustment Items**

Item	Contents	No
BiD/200/M/B	Bi-D Adjustment / 240 cps / Normal-dot / B head	#1
BiD/200/M/C	Bi-D Adjustment / 240 cps / Normal-dot / C head	#2
BiD/300/N/B	Bi-D Adjustment / 333 cps / Normal-dot / B head	#3
BiD/300/N/C	Bi-D Adjustment / 333 cps / Normal-dot / C head	#4

**NOTE:** The numbers in the above table show the number of the printing adjustment pattern printed out initially when printing the adjustment patterns.

1. Turn the printer's power On while pressing the following buttons to start the Self-diagnostic Mode.
  - Paper Feed – button + Paper Feed + button + Cut / Eject button
2. Press the Paper Source button to select "Check: Adjustment" then press the Enter button.
3. Press the Paper Source button to select "Adj: Bi-d", then press the Enter button.
4. The message "Pattern printing." will be displayed in the LCD and the Bi-D adjustments patterns will be printed out. It takes about one minutes to complete the print #1,#2,#3,#4 adjustment pattern.
5. When printing of all 4 Bi-D adjustment pattern items is completed, the message "BI-D, 200. M. B: XXX" will be displayed in the LCD.
6. Check printing pattern No. 1 to No. 3, confirming if the vertical lines in the first pass deviate from the vertical lines printed in the second pass.

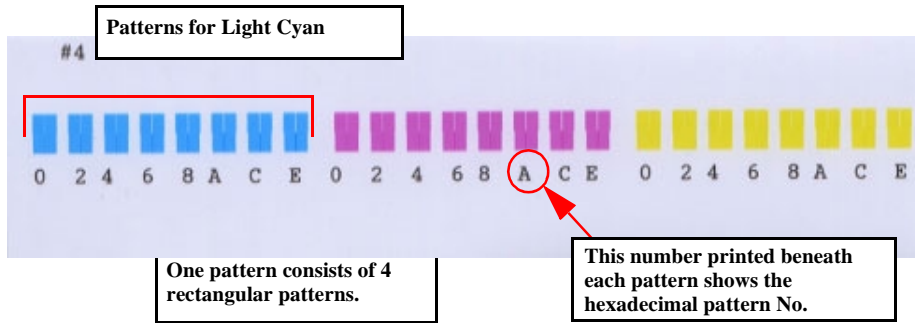
- If all lines are correctly lined up as in the following samples in printing patterns No. 1 to No. 3, press the Paper Source button 3 times and proceed to the printing pattern No. 4 adjustment menu. (Proceed to Step 8.) Confirm that "Bi-D, 300. N. C" is displayed in the LCD.
- If some lines are not aligned in printing patterns No. 1 to No. 3, press the Paper Source button several times to proceed to the adjustment menu for the affected pattern, then press the Paper Feed + or – button to input the appropriate numerical value. After inputting the correction value, press the Enter button. The printer will then print out the pattern with the results of the input correction value. The relationship between the inputs using the Paper Feed + or – button and the printing results is as shown below.
  - Adjustment Value Minimum Resolution: 1/2880 inch
  - Correction Direction :Paper Feed – button = Moves the line on the 2nd pass toward the HP side.  
Paper Feed + button = Moves the line on the 2nd pass away from the HP .
  - Adjustment Target :There should be no deviation between the lines on the first pass and the lines on the 2nd pass.



**Figure 4-134. Bi-D Adjustment Pattern No. 1 ~ No. 3.**

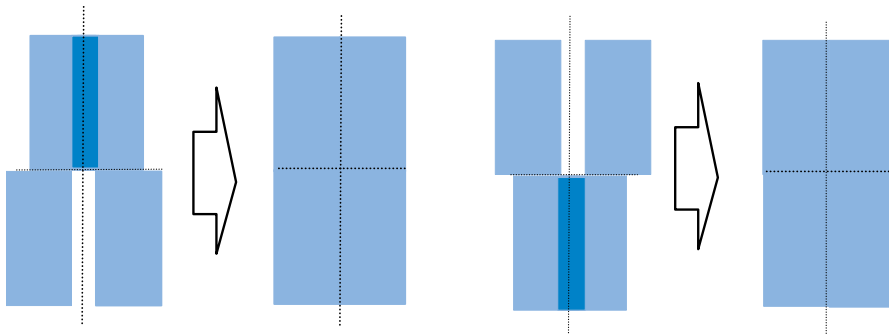
7. Repeat the above step 6 in order to carry out the adjustment of Bi-D printing patterns No. 1 to No. 3.

- Select “ND Base Value Adjust xx” by pressing the Paper Source Button. Check the results of printing Bi-D adjustment pattern No. 4 and check whether the following patterns exist in the 8 patterns each of light cyan, light magenta and yellow. The pattern No. of each pattern is printed in hexadecimal notation beneath it.



**Figure 4-135. Bi-D Adjustment Pattern No. 4**

- Each individual pattern consists of 4 rectangular patterns. Search for the pattern among the 8 patterns in each color where there is no gap and no overlapping between these 4 rectangles.



**Figure 4-136. Bi-D Adjustment Pattern No. 4 Check Method**

- If you can confirm a pattern among the 8 patterns of each color where there is no gap and no overlapping between these 4 rectangles, press the Paper Source button and move to the adjustment menu for each color. Proceed to Step 11.

If you were unable to confirm an appropriate pattern among the 8 patterns printed in each color, use the Paper Feed + / – buttons to input an estimated value in the “ND Base Value Adjust xx” menu.

- Paper Feed + Button:** Moves the top 2 out of the 4 patterns within the printed pattern in a direction so that they separate.
- Paper Feed – Button:** Moves the bottom 2 out of the 4 patterns within the printed pattern in a direction so that they separate.

Input the estimated values in the “ND Base Value Adjust xx” Menu, then press the Enter button to print a new Bi-D No. 4 print pattern.

- Repeat the above steps 9 and 10 until the proper printing pattern can be confirmed.
- “ND LC: XX” will be displayed in the LCD. In this menu, input the pattern No. of the pattern among the 8 light cyan printed patterns which was confirmed to be proper using the Paper Feed + and – buttons. The pattern No. on the printed pattern has the numbers printed in hexadecimal, with each number incremented by 2 from the number of the pattern to its left, but in this menu, it is possible to input each of the 16 numbers in hexadecimal. After inputting a value, press the Enter button.
- “ND LM: XX” will be displayed in the LCD. In this menu, input the pattern No. of the pattern among the 8 light cyan printed patterns which was confirmed to be proper using the Paper Feed + and – buttons. The pattern No. on the printed pattern has the numbers printed in hexadecimal, with each number incremented by 2 from the number of the pattern to its left, but in this menu, it is possible to input each of the 16 numbers in hexadecimal. After inputting a value, press the Enter button.

13. “ND Y: XX” will be displayed in the LCD. In this menu, input the pattern No. of the pattern among the 8 light cyan printed patterns which was confirmed to be proper using the Paper Feed + and – buttons. The pattern No. on the printed pattern has the numbers printed in hexadecimal, with each number incremented by 2 from the number of the pattern to its left, but in this menu, it is possible to input each of the 16 numbers in hexadecimal. After inputting a value, press the Enter button.
14. Make sure the message “Bi-D End” is displayed in the LCD, then move to the next adjustment item.



- Up to Bi-D adjustment patterns No. 1 ~ 3, by deciding the value input from the panel, the adjustment results are printed out, so it is possible to check the adjustment results visually, but for Bi-D adjustment pattern No. 4, even if you decide a value to input from the panel, a printing pattern that reflects the adjustment results is not printed, so the adjustment results cannot be checked visually. Therefore, if you are confirming the adjustment results for adjustment values by printing pattern, the following adjustment program becomes necessary.

\* Program Transfer Utility: Pout3.Exe

\* Program Name: Bid333.prn

The program transfer method is as follows.

- 1) Confirm that the printer is in the Pause state.
- 2) Move to the adjustment program
- 3) Input “POUT\_BID333.PRN.”
- 4) Press the Enter key.

Through the above operation, a total of 9 blocks of printing patterns are printed out in each color. The results from the adjustment values input in the Adjustment mode are positioned in the center pattern of the 9-block pattern of each color.

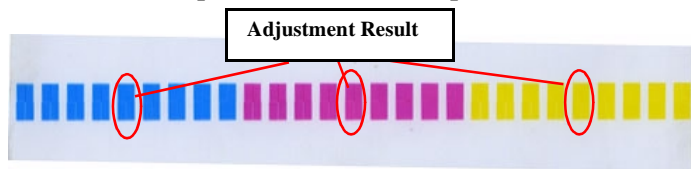


Figure 4-137. Bi-D #4 Adjustment Value Check Pattern

- Above mentioned printing pattern is included in the Stylus Pro7500 Adjustment program also.

## HEAD GAP ADJUSTMENT (ALIGNMENT BETWEEN HEADS)

This adjustment is performed for the following purpose.

- The GAP adjustment printing mode has been changed together with the update to the new firmware (pigment ink), so a new adjustment is necessary.

The following 2 items related to the GAP adjustment in the pigment ink firmware are adjusted.

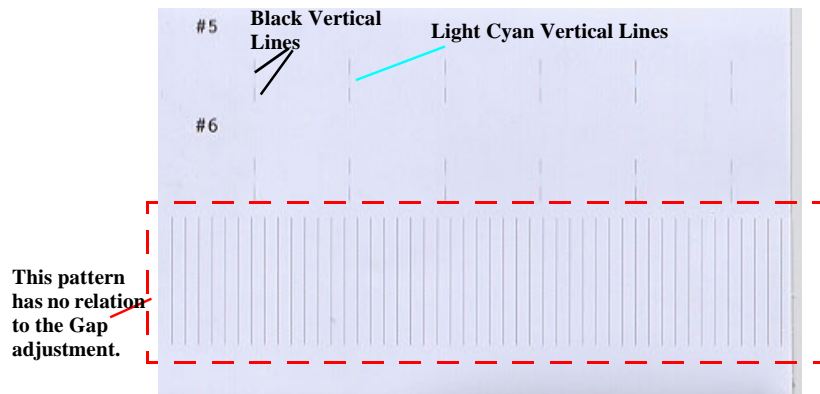
Table 4-11. Head Gap Adjustment Items

Item	Description	No
Gap/200/M	Head GAP adjustment / 240 cps / Normal-Dot	#5
Gap/300/N	Head GAP adjustment / 333 cps / Normal-Dot	#6

*NOTE:* The numbers in the above table are printed at the beginning of the printing pattern when the adjustment pattern is printed and show the adjustment pattern No.

1. After inputting the Bi-D adjustment, confirm that “Bi-D END” is displayed in the LCD. The program will move to the Head Gap adjustment mode, so press the Enter button.
2. Confirm that “Adj: Head LR Adj” is displayed in the LCD. Press the Enter button to print the adjustment pattern.

3. After all the adjustment patterns (#5, #6) are printed, “Gap, 200 , M: XXX” will be displayed in the LCD.



**Figure 4-138. Head Gap Adjustment Pattern**

4. Check printing patterns No. 5 and No. 6, and check for alignment of the black vertical lines in the 1st and 3rd pass and in the light cyan vertical lines in the 2nd pass.
- If black vertical lines and the light cyan vertical line are lined up correctly, in the patterns in printing patterns No. 5 and No. 6, press the Paper Source button 2 times, then check if the message “GAP END.” is displayed in the LCD. Proceed to Step 6.
  - If black vertical lines and the light cyan vertical line are not lined up correctly in the patterns in printing patterns No. 5 or No. 6, press the Paper Source button to move to the corresponding pattern adjustment menu, then input the appropriate numerical values using the Paper Feed + / – keys. After inputting the correction value, press the Enter button to print the results of the input correction values. The relationship between the inputs using the Paper Feed + / – buttons and the printing results is as shown below.

- Adjustment value minimum resolution: 1/2880 Inch
  - Correction Direction:
    - Paper Feed – Button = Moves the black lines in the 1st and 3rd passes toward the HP side.
    - Paper Feed + Button = Moves the light cyan lines in the 2nd pass away from the HP side.
  - Adjustment Target:
    - There should be no deviation in the black lines and the light cyan lines.
5. Repeat the above steps 3 and 4 until the adjustment of patterns No. 5 and No. 6 is completed.
6. After confirming that “GAP END.” is displayed in the LCD, execute the final check items.

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**FINAL CHECK**


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- Check the auto cutter's paper cutting position.  
Set the paper at about 10 cm below the level difference where paper is cut by the paper cutter, then release the CR unit lock manually and move it to the center of the paper.  
Pierce the paper with the paper cutter manually, then cut the paper on the left and right. Confirm that the length from the cut edge of the paper to the level difference edge for the cutter on the sub-platen is within  $0.5 \text{ mm} \pm 0.2$ . For details, see Page228. If it is outside the standard, the necessary adjustments should be made. See Page226.
- Printing Check in the Self-diagnostic Mode
  1. Start the Self-diagnostic mode by turning on the Power switch while pressing the following buttons.
    - Paper Feed – button + Cut / Eject button + Cleaning button
 Press the Paper Source button to select "Check: Printing", then press the Enter key.
  2. Set the roll paper included in the conversion kit in the printer. After setting the paper, make sure the paper set lever is in the paper set position.
  3. Press the Paper Source switch to select "Print : Nozzle Check," then press the Enter key, and the following items will be printed out.
    - Nozzle Check Pattern  
Check if all the nozzles spray ink without any bending or skipping of dots.
    - Firmware Version  
Check if the firmware version is L0XX0X. (Note: The "X" will differ depending on the firmware version.)
    - Waste Ink Counter  
Compare the counter value from the time this operation was being prepared for, with the counter value when the nozzle check pattern was printed out. Confirm that the value has gotten smaller.  
(Note: If initial filling has been exceptionally performed several times during this operation, the counter value that is printed out may actually be higher than the value printed out during the preparations.)

- Nozzle Vertical Position Check Pattern  
In this pattern, it should be confirmed that no irregular color (dark portions, light portions) are occurring in the patterns of each color. If extreme color irregularities are occurring, carry out KK2 Cleaning in the Self-diagnostic mode, and check if it recovers. If it doesn't recover, replace the heads.
- Uni-D Adjustment Pattern  
Confirm that there is no skipping of dots.
- Left Head Slant (angular) Adjustment Pattern  
The Magenta and Black patterns should be arranged on the same line horizontally.
- Right Head Slant (angular) Adjustment Pattern  
The Light Magenta and Light Cyan patterns should be arranged on the same line horizontally.
- B/C Head Height Adjustment Pattern  
The Light Magenta and Cyan patterns should be arranged on the same line horizontally.
- Bi-D Adjustment Pattern (Adjustment Results, #1 ~ #4)  
Patterns #1 ~ #3 should line up along the same vertical line.  
For #4, the 8 patterns in each color should be checked for a block pattern with no overlapping and gaps. Recheck with another check pattern.
- Head Gap Adjustment Pattern (Adjustment Results #5, #6)  
Patterns #5 and #6 should line up on the same vertical line.

 Bi-D Pattern #4 Check

Start Pout3.exe from the Adjustment program, then transfer the Bid333.Prn file to the printer and print out Bi-D pattern #4. Confirm that there are no gaps or overlapping in the center pattern of the 9 patterns in each color. Refer to Page200.



CHAPTER 0

5

ADJUSTMENT

## 5.1 Adjustment Outline

This section describes the adjustment procedures necessary after replacing certain parts and explains how to perform those adjustment procedures.

### 5.1.1 Cautions

Before beginning the adjustment operation, be sure to confirm the following caution items.



- If you are carrying out adjustments, see Table 5-2 and then confirm the relevant adjustment items and adjustment procedures.
- When carrying out adjustments, check the cautions displayed in the explanation for each adjustment item thoroughly. If the operation is performed wrong, it could hinder the product's operation or functions.
- When carrying out adjustments accompanying replacement of the following parts, be sure to install and use new ink cartridges. Ink supply system parts replacement (Heads, I/H Assembly, Ink tubes, Head damper)

### 5.1.2 Adjustment Tools

The necessary tools for performing adjustment procedures on this printer are shown below. The mechanical adjustment tools are not mentioned in the following table and “Mechanism Adjustment” on page 219.

**Table 5-1. Adjustment Tools**

Name	Part Code	Notes
Tension Gauge	1054053/standard tool acceptable	Max. 10,000g
Tension Gauge	B747700300/standard tool acceptable	Max. 4,000g
Flash Memory Card #F727 (x 2)	1050073 / Commercially available product can be used.	Specifications: 2 MB Flash memory card Type-II PCMCIA Rel. 2.1 / JEIDA Ver. 4.2) 5 V single operation specifications
24-inch Wide Roll Paper (MCSP24R4)	Epson or commercially available paper (Thick mat paper roll)	For printer mechanism adjustments and test printing.
A3 Tracing Paper	Microtrace #300 LMB, made by Kimoto #F751 (1057723)	Used for adjustment of the paper status detection sensor (P_FRONT, P_REAR) level adjustment.
A3 Copy Paper (PPC)	Commercially available product (Example: Fuji Xerox Bright Recycled)	Used for adjustment of the paper status detection sensor (P_EDGE) level adjustment.

**Table 5-1. Adjustment Tools**

Name	Part Code	Notes
Scale 1000 mm #F713	1047746 / A commercially available scale can be purchased.	Length: 1000 mm
Scale Stopper #F714	1047745 / A commercially available scale can be purchased.	Used in combination with the #F713 (measurements in 0.1 mm units)
Ink Cartridge L, Shipping Fluid, S46, Recycled (x 6)	1045585	Cleaning and product shipping fluid cartridge (6 are required for a single operation.)

### 5.1.3 Adjustment Items

All parts that require adjustment when replaced are listed in the table below. For actually performed part replacements, and disassembly and reassembly operations, the specified adjustment items should be performed in the sequence shown in the instructions.

**Table 5-2. Service Parts & Required Adjustments**

Service Operation	Adjustment Items	Refer to page
Printhead replacement	<Start self-diagnostic function>	
	1. Capping position adjustment	193
	2. Head rank input (and initial ink charge)	195
	3. Nozzle check	196
	4. Head slant adjustment (B/C heads)	197
	5. Head Height (Linear) adjustment	199
	6. Bi-D adjustment	200
	7. Head Gap adjustment	203
	8. Test print	208
9.Reset the head unit service life counter>	216	
C299 MAIN Board Replacement Note): If it is possible to perform adjustment items 1 and 2 in the table at left, except for item 4 in the table, it is not necessary to perform items 3, 5~11.	1. <Backup parameters> *1	174
	2. <Reload firmware> <Start the self-diagnostic function>	175
	3. Capping position adjustment	
	4. Writing of D/A correction values	193
	5. Head rank input (initial filling is not necessary)	195
	6. Bi-D Adjustment	195
	7. Matching between heads (gap)	200
	8. Flash point adjustment (8)	203
	9. Band feed correction	204
	10.Top/Bottom adjustment	205
	11.Rear sensor position adjustment	207
	12.Paper sensor adjustment	184
	13.Test print	208
	14.<Replace waste ink pads, reset waste ink service life counter>	216
	15.Writing the USB-ID.	231

**Table 5-2. Service Parts & Required Adjustments (continued)**

Service Operation	Adjustment Items	Refer to page
CR Motor replacement	1. <Adjust the CR timing belt tension> Required tool: Tension gauge (for 10,000 g) <Start the self-diagnostic function>	220
	2. Capping position adjustment	193
	3. Bi-D Adjustment	200
	4. Matching between heads (gap)	203
	5. Flash point adjustment	204
	6. Top/Bottom adjustment	206
	7. Test print	208
PF Motor replacement	1. <Adjust the PF timing belt tension> Required tool: Tension gauge (for 4,000 g)	221
	2. <PF ENC installation position adjustment 2> Required tool: PF ENC installation position adjustment tool #F765 <Start the self-diagnostic function>	230
	3. Band feed correction	205
	4. Top/Bottom adjustment	206
	5. Rear sensor position adjustment	207
	6. Test print	208
<Sensor Replacement 1> • P_FRONT Sensor Assembly • P_EDGE Sensor Assembly	<Start the self-diagnostic function>	
	1. Paper sensor adjustment 2. Top/Bottom adjustment	184 206
<Sensor Replacement 2> P_REAR Sensor Assembly	<Start the self-diagnostic function.>	
	1. Paper sensor adjustment 2. Rear sensor position adjustment	184 207
<Sensor Replacement 3> P_THICK Sensor Assembly	<Start the self-diagnostic function.>	
	1. In this menu, carry out the “P_Thick” check in the “Sensor” items. Required tool: Thickness gauge	222
<Sensor Replacement 4> CR_HP Sensor Assembly	<Start the self-diagnostic function>	
	1. Capping position adjustment	193

Table 5-2. Service Parts &amp; Required Adjustments (continued)

Service Operation	Adjustment Items	Refer to page
<Sensor Replacement 5> CR Encoder Sensor Assembly	<CR encoder sensor installation position adjustment> 1. Required tool: CR ENC sensor installation tool #F757	224
<Sensor Replacement 6> Cover Sensor Assembly	<Start the self-diagnostic function> 1. Inspect “Covers” under the “Sensors” item in this menu.	223
<Sensor Replacement 7> PF Encoder Sensor Assembly	1. <Adjust the PF ENC installation position> Required tool: PF ENC Installation Position Adjustment tool #F764 <Adjust the PF ENC installation position 2> Required tool: PF ENC Installation Position Adjustment tool 2 #F765	230
CR Encoder Scale Fastening Plate Removal	1. <Adjust the CR encoder scale installation position.> Required tool: CR ENC Scale Installation Position Adjustment tool #F758	225
CR Solenoid Assembly Replacement or Paper Guide L Removal	1. <Adjust the cutter’s positioning> Required tool: Cutter Positioning tool #F763 <Check the paper cutting position>	226

## 5.2 Adjustment Steps

This section describes the detailed steps for performing the adjustment procedures listed in Table 5-2.

### 5.2.1 Parameter Backup

NVRAM (Flash-ROM and EEPROM) are installed on this printer's C299MAIN board and the "Backup Parameters" are recorded in this memory.

The backup parameters consist of "Panel setting values," "C299MAIN board inherent adjustment values (cannot be erased or changed)" and "Mechanism adjustment values."

During servicing, if operations which include replacement of the C299MAIN board are performed, the "Panel setting values" and "Mechanism adjustment values" included in these backup parameters on the existing C299MAIN board should be backed up, then by writing these parameters to the new C299MAIN board, matching with the existing printer mechanism can be maintained and it is possible to omit a number of adjustment operations.

The backup operation basically consists of uploading the backup parameters (data) recorded in flash memory in the existing C299MAIN board to a memory card, then writing the data transferred to that memory card to the new C299MAIN board's flash memory.

#### CHECK POINT



If you have backed up the parameters correctly, by downloading these parameters to the new C299MAIN board, part of the adjustments using the self-diagnostic function become unnecessary. In this case, perform the operation by the following procedure.

1. Back up the parameters from the previous C299MAIN board.
2. Replace the old C299MAIN board with a new one.
3. Download the parameters to the new C299MAIN board. (
4. Write the firmware.
5. Rewrite D/A corrected values.
6. Adjust the paper sensors.

#### REQUIREMENTS FOR PARAMETER BACKUP

- #F727 Flash Memory Card  
Part # 1050073 (Fujitsu: MB98A81183-15)
- Memory card writing utility  
(i.e. Adtech CardUT97)
- PC with memory card writer or stand alone memory card writer
- IPL contained in the #F733 Self-Training Kit  
Part Code: 1053426 (This can be used in common with the Stylus Pro 7000.)  
IPL Name: \TOOL\BACKUP\PBUSSET\_B.BIN  
(This program is written to the memory card using the utility corresponding to the above memory card.)



- **The IPL for parameter backup is common with the Stylus Pro 7000.**
- **The memory card created here should be used exclusively for "Stylus Pro 7000/7500 parameter backup."**

**BACKING UP PARAMETERS FROM MAIN BOARD TO PC CARD**

1. Remove the access cover (two screws) from the rear of the printer, and make sure the Control Panel unit is attached.

**NOTE:** The operation panel unit should be connected.

2. Insert the PC card (top facing the outside of the printer) into the PC card slot connector (CN20) on the Main Board, and then turn on the printer.

**NOTE:** It should be set so that the memory card surface is facing the printer's outside.

3. Make sure the following message appears on the LCD, and wait for the procedure to begin.

Wait:F->M Push:M->F

4. The backup procedure starts about 15 seconds after the message appears.

Flash -> Mcard



**Do not touch the Control Panel buttons at this point. Doing so causes the PC card to download its data to the Main Board's Flash memory instead of backing up the data in Flash memory. In other words, this clears the parameters!**

5. When the backup procedure is finished, the following message appears.

End [Success]

6. After making sure the printer is finished, turn off the printer and remove the PC card.

**DOWNLOADING PARAMETERS FROM PC CARD TO NEW BOARD**

1. Make sure the access cover is removed from the top of the Upper Paper Guide, and make sure the Control Panel is attached.

**NOTE:** The operation panel unit should be connected.

2. Insert the PC card containing the backup data (top facing the outside of the printer) into the PC card slot connector on the Main Board, and turn on the printer.

**NOTE:** It should be set so that the memory card surface is facing the printer's outside.

3. Make sure the following message appears on the LCD.

Wait:F->M Push:M->F

4. Press any button on the Control Panel to start the download procedure.

Mcard -> Flash



**You need to press one of the Control Panel buttons within 15 seconds; otherwise the printer will start the backup procedure instead of the download procedure. This overwrites parameter data stored in the PC card with data stored in the Main Board Flash memory.**

5. When the download procedure is finished, the following message appears.

End [Success]

6. After making sure the printer is finished, turn off the printer and remove the PC card.
7. Replace the access cover on the rear of the printer.

---

**BACKUP/DOWNLOAD ERROR RECOVERY**

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If an error occurs during the backup or download procedure, the following message appears on the LCD.

**End [Error]**

If you see the message above, one of the following errors has occurred.

- Flash memory/ write error
- Flash memory/ erase error
- PC card/ write error
- PC card/ erase error

Using a different PC card, try the operation again. If a different PC card does not solve the problem, there is a problem with the flash memory on the Main Board and a backup is not possible. Replace the Main Board

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**RANGE OF BACKED UP PARAMETERS**

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Uploading of the backup parameters is done to the following addresses in NVRAM on the C299MAIN board. (Flash ROM Addresses 000 ~ 5FF <H>. Except addresses 120 ~ 13F <H>)



## 5.2.2 Firmware Update

Since the firmware is written into the Flash ROM on the Main Board, to replace the Main Board you need to write the firmware to the new Flash ROM on the new Main Board as described below.



- **Immediately after reloading firmware to the new C299MAIN board without any parameters existing on it, when the printer's power is turned on, the ink initial refilling operation starts. If initial refilling is not necessary, be sure to start the printer by the following procedure.**

1. Start the Self-diagnostic function when the power is turned On.
2. Select "Parameters: Update" under "Diagnostic: Parameters."
3. Select "Update: Ink Parameters."
4. Select "Reset" in "Initial Ink Filling."
5. Turn the printer's power switch Off, then turn it On again.

- **The correct firmware data file should be used to match the download method.**

- Via PC parallel interface (compatible): L0XX0X.IPL
- PC memory card: L0XX0X.ROM

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### UPDATING FIRMWARE VIA THE PC

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1. Make sure "Ready" appears on the LCD. Press the SelecType button multiple times until "Printer Status Menu" appears. Then press the Item button. "Version LOxxxx" appears. Write down the version number.

2. Turn off the printer, and connect the interface cable (Parallel/Compatible Mode) between the PC and printer.

3. While pressing the following buttons, turn on the printer.  
[Paper Source] + [Cut/Eject] + [Cleaning]

The LCD displays the following message: "IPL Start" -> "Data Send"

4. From the PC, send the prepared firmware program to the printer as follows. From the DOS prompt, type "copy /a [filename] lpt1:" and press Enter.

Example: **Copy /a mpb0289c.ipl lpt1:**

5. The data transfer operation takes between five and seven minutes, and the ink out plus Pause indicators flash during the transfer. "FLASH ERASE" -> "FLASH WRITE" -> "PROGRAM LOAD END"
6. Turn the printer off, and then back on.
7. Verify the firmware version according to the directions in step 1, turn off the printer, and see the Caution at the top of this page.

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## UPDATING FIRMWARE FROM A MEMORY CARD

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1. Make sure “Ready” appears on the LCD. Press the SelecType button multiple times until “Printer Status Menu” appears. Then press the Item button. “Version LO xxxxx” appears. Write down the version number.
2. Turn off the printer.
3. Remove the access cover from the rear of the printer, and insert the prepared firmware card (xxxxxxx.ROM) into slot CN20. The top surface of the card faces the outside of the printer.  
The card is EPSON service tool #F727 Flash memory card.

**NOTE:** *The memory card should be inserted so that its top is toward the printer’s outside.*

4. Turn on the printer.
5. "Update Complete" appears when the firmware update has finished.
6. Turn off the printer, remove the memory card, and then turn on the printer.
7. Verify the firmware version according to the directions in step 1, turn off the printer, and see the Caution at the top of the previous page.



- **In either method, if update processing stops midway, (if the power goes off, etc.), it can be recovered from by repeating this operation.**
- **The memory card which the firmware data are written on should be the exclusive “Stylus Pro 7500 Firmware Reload” card.**

### 5.2.3 Self-diagnostic Function

The function built into this printer which performs each type of printer adjustment is called the “Self-diagnostic Function” mode. If you are performing any of the adjustments, start this mode by the following method, select the necessary adjustment item from the menu, and execute it.

#### 5.2.3.1 Starting the “Self-diagnostic Function”

1. Switch the printer’s power On while pressing the following buttons on the operation panel.

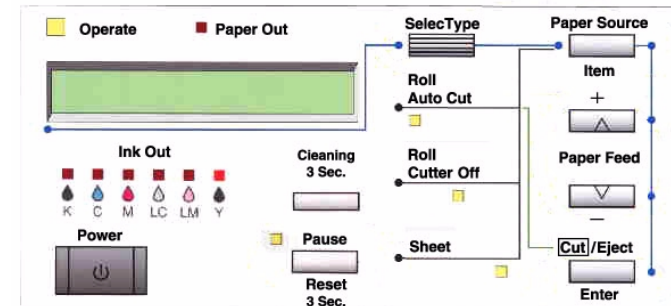
[Paper Feed +] + [Paper Feed -] + [Enter]

2. “Check: Test” and the menu items are displayed in the LCD panel in the operation panel and the self-diagnostic function mode starts.  
In the Self-diagnostic Mode, the functions of each button on the operation panel are changed as shown in the table below.

**Table 5-3. Self-diagnostic Function Mode - Panel Operation**

Normal Mode	Self-diagnostic Mode	Functions
Pause	Previous Level	Returns the setting item to the previous level of the menu hierarchy.
SelecType	Setting Item (Next)	Displays the next menu.
Paper Source	Setting Item (Previous)	Displays the previous menu.
+ (Paper Feed ↑)	Setting Value +	Changes the setting value on the plus side.
- (Paper Feed ↓)	Setting Value -	Changes the setting value on the minus side.
Cut / Eject (Enter)	Enter	Sets the setting value.
Cleaning	Paper Feed & Cut	If it is pressed, the paper is fed, and when it is released, the paper is cut.

3. Switch the printer’s power off to finish the self-diagnostic Function.



**Figure 5-1. Self-diagnostic Function - Panel Functions**



■ Except as otherwise specified, EPSON MC Thick Mat Roll Paper (MCSP24R4) should be used for test printing.

### 5.2.3.2 Self-Diagnostic Mode Menus

In the Self-Diagnostic mode, you can select from the following menus.

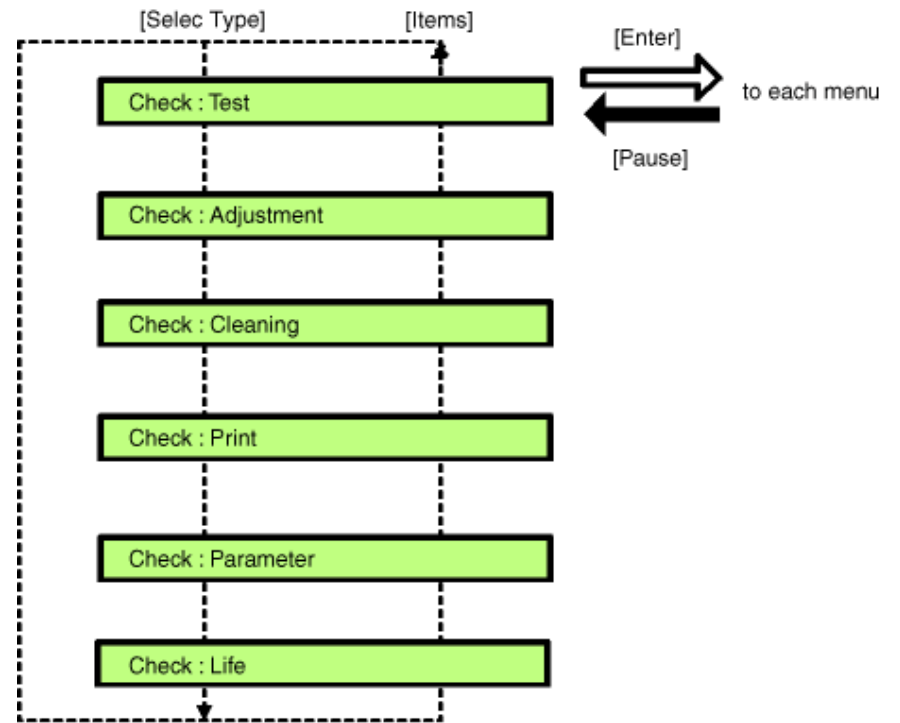
**Table 5-4. Self-Diagnostic Menus**

Message	Description
Check: Test	Verifies certain information such as RAM, version number, panel, sensors, fatal-error history and encoder.
Check: Adjustment	Adjusts certain mechanism such as printheads, sensors, and feed path.
Check: Cleaning	Starts initial ink charge or predetermined cleaning sequence
Check: Print	Prints nozzle check pattern or adjustment parameter list
Check: Parameter	Updates or clears all of the adjustment parameters
Check: Life	Tests the operation of the printer components.*1

\*1. This diagnostic item is a function that is used in factory inspections and it is not particularly necessary to execute it during servicing, so it is not explained.



