SERVICE MANUAL

Color Inkjet Printer

EPSON Stylus C82

Notice

PRECAUTIONS

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

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

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

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

DANGER

1. ALWAYS DISCONNECT THE PRODUCT FROM THE POWER SOURCE AND PERIPHERAL DEVICES PERFORMING ANY MAINTENANCE OR REPAIR PROCEDURES.

2. NO WORK SHOULD BE PERFORMED ON THE UNIT BY PERSONS UNFAMILIAR WITH BASIC SAFETY MEASURES AS DICTATED FOR ALL ELECTRONICS TECHNICIANS IN THEIR LINE OF WORK.

3. WHEN PERFORMING TESTING AS DICTATED WITHIN THIS MANUAL, DO NOT CONNECT THE UNIT TO A POWER SOURCE UNTIL INSTRUCTED TO DO SO. WHEN THE POWER SUPPLY CABLE MUST BE CONNECTED, USE EXTREME CAUTION IN WORKING ON POWER SUPPLY AND OTHER ELECTRONIC COMPONENTS.

4. WHEN DISASSEMBLING OR ASSEMBLING A PRODUCT, MAKE SURE TO WEAR GLOVES TO AVOID INJURIER FROM METAL PARTS WITH SHARP EDGES.

WARNING

1. REPAIRS ON EPSON PRODUCT SHOULD BE PERFORMED ONLY BY AN EPSON CERTIFIED REPAIR TECHNICIAN.

2. MAKE CERTAIN THAT THE SOURCE VOLTAGES IS THE SAME AS THE RATED VOLTAGE, LISTED ON THE SERIAL NUMBER/RATING PLATE. IF THE EPSON PRODUCT HAS A PRIMARY AC RATING DIFFERENT FROM AVAILABLE POWER SOURCE, DO NOT CONNECT IT TO THE POWER SOURCE.

3. ALWAYS VERIFY THAT THE EPSON PRODUCT HAS BEEN DISCONNECTED FROM THE POWER SOURCE BEFORE REMOVING OR REPLACING PRINTED CIRCUIT BOARDS AND/OR INDIVIDUAL CHIPS.

4. IN ORDER TO PROTECT SENSITIVE MICROPROCESSORS AND CIRCUITRY, USE STATIC DISCHARGE EQUIPMENT, SUCH AS ANTI-STATIC WRIST STRAPS, WHEN ACCESSING INTERNAL COMPONENTS.

5. DO NOT REPLACE IMPERFECTLY FUNCTIONING COMPONENTS WITH COMPONENTS WHICH ARE NOT MANUFACTURED BY EPSON. IF SECOND SOURCE IC OR OTHER COMPONENTS WHICH HAVE NOT BEEN APPROVED ARE USED, THEY COULD CAUSE DAMAGE TO THE EPSON PRODUCT, OR COULD VOID THE WARRANTY OFFERED BY EPSON.

About This Manual

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

Manual Configuration

This manual consists of six chapters and Appendix.

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

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

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

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

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

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

APPENDIX Provides the following additional information for reference:
• Connector pin assignments
• 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 NOTE, CAUTION, or WARNING messages.

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

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

CHECK POINT 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.

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

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

Revision Status

Revision	Issued Date	Description
A	July 31, 2002	First Release

CONTENTS

Chapter 5 ADJUSTMENT

Chapter 6 MAINTENANCE

Chapter 7 APPENDIX

PRODUCT DESCRIPTION

1.1 Features

The major features of EPSON Stylus C82 are:

□ High color print quality

■ 2880 (H) x 1440 (V) dpi printing (Max resolution)

■ 4 color printing (YMCK)

□ Separate ink cartridge for each color

□ Built-in auto sheet feeder

■ Holds 150 cut-sheets (90g/m²)

■ Holds 15 envelopes

□ Built-in 2 I/F

■ Bi-directional parallel I/F (IEEE-1284 level 1 device)

■ USB

□ Windows/Macintosh exclusive

■ Options

10/100 Base-TX External Print Server   : C82378

EpsonNet 802.11b Wireless Ext. Print Server   : C12C82396

1.2 Specifications

This section covers specifications of the printers.

1.2.1 Physical Specification

□ Weight   : 5.2kg (without the ink cartridges)

□ Dimension   : 470mm (W) x 593mm (D) x 316mm (H)

1.2.2 Printing Specification

□ Print method

■ On demand ink jet

□ Nozzle configuration

■ Monochrome 180 nozzles

■ Color 59 nozzles x 3 (Cyan, Magenta, Yellow)

Figure 1-1. Nozzle rear view
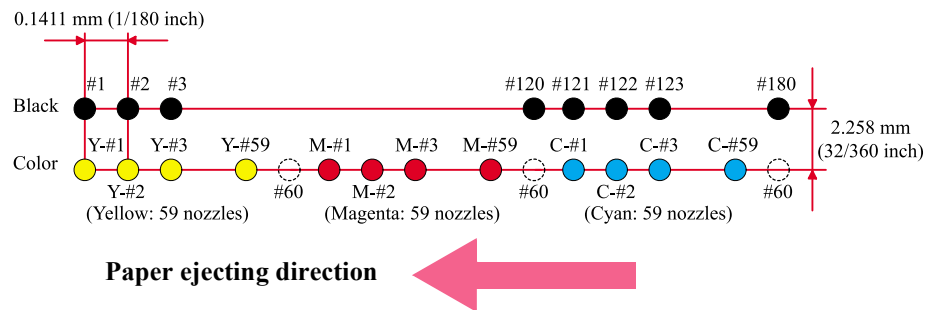
NOTE: The #60 for each nozzle is only a space.

□ Print direction

■ Bi-direction with logic seeking

□ Print speed & Printable columns

Table 1-1. Character mode

Character pitch	Printable columns	LQ speed
10CPI (Pica)	80	245CPS

Table 1-2. Raster graphics mode

Horizontal resolution	Printable area	Available dot	CR speed
180dpi	209.8mm (8.26inch)	1488	291CPS
360dpi (Black)	209.8mm (8.26inch)	2976	245CPS

Table 1-2. Raster graphics mode

Horizontal resolution	Printable area	Available dot	CR speed
360dpi (Color)	209.8mm (8.26inch)	2976	225CPS
720dpi	209.8mm (8.26inch)	5952	245CPS
1440dpi	209.8mm (8.26inch)	11904	190CPS

☐ Control code

   ■ ESC/P2 expanded raster graphics code

   ■ EPSON Remote command

☐ Typeface

   ■ Bit map LQ font: EPSON Courier 10 CPI

1.2.3 Paper Feeding

☐ Feeding method

   ■ Friction feed with ASF

☐ Paper path

   ■ Cut-sheet ASF (Top entry Front out)

☐ Feed speed

   ■ 220.86mm/sec (8.70inch/sec) (Normal, 25.4mm feed)

   ■ 294.0mm/sec (11.5inch/sec) (Fast, continuous feed)

1.2.4 Input Data Buffer

☐ Input buffer size   : 32KB

1.2.5 Electric Specification

[120V version]

Rated voltage	: AC 120V
Input voltage range	: AC 99 to 132V
Rated frequency range	: 50 to 60Hz
Input frequency range	: 49.5 to 60.5Hz
Rated current	: 0.4A (Max. 1.3A)
Power consumption	: Approx. 16W (ISO 10561 Letter Pattern)
	Approx. 3.5W in sleep mode
	Approx. 0.35W in powered off mode
	Energy Star compliant
Insulation resistance	: 10M ohms min.
	(between AC line and chassis, DC 500V)
Dielectric strength	: AC 1000V rms. 1 minute or
	AC 1200V rms. 1 second
	(between AC line and chassis)

[220 to 240V version]

Rated voltage	: AC 220 to 240V
Input voltage range	: AC 198 to 264V
Rated frequency range	: 50 to 60Hz
Input frequency range	: 49.5 to 60.5Hz
Rated current	: 0.2A (Max. 0.7A)
Power consumption	: Approx. 15W (ISO10561 Letter Pattern)
	Approx. 3.5W in sleep mode
	Approx. 0.5W in powered off mode
	Energy Star compliant
Insulation resistance	: 10M ohms min.
	(between AC line and chassis, DC 500V)
Dielectric strength	: AC 1500V rms. 1 minute
	(between AC line and chassis)

1.2.6 Environmental Condition

Table 1-3. Environmental Condition

	Operating	Non-operating [*1]
Temperature	10 to 35°C [*2]	-20 to 40°C (1 month at 40°C and 120 hours at 60°C)
Humidity (Without condensation)	20 to 80% RH [*2]	5 to 85% RH
Resistance to shock	1G, within 1ms	2G, within 2ms
Resistance to vibration	0.15G	0.50G

*NOTE: (*1) With shipment container*

*NOTE: (*2) Condition is as following figure*
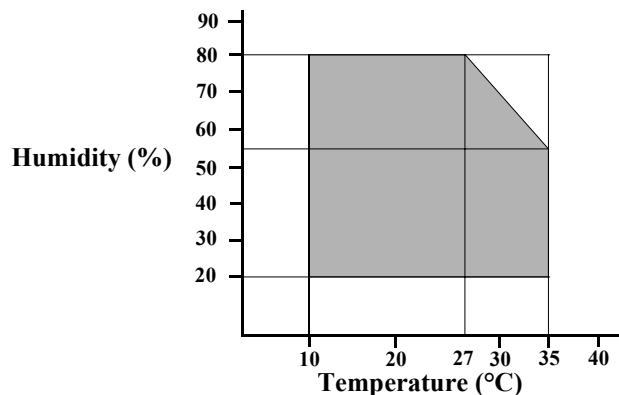
Figure 1-2. Temperature/Humidity range

1.2.7 Reliability

Total print volume   : 50,000 pages (A4, Letter) (Black)
                                   20,000 pages (A4, Letter) (Color)

Printhead Life   : 3000 million dots/nozzle

1.2.8 Safety Approvals

[120V version]
Safety standards   : UL1950
                                   CSA 22.2 No.950

EMI   : FCC part 15 subpart B class B
                                   CSA C108.8 class B

[220 to 240V version]
Safety standards   : EN60950 (VDE)

EMI   : EN55022 (CISPR Pub.22) class B
                                   AS/NZS 3548 class B

1.2.9 Acoustic Noise

Level   : Approx. 42dB (A) (According to ISO 7779)

1.2.10 CE Marking

[220 to 240V version]
Low voltage directive 73/23/EEC   : EN60950
EMC directive 89/336/EEC   : EN55022 class B
                                     EN55024
                                     EN61000-3-2
                                     EN61000-3-3

1.3 Operator Controls

1.3.1 Operate Switch

Operate switch is located on the control panel.