- In Self-Diagnostic mode, all of the tests except for one (Rear Sensor adjustment) assume that you have loaded roll paper. Be aware that the printer handles the paper as if it were roll paper even if you load cut sheets.
- All explanations in this mode refer to the printheads in the following way:  
 B head = K/C/M side (left head when facing the printer)  
 C head = Lc/Lm/Y side (right head when facing the printer)



**Figure 5-2. Self-Diagnostic Menu Flow**

### 5.2.3.3 Test Menu

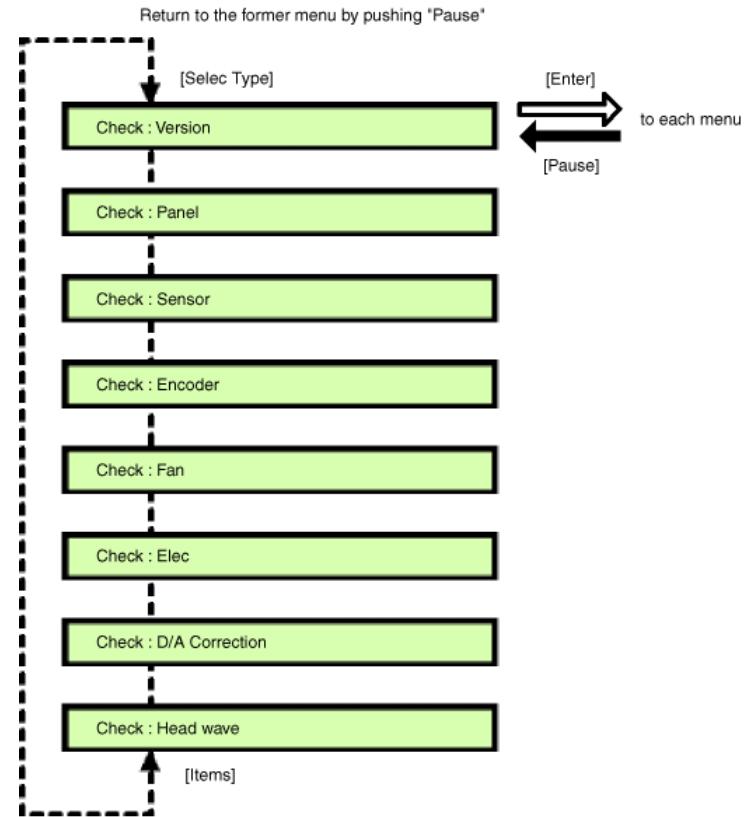
The Test menu tests or checks the operation of the control main board.

**Table 5-5. Test Menu Items**

Test Item	Description
Version	<ul style="list-style-type: none"> <li>• Firmware program</li> <li>• Backup parameters</li> <li>• DIP-SW</li> <li>• C299MAIN Board Rev.</li> <li>• Panel Unit Rev.</li> </ul>
Control Panel	<ul style="list-style-type: none"> <li>• Panel buttons</li> <li>• LCD panel display</li> <li>• LED indicators</li> </ul>
Sensors	CR HP / Cover Open / Paper Set Lever / P_EDGE / P_FRONT / P_REAR / Paper Thickness / Head SLID / Head Thermistor B, C / I/C Present / Not Present / Ink End
Encoder	CR Motor, PF Motor
Fan	On/Off confirmation
Elec.	<ul style="list-style-type: none"> <li>• Maintenance Record</li> <li>• Fatal Error Record</li> </ul>
D/A Revision	Factory use for Head voltage correction - do not attempt *1
Head Signal	Factory use for Head pulse check - do not attempt

**NOTE:** \*1. Function for which service is not necessary.

The menu items and their order in the menu are shown below.



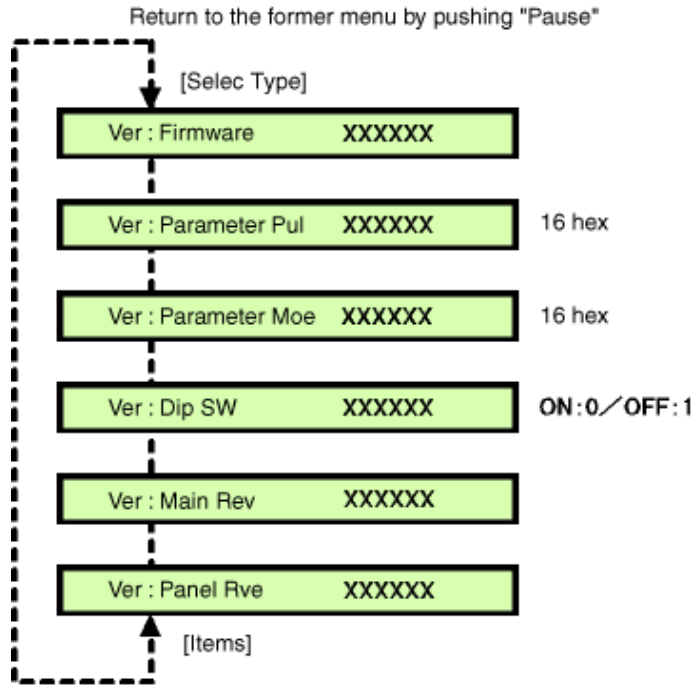
**Figure 5-3. Test Menu**

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**VERSION**


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This function confirms the firmware version and dip switch settings.

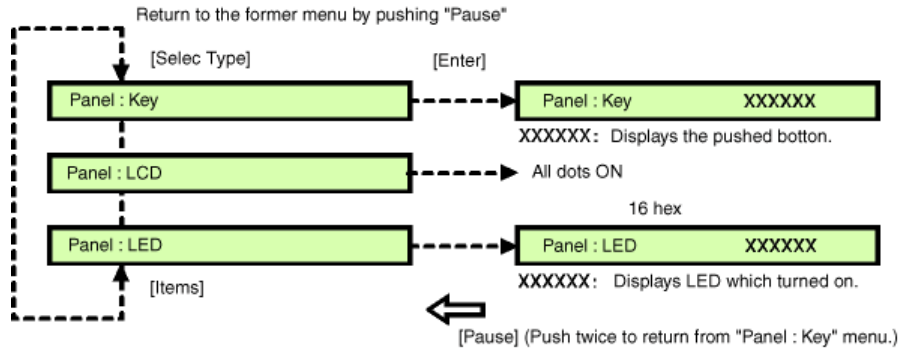


**Figure 5-4. Version Menu Options**

- Concerning “Firmware,”  
“LODDYM” is displayed. The explanation of this is as follows.  
LO Fixed  
DD Day  
Y Year (Last digit of AD year)  
M Month (Hex)
- Concerning DIP-SW  
The DIP-SW mounted on the C299MAIN board is a 2-bit switch, with SW-1 displayed as the LSB and SW-2 displayed as the MSB.  
Example: If JP1 = Shorted (ON) and JP2 = Shorted, the display is “0x03.”

**CONTROL PANEL**

This function allows you to check the operation of the control panel buttons, LED indicators, and LCD panel.

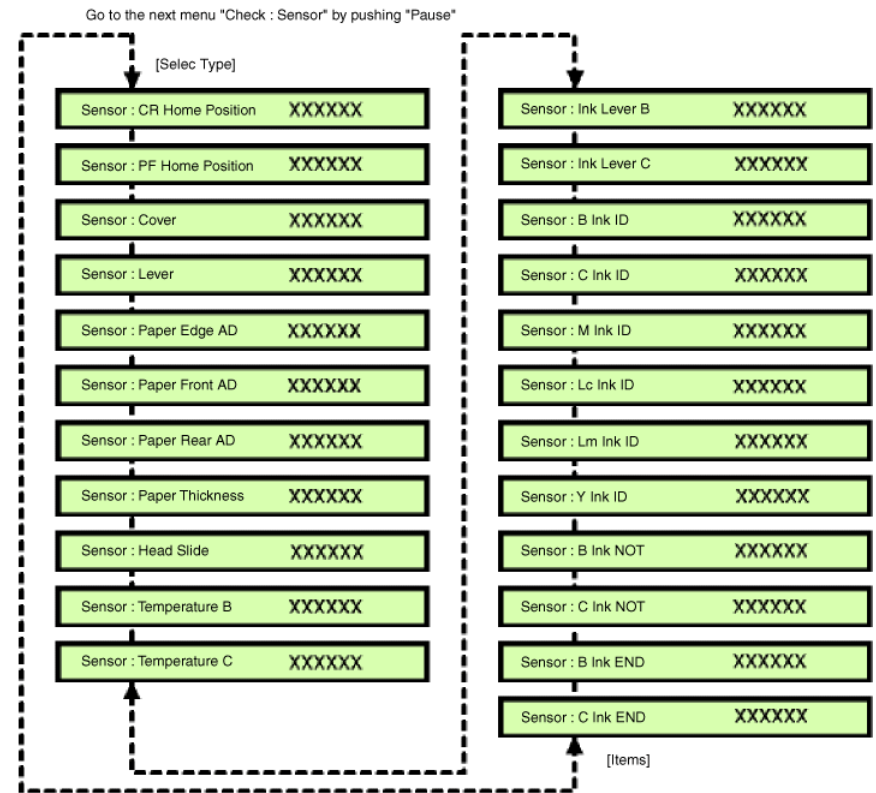


**Figure 5-5. Control Panel Check**

- "Key" check  
The name of the button that is pressed appears. Press the [Pause] button twice to exit the "Panel: Key" function.
- "LCD" check  
All dots turn on. If a dot is not on, the LCD is not working properly.
- "LED" check  
The LED indicators turn on in the following order and the name of the indicator appears on the LCD when that indicator turns on.  
Power, Pause, Ink End (K, C, M, Lc, Lm, and Y), Paper Out, Cut, Roll Cut Off, and Sheet.

**SENSORS**

This function allows you to confirm whether the sensors are operating properly. The current status (ON or OFF) of the sensors (one at a time) is shown in the LCD display, and you need to check the sensor operation by hand. For example, to check the Paper Set Lever position sensor, move the lever up and down.



**Figure 5-6. Sensor Menu Options**

**Table 5-6. “Sensor” Function Confirmation Items**

Display Item	Contents
CR Home Position	Shows the state detected by the CR_HP sensor.
PF Home Position	Not used.
Cover	Shows the front cover open / closed state.
Lever	Shows the paper set lever’s state (Forward: Down Back: Locked).
Paper Edge AD / Paper Front AD / Paper Rear AD*1	Shows the state detected by the paper sensors’ (P_EDGE, P_FRONT, P_REAR).
Paper Thickness	Shows the state detected by the paper thickness detection sensor.
Head Slide	Shows the state detected by the PG cam home position detection sensor.
Temperature B / C	Shows the temperature detected by the Thermistor inside the B and C heads.
Ink Lever B / C	Not used.
[ ] [ ] Ink ID	Not used.
B C Ink NOT [ ] [ ] [ ]	Shows the state detected by the I/C sensor, whether the I/C is present or not, and displays the name of the I/C that is not installed. (Example: When the Lm I/C is not installed, “Lm” is displayed.)
B / C Ink END [ ] [ ] [ ]	Shows the state detected by the ink low detection sensor and shows the name of the I/C where the ink low state is detected. (Example: When the ink is low in the Lm I/C, “Lm” is displayed.)

\*1 This should definitely be done after a new C299MAIN board has been installed.



You need to perform the “Adjustment the Paper Sensors” as described on the next page after replacing the Main board as well as any of the P\_THICK, P\_REAR, and P\_FRONT sensors.

**ADJUSTMENT THE PAPER SENSORS**

The P\_EDGE, P\_REAR and P\_FRONT sensors which detect the paper are reflective type optical sensors, so if the sensors themselves and the main board are replaced, the following adjustment should be made to set the sensors’ detection level to the proper value.



- For the reasons given on the preceding page, depending on the base unit’s serial code and the firmware version, the adjustment methods for the P\_FRONT / REAR / EDGE sensors differ, so the appropriate adjustment should be made.
- If the same sensor adjustment as that for a Type 2 unit is performed for a Type 1 unit, the sensor’s sensitivity will rise too high and it will be easy for it to be influence by stray light, and it may no longer be impossible for it to correctly detect EPSON genuine paper.
- If you are turning the VR element (volume resistor) on the main board to make adjustments, care should be taken not to touch the other elements on the board or the frame, etc.
- It is easy for each sensor to be influenced by stray light from the sun or from the room lighting, etc. The P-FRONT sensor in particular is easily influenced by stray light, so printing should always be done with the printer covers securely in place.
- If the specified paper is set in the printer for each sensor adjustment, the paper set lever should be moved to the paper set position securely so as to stabilize the paper over the sensors.
- The papers used for this adjustment (PPC, Kimoto Tracing Paper #300) should be replaced periodically. If there is any dirt (ink, foreign matter adhering), damage (wrinkles, tearing) in the standard paper, an accurate adjustment cannot be made, so the standard paper should be replaced after adjustment of about 20 printer units.





■ Since the new pigment based firmware is written to the flash ROM by this upgrade service implementation, the display in the sensor adjustment mode's LCD display is as shown below. The meaning of each value is as shown below.

- Panel Display: "Sen: Sensor Name A D ttt vvv"
- ttt = Difference between the sensing level when there is no paper and when there is paper. This numerical value is shown in Hexadecimal and changes depending on the printer's state.
- vvv = Sensor detection level when there is paper. The hexadecimal number during the adjustment changes depending on the VR element's adjustment level and the printer's state.

□ VR Element Function for Each Sensor

The arrangement of the VR chips on the main board is as shown below.

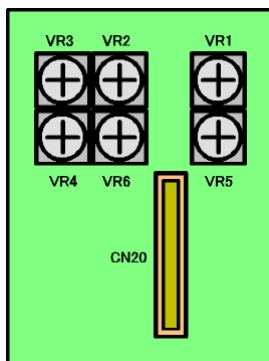


Figure 5-7. Positions of VR 1 ~ VR 6  
(As viewed from the rear cover access window.)

See below concerning the adjustment function for each sensor and VR element.

Table 5-7. Adjustment Function for Each Sensor and VR Element

Sensor	Volume (VR)	Adjustment	Fine Adjustment
P_EDGE Sensor	VR1 and VR5	VR1	VR5
P_REAR Sensor	VR3 and VR4	VR3	VR4
P_FRONT Sensor	VR2 and VR6	VR2	VR6

## □ P\_EDGE Sensor Adjustment

1. Remove the rear cover's access cover (2 screws).
2. The self-diagnostic mode is started by turning on the Power switch while pressing the following buttons.
  - Paper Feed – Button + Cut / Eject Button + Cleaning Button
 Press the Paper Source button and select “Check: Test”, then press the Enter button.
3. Press the Paper Source button and select “Test : Sensors”, then press the Enter button.
4. Press the Paper Source button and select “Sen: Edge AD.” At that time, make sure that the LCD displays “Sen: Edge AD ttt vvv.”

**NOTE:** “ttt” or “vvv” is a hexadecimal number that changes depending on the printer's state.

5. As necessary, the access cover on the paper guide should be removed.
6. Raise the paper set lever, then set a sheet of A3 size plain copy paper (PPC paper) in the paper path, then lower the paper set lever to fix the paper in position. At this time, make sure the front edge of the sheet of paper is at the paper front edge setting position on paper guide L.
7. Move the CR unit over the paper and close the front cover halfway. At this time, if the vvv value in the LCD display does not change, the subsequent operation can be performed with the front cover in the open state. If the vvv value changes, use adhesive tape, etc. to fix the front cover in the half closed state.

**NOTE:** Move the CR unit over the paper so that the CR unit's right edge is aligned with the paper's right edge.

8. Confirm that the LCD displays the following.
  - LCD Display: “Sen: Edge AD ttt vvv”
  - ttt value: 040<H> or higher
  - vvv value: Should be a value between 0E0<H> and 0E8<H>

If the ttt value is lower than 040<H>, carry out the rough adjustment with the VR1 element, then carry out the fine adjustment with the VR 5 element.

If the VR1 element is set on the maximum, and vvv does not reach 0E0<H>, adjust the VR1 element so that the sensor detection level when there is no paper rises, adjusting it so that it reaches 0E0<H> when paper is present. If adjustment is impossible, replace the sensor.

9. Raise the paper set lever, then after removing the paper, return the paper set lever to the paper set position.

### □ P\_FRONT Sensor Adjustment

1. Press the Paper Source button and select “Sen: Front AD.” At that time, make sure that the LCD displays “Sen: Front AD ttt vvv.” If the vvv value is lower than 01C<H> when no paper is set, then adjustment is impossible. In this case, replace the sensor.

**NOTE:** “ttt” or “vvv” is a hexadecimal number that changes depending on the printer’s state.

2. Raise the paper set lever, then set a sheet of #F751 Kimoto Micro Tracing Paper (A3 size) in the paper path, then lower the paper set lever to fix the paper in position. At this time, make sure the front edge of the sheet of paper is at the paper front edge setting position on paper guide L.
3. Close the front cover halfway. At this time, if the vvv value in the LCD display does not change, the subsequent operation can be performed with the front cover in the open state. If the vvv value changes, use adhesive tape, etc. to fix the front cover in the half closed state.
4. Confirm that the LCD displays the following.
  - LCD Display: “Sen: Front AD ttt vvv”
  - ttt value: 40<H> or higher
  - vvv value: 95<H> or lower

If the above conditions are not met, adjust the VR2 (rough adjustment) and VR6 (fine adjustment) elements while checking the display in the LCD adjusting the values so they match the above conditions.

### □ P\_REAR Sensor Adjustment

1. Press the Paper Source button and select “Sen: Rear AD.” At that time, make sure that the LCD displays “Sensors: Rear AD ttt vvv.” If the vvv value is lower than 01C<H> when no paper is set, then adjustment is impossible. In this case, replace the sensor.

**NOTE:** “ttt” or “vvv” is a hexadecimal number that changes depending on the printer’s state.

2. Raise the paper set lever, then set a sheet of #F751 Kimoto Micro Tracing Paper (A3 size) A3 in the paper path, then lower the paper set lever to fix the paper in position. At this time, make sure the front edge of the sheet of paper is at the paper front edge setting position on paper guide L.
3. Close the front cover halfway. At this time, if the vvv value in the LCD display does not change, the subsequent operation can be performed with the front cover in the open state. If the vvv value changes, use adhesive tape, etc. to fix the front cover in the half closed state.
4. Confirm that the LCD displays the following.
  - LCD Display: “Sen: Rear AD ttt vvv”
  - ttt value: 40<H> or higher
  - vvv value: 95<H> or lower

If the above conditions are not met, adjust the VR3 (rough adjustment) and VR4 (fine adjustment) elements while checking the display in the LCD adjusting the values so they match the above conditions.

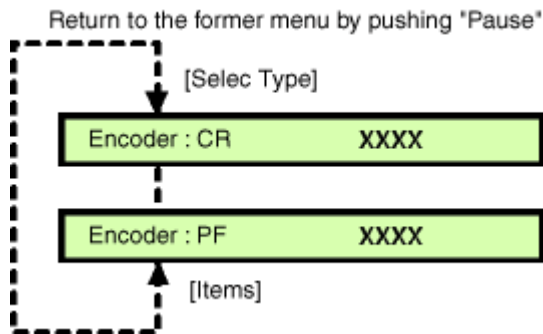
5. Raise the paper set lever, then after removing the paper, return the paper set lever to the paper set position.
6. Turn the printer’s power switch off, then close the access cover and tighten the installation screws.

**ENCODER**

This function confirms the operation of the CR Motor and PF Motor encoders.

To check an encoder, follow the instructions below for the corresponding encoder.

- CR encoder: Move the carriage left and right by hand
- PF encoder: Turn the Grid Roller by hand



**Figure 5-8. Encoder Confirmation Process**

**FAN**

This function confirms the operation of the paper vacuum fans (x2). When this item is selected, the fan turns on. Press the Pause button to turn the fan off and proceed to the next item.

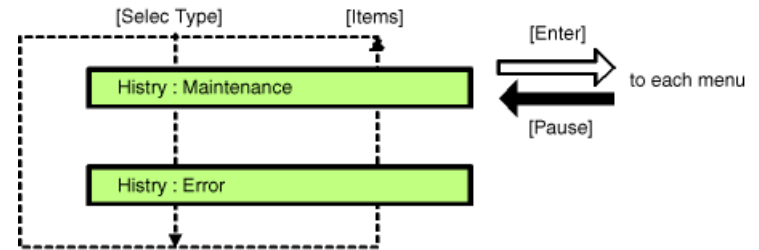
Return to the former menu by pushing "Pause"



**Figure 5-9. Fan Operation Check**

**ELEC.**

The printer's operating history information and fatal error occurrence history saved in the control circuit NVRAM can be checked.



**Figure 5-10. Record Menu Options**

- Record: Maintenance menu

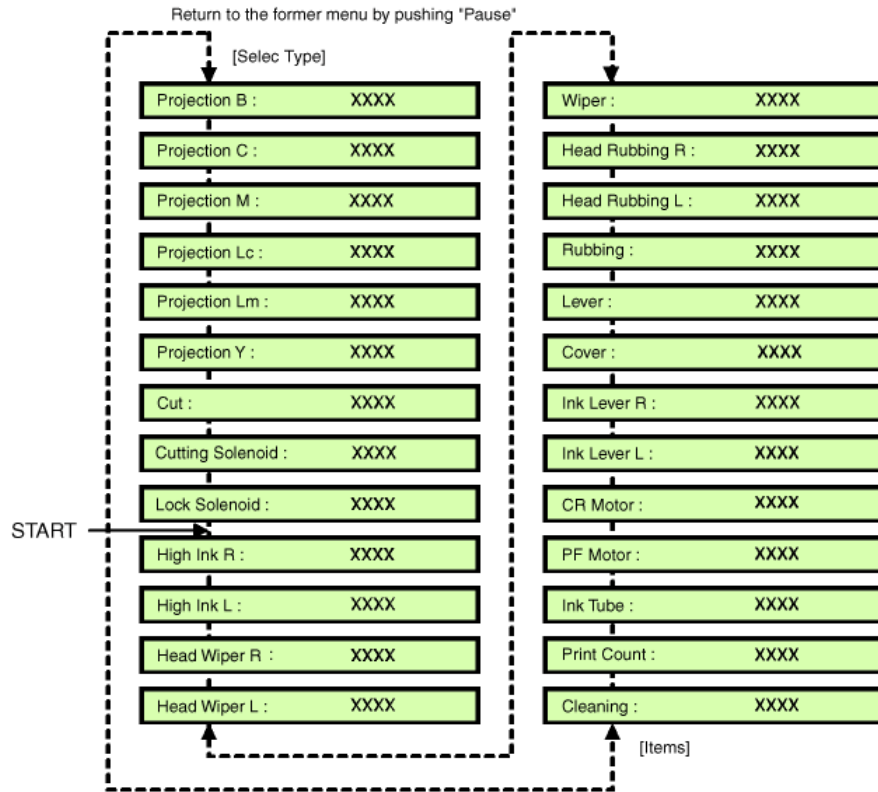


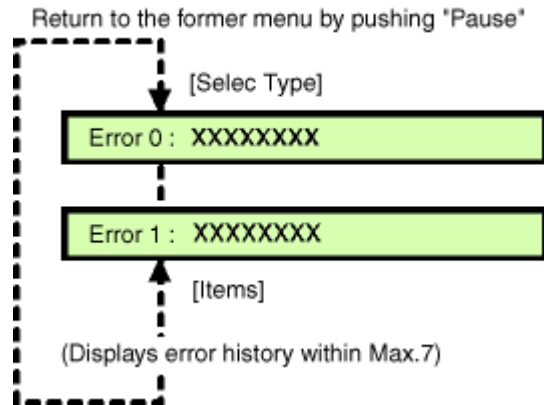
Figure 5-11. Maintenance History Menu

Table 5-8. History: Maintenance items

Item	Content
Waste Ink R/L	Waste Ink disposal Volume Counter Value (Separate for R/L)
Head Wiper R/L	Individual wiping operation count for the B and C heads
Wiper	Wiper operation count
Head Rubbing R/L	Individual rubbing operation count for the B and C heads
Rubbing	Rubbing operation count
Lever	Paper set lever operation count (1 count for each respective Up/Down operation)
Cover	Front cover open/close count(1 count for each respective Open/Close operation)
Ink Lever R/L	Not used.
CR Motor	Carriage cumulative moving distance (Units: Km)
PF Motor	Paper feed cumulative distance (Units: Km)
Ink Tube	Carriage cumulative pass count
Print Count	Cumulative number of sheets printed (Count for each FF)
Cleaning	Cumulative cleaning operation count
Discharge Times	Total number of ink discharges for each color's nozzles (Units: Megadots)
Cutting	Paper cutting operation count
Cutter Solenoid	Cutter solenoid operation count
Lock Solenoid	CR lock solenoid operation count

□ Record: Error menu

The errors listed here do not include CPU errors (service call errors), and the printer lists a maximum of the most recent seven fatal errors, Error 0~6.



**Figure 5-12. Error Record Function**

**NOTE:** See Table 3-22 in Chapter 3, "Troubleshooting" concerning the error contents.

### 5.2.3.4 Adjustment Menu

The Adjust menu allows you to make certain adjustments to the printer mechanism and controls, for example head angle adjustment, print position adjustment, paper feeding correction, and firmware-control setting.

**Table 5-9. Adjustment Menu Items**

Adjustment Item	Description
Capping Position	Sets the Capping position (automatic Adjustment)
Paper Skew Check	Verifies the degree of skew (slant) allowed during printing
Write D/A Value	Writes the direct/alternate data to the Flash ROM; *1 compensates for differences in individual Main Boards - like head ID for the Main Board
Head Rank Input	Sets the printhead ID
Head Nozzle Check	Prints the check pattern to make sure the nozzles are not clogged
B Head Angle	Adjusts the angle of the B Head (mechanism adj.)
C Head Angle	Adjusts the angle of the C Head (mechanism adj.)
BC Head Height	Verifies the B/C Head nozzles are at the same height (mechanism adj.)
Bi-D Print Position	Verifies the printed lines match up when performing bi-directional printing.
Head Gap	Adjusts the B/C Head Gap as well as sets the left margin
R Flush Point	Adjusts the flush position on the HP side
L Flush Point	Do not use, there is no left flush point and this function will generate a fatal error
Feed Correction	Checks paper feeding (w/ruler)
Top & Bottom	Checks the top and bottom margins (w/ruler)
Rear Paper Sensor Position	Sets the detection position of the rear paper-edge sensor

**Table 5-9. Adjustment Menu Items (continued)**

Adjustment Item	Description
Test Pattern Print	Checks print quality (prints setting information, check pattern and so on)
Clean Head	Initiates cleaning/flushing of the heads and ink path 1) Ink drain 2) Fill with transportation fluid (1 time = 15ml) 3) Drain transportation fluid 4) Reset the ink charge flag
Counter Clear	Resets all counters in Table 5-13 on page 210

\*1 These should definitely be executed after the new C299MAIN board has been installed.



- Use the transport liquid cartridges (x 6) for “Head Cleaning.” It is also possible to substitute “Transport Liquid Initial Filling - Transport Mode.”
- “Counter Clear” should only be carried out during replacement of periodic replacement parts produced in the “Maintenance Kit, Stylus Pro 7500,” which includes the waste ink pads.



- When replacing the C299MAIN board, be sure to carry out writing of the D/A correction values. This parameter is measured during manufacturing of the circuit board, and is written to the USB EEPROM on the board. This parameter exists in a Flash ROM area that cannot be copied during parameter backup with a PC card, so it should be carried out from the USB EEPROM on the new board.

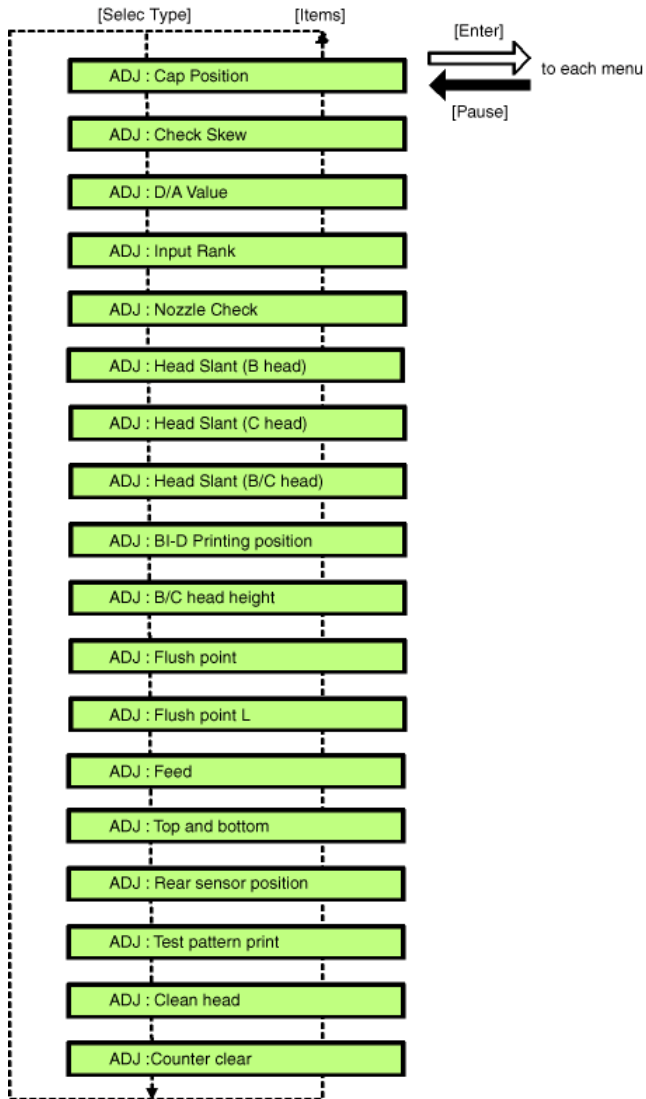


Figure 5-13. Adjustment Menu



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## ADJ CAP POSITION

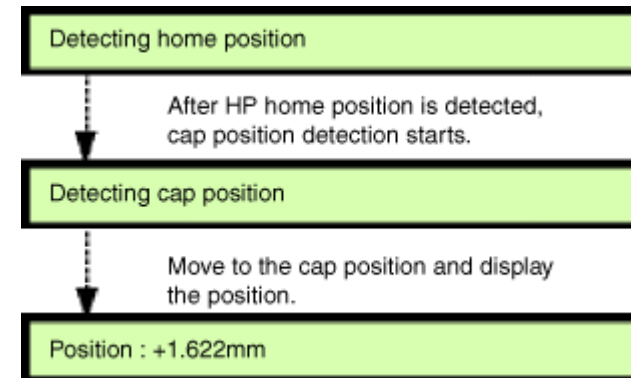
---

Use this function to check the actual capping position and correct the capping position parameter in the firmware if necessary.

**CAUTION**


- When the cleaning operation positions do not match, this adjustment becomes necessary.
- When this adjustment is completed, the corrected value is written automatically.
- To confirm the cap position, after carrying out this adjustment, turn the power on again, then when the carriage stops at the home position, check if the CR is locking.

1. Make sure "Adj Cap Position" appears on the LCD and press the Enter button.
2. The printer begins the HP detection sequence and automatically detects the capping position, adjusting the logical position if necessary.
3. After the adjustment process is finished, the detected distance between the HP and the capping position is displayed.
4. Do one of the following:
  - > Press the Enter button to update the capping position parameter and proceed to the next menu item, or
  - > Press the Pause button to avoid updating the capping position parameter and return to the beginning; "Adj Cap Position" appears on the LCD
5. Turn the power switch OFF.



**Figure 5-14. Cap Position Check Operation**

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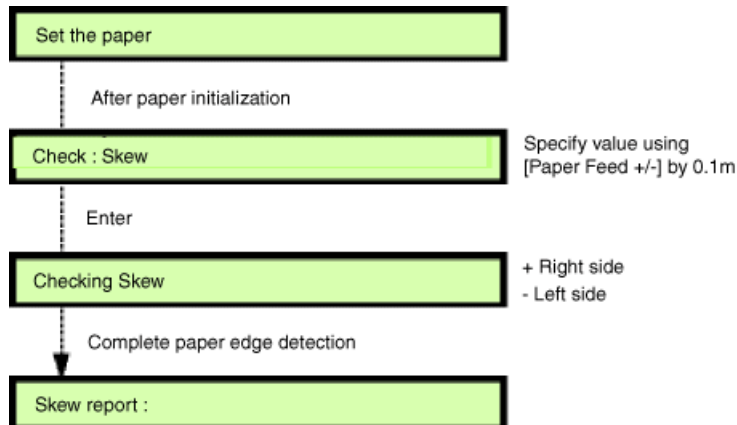
**ADJ CHECK SKEW**


---

When the band turns a predetermined amount (during printing), the printer detects the paper edge using the P\_EDGE sensor.

1. Make sure "Adj: Check Skew" appears on the LCD and press the Enter button.
2. If the paper is not loaded correctly, "Reload Paper" appears indicating you need to properly load the paper. If the paper is set correctly, the printer initializes the paper.
3. After paper is loaded and initialized, "Check Skew 1.0m" appears. Use the Paper Feed + and Paper Feed - buttons to adjust the paper-skew detection distance, then press Enter to begin the skew check.
4. After the skew is correctly detected, "Skew Result: xxxx" appears. Press Enter to proceed to the next menu item, or press Pause to return to the beginning; "Adj: Check Skew" appears on the LCD.
5. Proceed to the following adjustment items by pressing the Enter button. (If the "Pause" button is pressed, the program will return to the "Adjustment" Paper skew check" item again without updating the parameters).

**NOTE:** If the paper check LED blinks or stays lighted up, a paper sensor error has occurred. After releasing the paper set lever once, perform this adjustment again.)



**Figure 5-15. Skew Check Operation**

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## WRITE D/A VALUE

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During the C299MAIN board production process, the head drive circuit parameters are written to the USB EEPROM.

After service, these parameters must be transferred to the Flash-ROM.

**NOTE:** *This operation should definitely be performed before starting a printing job. If it is not done, it is possible that color irregularities could occur during printing.*



- **This operation should definitely be performed before starting a printing job. If it is not done, it is possible that the uneven printing could appear during printing.**
- **This correction value exists in an area (in the Flash ROM) where it is impossible to copy using parameter backup with a PC card, so this operation should also be performed after parameter backup / copy is completed when replacing the board.**

1. Make sure "Write D/A Value" appears on the LCD and press Enter.
2. Press Enter again when "Press Enter to write" appears.
3. Turn off the printer when "Please turn off" appears.

---

## ADJ INPUT RANK

---

This function allows you to enter the B head and C head ID's.

1. Make sure "Adj: Input Rank" appears on the LCD and press the Enter button.
2. Make a memo of the 6 digit ID printed on the head ID label affixed to the heads.
3. First, set the ID value of the B head (K/C/M). Specify the proper value using the [Paper Feed + / -] buttons.

The numbers after the ID, 1 ~5 show the number of the position from the left side head ID, and are set in order for each step.

After the B head ID value input is completed, pressing the Enter button causes the program to switch to the C Head (Lc/Lm/Y) ID value setting display, so carry out this setting next.

If there is a mistake in the setting value (a value outside the range is specified, etc.), it result in an error. Press the [Enter] button to input the value again.

4. At the point when setting of the B and C head ID values, if the [Enter] button is pressed, the message "Fill [Set] Execute" is displayed. Here, if the [Enter] button is pressed, the ID setting values are updated in the C299MAIN board and initial filling processing is started, with the head filling operation starting.



**If the print head has not been replaced yet, initial filling is not necessary, so when message "Fill [Set] Execute" is displayed, if you press the "Pause" button, you can skip the initial filling processing.**

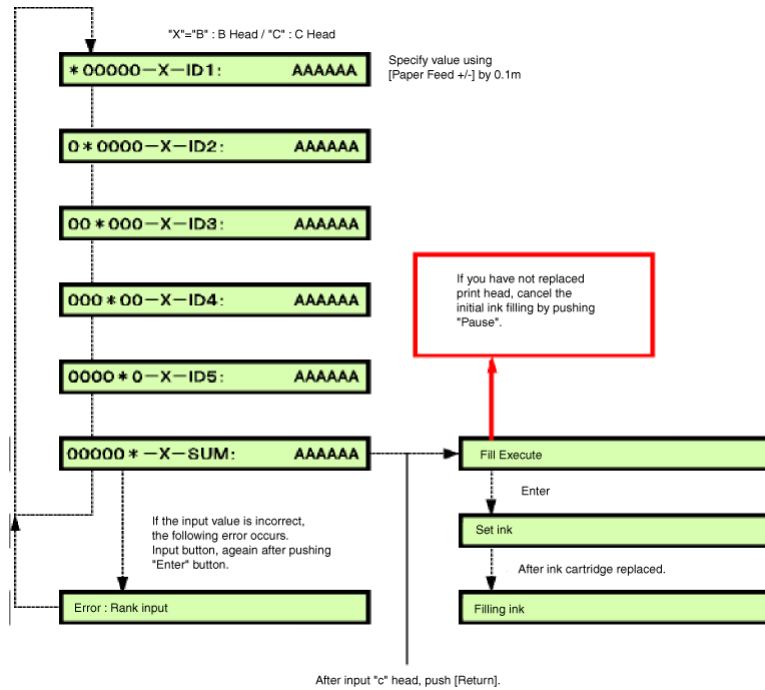


Figure 5-16. Head ID Input Process

ADJ CHECK NOZZLE

After the initial ink charge, this function verifies that the nozzles are properly firing ink. If some nozzles are not firing correctly or at all, you can run the cleaning operation from this menu.

1. Make sure "Adj: Check Nozzle" appears on the LCD and press the Enter button.
2. Load paper if not already loaded and replace any low or empty ink cartridges if detected. If these conditions are OK, the printer prints the following check pattern.

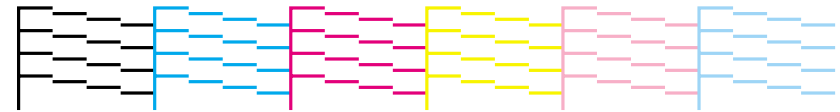


Figure 5-17. Head Nozzle Check Pattern

The patterns are printed in order from the left with the colors black, cyan, magenta, yellow, light magenta and light cyan, then the following items are printed out.

- Firmware version
- Waste ink counter remaining capacity
- Vertical nozzle alignment check pattern
- Horizontal nozzle alignment check pattern
- Left head slant adjustment pattern
- Right head slant adjustment pattern
- Color head height adjustment pattern
- Bi-D adjustment pattern #1 ~ #4
- Gap adjustment pattern #5 ~ #6

Check Item:

- Nozzle ink discharge (skipping, not continuous, meandering)
- Horizontal nozzle alignment check
- Vertical nozzle alignment check

- When the check pattern is finished printing, "Nozzle Check End" appears on the LCD. If the pattern printed all six colors properly with no lines or dots missing, press the Enter button to end this adjustment procedure. If lines or dots are missing, press the SelecType button to start the cleaning cycle.

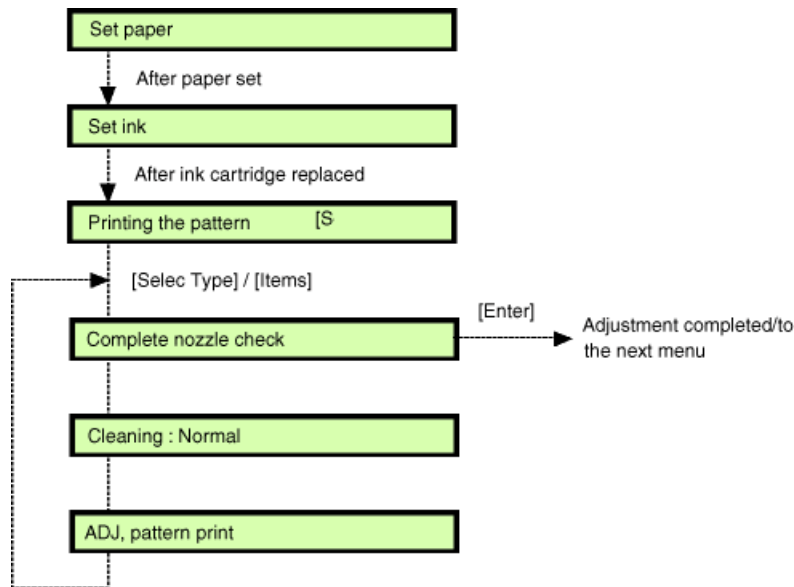


Figure 5-18. Nozzle-Check Printing Operation

### ADJ X HEAD SLANT (B/C HEADS)

This function prints a check pattern (one-at-a-time for each head) to make sure the printheads are installed straight up-and-down. Use the patterns to determine whether one or both printheads need adjustment. To correct any slant, use "Head Adjust Lever A" as described below.

- Make sure "Adj: x Head Slant" appears in the LCD, and press the Enter button. (x = B or C depending on the printhead) After the check pattern prints, "x Slant Check End" (x = B or C head) appears in the LCD.
- Compare the printed pattern with the illustration below. Press Enter if the lines are parallel, as shown in the "OK" examples below. If there is a slant, open the front cover, release the carriage lock by hand, and move the carriage away from the carriage cap position.

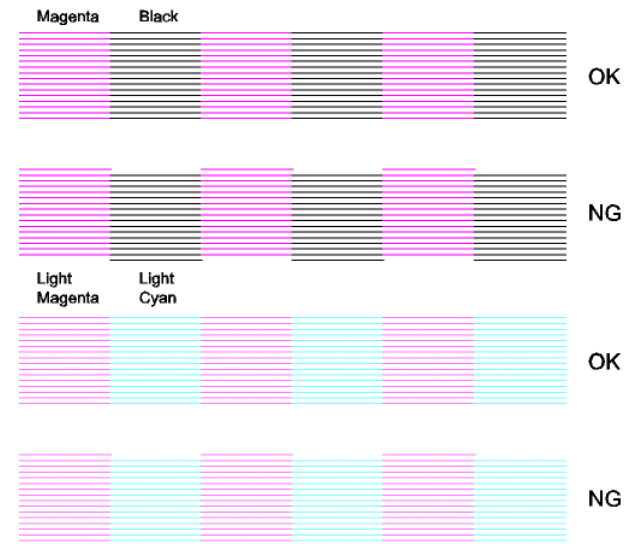


Figure 5-19. Head Slant Check Printout

- Open the front cover and release the carriage lock manually, then move the carriage from the cap position. Next, loosen the head installation screws for the affected head, then correct the head adjuster A to correct the inclination. Then tighten the head installation screws. The movement direction of the head adjuster at this time is as

follows depending on the degree of inclination. (The check pattern color will differ during C head adjustment. After the adjustment, return the carriage to the cap position and close the front cover.

- Using the [SelecType] / [Paper Source] buttons, select the "Pattern Output" display, then print the check pattern once more and check the degree of inclination. If there is no problem, press the Enter button when "Inclination Check End" is displayed, and the operation will end.

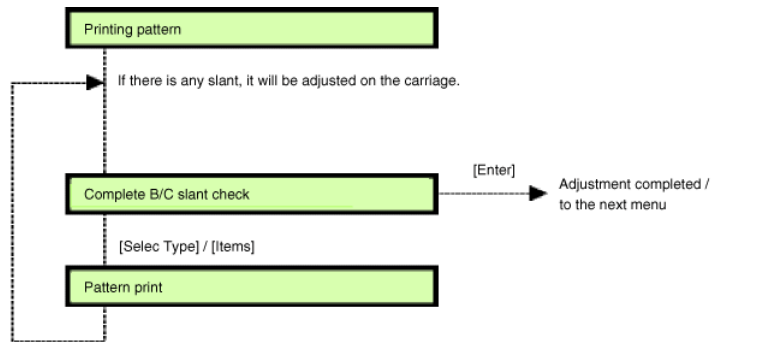


Figure 5-20. Head Slant Check Operation

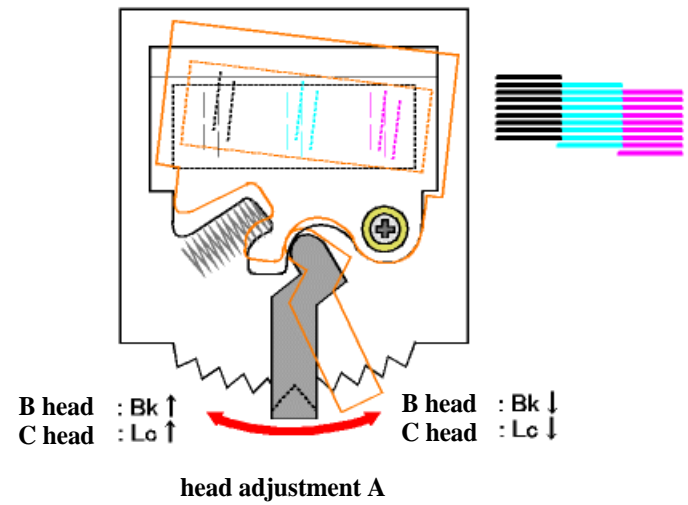
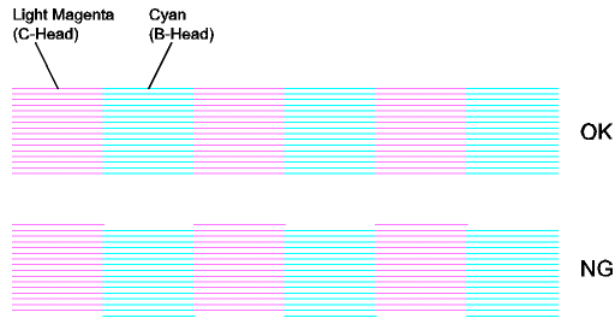


Figure 5-21. B/C Head Slant Adjust Lever

**ADJ B/C HEAD HEIGHT**

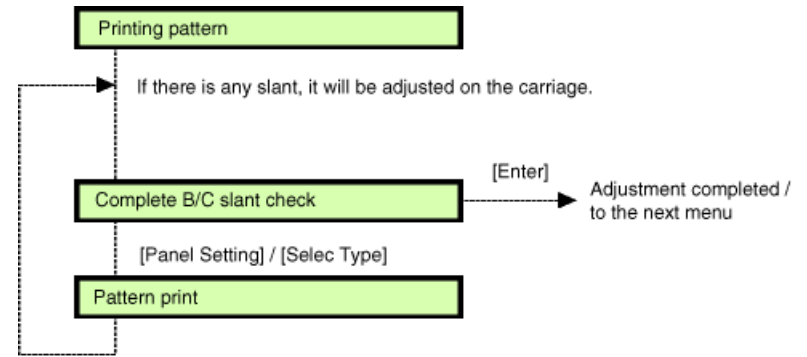
This function matches the height of the B head nozzles and C head nozzles. Assuming the B head nozzles are correct, The printer prints a test pattern and if the two sets of lines do not match up vertically, you need to adjust the height of the C head using the Head Height Lever.

1. Make sure "BC Slant Check End" appears in the LCD, and press Enter.
2. After the check pattern prints, "BC Slant Check End" appears in the LCD. Compare the printed pattern with the illustration below.
3. Open the front cover and release the carriage lock manually, then move the carriage from the cap position. Next, loosen the installation screws in the C head side, then move the head adjuster B to correct the deviation. Then tighten the head installation screws. The movement direction of the head adjuster at this time is as shown in the following figure depending on the degree of inclination. After the adjustment, return the carriage to the cap position manually and close the front cover.

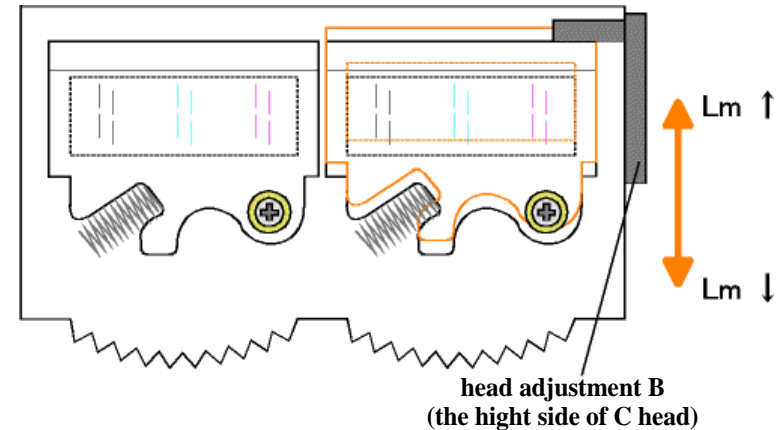


**Figure 5-22. Head Parallelism Check Printout**

4. Select "Print Adj Pattern" with the SelecType or Item button, and print the pattern again to make sure the heads are lined up. Adjust again if necessary. If there is no slant, press Enter.



**Figure 5-23. Head Parallelism Check Operation**



**Figure 5-24. B/C Head Height Lever**

**BI-D PRINTING POSITION ADJUSTMENT**

This adjusts the Bi-D printing position in the B and C heads. In the adjustment, bi-directional printing is performed, then the positional error between the one way print results (from the HP side to the side opposite the HP side) and the print results for the return pass (opposite direction) is judged visually and correction values are set. Adjustment items are as shown below.

Table 5-10. Bi-D Adjustment Items

Item	Contents	No.
BiD/200/M/B	Bi-D Adjustment / 240 cps / Normal-dot / B head	#1
BiD/200/M/C	Bi-D Adjustment / 240 cps / Normal-dot / C head	#2
BiD/300/N/B	Bi-D Adjustment / 333 cps / Normal-dot / B head	#3
BiD/300/N/C	Bi-D Adjustment / 333 cps / Normal-dot / C head	#4

**NOTE:** The numbers in the above table show the number of the printing adjustment pattern printed out initially when printing the adjustment patterns.

1. Display “Adjustments: Round Trip Alignment,” , then press the Enter button.
2. All the Bi-D adjustments patterns will be printed out, then “BI-D, 200. M. B: XXX” will be displayed in the LCD for the first adjustment item.

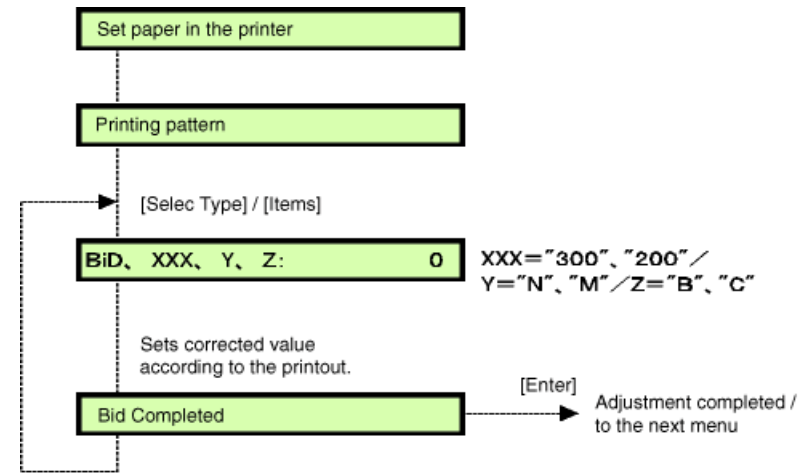


Figure 5-25. Bi-D Adjustment Operation

3. Check printing pattern No. 1 to No. 3, confirming if the vertical lines in the first pass deviate from the vertical lines printed in the second pass.
  - If all vertical lines are lined up correctly in printing patterns No. 1 to No. 3, press the Paper Source button 3 times and proceed to the printing pattern No. 4 adjustment menu. (Proceed to Step 5.) Confirm that “Bi-D, 300. N. C” is displayed in the LCD.
  - If all vertical lines are not lined up in printing patterns No. 1 to No. 3, press the Paper Source button several times to proceed to the adjustment menu for the affected pattern, then press the Paper Feed + or – button to input the appropriate numerical value. After inputting the correction value, press the Enter button. The printer will then print out the pattern with the results of the input correction value. The relationship between the inputs using the Paper Feed + or – button and the printing results is as shown below.
    - Adjustment Value Minimum Resolution:1/2880 inch
    - Correction Direction:Paper Feed – button = Moves the line on the 2nd pass toward the HP side.  
Paper Feed + button = Moves the line on the 2nd pass away from the HP .



- Adjustment Target: There should be no deviation between the lines on the first pass and the lines on the 2nd pass.

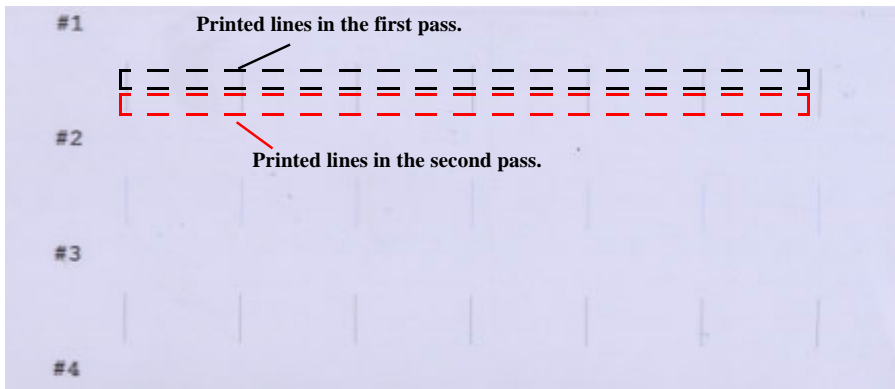


Figure 5-26. Bi-D Adjustment Pattern No. 1 ~ No. 3.

4. Repeat the above steps 2 and 3 in order to carry out the adjustment of Bi-D printing patterns No. 1 to No. 3.
5. Select “ND Base Value Adjust xx” by pressing the Paper Source Button. Check the results of printing Bi-D adjustment pattern No. 4 and check whether the following patterns exist in the 8 patterns each of light cyan, light magenta and yellow. The pattern No. of each pattern is printed in hexadecimal notation beneath it.

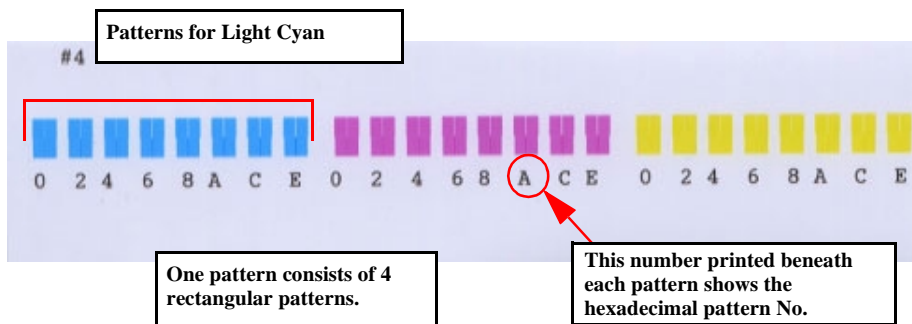


Figure 5-27. Bi-D Adjustment Pattern No. 4

- Each individual pattern consists of 4 rectangular patterns. Search for the pattern among the 8 patterns in each color where there is no gap and no overlapping between these 4 rectangles.

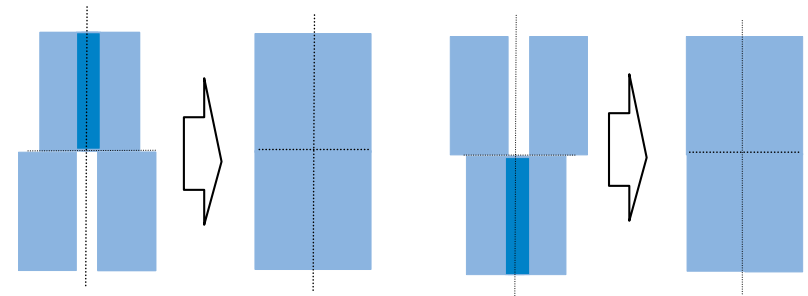


Figure 5-28. Bi-D Adjustment Pattern No. 4 Check Method

6. If you can confirm a pattern among the 8 patterns of each color where there is no gap and no overlapping between these 4 rectangles, press the Paper Source button and move to the adjustment menu for each color. Proceed to Step 11.

If you were unable to confirm an appropriate pattern among the 8 patterns printed in each color, use the Paper Feed + / – buttons to input an estimated value in the “ND Base Value Adjust xx” menu.

- Paper Feed + Button: Moves the top 2 out of the 4 patterns within the printed pattern in a direction so that they separate.
- Paper Feed – Button: Moves the bottom 2 out of the 4 patterns within the printed pattern in a direction so that they separate.

Input the estimated values in the “ND Base Value Adjust xx” Menu, then press the Enter button to print a new Bi-D No. 4 print pattern.

7. Repeat the above steps 5 and 6 until the the proper printing pattern can be confirmed.
8. “ND LC: XX” will be displayed in the LCD. In this menu, input the pattern No. of the pattern among the 8 light cyan printed patterns which was confirmed to be proper using the Paper Feed + and – buttons. The pattern No. on the printed pattern has the numbers printed in hexadecimal, with each number incremented by 2 from the number of the pattern to its left, but in this menu, it is possible to input each of the 16 numbers in hexadecimal. After inputting a value, press the Enter button.
9. “ND LM: XX” will be displayed in the LCD. In this menu, input the pattern No. of the pattern among the 8 light cyan printed patterns which was confirmed to be proper using the Paper Feed + and – buttons. The pattern No. on the printed pattern has the numbers

printed in hexadecimal, with each number incremented by 2 from the number of the pattern to its left, but in this menu, it is possible to input each of the 16 numbers in hexadecimal. After inputting a value, press the Enter button.

10. "ND Y: XX" will be displayed in the LCD. In this menu, input the pattern No. of the pattern among the 8 light cyan printed patterns which was confirmed to be proper using the Paper Feed + and – buttons. The pattern No. on the printed pattern has the numbers printed in hexadecimal, with each number incremented by 2 from the number of the pattern to its left, but in this menu, it is possible to input each of the 16 numbers in hexadecimal. After inputting a value, press the Enter button.
11. Make sure the message "Bi-D End" is displayed in the LCD, then move to the next adjustment item.



■ Up to Bi-D adjustment patterns No. 1 ~ 3, by deciding the value input from the panel, the adjustment results are printed out, so it is possible to check the adjustment results visually, but for Bi-D adjustment pattern No. 4, even if you decide a value to input from the panel, a printing pattern that reflects the adjustment results is not printed, so the adjustment results cannot be checked visually. Therefore, if you are confirming the adjustment results for adjustment values by printing pattern, the following DOS program becomes necessary.

\* Program Transfer Utility: Pout3.Exe

\* Program Name: Bid333.prn

The program transfer method is as follows.

- 1) Confirm that the printer is in the Pause state.
- 2) Move to the DOS prompt.
- 3) Input "POUT\_\_BID333.PRN."
- 4) Press the Enter key.

Through the above operation, a total of 9 blocks of printing patterns are printed out in each color. The results from the adjustment values input in the Adjustment mode are positioned in the center pattern of the 9-block pattern of each color.

Adjustment Results

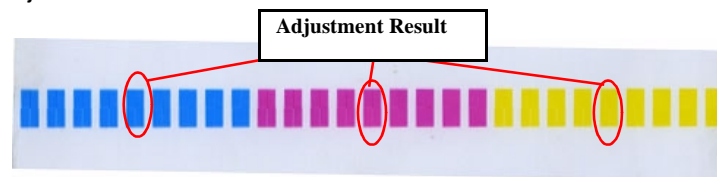


Figure 5-29. Bi-D #4 Adjustment Value Check Pattern

- Above check pattern are included in the Stylus PRO 7500 Adjstment program also.

**HEAD GAP ADJUSTMENT**

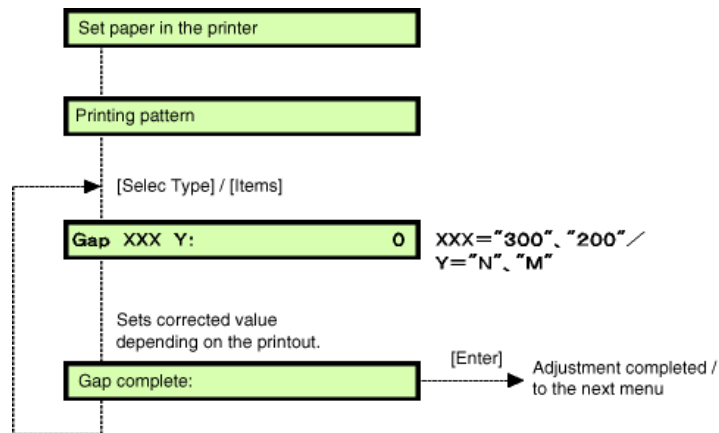
This corrects the printing position between the B and C heads. For adjustment, uni-directional printing is carried out and the print position error is judged in the printing results. Adjustment items are as follows.

**Table 5-11. Head Gap Adjustment**

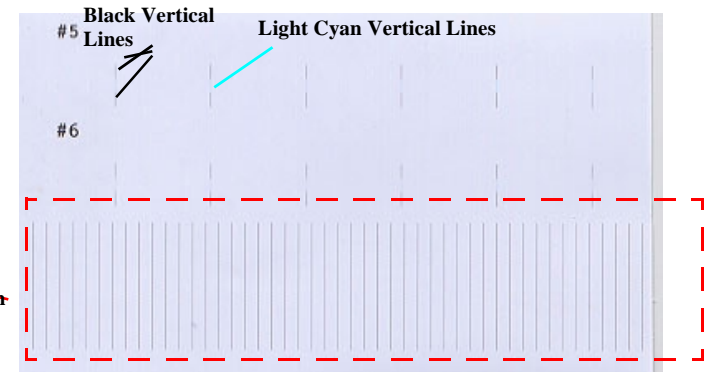
Item	Description	Number
Gap/200/M	Head GAP adjustment / 240 cps / Normal Dot	#5
Gap/300/N	Head GAP adjustment / 333 cps / Normal Dot	#6

**NOTE:** The numbers in the above table are printed at the beginning of the printing pattern when the adjustment pattern is printed and show the adjustment pattern No.

1. When “Adjustment: Head Gap Adjustment” is displayed, press the [Enter] button.
2. All the adjustment patterns will be printed and the first adjustment item, “Gap, 200, M: XXX” will be displayed.



**Figure 5-30. Head Gap Check**



**Figure 5-31. Head Gap Adjustment Pattern**

3. Check printing patterns No. 5 and No. 6, and check for deviation of the black vertical lines in the 1st and 3rd pass and in the light cyan vertical lines in 2nd pass.
  - If black vertical lines and light cyan vertical line are lined up correctly in the patterns in printing patterns No. 5 and No. 6, press the Paper Source button 2 times, then check if the message “Gap completed.” is displayed in the LCD. Proceed to Step 6.
  - If black vertical lines and light cyan vertical line are not lined up correctly in the patterns in printing patterns No. 5 or No. 6, press the Paper Type button to move to the corresponding pattern adjustment menu, then input the appropriate numerical values using the Paper Feed + / - keys. After inputting the correction value, press the Enter button to print the results of the input correction values. The relationship between the inputs using the Paper Feed + / - buttons and the printing results is as shown below.
    - Adjustment value minimum resolution: 1/2880 Inch
    - Correction Direction: Paper Feed - Button = Moves the black lines in the 1st and 3rd passes toward the HP side.  
Paper Feed + Button = Moves the light cyan lines in the 2nd pass away from the HP side.
    - Adjustment Target: There should be no deviation in the black lines and the light cyan lines.
4. Repeat the above steps 3 and 4 until the adjustment of patterns No. 5 and No. 6 is completed.

5. After confirming that "GAP completed." is displayed in the LCD, execute the final check item.

## FLUSH POINT ADJUSTMENT

This function corrects the flushing position of the carriage to make sure the carriage is properly positioned over the F Box during the flushing operation.

1. Make sure "Adj. Flush Point R" appears in the LCD, and press the Enter button.
2. The carriage moves to the flushing position and begins flushing.
3. After flushing is finished, "Point R NNN" (NNN = numeric position) appears. Check the piece of paper you put over the flushing box to confirm the ink is ejected into the flushing box. If the ink-flushing position is correct, press the Enter button to finish. Otherwise, press the SelectType or Item button to correct the flushing position. The settings increment as follows.

Correction distance: One press = 1/720 inch

Direction: "+" = toward HP and "-" = away from HP

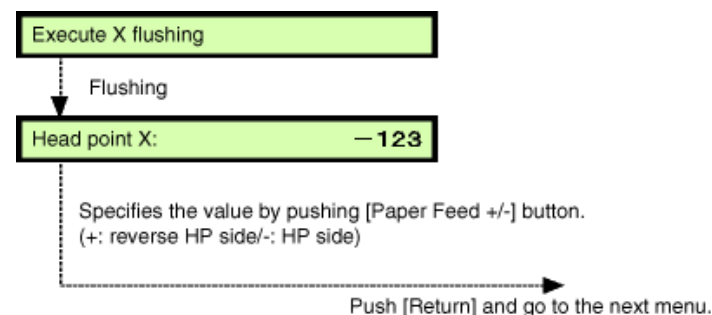


Figure 5-32. Flushing Point Check Operation

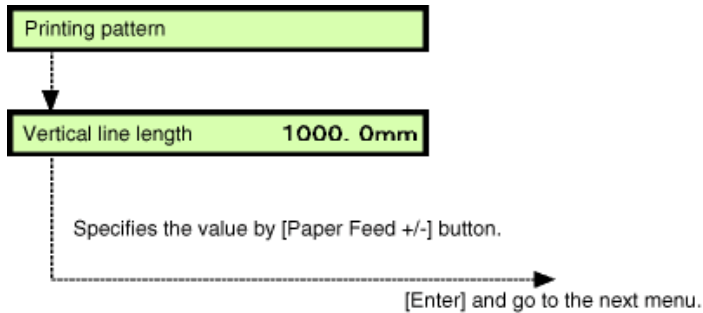


- Since you do not have the L flushing box, the "Flushing Point L Adjustment" should not be performed. If it is performed, "Service Call 0003000D" will be generated.

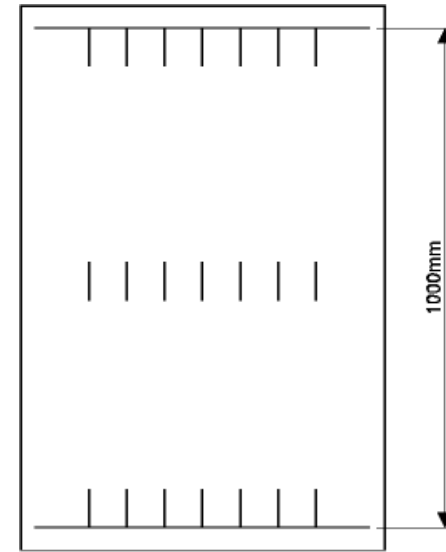
**FEED ADJUSTMENT**

This function adjusts the distance the printer feeds paper by correcting the printer's distance-measurement setting.

1. Make sure "Adj. Feed" appears in the LCD, and press the Enter button.
2. The printer prints a check pattern (lines) while feeding the paper at a fixed distance.
3. After the pattern is printed, "V Length 1000.0mm" appears. Using a regular ruler (and the Scale Stopper, code number 1047746/1047745), measure the printed pattern from the top line to the bottom line. Then enter this measurement using the item select +/- buttons in 0.1mm increments.
4. After entering the measurement, press the Enter button to finish.



**Figure 5-33. Feed Distance Check Operation**



**Figure 5-34. Feed Distance Check Pattern**

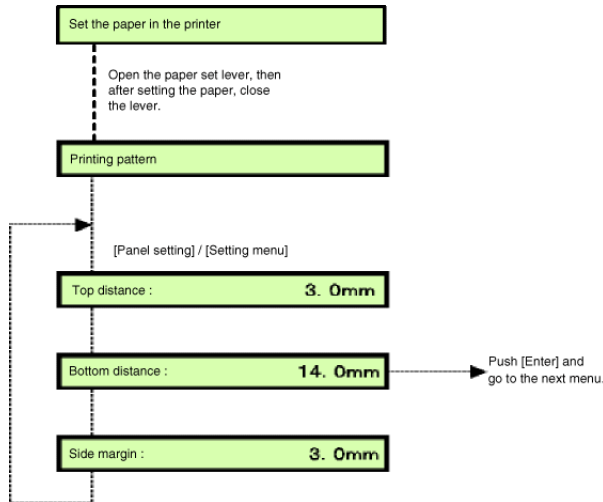


The center printed pattern in the above patterns serves the role of a supplementary line for measuring with the ruler.