1.3.2 Control Panel

1.3.2.1 Switches

There are 3 non-lock type push switches, and 3 LEDs.
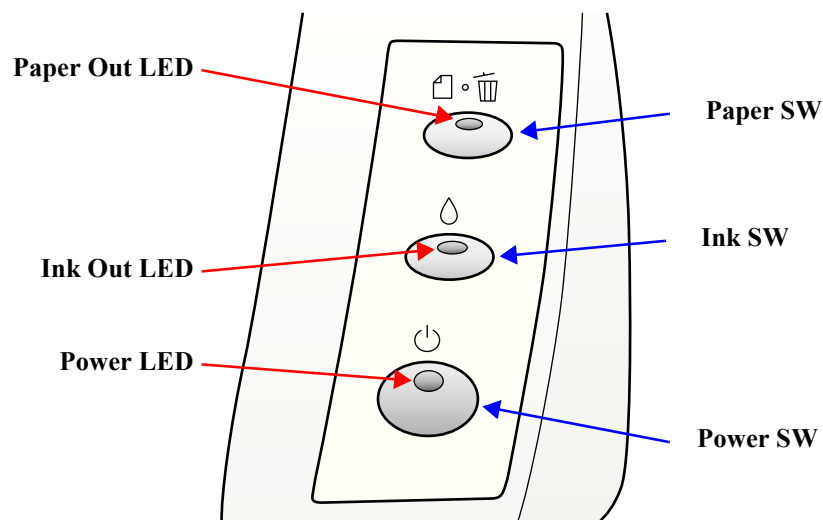
Figure 1-3. Control panel

1.3.2.2 Indicators

☐ **Power**
Lights when the operate switch is "ON", and AC power is supplied.

☐ **Paper Out**
Lights during the paper-out condition, and blinks during the paper-jam condition.

☐ **Ink Out**
Lights during no ink condition, and blinks during the ink low condition.

1.3.3 Panel Functions

Table 1-4. Panel functions

Switch	Function
Paper print cancel	• Loads or ejects the paper. • When carriage is on the ink check position, move carriage to next ink check position or cartridge change position. • When carriage is on the ink cartridge change position, return carriage from ink cartridge change position. • In the condition of "Double feed error", recovering from error condition, printing is restarted. • In the condition of printing, cancel the print job.
Ink	• Starts the ink cartridge change sequence. [*2] Move the carriage to cartridge change position. • When carriage is on the ink change position, return carriage from ink cartridge change position.
Ink (Pushing for 2 seconds *1)	• Starts the cleaning of head. • In the condition of "Ink low" or "Ink out" or "No ink cartridge", starts the ink cartridge change sequence.

*NOTE: (*1) 3 seconds is required at the user's manual.*

*NOTE: (*2) This function is not available in printing status.*

Table 1-5. Panel functions with power on

Switch	Pressing with power on function
Paper	Start status printings. [*1]

NOTE: (*) Status printings prints firmware version, ink counter and nozzle check patterns.

NOTE: The Stylus C82 cannot cancel a maintenance error from the control panel. When a maintenance error is generated, use the Adjustment Program to clear the counter value.

1.3.4 Printer Condition and Panel Status

Table 1-6. Printer condition and LED status

Printer status	Indicators			Priority
	Power	**Ink out**	**Paper out**	
Power on condition	On	-	-	11
Ink sequence	Blink	-	-	7
Ink cartridge change mode	Blink	-	-	6
Data processing	Blink	-	-	9
Paper out	-	-	On	5
Double feed error	-	-	On	5
Paper jam condition	-	-	Blink	4
No ink cartridge/Ink out	-	On	-	8
Ink level low	-	Blink	-	10
Enter EEPROM and Timer IC reset	-	On	On	-
Maintenance request	Fast blink	Fast blink	Fast blink	3
Fatal error	Blink	On	Blink	2
Power off	Blink	Blink	Blink	1

NOTE: (-) Don't care.

NOTE: Error messages for the printer driver are classified as "Paper out error" and "Double feed error."

1.3.5 Errors

☐ **No ink cartridge/Ink out**
　　Ink low　　: Blink
　　Ink out　　: On

☐ **Paper out**
　　When printer fails to load a sheet, it goes paper out error.

☐ **Paper jam**
　　When printer fails to eject a sheet, it goes paper jam error.

☐ **Maintenance request**
　　When the total quantity of ink wasted through the cleanings and flushing is reaches to the limit, printer indicates this error and stops.

☐ **Fatal errors**
　　At occurrence of a Carriage Control Error, CG Access Error or Head Hot Error, a Fatal Error is generated in order to allow recovery of dot-missing the next time power is turned on.

☐ **Double feed error**
　　When printer fails to load a sheet, it goes double feed error.

1.4 Paper

1.4.1 Paper Handling

Reverse feed of more than 9.5mm (0.38") is not allowed.

1.4.2 Paper Specification

☐ Cut sheet

Table 1-7. Paper specification (Cut sheet)

Paper size	Paper width	Paper length	Thickness	Weight (lb)	Quality
A4	210mm	297mm	0.08 to 0.11mm	64 to 90g/m^2 (17 to 24)	• Exclusive paper • Bond paper • PPC
Letter	215.9mm	279.4mm			
B5	182mm	257mm			
Legal	215.9mm	355.6mm			
Executive	184.2mm	266.7mm			
Half-letter	139.7mm	215.9mm			
A5	148mm	210mm			
Photo paper	101.6mm	152.4mm			

☐ Envelope

Table 1-8. Paper specification (Envelope)

Paper size	Paper width	Paper length	Thickness	Weight (lb)	Quality
No.10	241mm	104.8mm	0.16 to 0.52mm	45 to 75g/m² (12 to 20)	• Bond paper • Plain paper • Air mail
DL	220mm	110mm			
C6	162mm	114mm			

NOTE: Envelope printing is only available at normal temperature.