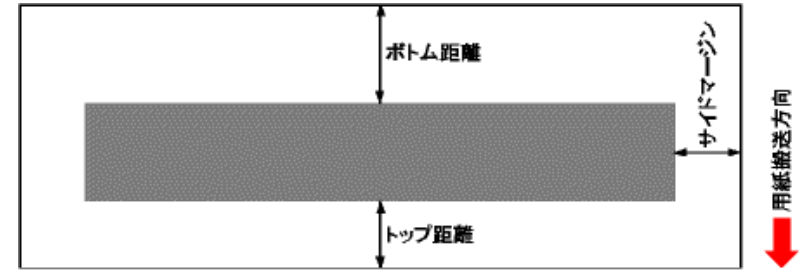
**ADJ TOP & BOTTOM**

This function sets the distances between the P FRONT sensor and heads, cutter and heads, as well as the P EDGE sensor and heads. You can also use this function to adjust the top, bottom, and side margins.

1. Make sure "Adj. Top & Bottom" appears, and press the Enter button.
2. The printer prints a check pattern (lines) and cuts off the paper at a fixed distance.
3. After the printing operation is finished, measure the top, bottom, and right (HP) side margins using a ruler. Press the item select (Paper Feed) +/- buttons to enter each of these measurements in 0.1mm increments.
4. After entering the measurements, press the SelecType or Item button until "Bottom Length xx.xmm" appears, and then press the Enter button.



**Figure 5-35. Margin Adjustment Operation**



**Figure 5-36. Measuring Sections/Margin Adjustment Pattern**

Adjustment Item:

Top Distance P\_FRONT sensor position

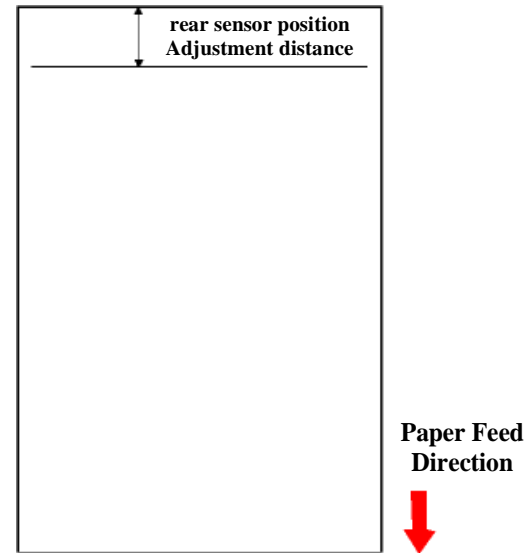
Bottom DistanceCutter position

Side Margin Print start position

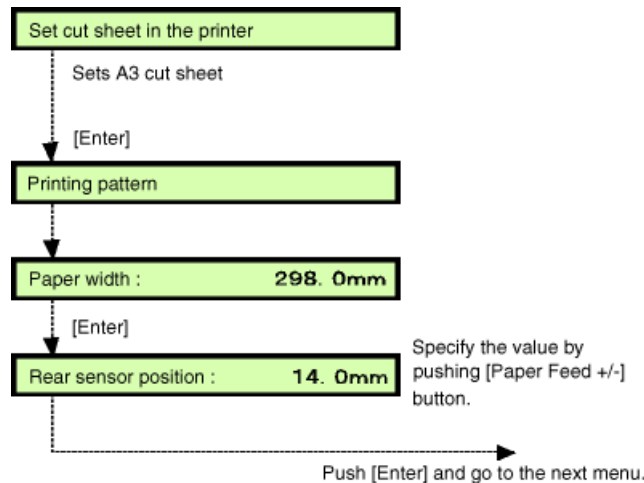
**ADJ REAR SENSOR POSITION**

This function makes sure the P REAR sensor correctly detects the rear edge of cut-sheet paper to allow the user to print with the largest possible printable area but without printing off the edge of the paper and marring future printouts. The printer prints an A3-size test pattern. Using a ruler, measure the distance from the rear edge of the pattern to the rear edge of the paper, and then enter this measurement when prompted. This value is stored in the printer’s firmware to be referenced against the printhead nozzle position.

1. Make sure "Adj Rear Sensor Pos." appears, and press the Enter button.
2. Load A3-size paper in portrait (short edge first) orientation when you see the "Please Set CutSheet" message. After the paper initializes, press the Enter button to print the check pattern.
3. After printing is finished, measure the distance from the rear edge of the printed pattern to the rear edge of the paper. Press the Enter button until you see "RearSen. Pos. xx.xmm", and then enter the measurement in increments of 0.1mm using the item select (Paper Feed) +/- buttons. After entering the measurement, press the Enter button.
4. After input, move to the next adjustment item using the “Enter” button.



**Figure 5-38. Rear Sensor Position Adjustment/Measurement**



**Figure 5-37. Rear Sensor Adjustment Operation**

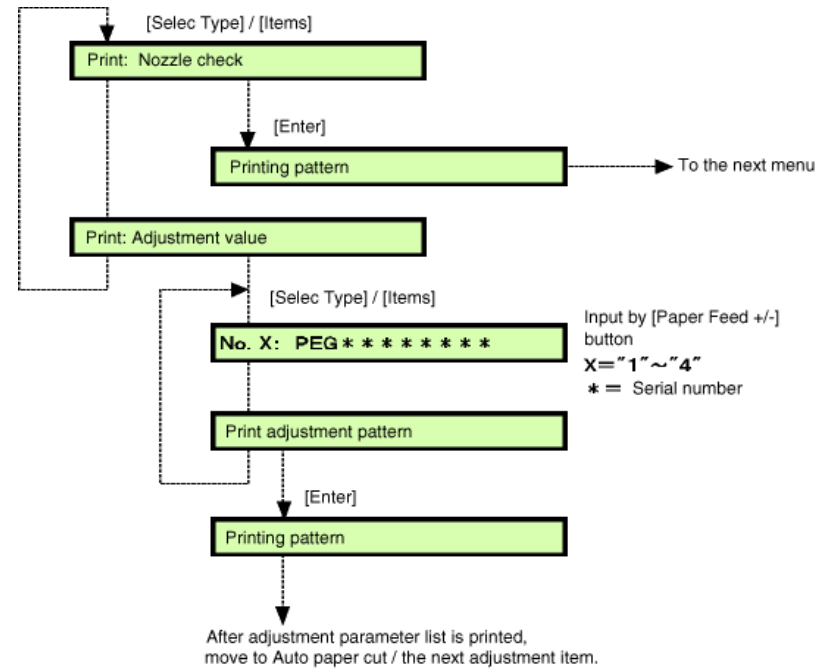
**TEST PATTERN PRINT**

This function prints a test pattern plus certain printer information/settings that you can refer to when performing printer adjustment procedures. For a list of the information that is printed, see the following table.

**Table 5-12. Printed Items in the Test Pattern**

Item	Description
Nozzle Check	Prints all of the check/test patterns that are available from the "Adjustment" menu.
Adjustment Variables	Prints a list of all the adjustable items from the "Adjustment" menu.

To print the list of variable items you need to enter the printer's serial number when prompted. The serial number is located on the back of the printer, next to the power connector.



**Figure 5-39. Test Pattern Printing Operation**



## CLEAN HEAD (DRAIN INK)

This function allows you to drain the ink from the ink delivery system including the printheads. Perform the Clean Head function before moving the printer.

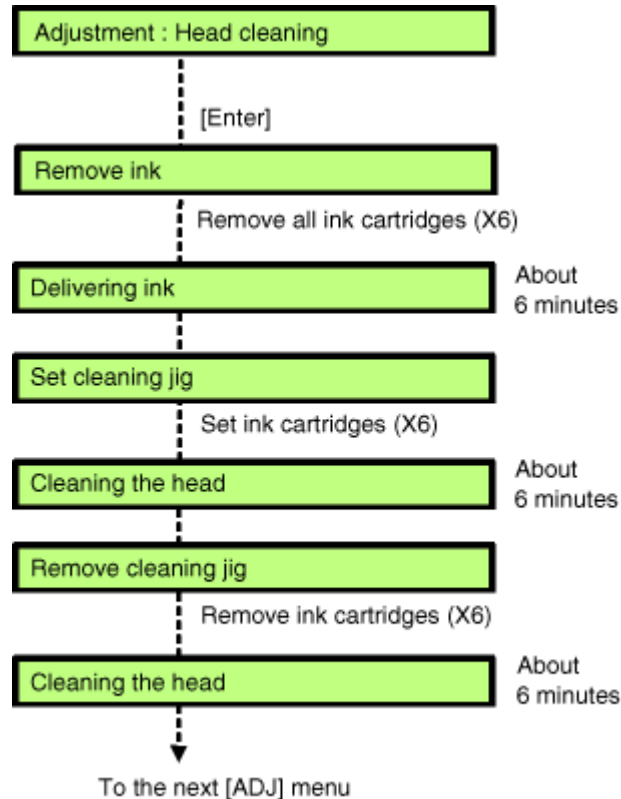


Figure 5-40. Ink Drain Operation

### CAUTION



- Print out the “Nozzle Check Pattern” in advance, then check the waste ink pad’s condition (remaining life [%]). If you judge that the remaining capacity is low, after cleaning is done, it should be replaced with a new one. The remaining capacity will drop by approximately 10% from this cleaning operation.
- For the “Cleaning tool”, be sure to use the cleaning fluid cartridge (x 6 cartridges) specified by EPSON.
- After discharging ink, at the point when the necessary operation is completed, be sure to carry out “Initial Filling.”

---

**COUNTER CLEAR**


---

This function resets (to the original condition) the following counters which are stored in memory on the Main Board.

**Table 5-13. Counters Reset by "Counter Clear"**

Counter	Reset Value
Protection Counter A/B	0
Ink Volume Counter Rb/ Ry/ Rx/Rz	0
Consumed Ink Counter Cb/ Cy/ Cm/ Cc/ Clm/ Clc	0
Power Cutoff Timer T2	0
Accumulated Prints Timer	0
CL Timer	0
CL Timer 3	0
CL Flag	0
Initial Charge Flag	1*
Periodic Pseudo-Vacuum Flag	0

Note \*: "1" means the flag is set, and the next time power is turned on the printer will perform an initial ink charge.

**CAUTION**


Before clearing the Waste Ink Counter or the Consumed Ink Counter, make sure you replace the following parts with new parts.

- Waste Ink Pads
- Flush Box
- Pump Assembly
- Cap Assembly
- Head Cleaner

The above parts are provided as [Maintenance Kit, SP-7500 1058463].

### 5.2.3.5 Cleaning Menu

Using this menu you can select a cleaning mode and initiate that cleaning operation. Also you can select whether or not the printer performs the initial-cleaning cycle as well as forcefully start the initial-cleaning cycle.

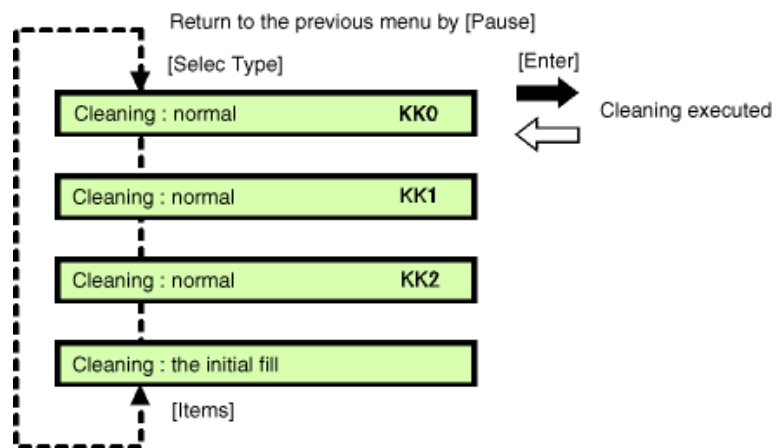


Figure 5-41. Cleaning Menu Options

- |  |                       |   |
|--|-----------------------|---|
| <input type="checkbox"/> Std. KK0 (CL1)  | Normal cleaning cycle | Volume of ink cleared = low                     |
| <input type="checkbox"/> Std. KK1 (CL1') | Strong cleaning cycle | Volume of ink cleared = medium<br>rubbing = off |
| <input type="checkbox"/> Std. KK2 (CL2)  | Strong cleaning cycle | Volume of ink cleared = high<br>rubbing = on    |
| <input type="checkbox"/> Init. Fill      |                       | Perform Initial charge sequence                 |

### 5.2.3.6 Print Menu

The Print menu performs the same test-printing functions as the "Test Print" option on the Adjustment menu. For details, see "Test Pattern Print" on page 208.

### 5.2.3.7 Parameter Menu

Using this menu you can reset or change the parameters for the printer mechanism controls.

#### CAUTION



- The parameters which are subject to change in this menu are common with the items subject to adjustment in the “Adjustments” menu and are set when those adjustments are made, so it is not necessary to update or initialize the adjustment parameters in this menu during servicing.
- The parameters which are subject to change in this menu are those parameters which can be uploaded and downloaded to and from a memory card by the method shown in “Parameter Backup” (see page 177).

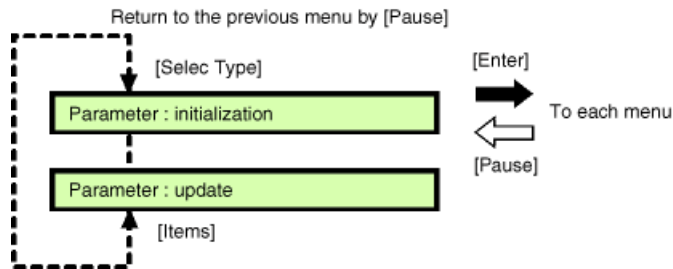


Figure 5-42. Parameter Menu Options

#### "INITIALIZE" ITEMS

The items you can reset (re-initialize) using this menu are described below.

- Capping Position (see “Adj Cap Position” on page 193)
- Paper Feed Distance (see “Feed Adjustment” on page 205)
- Serial No. (see “Test Pattern Print” on page 208 for more information)
- Maintenance Record (see Table 5-9, “Adjustment Menu Items,” on page 191)
- All (All the parameters in the above 4 items.)

#### "UPDATE" ITEMS

The items you can update are described below.

#### CHECK POINT

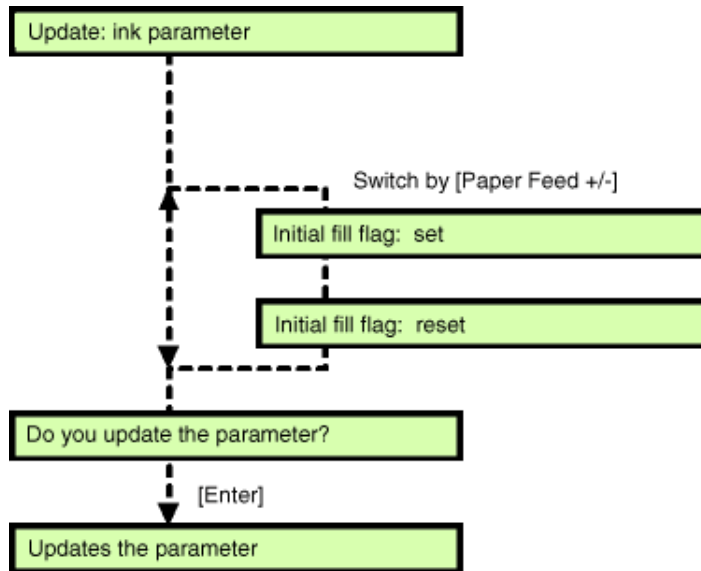


The parameters will update and be stored in the Flash memory on the Main Board the next time the printer is turned off.

- Capping Position (see “Adj Cap Position” on page 193)
- Head Rank voltage (see “Adj Input Rank” on page 195)
- Print Position Items (Bi-D Adjustment/Gap Adjustment)
- Paper Feed Distance (see “Feed Adjustment” on page 205)
- Mechanism Parameters (see the next page)

Ink Parameters

You can reset the Initial Ink Charge flag, causing the printer to perform the initial ink charge the next time the printer is turned on.



**Figure 5-43. Ink Parameter Update Operation**

Dot Shift Mode

This mode sets an offset for the adjustment value in Bi-D adjustment pattern No. 4. The initial setting is "Single Print."

**CAUTION**



If "Pair" is set based on the evaluation results, it will be judged that there is shifting of the adjustment results in the "Inter row corrections) in Bi-D No. 4, so the setting should absolutely not be changed in servicing.

If you change the setting, it will cause color irregularity (vertical direction), so adequate caution should be taken.

## 5.2.4 Maintenance Mode



The operation described here is a special function for the sake of service support and public disclosure to the end user is prohibited.

- Starting Method  
While pressing the following panel button, turn the power switch On to start the Maintenance Mode.
  - Pause button
- Operation Method:
  - (1) Pressing the Paper Source button once causes you to enter the setting item selection mode. At this time, the item at the top of the setting menu is displayed, with the display format as follows.  
[Setting Item] = [Current Setting Value] \*  
The "\*" at the end shows that the value is the current setting value.
  - (2) Each time the Paper Source button is pressed, the next setting item in the sequence is displayed in the format [Setting Item] = [Current Setting Value] \*, with the "\*" at the end showing that the value is the current setting value.
  - (3) With a setting item displayed, each time the Paper Feed + button or Paper Feed – button is pressed, the values that can be set are displayed in sequence with the format [Setting Item] = [Current Setting Value] \*. The "\*" at the end is displayed only when the displayed setting value is the current setting value.

If the Paper Feed – button is pressed, the items are displayed in reverse order. If you continue to press the Paper Feed + button or the Paper Feed – button a predetermined length of time, the setting values change in sequence at a predetermined interval, either in forward sequence or reverse sequence. If you continue to press the button, after a predetermined period of time, the display interval for the consecutive display values will be speeded up.

(4) If the "Enter" button is pressed, the currently set value is set as the current setting value and registered. Execution of the items accompanying this operation is also started. However, nothing happens in the case of those items with a "\*" displayed after them already.

(5) If the SelecType button is pressed while in the Setting Item selection mode, the printer returns to the maintenance mode display.

- End Method:
  - (1) to change the panel display language selection, carry out Reset after setting, then the printer will automatically change to the ready to print state.
  - (2) Turn the power OFF, then ON.
- The following Maintenance Mode Setting Item List will be displayed.

**Table 5-14. Maintenance Mode Setting Item List**

Item	Panel Display	Setting Value
HEX Dump Print	HEX DUMP	Print *1
Panel display language selection (for Domestic)	LANGUAGE	ENGLISH, FRENCH, ITALIAN, GERMAN, SPANISH, PORTUGUE
M/W Mode Setting	MW7	A/B

\*1: During HEX dump mode execution, the message "HEX MODE" is displayed.

---

## HEX DUMP

---

The HEX dump function is a function which prints out data transferred to the printer in hexadecimal form. 16 data items are displayed in HEX form on a single line and in addition, an ASCII character corresponding to those data is printed on the right side. If there are no characters which correspond to the data, a “.” (period) is printed for control codes, etc.

Printing of each 16 items of data is done, then finally, if the last 16 items of data remain, printing is done by pressing the Pause button.

Furthermore, the panel settings cannot be set while the printer is in the HEX dump mode.

By using this function, you can confirm whether or not the data sent from the host computer to the printer are correct.

To end this function, first stop printing by operating the Pause button, then turn the power switch off.

---

## PANEL DISPLAY LANGUAGE SELECTION

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By running this mode, the language displayed in the LCD screen can be select English, French, Italian, German, Spanish, Portuguese.

---

## M/W MODE SETTING

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The 720 x 720 dpi M/W operation mode can be selected from the following two choices.

- A: Operating mode that reduces banding in Bi-D printing.
- B: Stylus Pro 9000 / Stylus Pro 7000 720 dpi x 720 dpi interchangeable operating mode.

When you are using the Stylus Pro 7500 to print in the monochrome(black) mode at 720 x 720 dpi, if banding is prominent, by selecting this mode, there is a possibility that banding will be reduced.

## 5.2.5 Maintenance Mode 2



The operation described here is a special function for the sake of service support and public disclosure to the end user is prohibited.

- Starting Method  
While pressing the following panel buttons, turn the power switch On to start Maintenance Mode 2.
  - [Paper Source Button] + [Eject Button] + [Paper Feed – Button]

The top menu of this mode consists of the following items.

**Table 5-15. Maintenance Mode 2 Top Menu**

Item	Panel Display
Counter Display Menu	VIEW COUNTERS MENU
Counter Initialization Menu	CLEAR COUNTERS MENU
Adjustment, Setting Menu	SERVICE CONFIG MENU

- Operation Method:
  - (1) By pressing the SelecType button, the screen changes to the above item display.
  - (2) When the necessary item is displayed, press the Paper Source button once to enter the display menu for that item.
    - When the Counter Display Menu is displayed.  
Press the Paper Source button to switch display items.
    - When the Counter Initialization Selection menu is displayed.  
Press the Paper Source button to switch display items, then press the Enter button to carry out initialization of that item.
    - When the Adjustment Menu is selected.  
By pressing the Paper Source button, change the display items and display the necessary item. An asterisk is displayed at the end of the displayed setting value as shown below.

$$[\text{Setting Item}] = [\text{Current Setting Value}] *$$

The “\*” on the end shows that this is the current setting value.

With the setting item displayed, press the Paper Feed + button, or the Paper Feed – Button. Each time these buttons are pressed, the settable values are displayed one at a time in sequence with the format “[Setting Item] = [Setting Value] (\*).

The values are displayed in reverse sequence when the Paper Feed – Button is pressed. If you continue pressing the Paper Feed + Button or the Paper Feed – Button, the setting values will be displayed at predetermined intervals in forward or reverse sequence. If you continue to press these buttons, the values displayed will change continuously and will become faster.

If the Enter button is pressed, the setting value that is currently displayed will be set as the current setting value and registered. The items that accompany this operation will also be started. However, nothing happens if a “\*” is already displayed by the item.

(5) In the Setting Item selection mode, if the SelecType button is pressed, the printer returns to display of Maintenance Mode 2.

- End Method:
  - (1) Turn the printer OFF, then ON.



☐ Maintenance Mode 2 Counter Display Menu Item List

**Table 5-16. Maintenance Mode 2 Counter Display Menu**

Item	Panel Display	Setting Value
Remaining Ink (K) counter Value Display	INK K	0~42949672967295 (Decimal number)
Remaining Ink (C) counter Value Display	INK C	0~42949672967295 (Decimal number)
Remaining Ink (M) counter Value Display	INK M	0~42949672967295 (Decimal number)
Remaining Ink (LC) counter Value Display	INK LC	0~42949672967295 (Decimal number)
Remaining Ink (LM) counter Value Display	INK LM	0~42949672967295 (Decimal number)
Remaining Ink (Y) counter Value Display	INK Y	0~42949672967295 (Decimal number)
Cutter Service Life Counter Value Display	CUTTER	0~42949672967295 (Decimal number)
Total Printed Sheet Counter Value Display	TTL PAGES	0~42949672967295 (Decimal number)
Waste Ink Counter A Value Display	WAST. INK A	0~42949672967295 (Decimal number)
Waste Ink Counter B Value Display	WAST. INK B	0~42949672967295 (Decimal number)
CR Motor Service Life Counter Value Display	CR MOTER	0~42949672967295 (Decimal number)
PF Motor Service Life Counter Value Display	PF MOTER	0~42949672967295 (Decimal number)
Head Unit (K) Service Life Counter Value Display	HEAD K	0~42949672967295 (Decimal number)
Head Unit (C) Service Life Counter Value Display	HEAD C	0~42949672967295 (Decimal number)
Head Unit (M) Service Life Counter Value Display	HEAD M	0~42949672967295 (Decimal number)

**Table 5-16. Maintenance Mode 2 Counter Display Menu**

Item	Panel Display	Setting Value
Head Unit (LC) Service Life Counter Value Display	HEAD LC	0~42949672967295 (Decimal number)
Head Unit (LM) Service Life Counter Value Display	HEAD LM	0~42949672967295 (Decimal number)
Head Unit (Y) Service Life Counter Value Display	HEAD Y	0~42949672967295 (Decimal number)
Cleaning Unit Life Counter Value Display	CLEANER	0~42949672967295 (Decimal number)

☐ Counter Initialization Menu

**Table 5-17. Counter Initialization Menu**

Item	Panel Display	Setting Value
NVRAM / Timer / Service Life Counter / Mechanism Counter Initialization	INIT. ALL *1	EXEC.
NVRAM Initialization	NVRAM INIT *2	EXEC.
Timer Initialization	INIT *3	EXEC.
CR Motor Service Life Initialization	INIT. CR MTR *4	EXEC.
PF Motor Service Life Initialization	INIT. CR MTR *5	EXEC.
Head Unit Service Life Initialization	INIT. HEAD *6	EXEC.
Cleaning Unit Service Life Initialization	INIT. CLEANER *7	EXEC.
Total Printed Page count Initialization	INIT. TTL PR *8	EXEC.
Ink Level Initialization	INIT. INK *9	EXEC.
Waste Ink Capacity Initialization	INIT. WA. INK *10	EXEC.

\*1: By running this mode, the NVRAM, timer, service life counters and mechanism counters are initialized.

\*2: By running this mode, the NVRAM is initialized.

\*3: By running this mode, the timer setting value is initialized.

\*4: By running this mode, the CR motor service life counter is initialized.

\*5: By running this mode, the PF motor service life counter is initialized.

\*6: By running this mode, the head unit service life counter is initialized.

\*7: By running this mode, the cleaning unit service life counter is initialized.

\*8: By running this mode, the total number of printed sheets counter is initialized.

\*9: By running this mode, the ink level counter is initialized.

\*10: By running this mode, the waste ink capacity counter is initialized.

☐ Adjustment Setting Menu

**Table 5-18.**

Item	Panel Display	Setting Value
Bi-D Adjustment Pattern #3 Offset Setting (333cps/ Normal Dot)	BIE OFFSET *1	-4 ~ 0 ~ +4
MW2 Balance	MW7 Balance *2	-31 - 0 - *31

\*1: This sets the desired offset for reducing uneven printing (against the CR movement direction) with respect to the Bi-D adjustment value adjusted by the user. This mode is a function for reducing irregular color that occurs in the 720 dpi x 720 dpi and 1440 dpi x 720 dpi printing modes due to setting of the desired offset with respect to the adjustment values for Bi-D adjustment values (Bi-D adjustment pattern No. #3) for these printing modes. However, since there are cases where there is no effect even when the desired offset is set in this function, adequate caution should be exercised when changing the setting values

2 : This function is to improve the micro banding which may appear in the 720dpi x360 dpi, or 720dpi x 720dpi mode. Changing this setting value, the micro banding may be improved a little. However, since there are cases where there is no effect even when the desired offset is set in this function, adequate caution should be exercised when changing the setting values

## 5.2.6 Mechanism Adjustment

This section describes the mechanism adjustments you need to perform when replacing or removing certain parts. The parts and their corresponding adjustments are as follows.

**Table 5-19. Necessary Mechanism Adjustments**

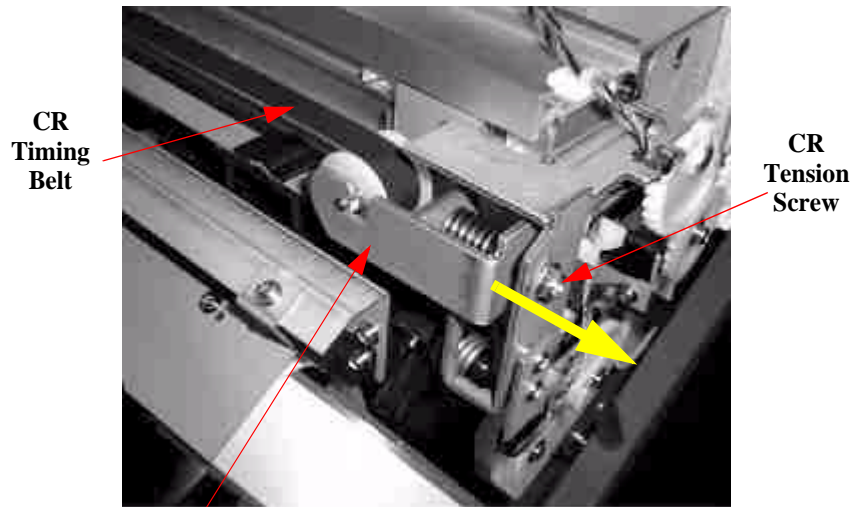
Parts	Adjustment	Necessary Tools	Refer to
CR Motor	CR Steel Belt Tension	Tension Gauge #F712 code: 1047744 Standard: 8,000g	page 220
PF Motor	PF Belt Tension	Tension Gauge code: B747700300 Standard: 4,000g	page 221
P THICK sensor	Self-diagnostic test - "Paper Thickness"	6/7mm schema gauge(s)	page 222
Cover Open sensor	Self diagnostic test - "Cover"	----	page 223
CR Encoder Sensor	CR encoder installation position adjustment.	Exclusive tool #F757 Code: 1059436	page 224
CR Encoder Scale	CR encoder scale installation position adjustment	Exclusive tool #F758 Code: 1059440	page 225
Cutter Solenoid	Cutter positioning adjustment	Exclusive tool #F763 Code: 1060656	page 226
PF Encoder Sensor	PF ENC installation position adjustment PF ENC installation position adjustment 2	Exclusive tool #F764 Code: 1060658 Exclusive tool #F765 Code: 1060657	page 230

### 5.2.6.1 CR Timing Belt Tension Adjustment

This adjustment is necessary for service operations that require you to remove/loosen the CR Motor or CR Steel Belt. When replacing or re-installing the CR Steel Belt, you need to confirm the tension of the CR Steel Belt. Tighten or loosen the screws on the Driven Pulley to increase or decrease the tension.

Standard: 8000g  $\pm$  10% (at the point where the CR Steel Belt contacts the CR Rail)

Adjustment: A tension scale is provided on the bottom of the CR tension bracket, so read the value when the tension is reduced by the tension gain here. After eliminating the tension gain, turn the CR tension shaft and match it to the scale reading which you read.



CR Tension Bracket

Hook the tension gauge here and pull directly to the right, parallel to the timing belt. Fix the screw at a tension of 8000g  $\pm$  10%.

Figure 5-44. CR Timing Belt Tension Adjustment

### 5.2.6.2 PF Timing Belt Tension Adjustment

This adjustment is necessary for service operations that require you to remove/loosen the PF Motor or PF Belt. When replacing or re-installing the PF Belt, you need to confirm the tension of the PF Belt.

Standard: 2,200g  $\pm$  10%  
(Tension in the PF motor mounting plate moving direction.)

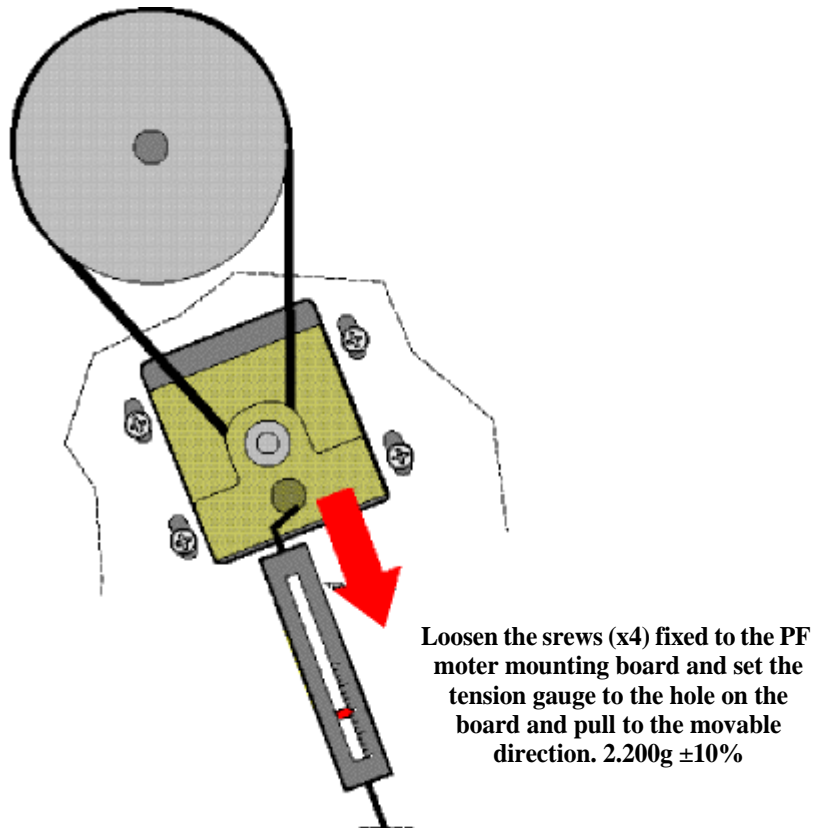


Figure 5-45. PF Belt Tension

### 5.2.6.3 P THICK Sensor Assembly Adjustment

When removing/replacing the P THICK sensor, verify the sensor operation using the Self-Diagnostic mode as described below.