NOTE: Keep the longer side of the envelope horizontally at setting.

☐ Index card

Table 1-9. Paper Specification (Index card)

Paper size	Paper width	Paper length	Thickness
A6 Index card	105mm	148mm	Less than 0.23mm
5 x 8" Index card	127mm	203mm	
10 x 8" Index card	254mm	203mm	

☐ Post cards (Card)

Table 1-10. Paper Specification (Post cards)

Paper size	Paper width	Paper length
Post card	100mm	148mm
Return post card	200mm	148mm

1.4.3 Printing Area

1.4.3.1 Cut Sheet

Table 1-11. Character mode

Paper size	LM (Left margin) (min.)	RM (Right margin) (min.)	TM (Top margin) (min.)	BM (Bottom margin) (min.)
A4	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54")
Letter	3mm (0.12")	9mm (0.35")	3mm (0.12")	14mm (0.54")
B5	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54")
Legal	3mm (0.12")	9mm (0.35")	3mm (0.12")	14mm (0.54")
Statement	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54")
Exclusive	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54")

Table 1-12. Raster graphics mode

Paper size	LM (Left margin) (min.)	RM (Right margin) (min.)	TM (Top margin) (min.)	BM (Bottom margin) (min.)
A4	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54") / 3mm (0.12") (*)
Letter	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54") / 3mm (0.12") (*)
B5	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54") / 3mm (0.12") (*)
Legal	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54") / 3mm (0.12") (*)
Statement	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54") / 3mm (0.12") (*)
Executive	3mm (0.12")	3mm (0.12")	3mm (0.12")	14mm (0.54") / 3mm (0.12") (*)

NOTE: (*) Bottom margin is expanded to 3mm when paper dimension is defined by using command, otherwise it is not expanded (14mm).

NOTE: From a form lower end 3mm as for 14mm area a printing may scramble.

1.4.3.2 Envelopes

Table 1-13. Envelope margin

Paper size	LM (Left margin) (min.)	RM (Right margin) (min.)	TM (Top margin) (min.)	BM (Bottom margin) (min.)
No.10	3mm (0.12")	20mm (0.78")	3mm (0.12")	3mm (0.12")
DL	3mm (0.12")	20mm (0.78")	3mm (0.12")	3mm (0.12")
C6	3mm (0.12")	20mm (0.78")	3mm (0.12")	3mm (0.12")

NOTE: Keep the shorter side of the envelope horizontally at setting.

1.5 Ink Cartridge

1.5.1 Black Ink Cartridge

Bk   : Completely compatible between Stylus C80/C70.

Type   : Exclusive cartridge
Color   : Black
Print capacity   : 1240 pages/A4 (ISO/IEC 10561 Letter Pattern at 360dpi)
Ink life   : 2 years from production data.
Storage temperature : -20ºC to 40ºC (Storage, within a month at 40ºC)
                                  -30ºC to 40ºC (Packing storage, within a month at 40ºC)
                                  -30ºC to 60ºC (Transit, within 120 hours at 60ºC
                                  and within a month at 40ºC)
Dimension   : 22.0mm (W) x 71.2mm (D) x 66.5mm (H)

1.5.2 Color Ink Cartridge

CMY   : Not compatible between Stylus C80/C70.
Type   : Exclusive cartridge
Color   : Magenta, Cyan, Yellow
Print capacity   : 420 pages / A4 (360 dpi, 5% duty each color)
Ink life   : 2 years from production date

Storage temperature   : -20ºC to 40ºC (Storage, within a month at 40ºC)
                                     -30ºC to 40ºC (Packing storage, within a month at 40ºC)
                                     -30ºC to 60ºC (Transit, within 120 hours at 60ºC
                                     and within a month at 40ºC)
Dimension   : 12.7mm (W) x 71.2mm (D) x 66.5mm (H)

NOTE: Ink cartridges cannot be refilled. Only new cartridges are prepared for use. To prevent ink leakage, be sure not to peel off blue label attached to side of cartridge.

NOTE: Do not use the ink cartridge which was passed away the ink life.

NOTE: Ink will be frozen under -4ºC environment, however it will be usable after placing it more than 3 hours at room temperature.

C H A P T E R

2

OPERATING PRINCIPLES

2.1 Overview

This section describes the operating principles of the printer mechanism and electrical circuit boards

2.1.1 Printer Mechanism

☐ The basic component of the printer mechanism is same the Stylus C80/C70.

☐ Only the ASF is newly designed.

☐ For throughput improvement, the special use Flashing Box utilizes 0/80 digit bi-direction.

☐ Paper can be supplied by 0/80 digit bi-direction. (Economy printing only.)