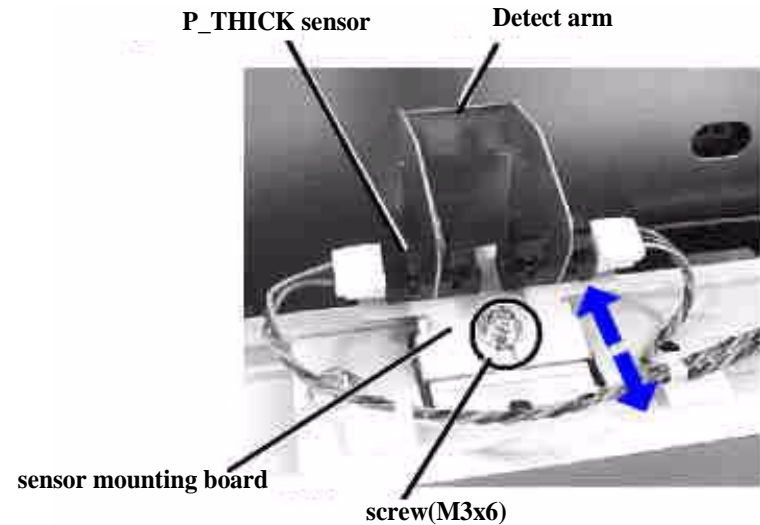
1. Remove the Top Cover as described in Chapter 4.
2. Press the following buttons and turn on the printer to enter the Self-Diagnostics mode.  
**[Paper Feed ↓] + [Cut/Eject] + [Cleaning]**
3. Press the SelecType or Item button until "Check: Test" appears in the LCD, then press the Enter button to select the Test menu.
4. Press the SelecType or Item button until "Test: Sensor" appears in the LCD, then press the Enter button to select the Test Item menu.
5. Press the SelecType or Item button until "Sen: Paper xxxx" appears.
6. Push back the Paper Set Lever to the "Release" position, and verify that "Sen: Paper Thick" appears in the LCD.
7. Insert a schema gauge (0.6mm/0.7mm) between the set of PF Grid Rollers and Driven Rollers nearest the HP. Return the Paper Set Lever to the "Set" position. The LCD message will vary according to the schema gauge as shown in the table below.

**Table 5-20. P THICK Sensor Operation Check**

Schema Gauge	LCD Message
0.7mm (thick paper)	Sen: Paper Wide
0.6mm (standard paper)	Sen: Paper Std

8. If the correct message does not appear or any other message appears, verify the P\_THICK sensor is installed correctly and check the operation again.

9. Turn the power switch Off, then after disconnecting the power cable, install the H top cover.



**Figure 5-46. P THICK Sensor Position Adjustment**

### 5.2.6.4 Cover Open Sensor Assembly

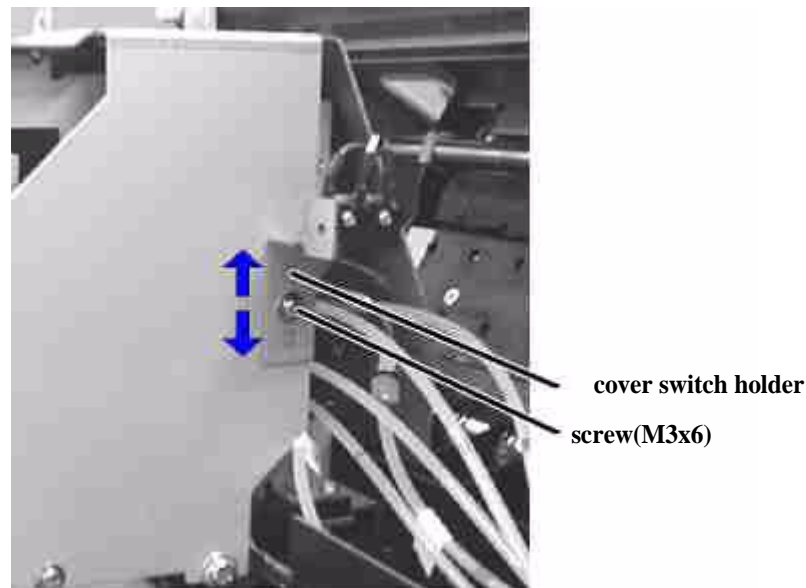
When removing/replacing the Cover Assembly or the Front Cover, verify the sensor operation using the Self-Diagnostic mode as described below.

1. Carry out "Removing the Tube Cover."
2. Press the following buttons and turn on the printer to enter the Self-Diagnostics mode.  
**[Paper Feed ↓] + [Cut/Eject] + [Cleaning]**
3. Press the SelecType or Item button until "Check: Test" appears in the LCD, then press the Enter button to select the Test menu.
4. Press the SelecType or Item button until "Test: Sensor" appears in the LCD, then press the Enter button to select the Test Item menu.
5. Press the SelecType or Item button until "Sen: Cover xxxx" appears.
6. Open and close the Front Cover, checking the LCD to make sure the message changes depending on the Front Cover position.

**Table 5-21. Cover Sensor Assembly Check**

Front Cover	LCD Message
Open	Sen: Cover Open
Closed	Sen: Cover Close

7. If the correct message does not appear or any other message appears, verify the Cover Sensor is installed correctly and check the operation again.



**Figure 5-47. Interlock Switch Mechanism**

### 5.2.6.5 Adjusting the CR Encoder Sensor Mounting Position

This adjustment should definitely be done when the CR encoder sensor is removed or replaced.

1. Take out the one screw holding the cutter solenoid assembly, shown in the figure below.
2. Fasten the CR encoder sensor to the cutter solenoid assembly simply with one installation screw.
3. Move the CR unit to the left edge of the printer, then set the exclusive tool #F757, between the CR encoder sensor and the CR guide rail.
4. Push the CR encoder sensor to the exclusive tool side (CR guide rail side), then tighten the CR encoder sensor installation screw securely.

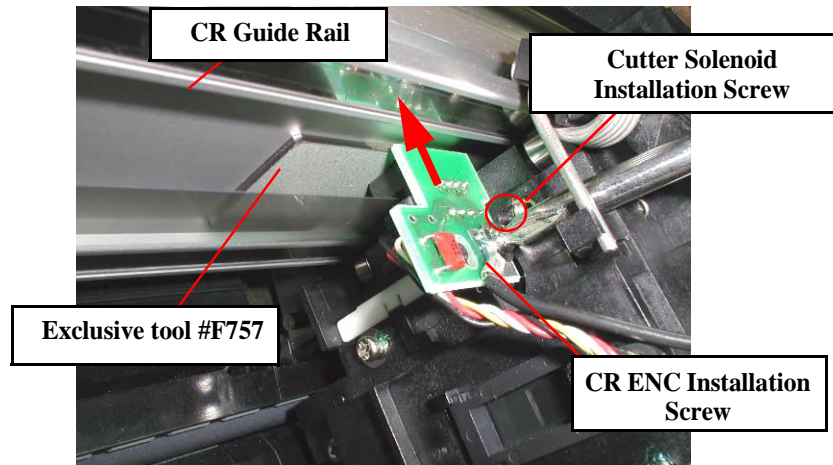


Figure 5-48. CR Encoder Sensor Installation Position Adjustment



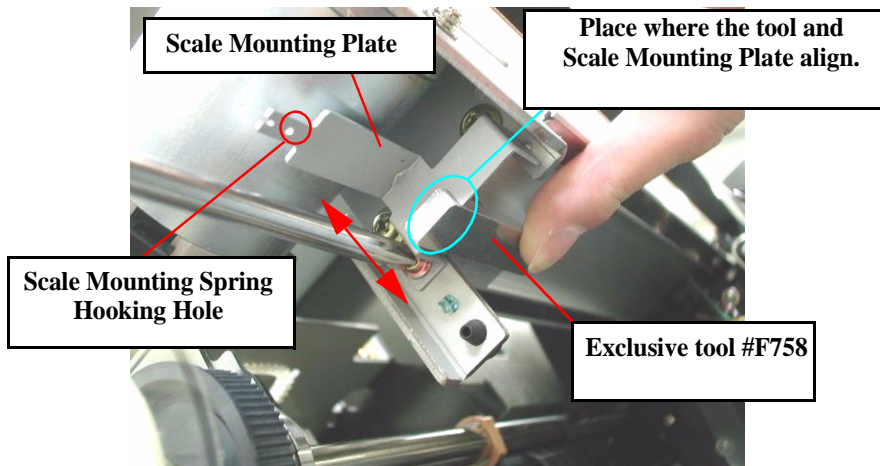
- If the cutter installation screw in the above figure is not taken out, tightening and loosening of the CR encoder sensor's installation screw cannot be done.
- The place where the tool is set can be anywhere, but it is easier to set it at the printer's left side.



### 5.2.6.6 CR Encoder Sensor Scale Installation Position Adjustment

This adjustment should definitely be done when the CR encoder sensor scale installation plate is removed.

1. Take the CR encoder scale installation spring from the scale installation plate's hooking hole.
2. Move the CR unit to the printer's left side, then set the tool on the left end of the CR guide rail as shown in the figure below, then push the tool to the CR guide rail and support it in that position.
3. Loosen the one scale mounting plate installation screw and align the notch in the scale installation screw with the front end of the tool, then tighten the scale mounting plate installation screw.



**Figure 5-49. Adjusting the CR Encoder Scale Installation Position**

4. Hook the right end of the mounting spring to the CR encoder sensor scale, then hook the left end of the scale mounting spring in the scale mounting plate spring hooking hole and set it securely.

### 5.2.6.7 Cutter Positioning Adjustment

This adjustment should definitely be made if the following parts are removed.

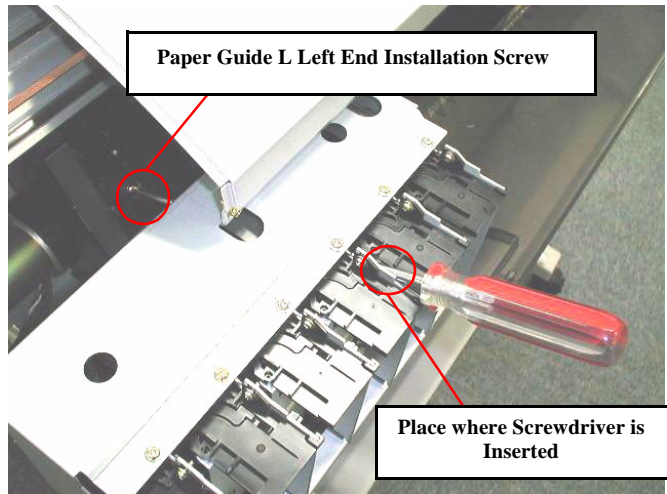
- Cutter Solenoid Assembly
- Paper Guide L

This adjustment adjusts the cutter position with respect to the level difference for the cutter in the paper guide L, so that it is installed in a position with the proper height.

**CHECK  
POINT**



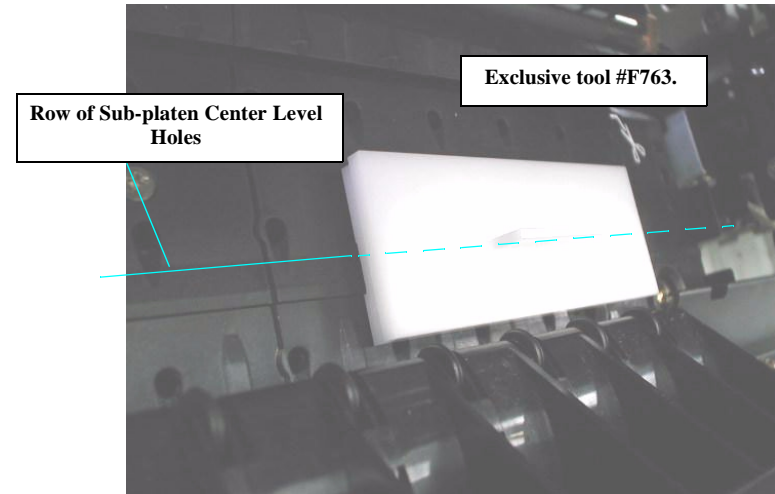
Before performing this adjustment, the I/H cover should be removed. When adjusting the paper guide L's installation position, if the I/H cover is assembled on the printer, the installation screw at the paper guide L's left end cannot be loosened or tightened. When performing this operation, insert a screwdriver in the place in the I/H holder assembly shown in the figure below and tighten the screw.



**Figure 5-50. Place where Paper Guide L Installation Screw is Removed**

- Before performing this adjustment, the cutter should be removed from the cutter holder.

1. Insert the exclusive tool #F763 in the roll of holes in the center level of the sub-platen on the right end of the paper guide L, with its insertion shaft as shown in the figure below.



**Figure 5-51. tool #F763 Setting Position**

**NOTE:** The exclusive tool, #F759 for the Stylus Pro 9000 and Stylus Pro 9500 should not be used.

2. Loosen the two CR cover installation screws, then remove the CR cover.
3. Move the CR unit so that it passes the notch in the cutter solenoid assembly to the plate on the tool. At this time, if the notch in the cutter solenoid will not make contact with the plate on the tool.
  - Loosen the three screws holding the paper guide L and gradually shift it so that the plate on the tool moves to the position where it passes through the notch in the cutter solenoid.
  - Also, loosen the 3 installation screws in the cutter solenoid assembly and adjust the height of the cutter solenoid assembly.

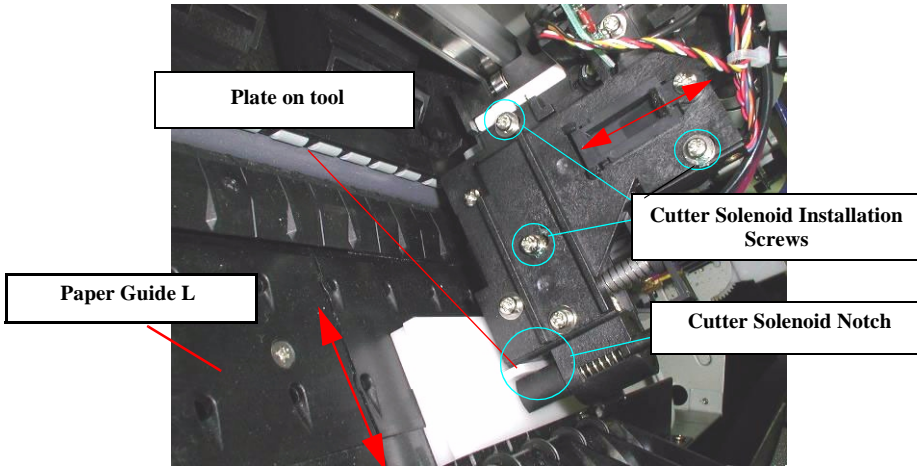


Figure 5-52. Moving the CR Unit

4. At the position where the top of the cutter holder and the bottom side of the plate on the tool touch each other, fasten the paper guide L with the three installation screws.
5. Loosen the three cutter solenoid installation screws, then push the cutter holder until its front end reaches the tool, then tighten the 3 installation screws. See Fig. 5-52 for the positions of the installation screws.

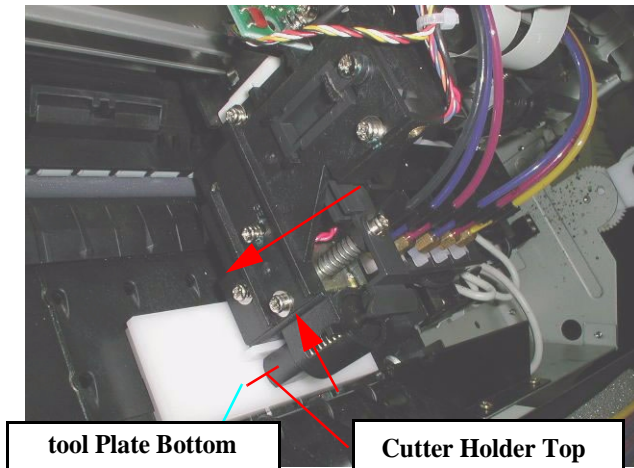


Figure 5-53. Adjustment 1

6. Set the exclusive tool #F763 in the row of holes to the left in the center level of the paper guide L's sub-platen, then adjust in the same way as in Steps 3 ~ 5 above, then confirm the results.

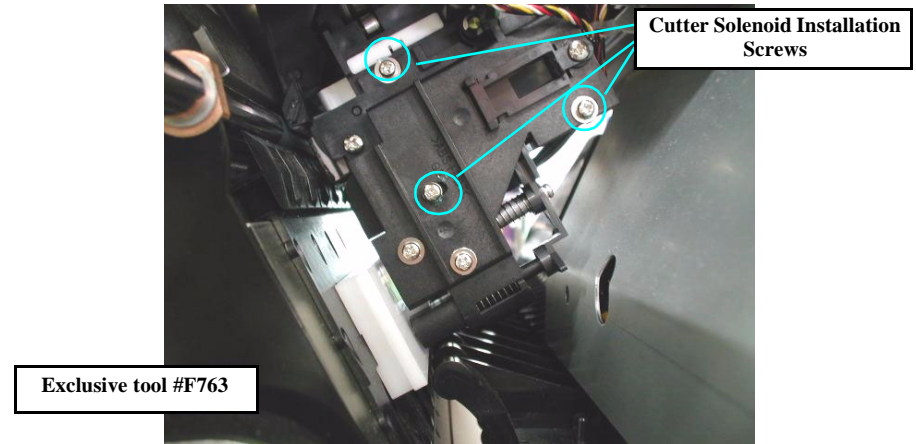


Figure 5-54. Adjustment 2

### 5.2.6.8 Paper Cutting Position Check

This check operation checks the results of the following adjustment which determines the paper cutting position, which was carried out previously, by actually cutting paper.

#### ■ Cutter Positioning Adjustment

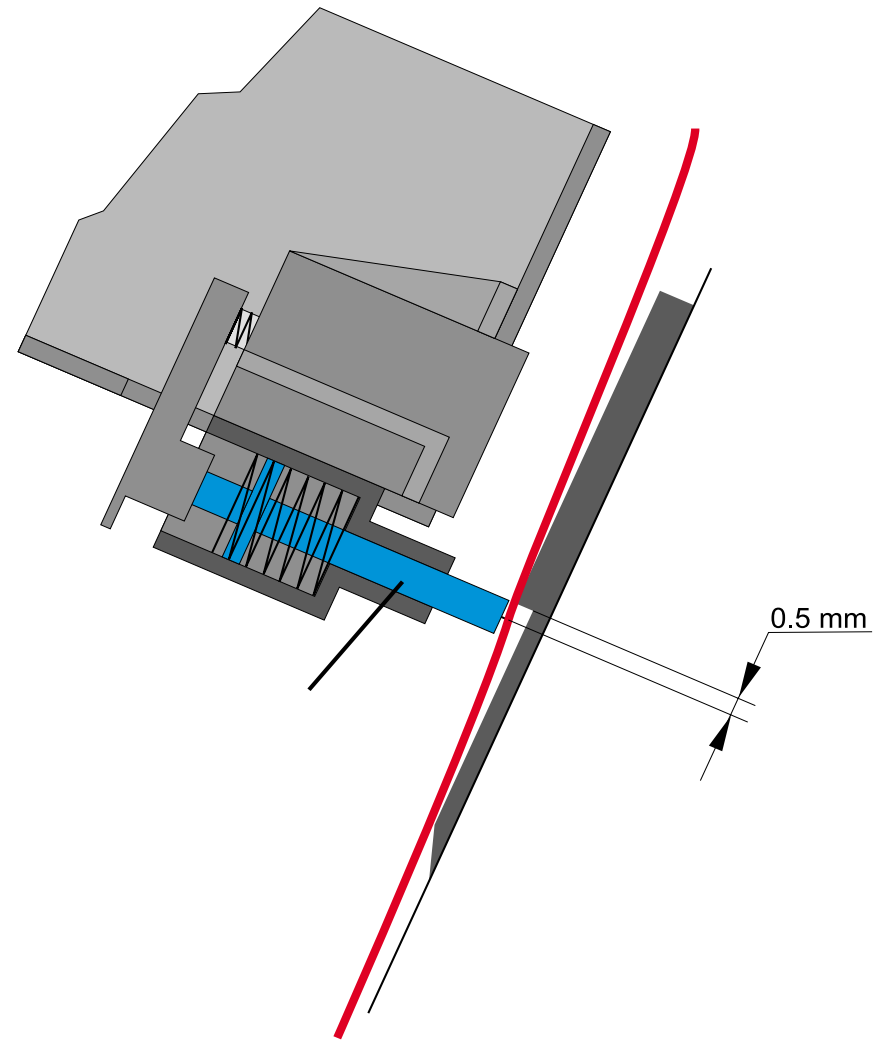
1. Set paper (minimum size: 10 cm wide x 20 cm) in the paper path along the paper setting position on the right side of the printer, then move the paper set lever back and set the paper.
2. Move the CR manually to the right edge of the paper, then lower the cutter manually.
3. While holding the bottom edge of the paper with one hand, cut the paper with the cutter.
4. set a gauge with minimum measuring units of 0.5 mm at the edge of the cutter level difference on the sub-platen and check if the distance from the edge of the cutter level difference to the actual paper cutting position is within  $0.5 \text{ mm} \pm 0.2 \text{ mm}$ .
5. If the measuring results are outside the standard, loosen the 3 screws holding the paper guide L, then carry out fine adjustment of the paper guide L's assembly position.



■ **The length from the edge of the cutter level difference to the front edge of the paper where it was actually cut should be within  $0.5 \text{ mm} \pm 0.2 \text{ mm}$ .**

■ **If you are adjusting the assembly position of the paper guide L, the installation screws that are loosened should be the absolute minimum number of screws necessary to adjust the position. If a large number of screws is loosened, the assembly position of the paper guide L will shift a great distance from the original adjustment position, so caution should be exercised.**

6. In the same way, set paper on the left side of the printer, cut the paper manually and measure the length from the cutter level difference to the front edge of the paper. If the measurement results are not within the standard, loosen about 3 of the screws holding the paper guide L and carry out fine adjustment of the paper guide L's assembly position.



### 5.2.6.9 PF Encoder Sensor Installation Position Adjustment

This adjustment is performed to set the distance between the PF roller shaft (grid roller) and PF encoder sensor in the proper position. Through this adjustment, the position of the PF encoder sensor's emitter and receptor are set properly with respect to the slits in the loop scale for the PF motor.

1. Loosen the 2 PF encoder sensor installation screws, then set the tool, #F764 on the round hole side of the PF roller shaft, fitting the notched end against the PF encoder sensor's emitter (outside).
2. Move the PF encoder sensor up and down so that it is in a position where the clearance between the outside part of the PF encoder sensor and the notch in the tool, #F764 becomes uniform, then tighten the 2 PF encoder sensor installation screws.

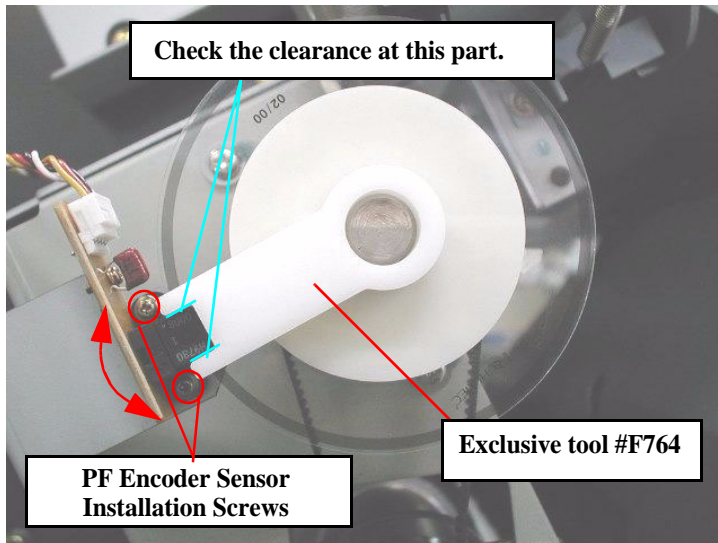


Figure 5-55. PF Encoder Sensor Installation Position Adjustment

### 5.2.6.10 PF Encoder Sensor Installation Position Adjustment 2

This adjustment shifts and adjusts the PF encoder sensor on each installation frame so that the loop scale on the PF roller shaft is positioned virtually in the center between the PF encoder sensor's receptor and emitter. Through this adjustment, it becomes possible to read the slits on the loop scale more accurately.

1. Loosen the 2 PF encoder assembly installation frame installation screws, then set the tool #F765 in the PF encoder sensor's emitter side (outside) position.

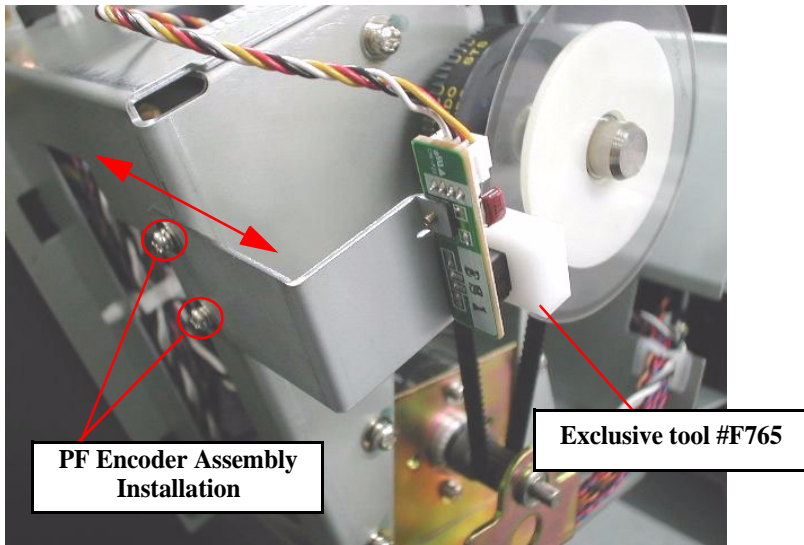


Figure 5-56. PF Encoder Sensor Installation Position Adjustment 2

2. Turn the PF roller one time by hand (use the reduction belt), then check if loop scale is touching the front end of the tool, #F765. If it is found to be touching, shift the PF encoder sensor installation frame gradually toward the printer's outside to a position where the loop scale does not touch it in even a full rotation, then tighten the 2 PF encoder sensor installation frame installation screws.

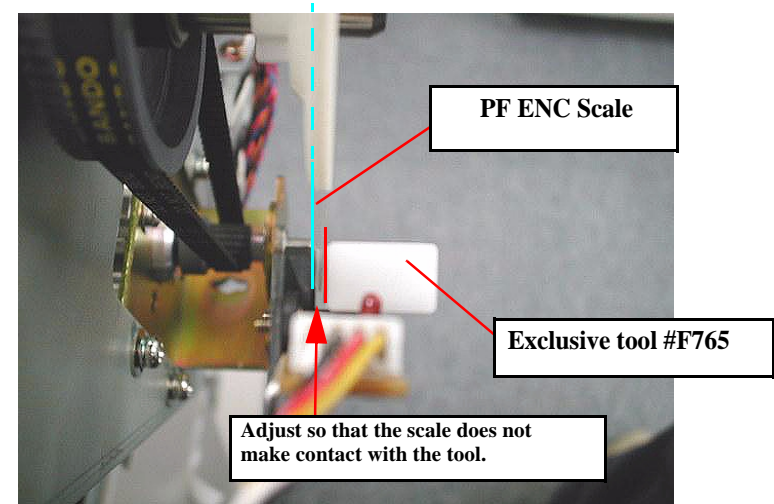


Figure 5-57. Check Points



Due to sensor characteristics, the reading accuracy of the sensor has a tendency to drop if the scale makes contact with the sensor's emitter side (outside).

## 5.2.7 Writing the USB-ID

The inherent USB-ID \*1 for each printer is recorded in the NVRAM (EEPROM) on this printer's C299MAIN board. Just as in the Stylus Pro 7500, where the serial No. is different for every machine, so the USB-ID is different for each printer.

**NOTE:** *USB-ID: NE101XXXXXXXXXXXX0 (The X represents the desired character string, 0 ~ 9, A ~ Z) has a total of 18 digits. This ID is set so that the USB ID will not overlap, even in cases where multiple Stylus Pro 7500's are connected to the same PC.*

In after service, this must be implemented when replacing the C299MAIN board with a new board.

Furthermore, making a copy of this ID or writing it is done with a PC on which an exclusive "Stylus Pro 7500 After Service Adjustment Program" (OS: MS-DOS or Windows 95) installed, and with the printer connected to the parallel (compatible) interface.

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### REQUIRED MATERIALS

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- Stylus Pro 7500 After Service Adjustment Program
- PC with a Windows 95/98 environment, parallel interface cable

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### OPERATING ENVIRONMENT AND PRELIMINARY PREPARATIONS

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1. Click Set.exe in Program Disk 1 and install the program.
2. Install Disk 2 in accordance with the procedure instructed on the display.



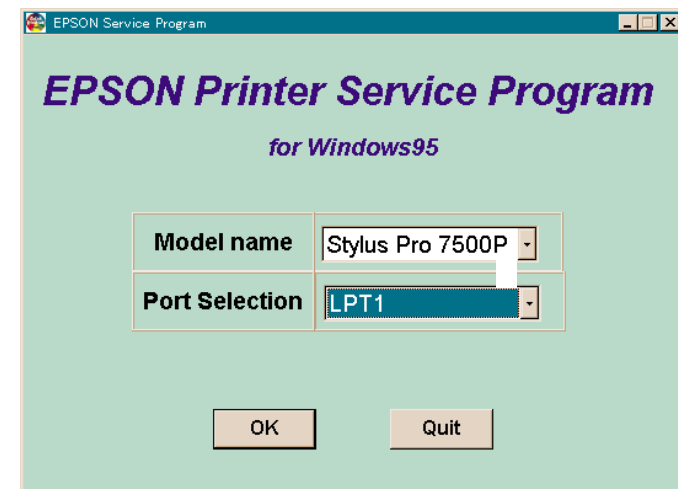
**In this adjustment program, there is no function for reading the USB ID from the old C299MAIN board and copying it to the new C299MAIN board. It only supports the generation of a new USB ID and a function to write it to the new board, and a function to check the current USB ID.**

---

### WRITING THE USB ID

---

1. Carry out the procedure for "Replacing the C299MAIN board" in 4.2.2.3, then make the accompanying adjustments in Table 5-2, "Repair Items and Necessary Adjustment Items" in 5.1.3, "Adjustments."
2. Turn on the printer's Power switch, then check the following 2 points.
  - Check if the printer is in the ready state.
  - Check if the parallel interface cable is connected between the PC and the printer.
3. Start the Stylus Pro 7500 adjustment program, then select the model name and the name of the port used and click the OK button.



**Figure 5-58. Selecting the Model Name and Connection Port**

4. Select Input USB ID in the main menu, the screen appears as shown below.

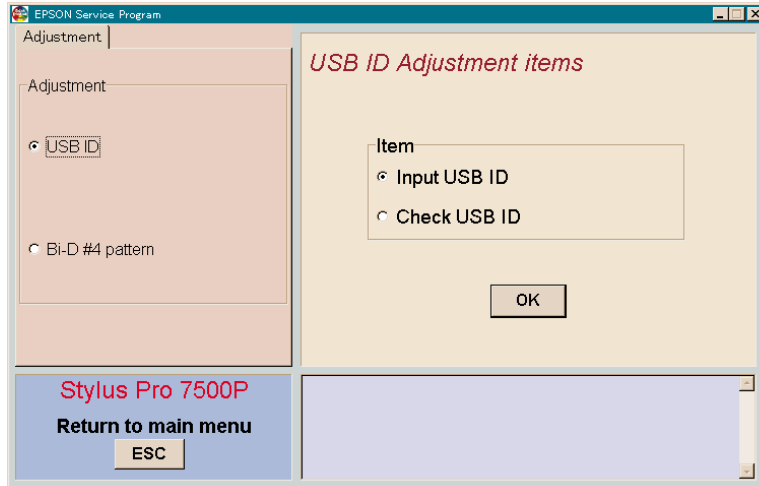


Figure 5-59. USB ID Input Screen 1

5. Select Input USB ID in the selection item menu, then click the OK button.

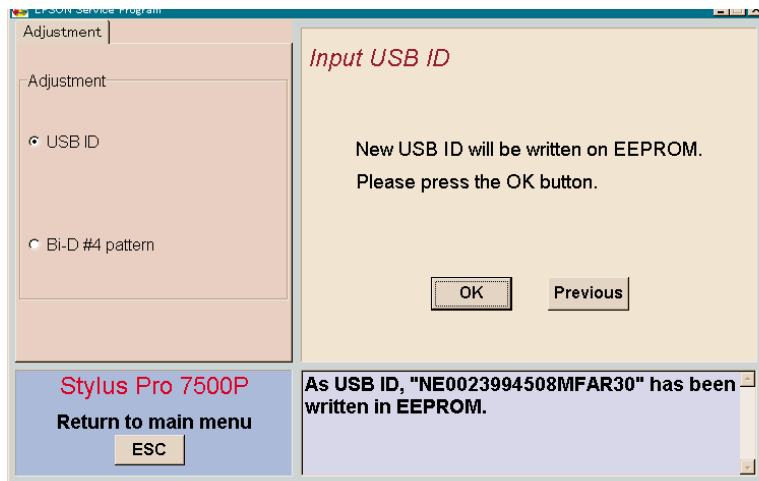


Figure 5-60. USB ID Input Screen 2

6. Clicking the OK button in the following confirmation screen causes an 18-digit USB ID to be generated.



- Each time the OK button is clicked in Step 6, a new USB ID is generated.
- Writing of the generated USB ID to the EEPROM is accomplished by a hardware reset when closing the program.

7. Click the ESC button and end the program.



## 5.2.8 Bi-D #4 Adjustment Check Pattern

This function Carries out printing of a pattern to check the results of adjustments to Bi-D adjustment pattern No. 4, carried out via the printer's control panel.

### REQUIRED MATERIALS

- Stylus Pro 7500 Service Adjustment Program
- PC with a Windows 95/98 environment, parallel interface cable

### OPERATING ENVIRONMENT AND PRELIMINARY PREPARATIONS

1. Click Set.exe in Program Disk 1 and install the program.
2. Install Disk 2 in accordance with the procedure instructed on the display.

### BI-D #4 ADJUSTMENT CHECK PATTERN

1. Turn on the printer's power switch and check the following 3 points.
  - Check if the printer is in the print ready state.
  - Check if the parallel interface cable is connected between the PC and the printer.
  - MC thick mat paper should be set in the printer.
2. start the MC-7500 adjustment program, select the model name and the name of the port used, then click the OK button.

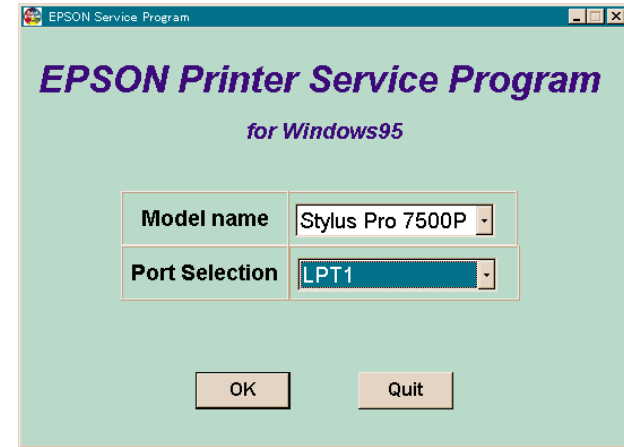


Figure 5-61. Selecting the Model Name and Connection Port

3. If "Bi-D #4 Adjustment Check Pattern" is selected in the main menu, the following screen is displayed.

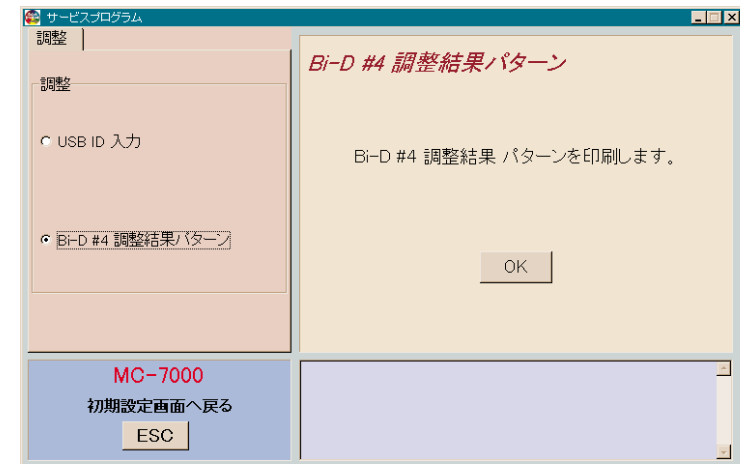


Figure 5-62. Bi-D #4 Adjustment Check Pattern

4. If you click the OK button, the Bi-D #4 adjustment check pattern is printed.

5. The middle pattern out of the total of 9 patterns printed out in each color (the fifth pattern from the left and from the right) shows the current adjustment value, so judge if the adjustment results are appropriate or not by this pattern. (See page 200)

**CHAPTER**

**6**

**MAINTENANCE**

## 6.1 General Maintenance Issues

This section explains necessary maintenance items and their details for this product. Basically for this product, service technicians are required to visit the user's location where the EPSON Stylus Pro 7500 is used, and perform necessary maintenance/service on-site while following the precautions below. Service technicians have to be extra careful not to cause any accident to the product or the user's environment.



- **Since the power switch is mounted on the secondary circuit of the power supply circuit, unless otherwise specified, always turn off the printer using the power switch. After all moving parts have stopped, wait several seconds and then disconnect the power cable from the AC plug socket to prevent electric shock or circuit damage during service operations.**
- **The cover open sensor for detecting the open/close condition of the front cover has an interlock switch that functions as a safety device. Therefore, it is prohibited to turn off this switch.**
- **A lithium battery is installed on the MAIN Board of this printer. Be sure to observe the following instructions when servicing the battery:**
  - Keep the battery away from any metal.
  - Do not install the battery in the wrong direction. (This may cause burning or explosion.)
  - Do not heat the battery or put it near fire.
  - Do not set the C299MAIN board directly on top of any object which is conductive.
- **Be careful not to let ink get into your eyes or your skin. If ink gets in your eye, rinse them immediately with water.**



- **When performing service and maintenance operations, sufficient space should be assured surrounding the place where the work is performed.**
- **The printer should be set in a place where there is no vibration, and where it is level and stable.**
- **This machine is extremely heavy (the body only weighs approximately 43.5 kg / The body + the stand weighs approximately 52 kg), so adequate caution should be exercised when handling it. (If you are taking or reinstalling the body and stand, there should be 2 or more persons doing the work.)**
- **If operations are performed which involve the removal of ink system parts, there is danger of the product or the floor, etc. in the place where it is installed becoming soiled, so sheets, etc. should be spread on the floor, etc. during the work of removing parts related to the ink channels.**
- **If you are handling electrical circuit boards, to prevent destruction of the elements by static electricity, the elements on the board should not be touched with bare hands. If necessary, take the necessary measures to prevent static discharge, such as wearing a ground strap, when performing such work.**
- **If you are removing the various covers and operating the printer in that state, adequate caution should be used so as not to be injured by high speed operating parts such as the PS fan.**
- **The cutter blade is extremely sharp, care should be taken not to be injured by it.**
- **The an ultra-hardened blade is used for the cutter blade, and materially, this item is extremely brittle, so it should not be bumped against any metal or other parts on the printer when handled.**
- **If the printer needs to be transported for any reason, refer to Chapter 9 of the *Users Guide* to put the printer into printer-transport mode. Also, only use original packing materials and pack the printer as shown in the *Start-Up Guide* or *Assembly and Setup Guide*.**

## 6.1.1 Periodic Maintenance Items

The printer uses sensors and counters to determine when consumable items need to be replaced. When a consumable part has reached its predetermined end-of-life according to the corresponding counter, a message appears. See the table below for parts which require periodic replacement.

**Table 6-1. Parts That Require Periodic Replacement**

Items	LCD Message	Description
Waste Ink Pads (Maintenance Kit SP7500, #1058463)	“Maintenance Call 0100” or “Service Call 00000100”	<p>Solution</p> <p>Replace the following parts with the parts in the Maintenance Kit;</p> <ul style="list-style-type: none"> <li>• Waste Ink Pads</li> <li>• Pump Assembly</li> <li>• Cap Assembly</li> <li>• Flushing Box</li> <li>• Cleaner, Head</li> </ul> <p>Required Adjustment</p> <ul style="list-style-type: none"> <li>• Waste Ink Counter Clear (See “Counter Clear” on page 210.)</li> </ul>
Ink Tubes	“Service Call 00000101”	<p>Solution</p> <ul style="list-style-type: none"> <li>• Check the ink tube (The printer indicates this error when the carriage has made a predetermined number of passes; this indicates the ink tubes should be replaced before they wear out, causing air to enter the ink tube or ink to leak.)</li> </ul>

**CAUTION**



When replacing the waste ink pads, replace the pads in the waste ink tank and not the whole tank. Put the old pads in a plastic bag and throw away the used ink pads according to the laws and rules in your area.

## 6.1.2 Product Life Information

The table below shows the product life about the printer body, each mechanism and various parts. Information regarding to the product life can be checked by the following way.

Panel Setting: “Printer Status Menu”

The amount of ink remaining is indicated on the LCD. (“F\*\*\*\*\*E” - F = full, E = empty, and each asterisk \* represents a percentage of the total ink.)

Also, the counters which record these values can be initialized by “Maintenance Mode 2”.



**Do not perform the counter initialization without replacing the corresponding parts and checking their operation. Since the counters for “Waste Ink Life” and “Ink Remaining Quantity” influence printer operations, do not clear them unnecessarily.**

Self-Diagnostic Function: from the “Test” menu select “Check: Maintenance”

**Table 6-2. Product Life Information**

Items	Setting value	Notes	Result = Error
Printer	20,000 pages	A1 paper	No
Printheads	2 billion dots	Each nozzle	No
Waste Ink Pads	Right head: 84779 points Left head: 56519 points	1 point = 0.02ml	Yes
CR Motor	7,500,000 passes	1 pass =1 round trip *Ink tube life is monitored based on this counter value.	Yes
PF Motor	23,000 meters	Paper feed distance	No
Cutter	2,000 operations	1 operation = cut one page	No

### 6.1.3 Important Maintenance Items During Service Operations

Check the following items during printer maintenance/service and perform any necessary operations.

**Table 6-3. Items to be Checked During Maintenance/Service**

Items	Check Points	Remedy
Lower Paper Guide and the surface of the Subplaten	Make sure no paper, dust, or foreign objects are attached or have accumulated.	Cleaning (If there is an ink stain, wipe with dry, clean cloth after cleaning the ink stain with damp cloth.)
Timing Fence (Slitted plate for CR encoder detection.)	Is there any accumulation or adhesion of paper dust or foreign matter?	Clean If there is any damage, replace the part.
Rail on the CR guide frame	Make sure there are no foreign objects attached.	Cleaning
P_REAR sensor and P_FRONT sensor surface	Make sure no paper, dust, or foreign objects are attached or have accumulated.	Cleaning

## 6.2 Lubrication and Glue

In this printer, as necessary, the lubricants specified below should be used for oiling and adhesion during disassembly and assembly operations.

**Table 6-4. Grease and Glue Application**

Type	Name	Amount	Company	Part #	Location
Grease	Super-Multi Oil #32	n/a		n/a	Carriage rail bearings
	G-26 (Molicoat EM-60L)	40g (n/a)	EPSON (Dow Corning Asia)	B702600001	Other parts on mechanism
Glue	Screw lock	1,000g	EPSON	B730200200	Screw lock (blue)

**CAUTION**



**Do not apply any other oils, lubricants, or glues than those described in this manual; otherwise printer parts may be damaged or their useful life may be shortened.**



**CHAPTER**

**7**

**APPENDIX**

## 7.1 Wiring Diagrams

The following illustration shows the connection between the printer mechanism and the electrical circuits.

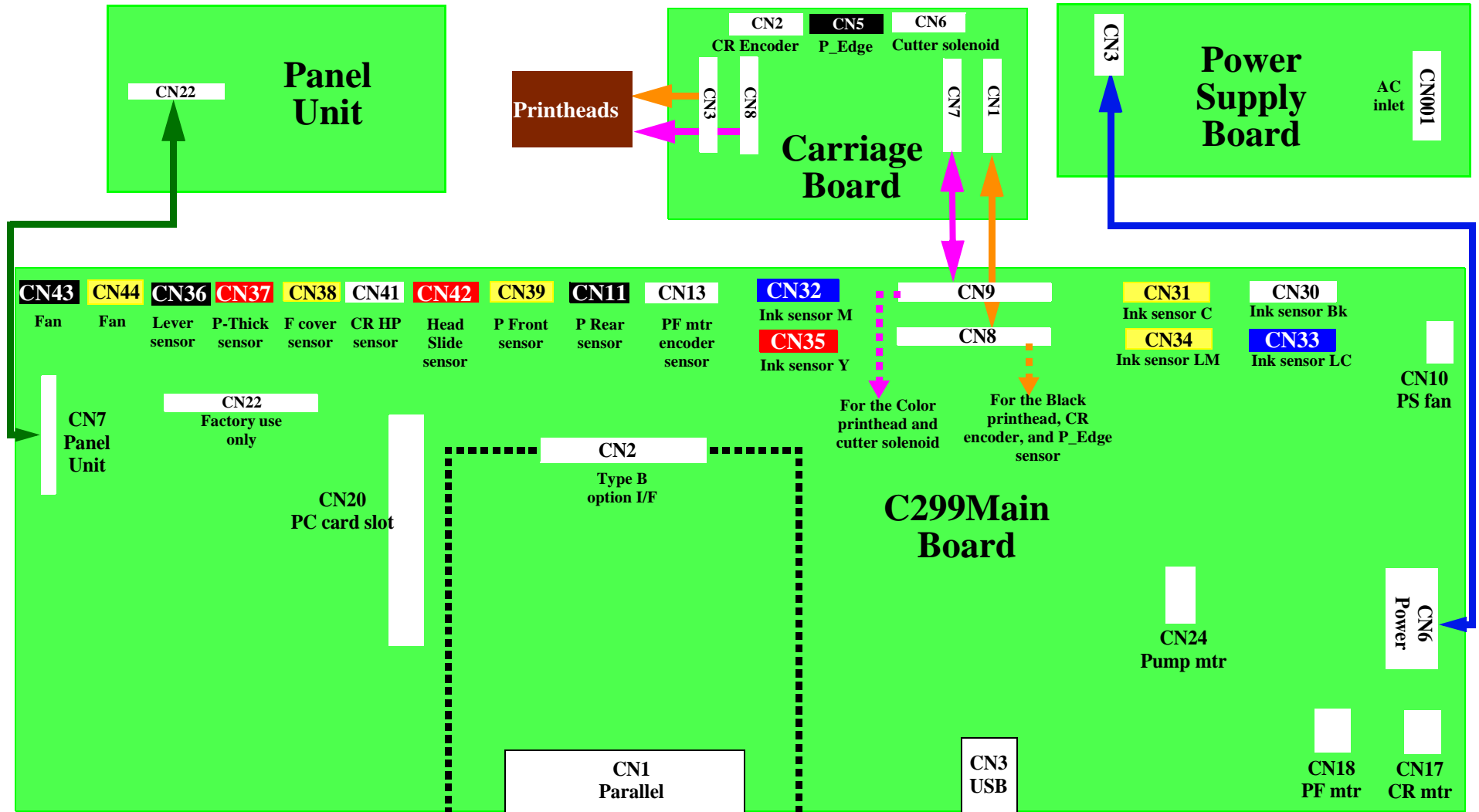


Figure 7-1. EPSON Stylus Pro 7500 Wiring Diagram

**Table 7-1. Electrical Circuit Connector List**

Board	Connector	Description
C299Main Board	CN1	Parallel Interface
	CN2	Type-B Option Card Connector
	CN3	USB Interface
	CN6	From and to the Power Supply Unit
	CN7	To and from the Control Panel
	CN8	For the black printhead, CR Encoder sensor, and P_Edge (width) sensor
	CN9	For the color printhead and cutter solenoid
	CN10	Power supply fan
	CN11	P_REAR Sensor
	CN13	PF motor encoder sensor
	CN17	CR Motor
	CN18	PF Motor
	CN20	PC Card Slot
	CN22	Factory use only
	CN24	Pump motor
	CN30	Ink sensor black
	CN31	Ink sensor cyan
	CN32	Ink sensor magenta
	CN33	Ink sensor light cyan
	CN34	Ink sensor light magenta
CN35	Ink sensor yellow	
CN36	Lever sensor	
CN37	P_Thick sensor	

**Table 7-1. Electrical Circuit Connector List (cont.)**

Board	Connector	Description
C299Main Board (continued)	CN38	Front cover sensor
	CN39	P_Front sensor
	CN41	CR HP sensor
	CN42	Head slide (PG) sensor
	CN43	Paper Suction Fan
	CN44	Paper Suction Fan
Panel Unit Board	CN22	From and to C299MAIN Board/CN7
Carriage Board	CN1	From and to C299MAIN Board/CN8:WHT
	CN2	CR Encoder sensor
	CN3	To light-color printhead
	CN5	P_Edge Sensor
	CN6	Cutter Solenoid
	CN7	To and from Main Board/CN9 BLE
	CN8	To dark-color printhead
	Power Supply Board	CN001
CN3		To Main Board

## 7.2 Parts List

**Table 7-2. Stylus PRO 7500 Parts List**

Block Name	Ref No.	Sales Part Code	Description
CASE BLOCK	170	1057545	LABEL,CAUTION,TRANSPORT;B
CASE BLOCK	172	1054150	LABEL,CUT PAPER SET AUTO;B
CASE BLOCK	173	1054151	LABEL,CUT PAPER SET MANUAL;B
CASE BLOCK	174	1054152	LABEL,ROLL PAPER SET,2;B
CASE BLOCK	175	1054153	LABEL,CUTTER CHANGE1;B
CASE BLOCK	176	1054154	LABEL,ROLL PAPER CHANGE;B
CASE BLOCK	177	1054155	LABEL,TRANSPORT;B
CASE BLOCK	178	1057549	LABEL,CUTTER CHANGE 2
CASE BLOCK	179	1057551	LABEL,CAUTION,CUTTER
CASE BLOCK	180	1054158	LABEL,CAUTION,FRONT COVER;B
CASE BLOCK	181	1057553	LABEL,PAPER LEVER SET UP
CASE BLOCK	182	1057555	LABEL,HAND POSITION,RIGHT
CASE BLOCK	183	1057557	LABEL,HAND POSITION,LEFE
CASE BLOCK	184	1052290	LABEL,CUT POSITION
CASE BLOCK	185	1057559	LABEL,INK MODEL NUMBER,BK
CASE BLOCK	186	1057560	LABEL,INK MODEL NUMBER,C
CASE BLOCK	187	1057561	LABEL,INK MODEL NUMBER,M
CASE BLOCK	188	1057563	LABEL,INK MODEL NUMBER,LC
CASE BLOCK	189	1057564	LABEL,INK MODEL NUMBER,LM
CASE BLOCK	190	1057562	LABEL,INK MODEL NUMBER,Y
CASE BLOCK	194	1057571	LABEL,MANUAL CUTTER 2;B
CASE BLOCK	195	1058870	LABEL,MANUAL CUTTER 3;B
CASE BLOCK	196	1057793	LABEL,MODEL NAME

**Table 7-2. Stylus PRO 7500 Parts List**

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	200	2033026	BOARD ASSY.,MAIN
CONTROL CIRCUIT BOAR	201	1005382	GROUNDING PLATE,I/F
CONTROL CIRCUIT BOAR	202	1006374	GUIDE,I/F BOARD
CONTROL CIRCUIT BOAR	BAT1	2012596	LITHIUM BATTERY
CONTROL CIRCUIT BOAR	BAT1	2031511	BATTARY HOLDER
CONTROL CIRCUIT BOAR	C104	2031509	ALUMINIUM ELECTROYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C114	2031509	ALUMINIUM ELECTROYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C157	2031509	ALUMINIUM ELECTROYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C158	2033030	ALMINIUM ELECTOROLYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C159	2033030	ALMINIUM ELECTOROLYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C309	2031509	ALUMINIUM ELECTROYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C323	2033403	ALMINIUM ELECTOROLYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C44	2033404	THERMISTOR
CONTROL CIRCUIT BOAR	C45	2029065	ALMINIUM ELECTROLYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C46	2031509	ALUMINIUM ELECTROYTIC CAPACITOR
CONTROL CIRCUIT BOAR	C83	2031509	ALUMINIUM ELECTROYTIC CAPACITOR

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	CM1	2033041	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CM2	2033040	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CM3	2033040	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CM4	2033040	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CM5	2033040	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CM6	2033040	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CM7	2033040	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CM8	2033040	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CM9	2033040	CAPACITOR ARRAY
CONTROL CIRCUIT BOAR	CN1	2013284	CONNECTOR 57RE-40360-830B(D7B)
CONTROL CIRCUIT BOAR	CN10	X600440120	CONNECTOR
CONTROL CIRCUIT BOAR	CN11	2017929	CONNECTOR
CONTROL CIRCUIT BOAR	CN13	X600440500	CONNECTOR
CONTROL CIRCUIT BOAR	CN17	X600720320	CONNECTOR
CONTROL CIRCUIT BOAR	CN18	2023764	CONNECTOR
CONTROL CIRCUIT BOAR	CN2	1025510	GROUNDING PLATE,I/F

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	CN2	2007160	CONNECTOR
CONTROL CIRCUIT BOAR	CN20	2029080	CONNECTOR
CONTROL CIRCUIT BOAR	CN24	2017936	CONNECTOR
CONTROL CIRCUIT BOAR	CN3	2027835	CONNECTOR
CONTROL CIRCUIT BOAR	CN30	X600440410	CONNECTOR
CONTROL CIRCUIT BOAR	CN31	2017995	CONNECTOR
CONTROL CIRCUIT BOAR	CN32	2024315	CONNECTOR
CONTROL CIRCUIT BOAR	CN33	2033449	CONNECTOR
CONTROL CIRCUIT BOAR	CN34	2029071	CONNECTOR
CONTROL CIRCUIT BOAR	CN35	2033034	CONNECTOR
CONTROL CIRCUIT BOAR	CN36	2007097	CONNECTOR
CONTROL CIRCUIT BOAR	CN37	2028505	CONNECTOR
CONTROL CIRCUIT BOAR	CN38	2022864	CONNECTOR
CONTROL CIRCUIT BOAR	CN39	2017995	CONNECTOR
CONTROL CIRCUIT BOAR	CN41	X600440310	CONNECTOR
CONTROL CIRCUIT BOAR	CN42	2024314	CONNECTOR

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	CN43	2003678	CONNECTOR
CONTROL CIRCUIT BOAR	CN44	2003679	CONNECTOR
CONTROL CIRCUIT BOAR	CN6	2015587	CONNECTOR
CONTROL CIRCUIT BOAR	CN7	X602172800	CONNECTOR
CONTROL CIRCUIT BOAR	CN8	2033029	CONNECTOR
CONTROL CIRCUIT BOAR	CN9	2033029	CONNECTOR
CONTROL CIRCUIT BOAR	CR1	2029053	QUARTZ OSCILLATOR
CONTROL CIRCUIT BOAR	CR2	X504013500	QUARTZ OSCILLATOR
CONTROL CIRCUIT BOAR	CR3	2027014	CRYSTAL
CONTROL CIRCUIT BOAR	CRU	2025626	QUARTZ OSCILLATOR
CONTROL CIRCUIT BOAR	D1	X325010309	DIODE
CONTROL CIRCUIT BOAR	D18	2021266	DIODE
CONTROL CIRCUIT BOAR	D19	2021266	DIODE
CONTROL CIRCUIT BOAR	D2	2002872	DIODE
CONTROL CIRCUIT BOAR	D20	2021266	DIODE
CONTROL CIRCUIT BOAR	D21	2021266	DIODE

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	D22	2029050	DIODE
CONTROL CIRCUIT BOAR	D23	2029050	DIODE
CONTROL CIRCUIT BOAR	D3	2012708	DIODE
CONTROL CIRCUIT BOAR	D4	2012708	DIODE
CONTROL CIRCUIT BOAR	D9	2029050	DIODE
CONTROL CIRCUIT BOAR	DM1	2029051	DIODE STACK
CONTROL CIRCUIT BOAR	DM2	2017557	DIODE
CONTROL CIRCUIT BOAR	DM3	2017557	DIODE
CONTROL CIRCUIT BOAR	DM4	2017557	DIODE
CONTROL CIRCUIT BOAR	DM5	2017557	DIODE
CONTROL CIRCUIT BOAR	DM6	2017557	DIODE
CONTROL CIRCUIT BOAR	DM7	2017557	DIODE
CONTROL CIRCUIT BOAR	DM8	2027914	DIODE ARRAY
CONTROL CIRCUIT BOAR	F1	2026445	FUSE
CONTROL CIRCUIT BOAR	F2	2026445	FUSE
CONTROL CIRCUIT BOAR	F3	2033423	FUSE

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	FL2	2026432	NOISE FILTER
CONTROL CIRCUIT BOAR	FLS1	2033033	EMI FILTER
CONTROL CIRCUIT BOAR	FLS2	2033033	EMI FILTER
CONTROL CIRCUIT BOAR	FLS3	2033033	EMI FILTER
CONTROL CIRCUIT BOAR	FLS4	2033033	EMI FILTER
CONTROL CIRCUIT BOAR	FLS5	2029219	FILTER
CONTROL CIRCUIT BOAR	FLS7	2033033	EMI FILTER
CONTROL CIRCUIT BOAR	HT1	1050742	HEAT SINK
CONTROL CIRCUIT BOAR	HT2	1051491	HEAT SINK
CONTROL CIRCUIT BOAR	IC1	2032629	FLASH ROM
CONTROL CIRCUIT BOAR	IC10	2025624	BICMOS
CONTROL CIRCUIT BOAR	IC11	X422350089	TTL-IC
CONTROL CIRCUIT BOAR	IC12	X422350329	TTL-IC
CONTROL CIRCUIT BOAR	IC13	2029040	GATE ARRAY
CONTROL CIRCUIT BOAR	IC15	2026115	REGULATOR
CONTROL CIRCUIT BOAR	IC16	2024977	TIMER IC

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	IC17	X422350069	TTL-IC SN74LS06NS-TPL
CONTROL CIRCUIT BOAR	IC2	2032629	FLASH ROM
CONTROL CIRCUIT BOAR	IC20	2029039	PIO
CONTROL CIRCUIT BOAR	IC23	X422350079	TTL-IC
CONTROL CIRCUIT BOAR	IC24	X422350029	TTL IC
CONTROL CIRCUIT BOAR	IC30	2022234	HIC
CONTROL CIRCUIT BOAR	IC32	2029041	GATE ARRAY
CONTROL CIRCUIT BOAR	IC33	2029045	DRIVER
CONTROL CIRCUIT BOAR	IC34	X422350749	TTL-IC
CONTROL CIRCUIT BOAR	IC35	2029045	DRIVER
CONTROL CIRCUIT BOAR	IC36	X440003394	COMPARATOR
CONTROL CIRCUIT BOAR	IC37	2027732	D/A CONVERTER
CONTROL CIRCUIT BOAR	IC39	2033341	S-RAM
CONTROL CIRCUIT BOAR	IC41	2029048	FET
CONTROL CIRCUIT BOAR	IC43	2029048	FET
CONTROL CIRCUIT BOAR	IC45	2026222	OPEAMP

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	IC46	2026222	OPEAMP
CONTROL CIRCUIT BOAR	IC47	X422352459	TTL SN74LS245NS-TPL
CONTROL CIRCUIT BOAR	IC49	X462701438	C-MOS IC
CONTROL CIRCUIT BOAR	IC50	X422350089	TTL-IC
CONTROL CIRCUIT BOAR	IC51	2008099	TTL-IC
CONTROL CIRCUIT BOAR	IC53	X422352449	TTL IC
CONTROL CIRCUIT BOAR	IC62	2032561	I/F IC
CONTROL CIRCUIT BOAR	IC63	X422352449	TTL IC
CONTROL CIRCUIT BOAR	IC65	2017554	LOGIC MOS
CONTROL CIRCUIT BOAR	IC68	X422352459	TTL SN74LS245NS-TPL
CONTROL CIRCUIT BOAR	IC69	2029238	TTL IC
CONTROL CIRCUIT BOAR	IC70	X422352459	TTL SN74LS245NS-TPL
CONTROL CIRCUIT BOAR	IC72	2033436	CMOS IC
CONTROL CIRCUIT BOAR	IC73	2033042	D-RAM
CONTROL CIRCUIT BOAR	IC74	2033042	D-RAM
CONTROL CIRCUIT BOAR	IC75	2033042	D-RAM

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	IC76	2033042	D-RAM
CONTROL CIRCUIT BOAR	IC77	X422350049	TTL-IC
CONTROL CIRCUIT BOAR	IC78	2008387	TTL IC
CONTROL CIRCUIT BOAR	IC8	2033258	MICROCONTROLLER
CONTROL CIRCUIT BOAR	IC80	2003700	RESET IC
CONTROL CIRCUIT BOAR	IC81	2033042	D-RAM
CONTROL CIRCUIT BOAR	IC82	2033042	D-RAM
CONTROL CIRCUIT BOAR	IC83	2033031	TTL IC
CONTROL CIRCUIT BOAR	IC85	X422352449	TTL IC
CONTROL CIRCUIT BOAR	IC9	2033337	IC
CONTROL CIRCUIT BOAR	JP2	X601002000	CONNECTOR
CONTROL CIRCUIT BOAR	JP2	X601002200	JUMPER CONNECTOR
CONTROL CIRCUIT BOAR	JP5	X601002000	CONNECTOR
CONTROL CIRCUIT BOAR	JP5	X601002200	JUMPER CONNECTOR
CONTROL CIRCUIT BOAR	Q1	2017978	TRANSISTOR
CONTROL CIRCUIT BOAR	Q10	2026213	TRANSISTOR



Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	Q11	2031926	TRANSISTOR
CONTROL CIRCUIT BOAR	Q12	2031928	TRANSISTOR
CONTROL CIRCUIT BOAR	Q13	2031926	TRANSISTOR
CONTROL CIRCUIT BOAR	Q14	2031928	TRANSISTOR
CONTROL CIRCUIT BOAR	Q19	2029049	TRANSISTOR
CONTROL CIRCUIT BOAR	Q2	2033344	NPN TRANSISTOR
CONTROL CIRCUIT BOAR	Q20	2029049	TRANSISTOR
CONTROL CIRCUIT BOAR	Q21	2011623	TRANSISTOR
CONTROL CIRCUIT BOAR	Q22	X302181589	TRANSISTOR
CONTROL CIRCUIT BOAR	Q23	2026214	TRANSISTOR
CONTROL CIRCUIT BOAR	Q24	2026213	TRANSISTOR
CONTROL CIRCUIT BOAR	Q3	2026582	TRANSISTOR
CONTROL CIRCUIT BOAR	Q4	2031446	TRANSISTOR
CONTROL CIRCUIT BOAR	Q5	2031926	TRANSISTOR
CONTROL CIRCUIT BOAR	Q6	2031928	TRANSISTOR
CONTROL CIRCUIT BOAR	Q7	2031926	TRANSISTOR

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	Q8	2031928	TRANSISTOR
CONTROL CIRCUIT BOAR	Q9	2026214	TRANSISTOR
CONTROL CIRCUIT BOAR	R122	2033397	METAL OXIDE FILM RESISTOR
CONTROL CIRCUIT BOAR	R123	2033397	METAL OXIDE FILM RESISTOR
CONTROL CIRCUIT BOAR	R132	2033398	METAL OXIDE FILM RESISTOR
CONTROL CIRCUIT BOAR	R140	2033398	METAL OXIDE FILM RESISTOR
CONTROL CIRCUIT BOAR	R172	2033396	METAL OXIDE FILM RESISTOR
CONTROL CIRCUIT BOAR	R44	2030491	METAL OXIDE FILM RESISTOR
CONTROL CIRCUIT BOAR	R45	2030491	METAL OXIDE FILM RESISTOR
CONTROL CIRCUIT BOAR	RM1	2029063	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM10	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM11	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM12	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM13	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM14	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM15	2026209	CHIP RESISTOR ARRAY

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	RM16	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM17	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM18	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM19	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM2	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM20	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM21	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM22	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM23	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM24	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM25	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM26	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM27	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM28	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM29	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM3	2026208	CHIP RESISTOR ARRAY

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	RM30	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM31	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM32	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM33	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM34	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM35	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM36	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM37	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM38	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM39	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM4	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM40	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM41	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM42	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM43	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM44	2026209	CHIP RESISTOR ARRAY

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	RM45	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM46	2033037	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM47	2033037	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM48	2033037	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM49	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM5	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM50	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM51	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM52	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM53	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM54	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM55	2033038	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM56	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM57	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM58	2033035	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM59	2033035	RESISTOR ARRY

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	RM6	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM60	2033035	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM61	2033035	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM62	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM63	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM64	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM65	2026209	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM66	2033039	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM67	2033039	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM68	2033039	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM69	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM7	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM70	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM71	2033036	RESISTOR ARRY
CONTROL CIRCUIT BOAR	RM8	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	RM80	2033038	RESISTOR ARRY

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
CONTROL CIRCUIT BOAR	RM9	2026208	CHIP RESISTOR ARRAY
CONTROL CIRCUIT BOAR	SWD1	2029069	DIP SWITCH
CONTROL CIRCUIT BOAR	TH1	2033404	THERMISTOR
CONTROL CIRCUIT BOAR	TH2	2033404	THERMISTOR
CONTROL CIRCUIT BOAR	VR1	2033411	POTENTIOMETER
CONTROL CIRCUIT BOAR	VR2	2033401	POTENTIOMETER
CONTROL CIRCUIT BOAR	VR3	2033401	POTENTIOMETER
CONTROL CIRCUIT BOAR	VR4	2033400	POTENTIOMETER
CONTROL CIRCUIT BOAR	VR5	2033402	POTENTIOMETER
CONTROL CIRCUIT BOAR	VR6	2033400	POTENTIOMETER
PS BLOCK	300	2034420	P/S BOARD ASSY
CABLE BLOCK	400	2035396	P/S CABLE
PRINTER MECHANISM	101	1053493	RUBBER FOOT
PRINTER MECHANISM	102	1053494	VACUUM FAN
PRINTER MECHANISM	103	1053495	VACUUM FAN 1 CABLE
PRINTER MECHANISM	104	1053496	VACUUM FAN 2 CABLE
PRINTER MECHANISM	105	2034396	P REAR SENSOR ASSY

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PRINTER MECHANISM	151	2037182	PF MOTOR PULLE ASSY
PRINTER MECHANISM	152	1053497	SPECER,X MOTOR
PRINTER MECHANISM	153	1053499	BEARING PF MOTOR
PRINTER MECHANISM	154	1053500	X REDUCTION BELT
PRINTER MECHANISM	155	1053501	PF MOTOR PULLEY ASSY
PRINTER MECHANISM	157	1048898	MOUNTING PLATE,SCALE
PRINTER MECHANISM	158	1056148	SCALE,PF
PRINTER MECHANISM	159	1048913	TAPE,D50
PRINTER MECHANISM	160	1059744	ENCODER FLANG
PRINTER MECHANISM	161	2035504	BOARD ASSY.,ENCODER
PRINTER MECHANISM	162	1059745	C RING
PRINTER MECHANISM	301	F055040	PRINT HEAD,IJ192-0AD
PRINTER MECHANISM	302	F055050	PRINT HEAD,IJ192-0AE
PRINTER MECHANISM	303	1053503	HEAD TAPE CABLE1
PRINTER MECHANISM	304	1030787	COMPRESSION SPRING,9.9
PRINTER MECHANISM	305	1056149	DAMPER ASSY.