2.1.2 Carriage Motor Specification

Table 2-1. CR motor Specification

Items	Specifications
Type	DC motor with brushes
Drive voltage	+42V ± 5% (voltage applied to driver)
Coil resistance	27.1Ω ± 10% (per phase at 25 degree)
Inductance	19.8mH ± 25% (1KH 1VmA)
Drive method	PWM, constant-current chopping
Driver IC	LB11947

2.1.3 Paper Feeding Motor Specification

Table 2-2. PF motor Specification

Items	Specifications
Type	DC motor with brushes
Drive voltage	+42V ± 5% (voltage applied to driver)
Coil resistance	22.3Ω ± 25% (per phase at 25 degree)
Inductance	17.3mH ± 25% (1KH 1VmA)
Drive method	PWM
Driver IC	LB11947

2.1.4 Paper Loading Mechanism (New ASF unit)

The ASF of this printer is newly designed. It has the following characteristics.

☐ Uses a Retard Roller. (Laser printers also use this roller.)

☐ New design of PF/ASF change mechanism. (Operating principle same as previous.)

2.1.4.1 Drive Process

1. The motion of the PF Motor is always transmitted to the Combination Gear Ratchet 65.6 but not transmitted to the LD Roller.

2. After receiving the paper feed command, the Carriage Unit contacts the A or B ASF Trigger Lever.

3. At this point, the Change Lever extends in the direction of arrow C, locking the Clutch mechanism.

4. The motion of Combination Gear Ratchet 65.6 is transferred to Clutch Gear 1.

5. LD Roller Gear 2 rotates one time (LD Roller rotates once), and then the LD Roller is stopped by the Clutch Gear again contacting the Change Lever.
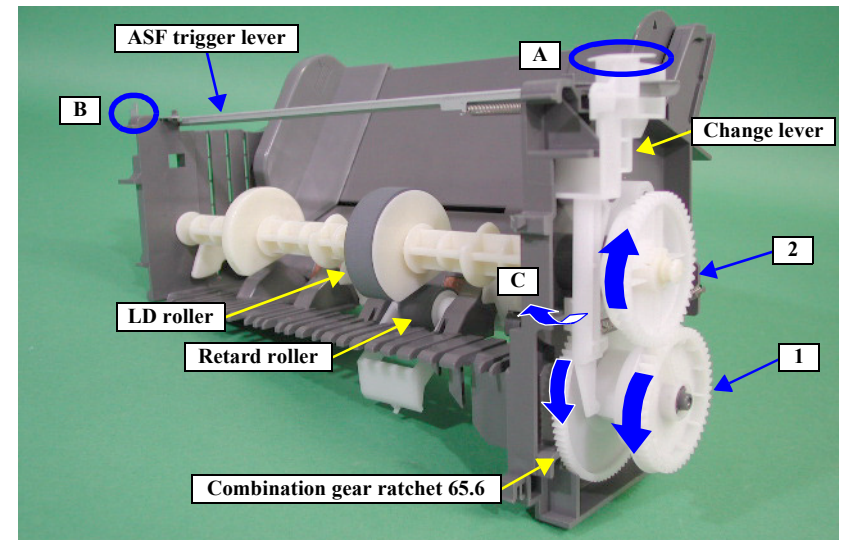
Figure 2-1. Drive Process

2.1.5 Ink System Mechanism

With this printer, when the PF Motor turns, power is always transmitted to the ink system.

2.1.5.1 Pump Unit & Wiper mechanism

Table 2-3. PF motor rotational direction & Ink system mechanism

Directions	Functions
Counterclockwise [*1]	• Set wiper. • Draw ink. • Set CR lock lever.
Clockwise [*1]	• Reset wiper. • Release pump. • Reset CR lock lever.

(*1): The PF Motor rotational direction = seen from the left side of the printer.

2.2 Electrical Circuit Operating Principles

The electric circuit of the Stylus C82 consists of the following boards.

☐ Main board   : C486 MAIN Board

☐ Power supply board   : C486 PSB/PSE Board

☐ Panel board   : C486 PNL Board

This section provides Block diagram of both C486 MAIN Board and C486 PSB/PSE Board.