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PRINTER MECHANISM	306	1033483	O RING,TUBE FASTEN
PRINTER MECHANISM	307	1033482	JOINT SCREWS,M6
PRINTER MECHANISM	308	1053504	DAMPER STOPPER
PRINTER MECHANISM	309	1053505	SLIDE GEAR
PRINTER MECHANISM	310	1053506	CUTTER HOLDER
PRINTER MECHANISM	311	2034405	P EDGE SENSOR ASSY
PRINTER MECHANISM	312	2034406	CR ENC ASSY
PRINTER MECHANISM	313	1053507	CUTTER SOLENOID ASSY
PRINTER MECHANISM	314	1053508	CUTTER SOLENOID SPRING
PRINTER MECHANISM	315	1053509	CUTTER CAP
PRINTER MECHANISM	316	1053510	CUTTER SPRING
PRINTER MECHANISM	317	1056294	H ADJUST LEVER C
PRINTER MECHANISM	318	1056295	H ADJUST LEVER B
PRINTER MECHANISM	319	1056296	H ADJUST LEVER
PRINTER MECHANISM	351	1053511	PRESS SHAFT TRAY
PRINTER MECHANISM	352	1053512	PRESS TRANSMISSION GEAR

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PRINTER MECHANISM	353	1053513	PRESS LEVER
PRINTER MECHANISM	354	1053514	PRESS IDLE GEAR
PRINTER MECHANISM	355	2034407	CR MOTOR PULLEY ASSY
PRINTER MECHANISM	356	1053515	CR DRIVEN PULLEY ASSY
PRINTER MECHANISM	357	1053516	CR BELT
PRINTER MECHANISM	358	2034408	PHOTO SENSOR
PRINTER MECHANISM	359	2034409	HD SLID SENSOR ASSY
PRINTER MECHANISM	360	1053517	T FENCE
PRINTER MECHANISM	361	2034410	LEVER SENSOR CABEL ASSY
PRINTER MECHANISM	362	2034411	P THICK SENSOR CABLE ASSY
PRINTER MECHANISM	363	2034412	CR HP CABLE ASSY
PRINTER MECHANISM	401	2034413	P FRONT SENSOR ASSY
PRINTER MECHANISM	402	1053518	WASTE INK BOX
PRINTER MECHANISM	403	1050828	POROUS PAD,INK EJECT
PRINTER MECHANISM	404	1053520	SUB PLATEN A
PRINTER MECHANISM	405	1053521	SUB PLATEN B

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PRINTER MECHANISM	406	1053522	PAPER OUTLET ROLLER ASSY
PRINTER MECHANISM	407	1053523	COVER SENSOR ASSY
PRINTER MECHANISM	408	1053524	CLAMP
PRINTER MECHANISM	409	1053525	PAPER GUIDE TRAY
PRINTER MECHANISM	410	1053519	WASTE INK TANK STOPPER
PRINTER MECHANISM	451	2024719	MOTOR ASSY.,ASF
PRINTER MECHANISM	452	1053527	PUMP REDUCTION GEAR 3
PRINTER MECHANISM	453	1053528	PUMP REDUCTION GEAR 4
PRINTER MECHANISM	454	1050829	PUMP ASSY.
PRINTER MECHANISM	455	1033209	CLEANER,HEAD,ASP
PRINTER MECHANISM	456	1054171	PUMP GEAR
PRINTER MECHANISM	457	1055991	CAP ASSY.
PRINTER MECHANISM	458	1053529	PUMP REDUCTION GEAR 1
PRINTER MECHANISM	459	1053530	PUMP REDUCTION GEAR 2
PRINTER MECHANISM	460	1053531	PG IDLE GEAR A
PRINTER MECHANISM	461	1053532	PG IDLE GEAR B

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PRINTER MECHANISM	462	1053533	FLASHING BOX ASSY
PRINTER MECHANISM	463	1012618	DAMPER,CR
PRINTER MECHANISM	464	1017596	SHAFT,DAMPER,CR;B
PRINTER MECHANISM	465	1038605	PLANE WASHER,3.3*1.5*8,S/NA
PRINTER MECHANISM	501	1050822	HOLDER,GUIDE,I/C,UPPER
PRINTER MECHANISM	502	1033929	FRAME ASSY.,NEEDLE
PRINTER MECHANISM	503	2034414	INK SENSOR K ASSY
PRINTER MECHANISM	504	2034415	INK SENSOR C ASSY
PRINTER MECHANISM	505	2034416	INK SENSOR M ASSY
PRINTER MECHANISM	506	2034417	INK SENSOR LC ASSY
PRINTER MECHANISM	507	2034418	INK SENSOR LM ASSY
PRINTER MECHANISM	508	2034419	INK SENSOR Y ASSY
PRINTER MECHANISM	509	1050825	FRAME,HOLDER,I/C,UNDER
PRINTER MECHANISM	510	1050826	POROUS PAD,HOLDER,I/C
PRINTER MECHANISM	511	1050827	TAPE,20X22
PRINTER MECHANISM	512	1033483	O RING,TUBE FASTEN

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PRINTER MECHANISM	513	1033482	JOINT SCREWS,M6
PRINTER MECHANISM	514	1001468	TORSION SPRING,3490
PRINTER MECHANISM	515	1007731	HOLDING PLATE,HOLDER,INK CARTRIDGE
PRINTER MECHANISM	516	1033461	COVER,HOLDER,INK CARTRIDGE
PRINTER MECHANISM	601	1051639	TUBE,SUPPLY,INK,B
PRINTER MECHANISM	602	1051640	TUBE,SUPPLY,INK,C
PRINTER MECHANISM	603	1051641	TUBE,SUPPLY,INK,M
PRINTER MECHANISM	604	1051642	TUBE,SUPPLY,INK,LM
PRINTER MECHANISM	605	1051643	TUBE,SUPPLY,INK,Y
PRINTER MECHANISM	606	1053202	TUBE,SUPPLY,INK,LC
PRINTER MECHANISM	607	1053535	STEEL BEAR
PRINTER MECHANISM	608	1053536	CR TAPE CABLE
PRINTER MECHANISM	609	1053537	TUBE GUIDE
PRINTER MECHANISM	610	2033028	BOARD ASSY.,SUB
PRINTER MECHANISM	611	1033482	JOINT SCREWS,M6
PRINTER MECHANISM	612	1033483	O RING,TUBE FASTEN

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PRINTER MECHANISM	613	1033481	JOINT,BK
PRINTER MECHANISM	614	1053534	TUBE CUSHION
PRINTER MECHANISM	701	1011863	GROUNDING PLATE,I/F,UPPER
PRINTER MECHANISM	702	2034421	INLET ASSY
PRINTER MECHANISM	703	2034422	DC CABLE ASSY
PRINTER MECHANISM	801	1059736	H TOP COVER
PRINTER MECHANISM	802	1057018	LOGO PLATE30X30
PRINTER MECHANISM	803	1053540	BRUSH REMOVE STATIC ELECTRICITY
PRINTER MECHANISM	804	1053541	CATCH
PRINTER MECHANISM	805	1059460	I/H COVER ASSY
PRINTER MECHANISM	806	1059737	FRONT COVER
PRINTER MECHANISM	807	1053544	FRONT COVER SUPPLEMENT
PRINTER MECHANISM	808	1059738	R SIDE COVER
PRINTER MECHANISM	809	1053546	LEVER BRIND SHEET
PRINTER MECHANISM	810	1059739	LEVER BRIND CAP
PRINTER MECHANISM	811	1059740	L SIDE COVER

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PRINTER MECHANISM	813	1053549	HANDLE RUBBER B
PRINTER MECHANISM	814	1053550	TOP COVER
PRINTER MECHANISM	815	1053551	ROLL SUPPORT R ASSY
PRINTER MECHANISM	816	1053553	ROLL SUPPORT L ASSY
PRINTER MECHANISM	817	1053554	BRANL PANEL
PRINTER MECHANISM	818	1053555	I/H COVER LID ASSY
PRINTER MECHANISM	819	1059743	PANEL SHEET(OVERSEAS)
PRINTER MECHANISM	820	1053557	PANEL TAPE CABLE
PRINTER MECHANISM	821	1059742	PRSSURE LEVER KNOB
PRINTER MECHANISM	822	2037184	PANEL UNIT ASSY(OVERSEAS)
PRINTER MECHANISM	901	1053559	FLANGE(2 INCH R)
PRINTER MECHANISM	901	1053561	FLANGE(3 INCH R)
PRINTER MECHANISM	902	1053560	FLANGE(2 INCH)
PRINTER MECHANISM	902	1053562	FLANGE(3 INCH L)
PACKING MATERIAL	NON FIG	1055028	ROLL BAND
PACKING MATERIAL	NON FIG	1056575	INK CARTRIDGE WITHIN INDIVIDUAL BOX,BG,OVERSEAS

Table 7-2. Stylus PRO 7500 Parts List

Block Name	Ref No.	Sales Part Code	Description
PACKING MATERIAL	NON FIG	1056576	INK CARTRIDGE WITHIN INDIVIDUAL BOX,YG,OVERSEAS
PACKING MATERIAL	NON FIG	1056577	INK CARTRIDGE WITHIN INDIVIDUAL BOX,MG,OVERSEAS
PACKING MATERIAL	NON FIG	1056578	INK CARTRIDGE WITHIN INDIVIDUAL BOX,CG,OVERSEAS
PACKING MATERIAL	NON FIG	1056579	INK CARTRIDGE WITHIN INDIVIDUAL BOX,LMG,OVERSEAS
PACKING MATERIAL	NON FIG	1056580	INK CARTRIDGE WITHIN INDIVIDUAL BOX,LCG,OVERSEAS
PACKING MATERIAL	NON FIG	1058463	MAINTENANCE KIT,STYLUS PRO 7000
PACKING MATERIAL	NON FIG	4011819	SUPPLEMENT
PACKING MATERIAL	NON FIG	4012671	UNPACKING SHEET



## 7.3 Exploded View Diagram

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The illustrations in the following pages show the printer components and arrangement. The part numbers in the illustrations refer to the illustration numbers in Table 7-2, page 162.

- No.1: Frame Assembly
- No.2: Paper Feed Assembly
- No.3: Head Assembly
- No.4: Carriage Assembly
- No.5: Frame Assembly
- No.6: Maintenance Assembly
- No.7: Ink Cartridge Holder Assembly
- No.8: Cable Guide
- No.9: Board Base Assembly
- No.10: Cover Assembly

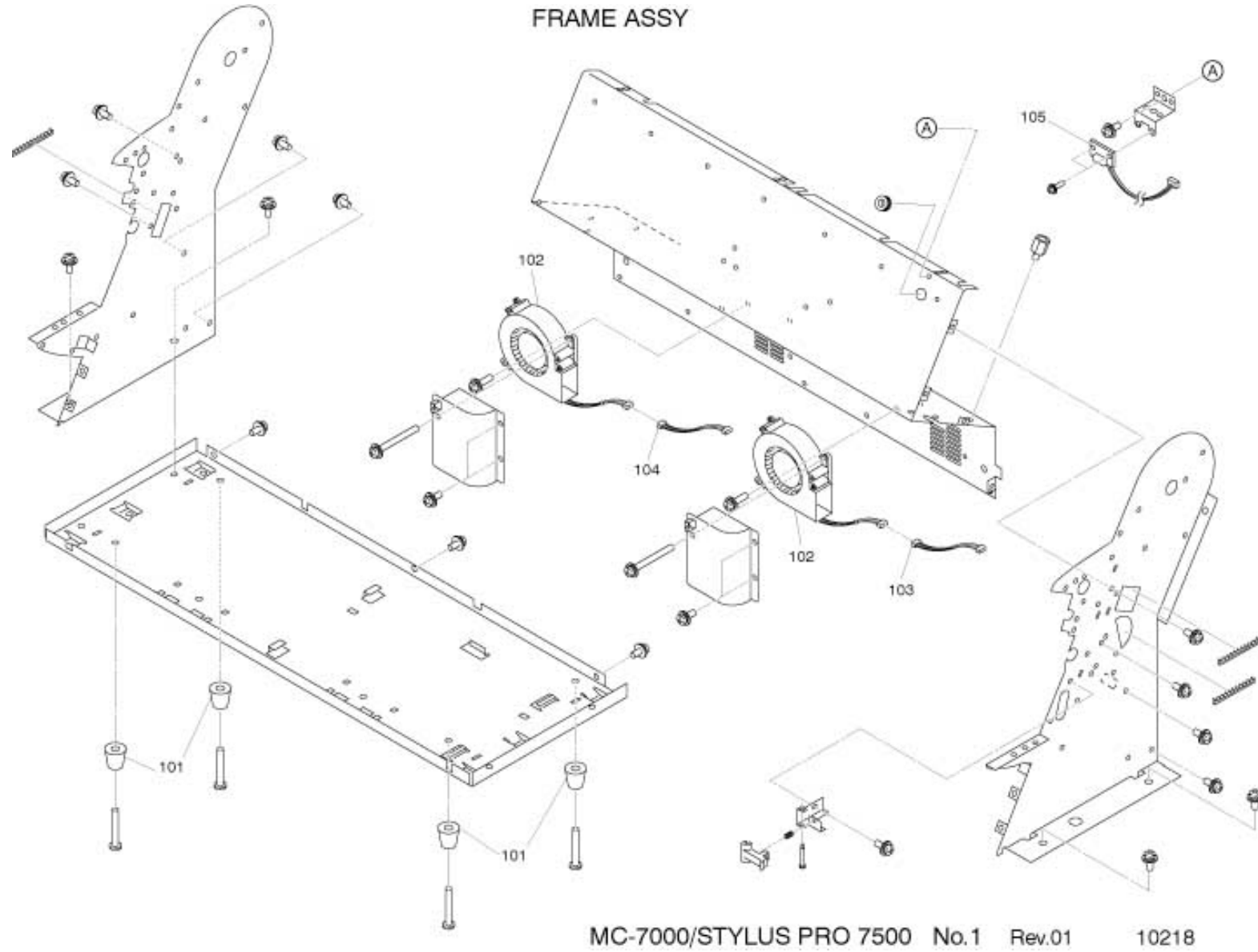


Figure 7-2. Frame Assembly

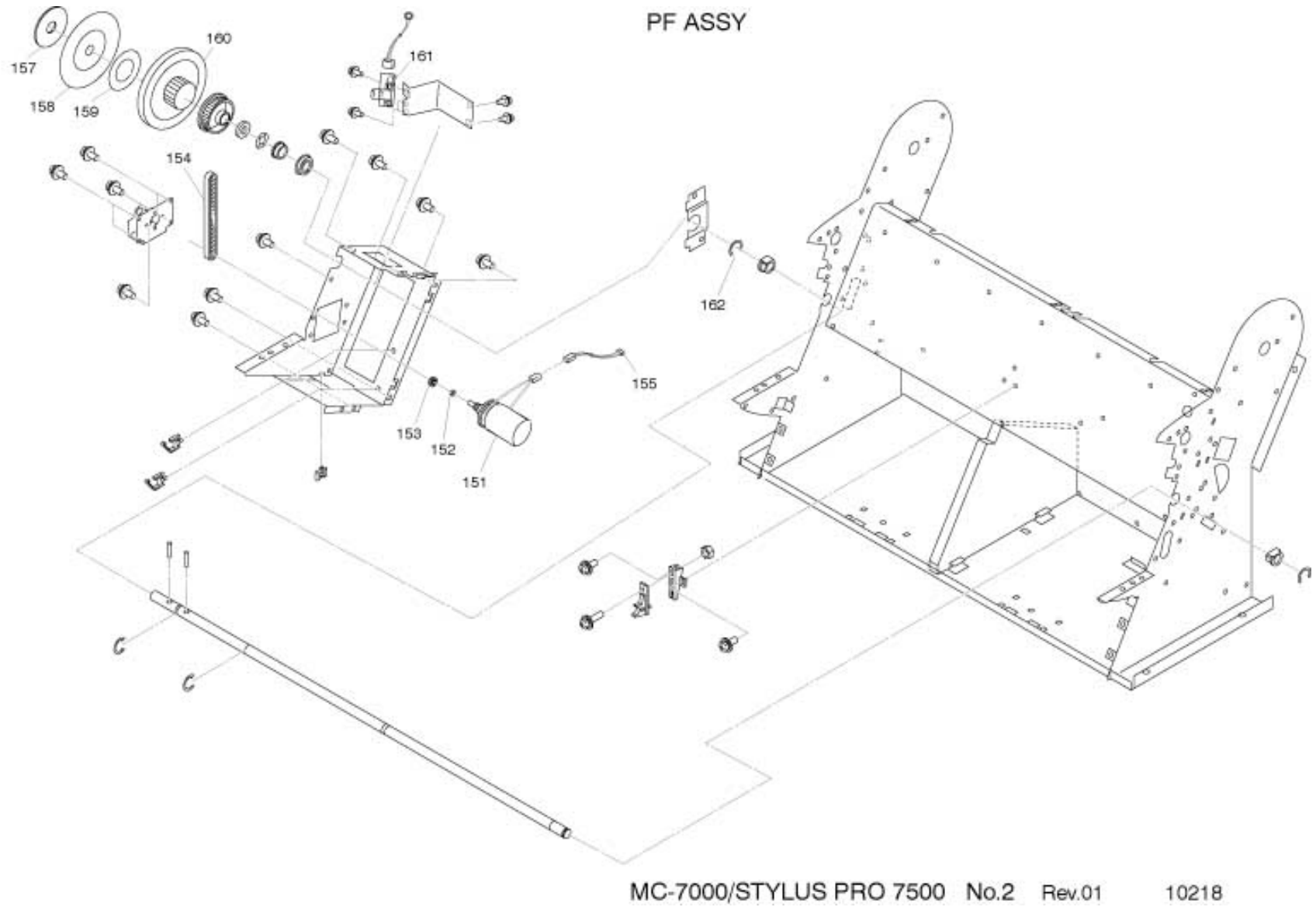


Figure 7-3. Paper Feed Assembly

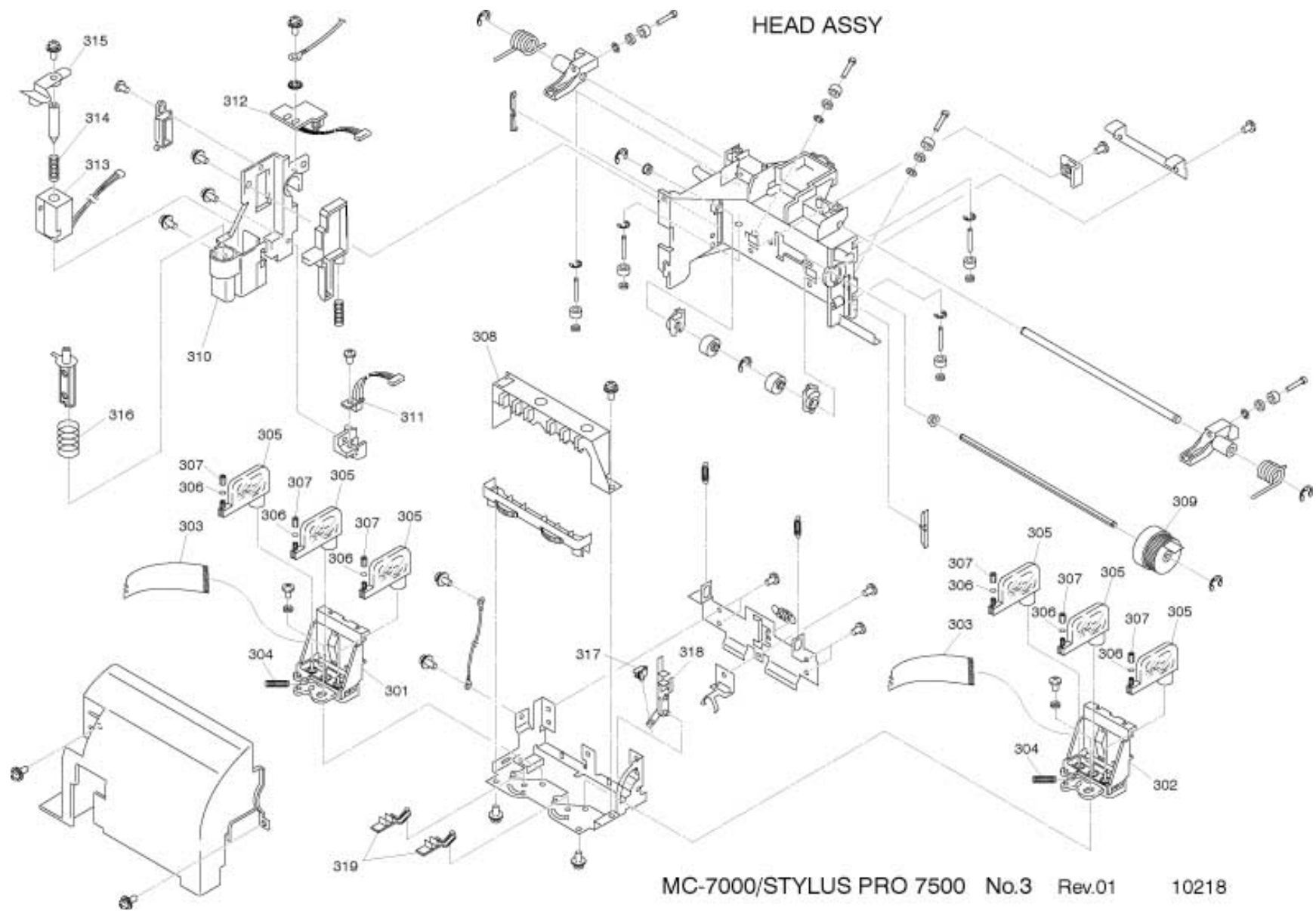


Figure 7-4. Head Assembly

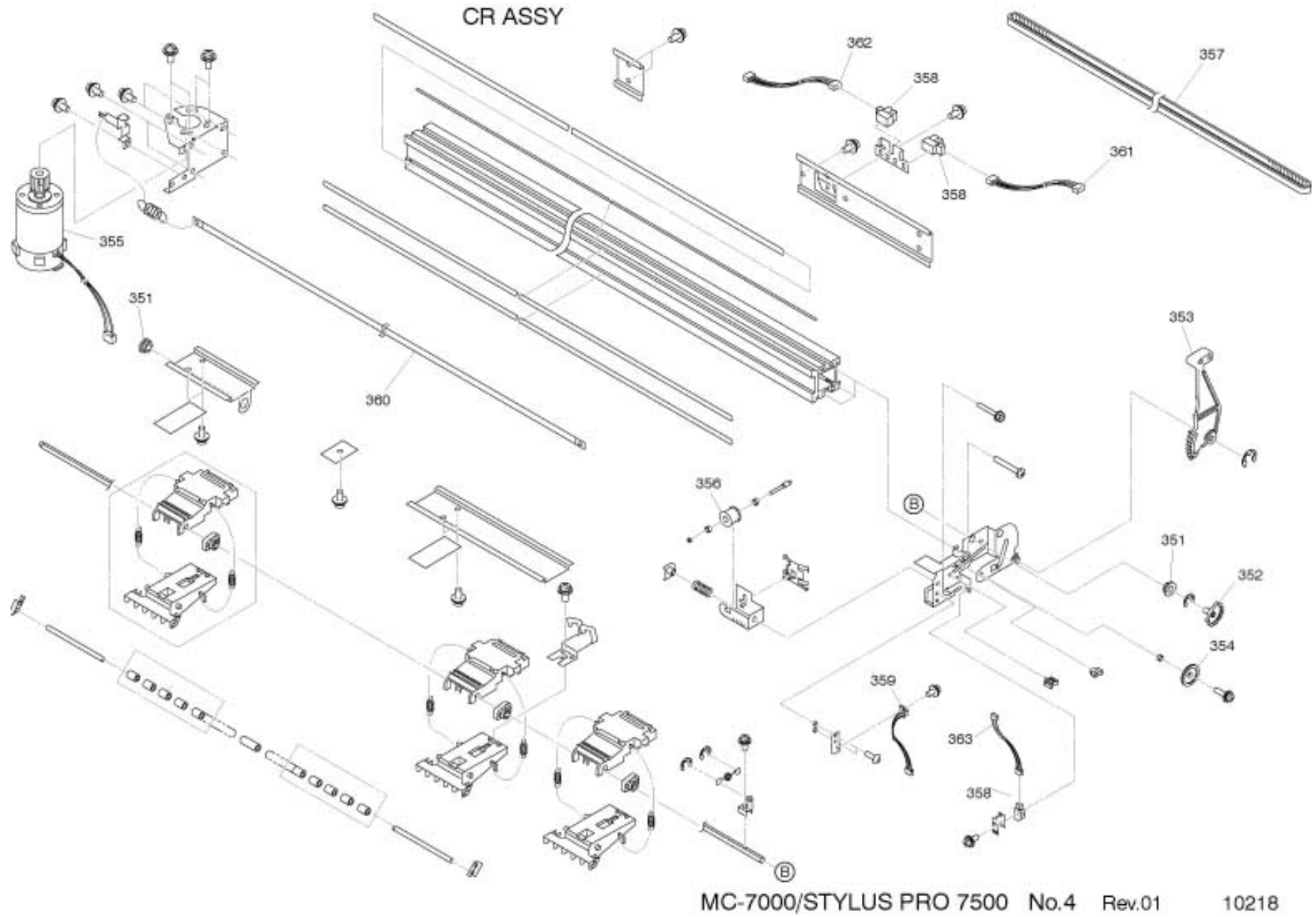


Figure 7-5. Carriage Assembly

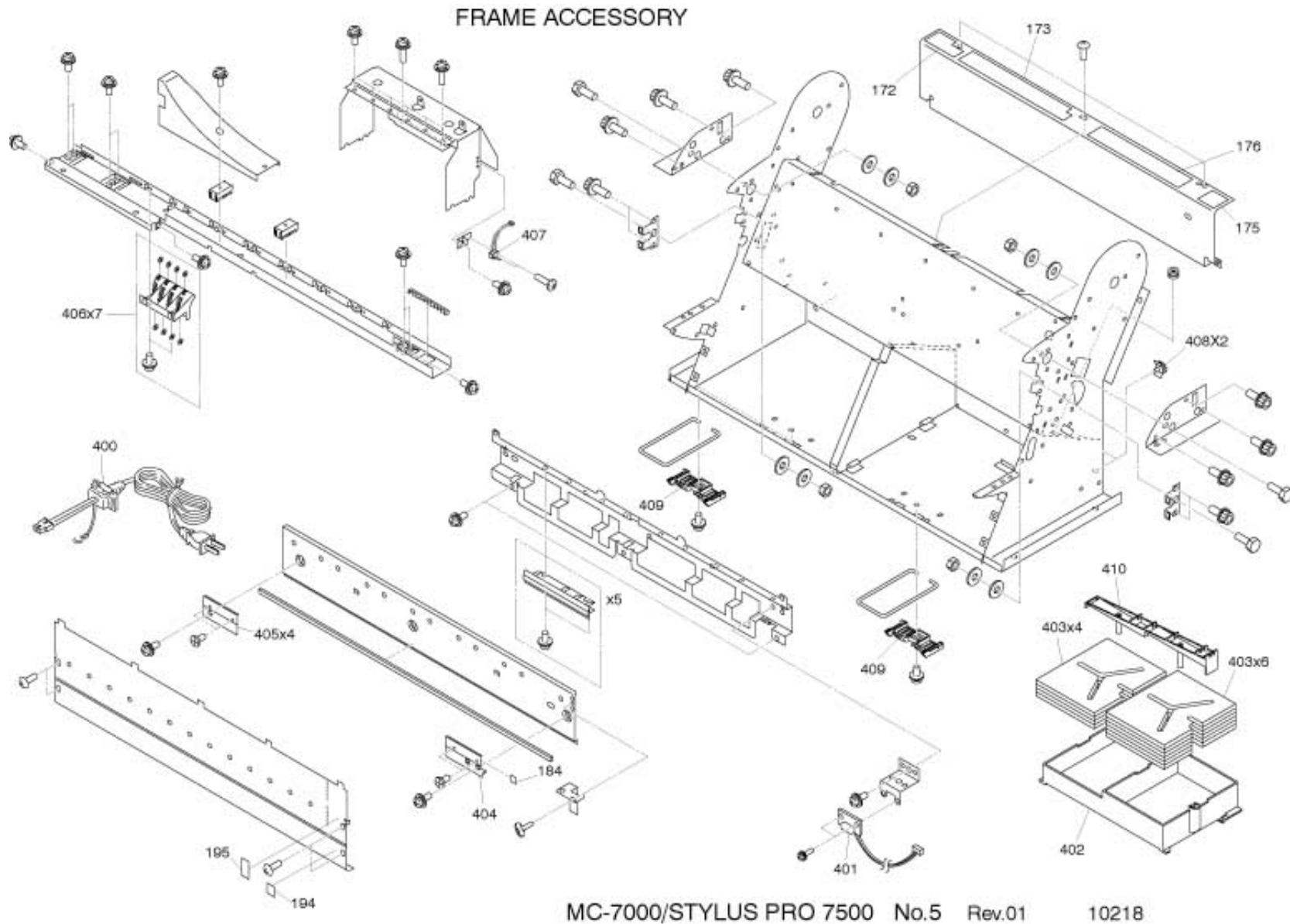
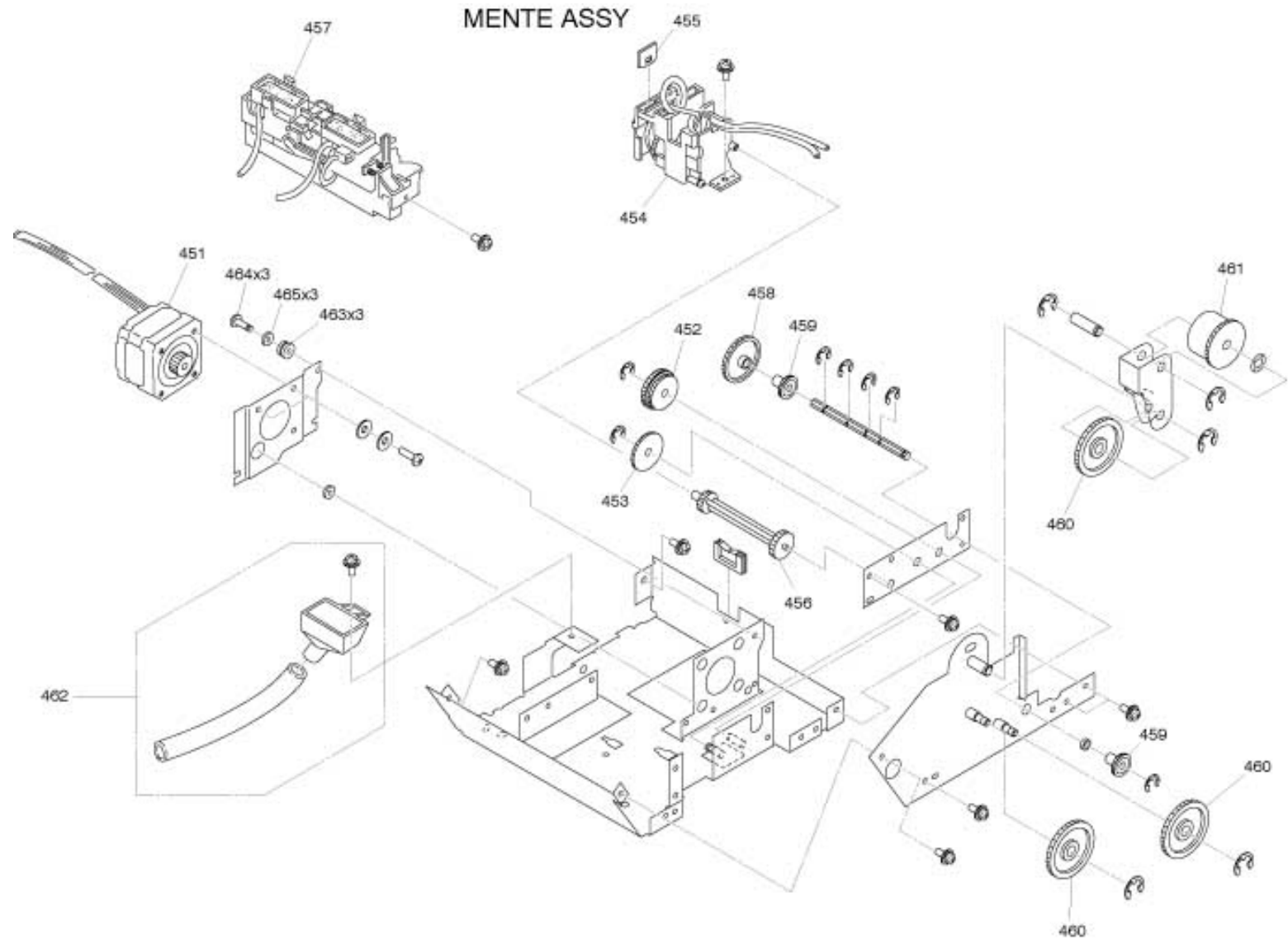