2.2.1 C486 PSB/PSE Board
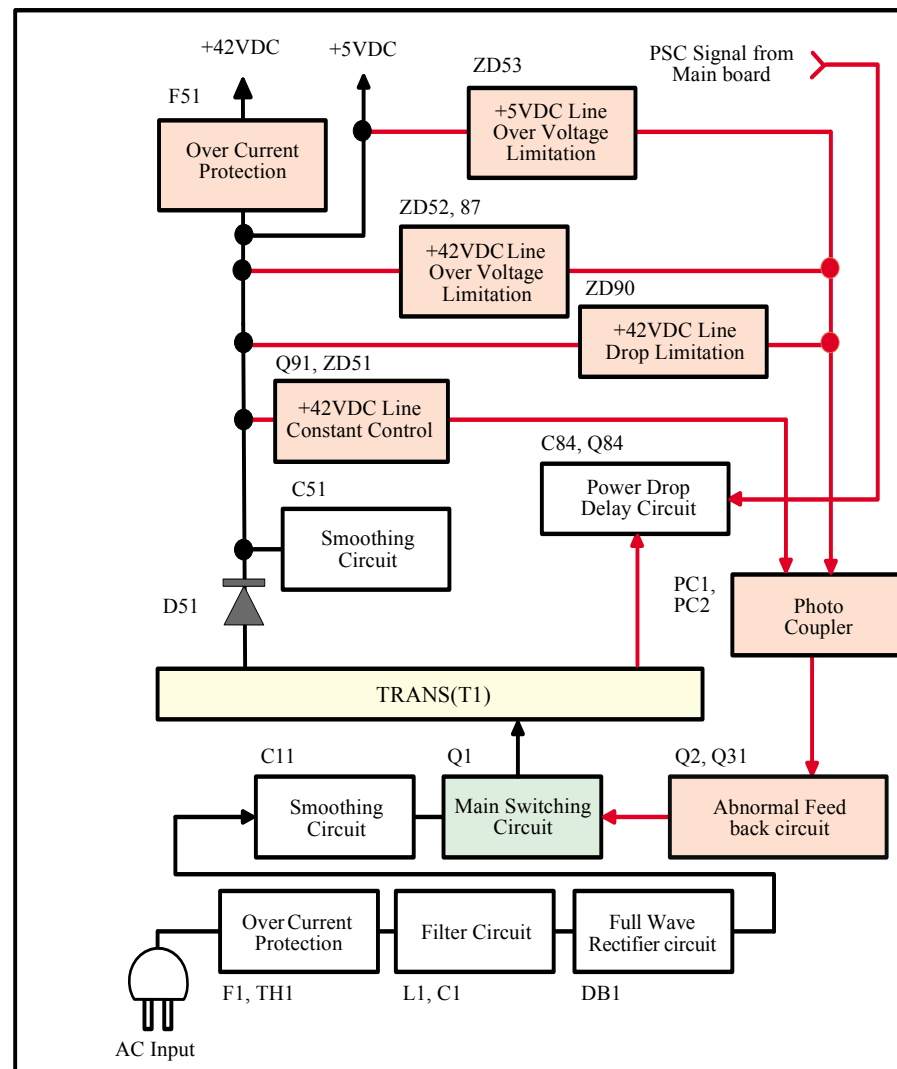
Figure 2-2. C486 PSB/PSE Board Block Diagram

2.2.2 C486 MAIN Board

Table 2-4. C486 MAIN Board Major Components and Primary Functions

IC	Location	Function
ROM	IC1	8 Mbit ROM program for CPU provided with CG table, 3.3V drive (not DOS compliant)
Transceiver	IC3	Transceiver IC for the Centronics I/F response to IEEE1284 and ECP more, Data transfer by DMA, 3.3V drive
Reset regulator	IC4	Formed reset signals shown below. 1. Dropping 42V line to 36.3V, 2. Dropping 5V line to 4.2V
D-RAM	IC5	4 Mbit RAM 2-CAS type, 16 bit bus, 5V and 3.3V drive provide page access functions.
EEPROM	IC6	1 kbit capacity for default setting or adjusted value.
Motor Driver	IC8	For driving both CR and PF motors, PWM control by program timer, 5V regulation, 42V drive
Head Driver 1	IC9	For creating trapezoidal waveform, 5V drive
ASIC	IC10	CPU (equivalent of H8S/2323), Internal 8Kbit RAM, Internal MASK ROM, 24MHz, 3.3Vdrive
Head Driver 2	Q2, Q3	Based on IC9 control, trapezoidal waveform creates, 42V drive

E01A38CA
ASIC (IC10)

ROM
(IC1)

DATA | ADDRESS

DATA

ADDRESS

D-RAM
(IC5)

D0 (#164), D1 (#169)
D2 (#174), D3 (#4)
D4 (#5),   D5 (#176)
D6 (#171), D7 (#166)
D8 (#167), D9 (#172)
D10 (#1),   D11 (#6)
D12 (#2),   D13 (#173)
D14 (#168), D15 (#163)

A1 (#154), A2 (#152)
A3 (#149), A4 (#147)
A5 (#144), A6 (#141)
A7 (#139), A8 (#136)
A9 (#133), A10 (#135)
A11 (#138), A12 (#140)
A13 (#143), A14 (#146)
A15 (#148), A16 (#151)
A17 (#153), A18 (#134)
A19 (#61)

/HWFLR (#36)
HWSDATA (#39)
HWSCLK (#30)
/HWSLAT (#31)

HWCLK1 (#33)
HWCLK2 (#34)

HWA0 (#40)
to
HWA4 (#44)

DATA

+42V

F1

F2

Q2

Q3

CN8

CN9

Printhead

Head
driver 1
(IC9)

DATA

DATA0 (#115)
to
DATA4 (#111)
DATA5 (#109)
to
DATA7 (#107)

RST_DCMCU (#89)
PWM1_MCU (#82)
PWM2_MCU (#87)
DATA1_MCU (#81)
CLK1_MCU (#83)
DATA2_MCU (#86)
CLK2_MCU (#88)

Motor driver
(IC8)

CN14

CN13

CR motor

PF motor

ECS (#128)
ECK (#127)
EDO (#126)
EDI (#125)

EEPROM
(IC6)

Transceiver
(IC3)

/ACK (#122), BUSY (#121)
PE (#119),   SLCT (#118)
/ERR (#117)
/STB (#104), /INIT (#103)
/AFXT (#102),/SLIN (#101)
LH (#106)
DIR (#124)
HD (#123)

ENCA_PFDCU (#54)
ENCB_PFDCU (#55)

CN12

PF Encoder

Parallel
I/F

CN1

SWA1 (#72)

CN4

PE sensor

USB

CN3

DP (#98)
DM (#99)
USBLH (#95)

PSC0 (#69)

CN19

PS Board

Reset regulator
(IC4)

MRES (#129)
/NMI (#131)
/RESET (#130)

LED2 (#66) to LED0 (#68)
SW0 (#57) to SW2 (#59)