Figure 7-6. Frame Accessory



MC-7000/STYLUS PRO 7500 No.6 Rev.01 10218

Figure 7-7. Maintenance Assembly

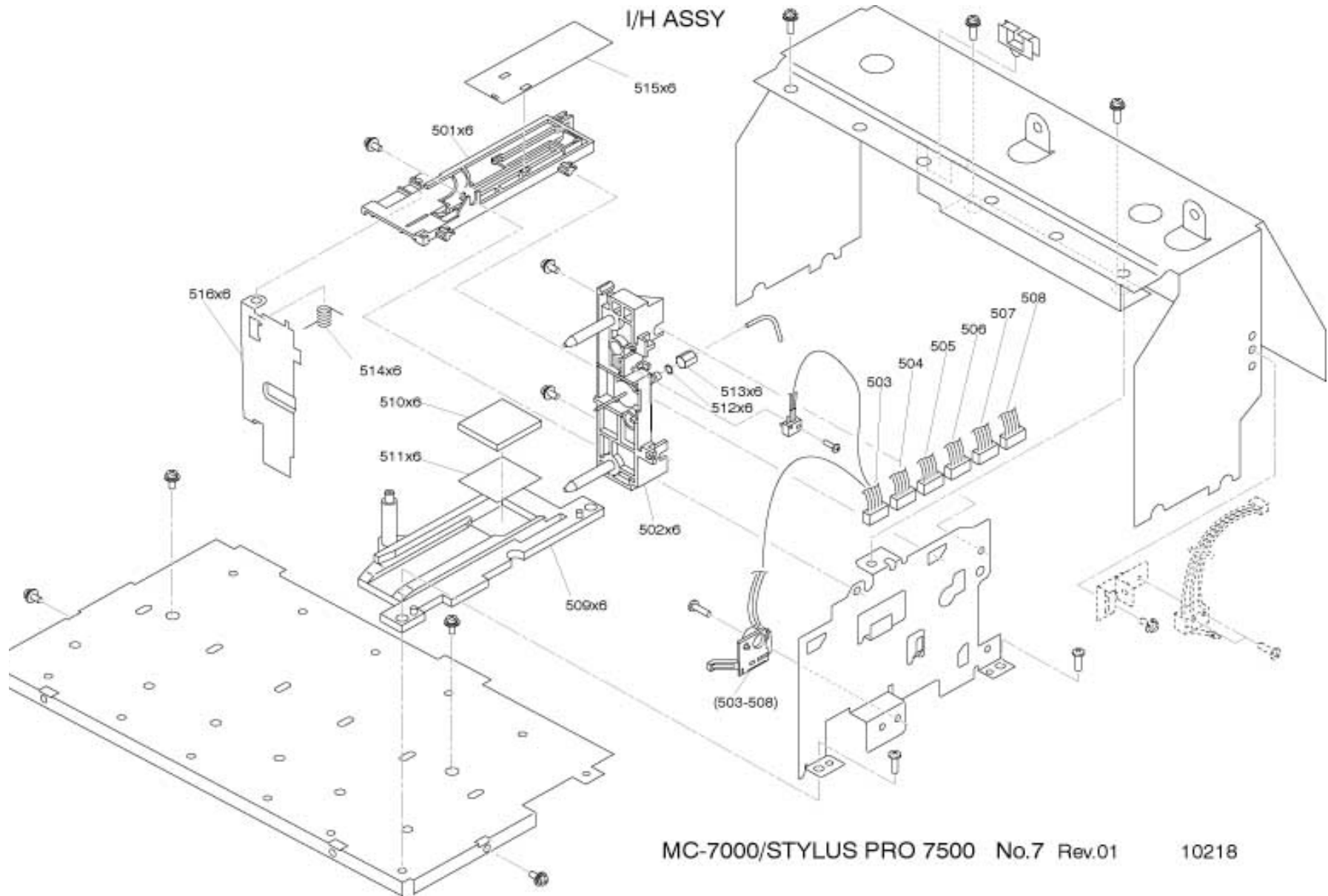


Figure 7-8. Ink Cartridge Holder Assembly



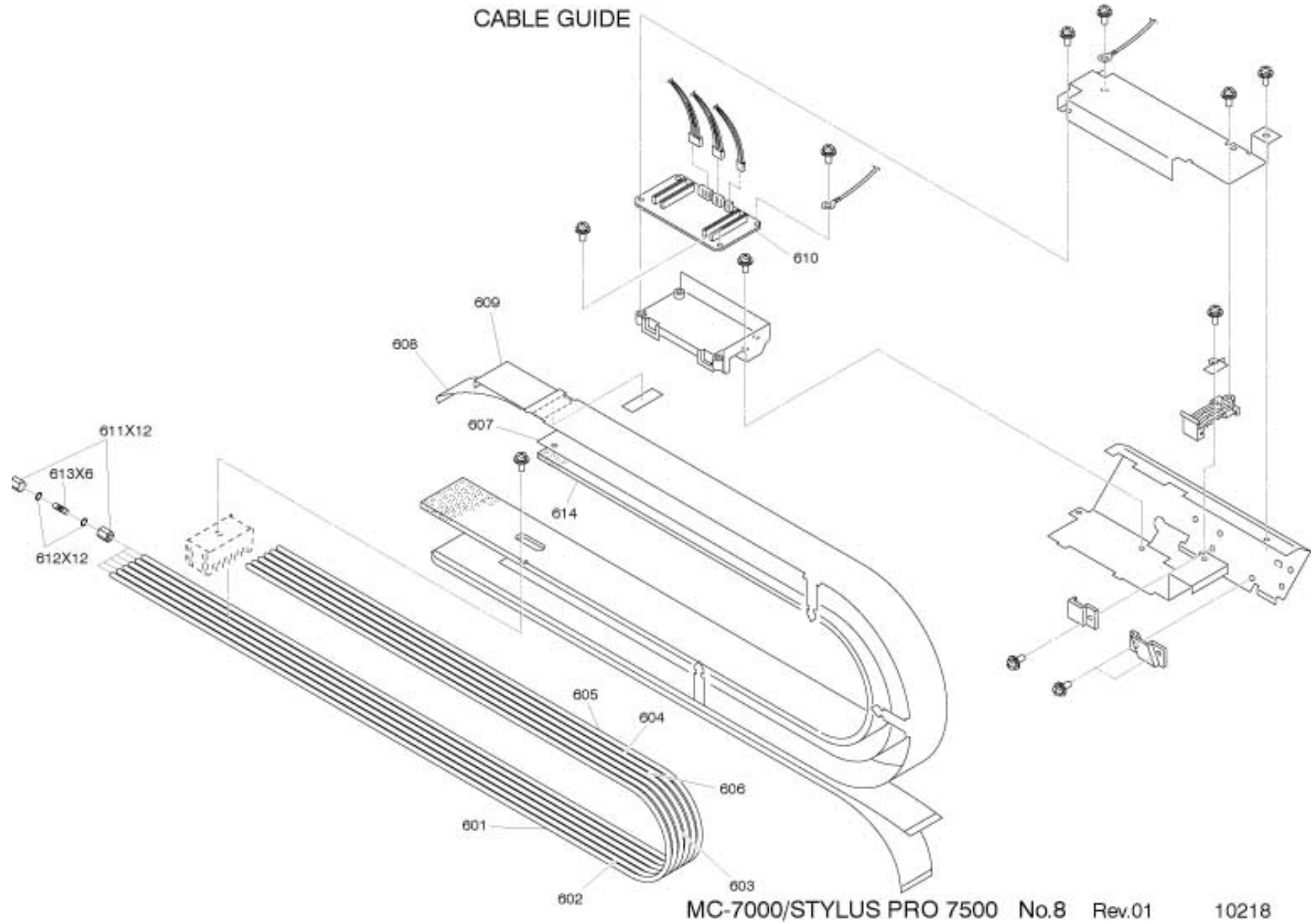


Figure 7-9. Cable Guide

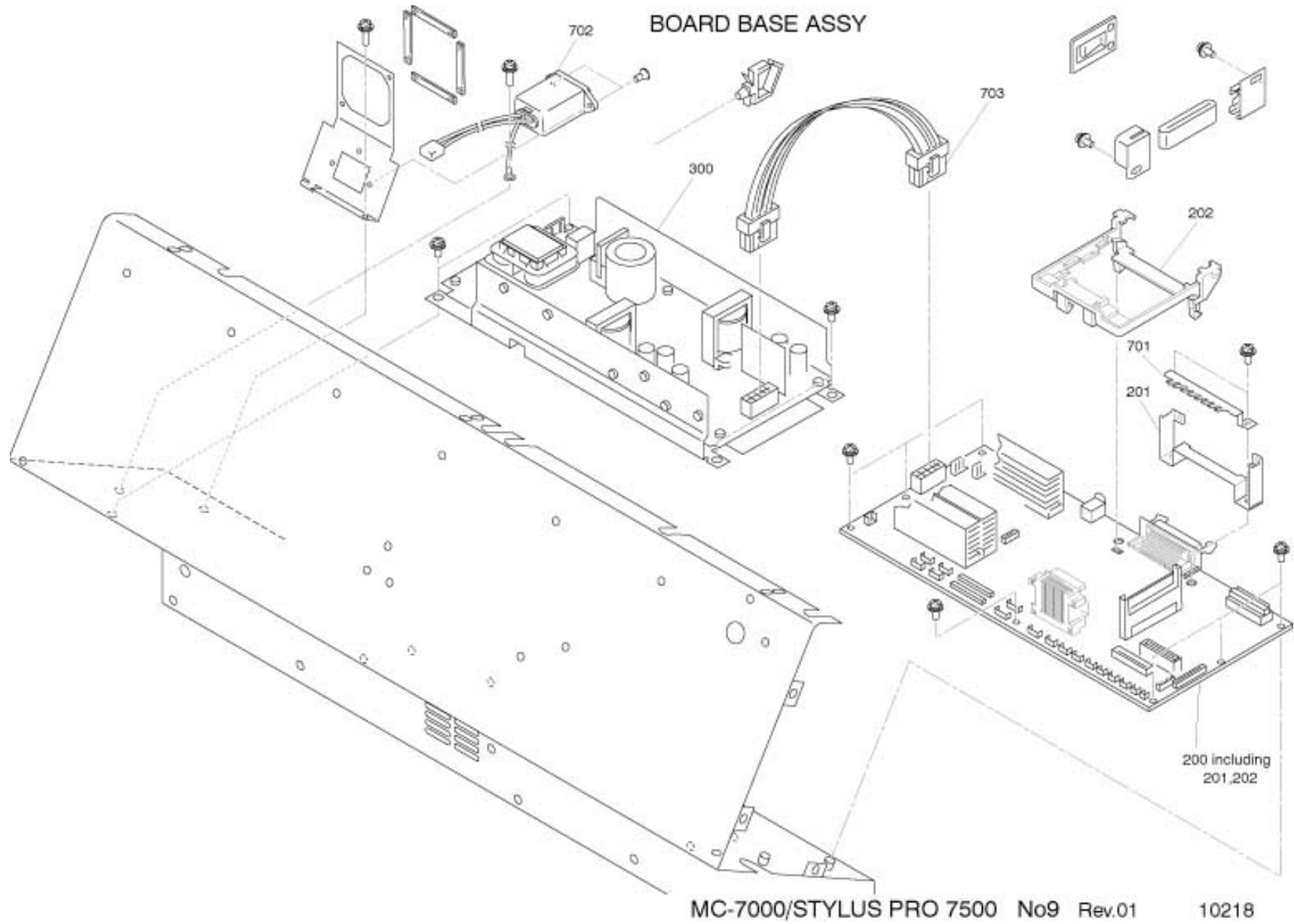


Figure 7-10. Board Base Assembly

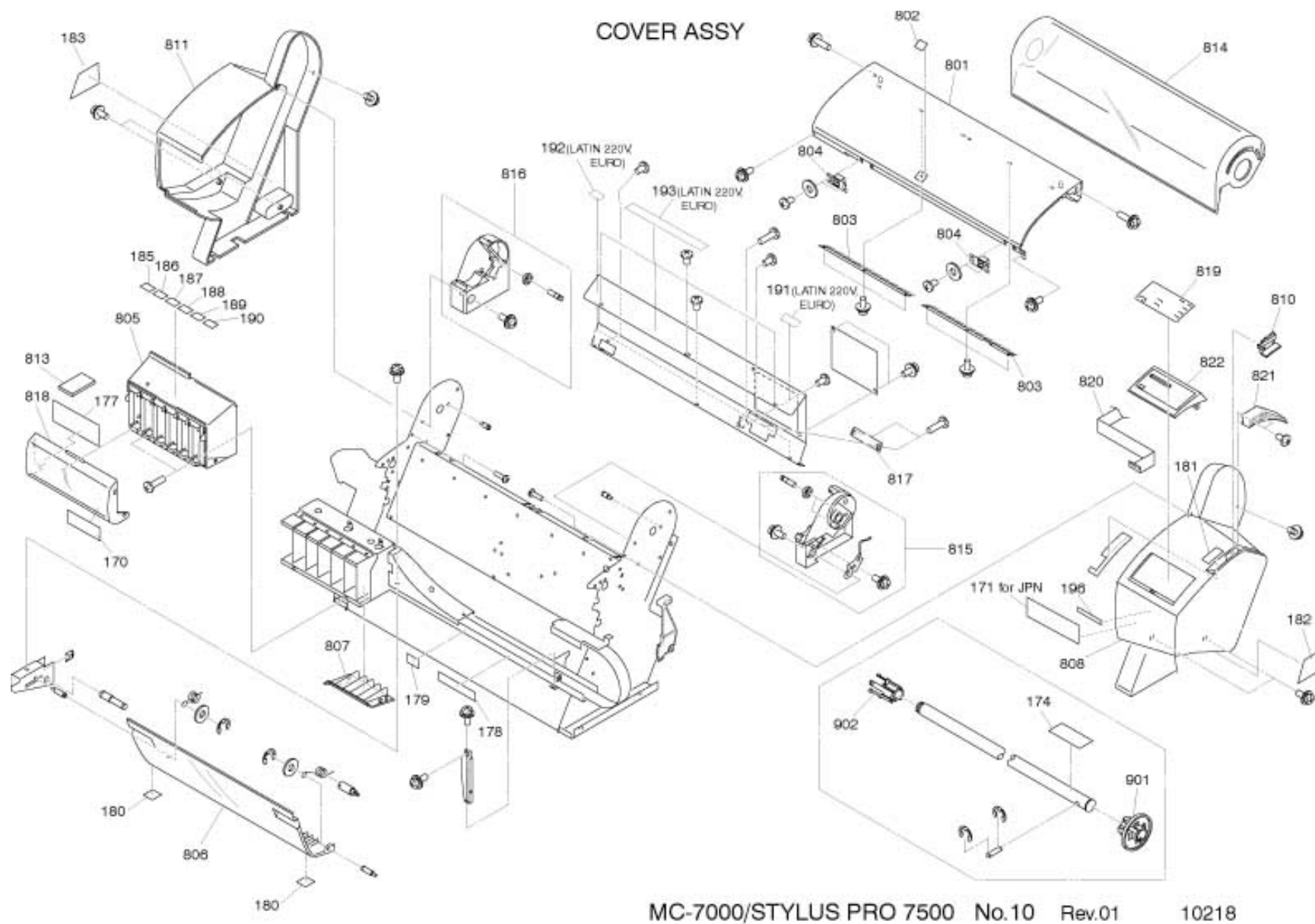


Figure 7-11. Cover Assembly

## 7.4 Component Layout

The illustrations below show the C299MAIN Board component layout.

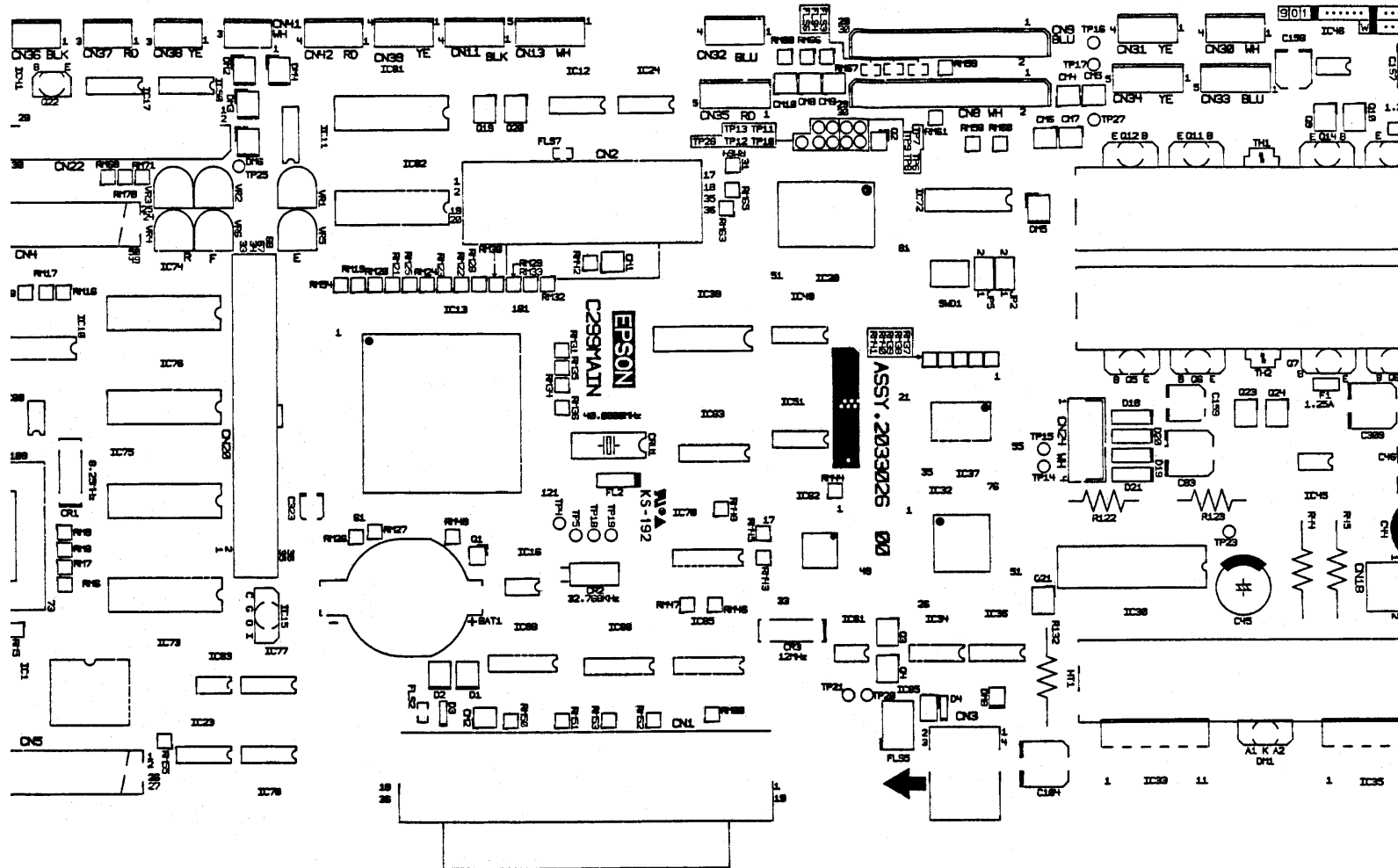


Figure 7-12. C299MAIN Board Component Layout of Component side

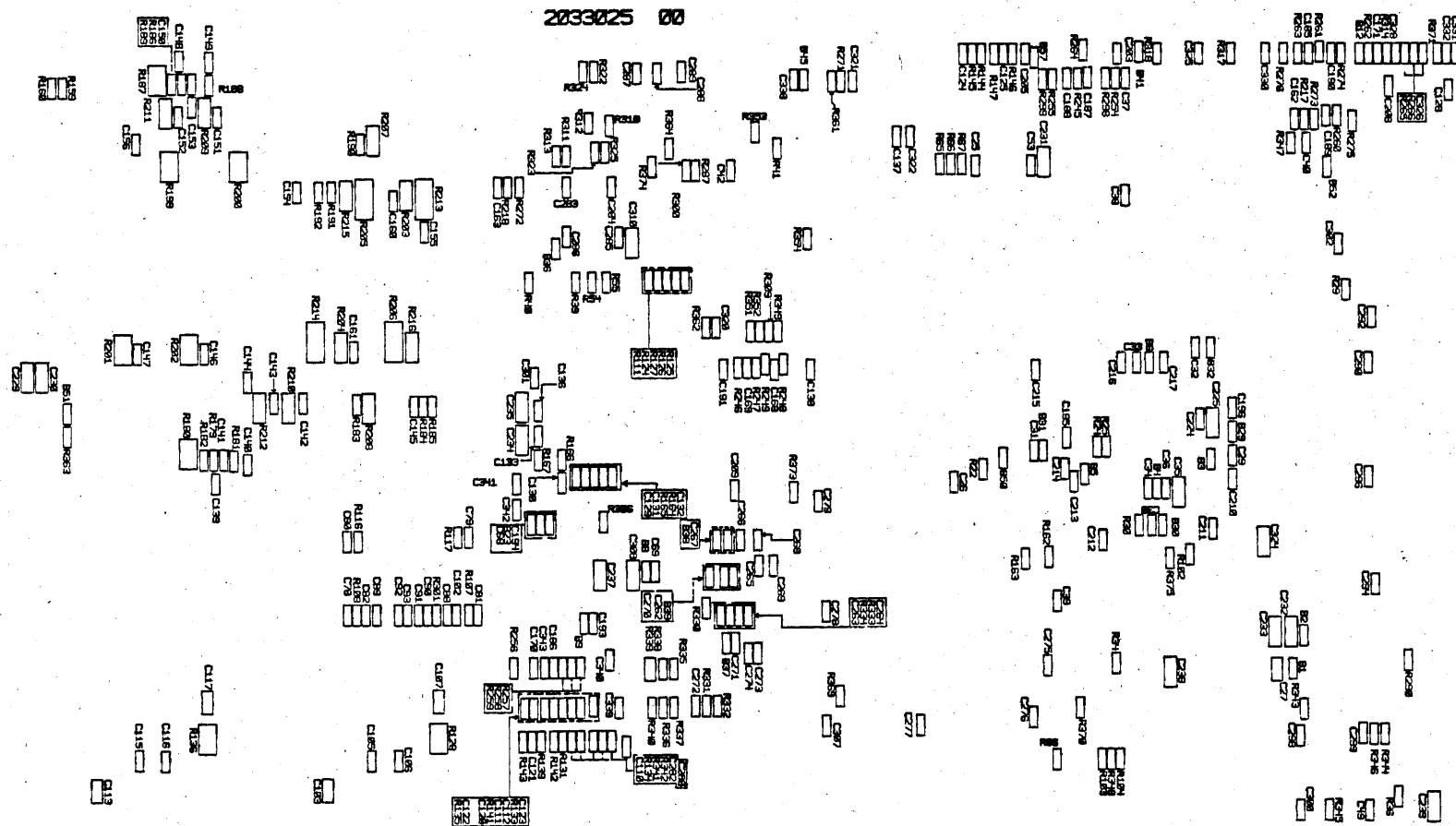


Figure 7-13. C299MAIN Board Component Layout of Soldering Side

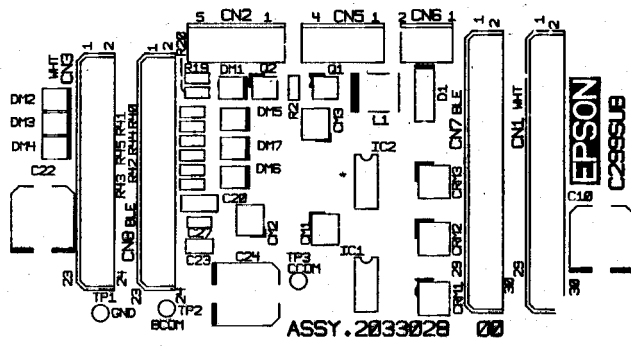


Figure 7-14. C299SUB Board Component Side

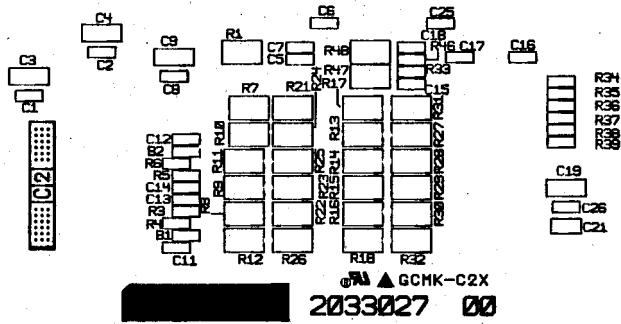


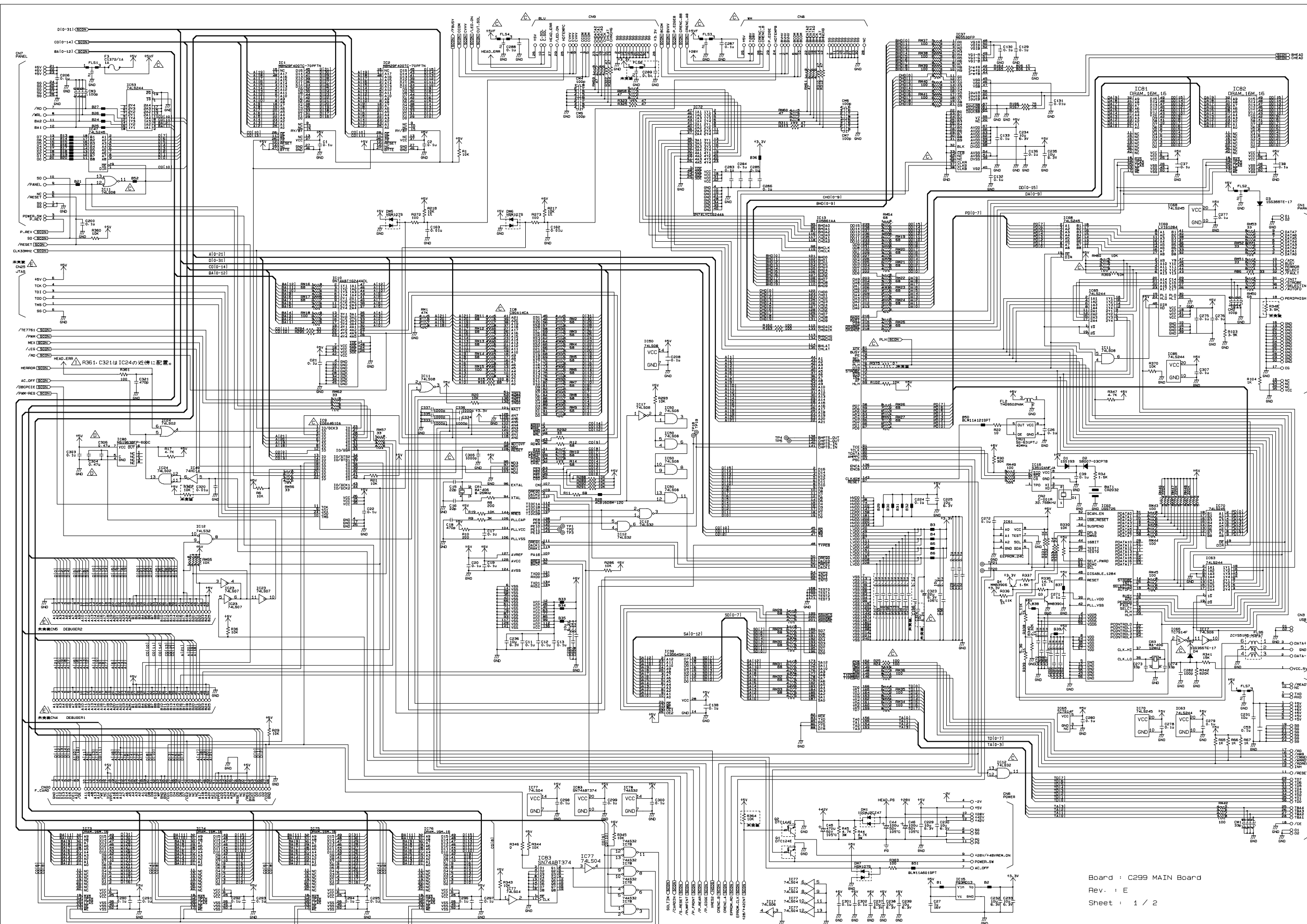
Figure 7-15. C299SUB Board Soldering Side

## 7.5 Circuit Diagrams

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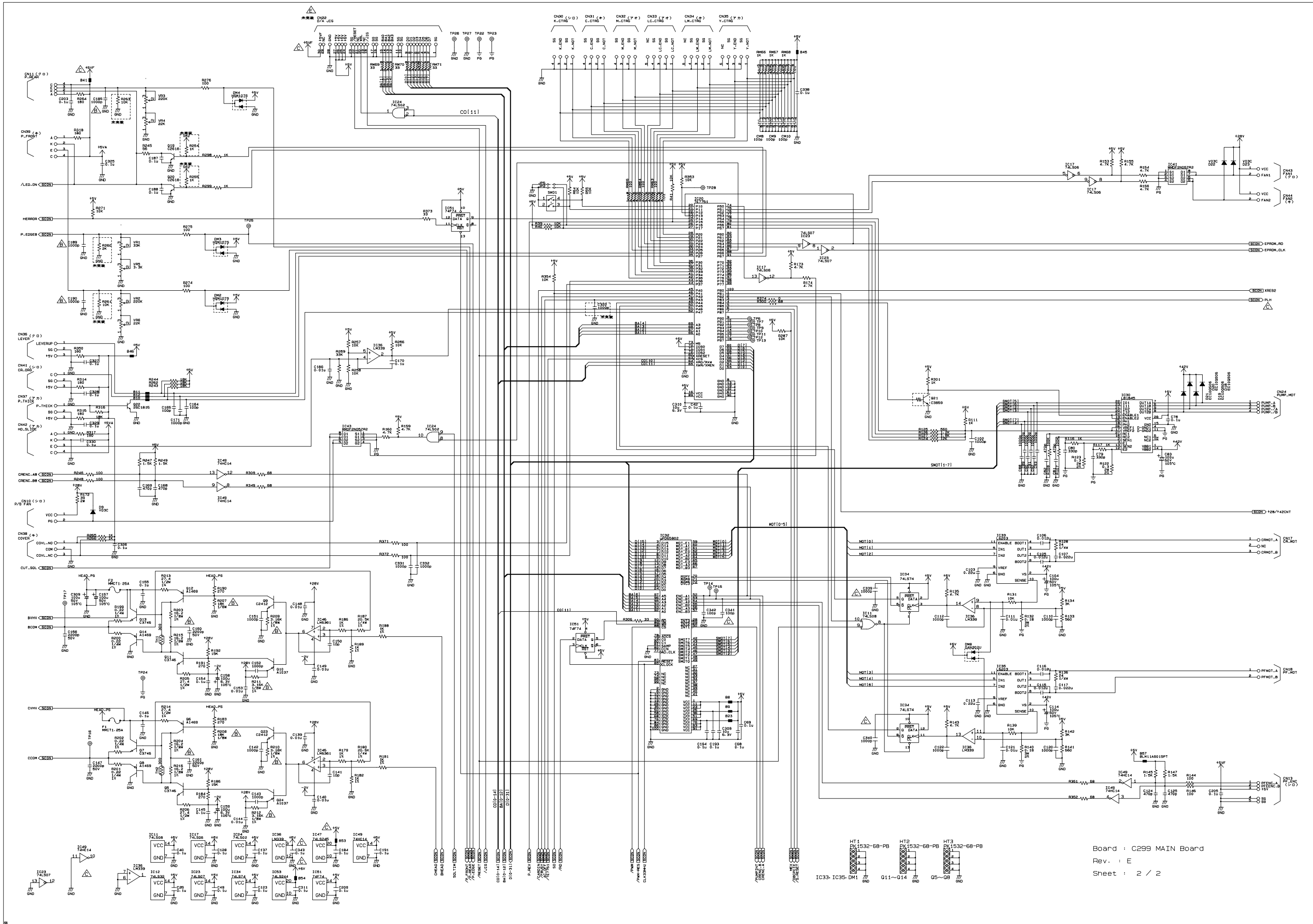
The circuit diagrams for the C299MAIN Board are provided in the following pages.

- C299MAIN (1/2)
- C299MAIN (2/2)
- C299SUB



Board : C299 MAIN Board  
 Rev. : E  
 Sheet : 1 / 2





Board : C299 MAIN Board  
 Rev. : E  
 Sheet : 2 / 2

HT1 HT2 HT3  
 1532-68-PB 1532-68-PB 1532-68-PB  
 IC33-IC35-DM1 Q11-014 G5-08

1

2

3

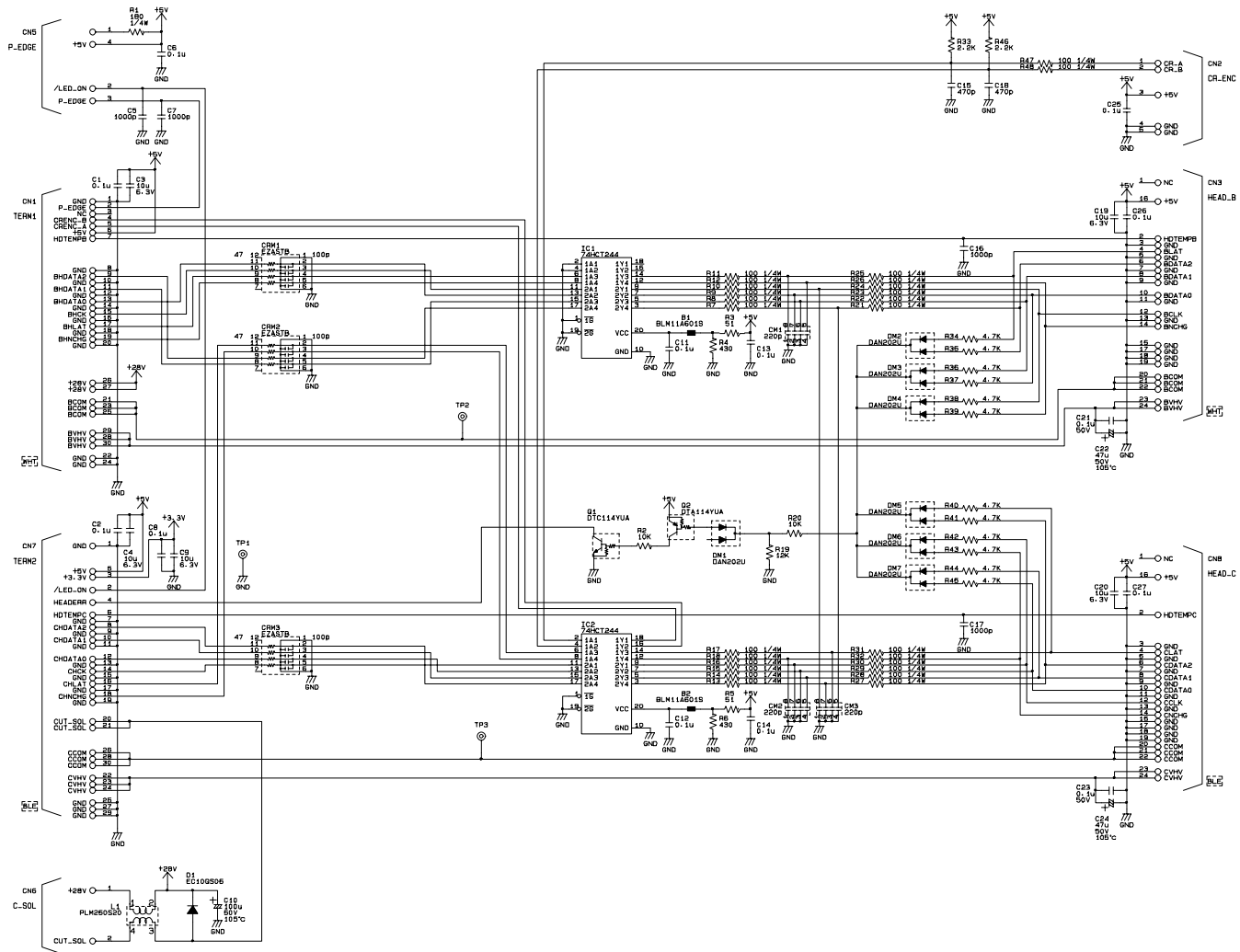
4

5

6

7

8



Board : C299SUB\_A Board

Rev. : A

Sheet : 1 / 1