CN20

Panel Board

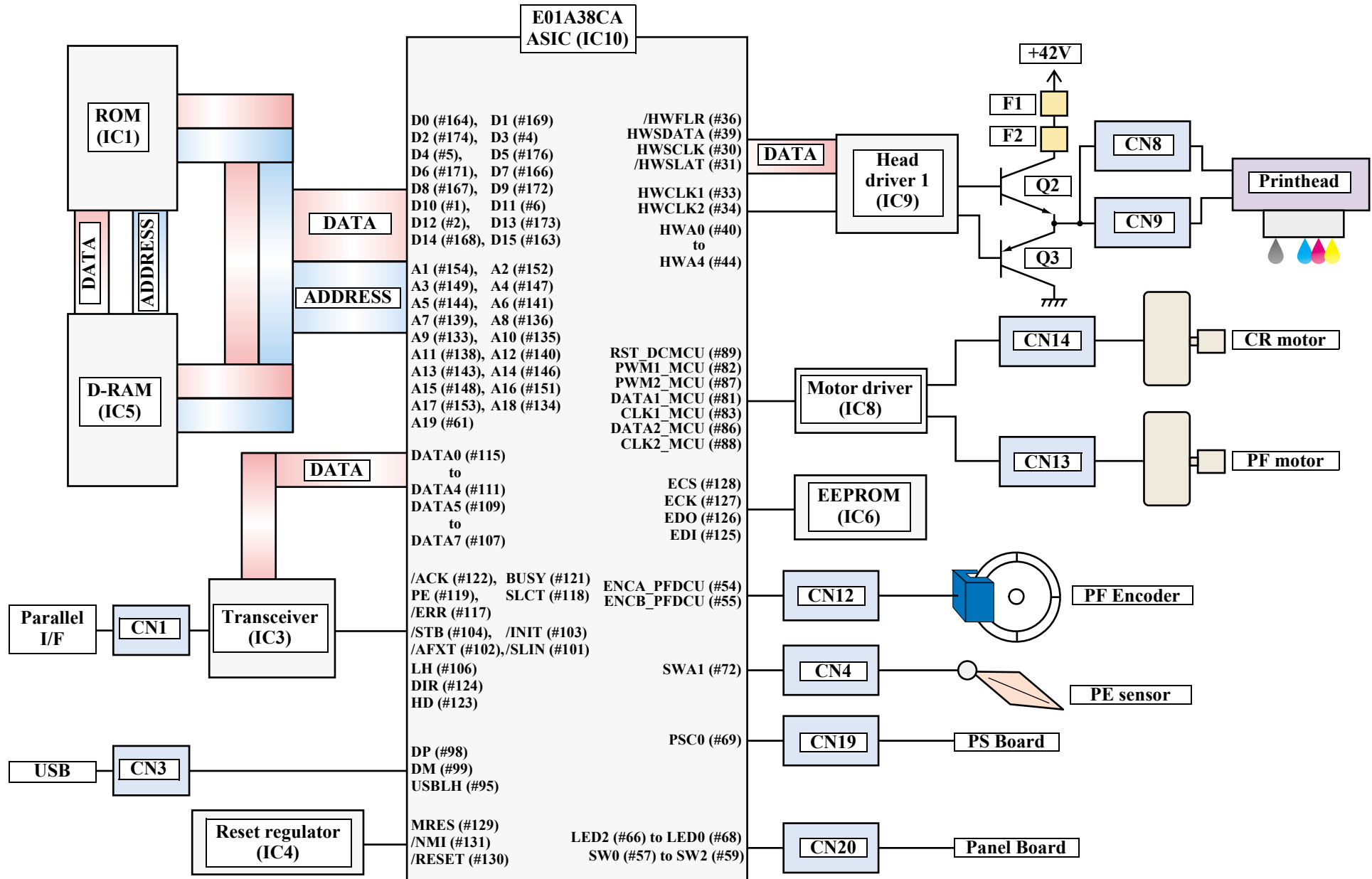**Table 2-5. Block diagram for the C486 MAIN Board**

TROUBLESHOOTING

3.1 Overview

This chapter describes how to troubleshoot problems.

WARNING

- **Be careful to avoid electric shocks when checking the electrical circuit boards (C486 MAIN, PSE and B circuit boards) while the power is turned on.**
- **Touching an FET, transistor or heat sink with one hand while touching a metal part of the mechanism with the other hand could result in an electric shock, so carefully avoid this.**
- **After initial filling of ink has been repeated several times, immediate moving or tilting of the printer could result in leaking of ink that has not been completely absorbed by the Waste Ink Pad. When initial filling of ink has been repeated several times, check the ink remaining in the tip of the Waste Ink Tube and the waste ink not absorbed by the Waste Ink Pad before moving the printer.**

CHECK POINT

- **Disassembly and reassembly of parts is often required when identifying the causes of problems. The parts should be disassembled and re-assembled correctly while referring to "Chapter 4 Disassembly and Assembly" so that the operation and status of each check item can be correctly verified.**
- **Some individual part and units may require adjustment once they are removed or replaced. If removing or replacing parts which have specific instructions for adjustment included in "Chapter 4 Disassembly and Assembly", be sure to make these adjustments after repairing the problem location.**

3.1.1 Troubleshooting With LED Error Indications

3.1.1.1 Paper Out/Double Feed Error

☐ Is the PE Sensor disconnected from the Main Board?

☐ Is the PE Lever properly operating?

3.1.1.2 Ink Out

☐ The Ink Out indicator did not recover immediately after installation of the Ink Cartridge. Press the Ink Switch and the Ink Out indicator will go out after the Carriage Unit returns to the HP. (Use same procedure for Ink Low after installing other Ink Cartridge.)

3.1.1.3 Fatal Error

There are 3 types of Fatal Errors: Carriage Error, PF Error and Head Hot Error.

1. Press the Power Switch, then turn on power again. (If it does not recover, see Table 3-1.)

Table 3-1. Carriage Error and PF Error Check Points

<Situation>	<Check point>
• Does the CR Motor turn?	• CR motor • CR motor connector • Linear scale position • CR encoder connector
• Does the PF Motor turn?	• PF motor • PF motor connector • Rotary scale position • PF encoder connector

2. Possible Head Hot Error Verification

   Before eliminating the cause of the Error, use Adjustment Program to check EEPROM 2Dh error history.

   - 2Dh → 0Dh   : Indicates that Head Hot Error was generated for black nozzle line.

   - 2Dh → 0Eh   : Indicates that Head Hot Error was generated for color nozzle line.

CAUTION

1. **Ink Out is not activated by Head Hot Error.**
2. **Automatic cleaning starts next time power is turned on.**
3. **Head Hot Error (Fatal Error) is generated only when a large quantity of Dot Missing is generated.**

3. Fatal Error Reference Information (Aside from Head Hot Error)

    Fatal Error cause can be analyzed by referring to EEPROM Address and Error Code shown below.

Table 3-2. [2Dh address: Sequence error]

Address	Error Condition	Address	Error Condition
00h	No error	05h	Mechanism edge detection error
01h	Memory free error	06h	CR home seeking 1 error
02h	Board hot/cold error	07h	CR home seeking 2 error
03h	DRAM error	08h	CR lock retry error
04h	Timer IC initialize error	09h to 0Ch	Motor sequence error

Table 3-3. [2Eh address: DC motor error]

Address	Error Condition	Address	Error Condition
00h	No error	FBh to FFh	PF motor control error
01h to 0Ch	CR motor control error		

> **CAUTION**
>
> **When printer cannot detect Ink Out, a Head Hot Error is handled as a Fatal Error and displayed. Because of this, the printer makes every effort to automatically recover from Ink Out Error without expecting that the existing Ink Cartridge had to have been replaced.**

3.1.1.4 Paper Supply Faults

1. Use a cleaning sheet to clean the Retard Roller and LD Roller inside the ASF Unit. (See "Chapter 6 Maintenance" for details.)

2. Clean the Retard Roller or LD Roller with a cloth moistened with a cleaning solution like alcohol.

3. Replace the Retard Roller or LD Roller. (It is recommended that both be replaced at the same time.)

3.1.1.5 Dot missing 1

1. Use operation from Panel or Driver Utility to execute cleaning 4~5 times.

2. Use Adjustment Program to execute strongest cleaning 2~3 times.

3. Use Adjustment Program to execute Ink Charge.

4. Allow printer to sit for one day and check printing again the next day. If problem continues, replace the Printhead.

3.1.1.6 Dot missing 2

When a specific single dot is missing only with color printing and cannot be recovered, check whether or not the Stylus C80 Printer Driver is being used. With the Stylus C82, 59 nozzles are used for each color nozzle, so 1 dot will be missing if the Stylus C80 Printer Driver is used.

DISASSEMBLY AND ASSEMBLY

4.1 Overview

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

If the assembling procedure is different from the reversed procedure of the disassembling, the procedure is described under the heading "REASSEMBLY".

Any adjustments required after disassembling the units are described under the heading "ADJUSTMENT REQUIRED". When you have to remove any units or parts that are not described in this chapter, refer to the exploded diagrams in the appendix.

Read precautions described in the next section before starting.

4.1.1 Precautions

See the precautions given under the handling "WARNING" and "CAUTION" in the following column when disassembling or assembling the product.

WARNING

- **Disconnect the power cable before disassembling or assembling the printer.**
- **If you need to work on the printer with power applied, strictly follow the instructions in this manual.**
- **Wear protective goggles to protect your eyes from ink. If ink gets in your eye, flush the eye with fresh water and see a doctor immediately.**
- **Always wear gloves for disassembly and reassembly to avoid iujury from sharp metal edges.**
- **To protect sensitive microprocessors and circuitry, use static discharge equipment, such as anti-static wrist straps, when accessing internal components.**
- **Never touch the ink or wasted ink with bare hands. If ink comes into contact with your skin, wash it off with soap and water immediately. If irritation occurs, contact a physician.**
- **Make sure the tip of the waste ink tube is located at correct position when reassembling the waste ink tube. Otherwise it will cause ink leakage.**

WARNING

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

CAUTION

- **When transporting the printer after installing the ink cartridge, be sure to pack the printer for transportation without removing the ink cartridge.**
- **Use only recommended tools for disassembling, assembling or adjusting the printer. (Refer to Table 4-1 "Special Tool List".)**
- **Observe the specified torque when tightening screws.**
- **Apply lubricants and adhesives as specified. (Refer to Chapter 6 for details.)**
- **Make the specified adjustments when you disassemble the printer. (Refer to Chapter 5 for details.)**

4.1.2 Tools

Use only specified tools to avoid damaging the printer.

Table 4-1. Special Tool List

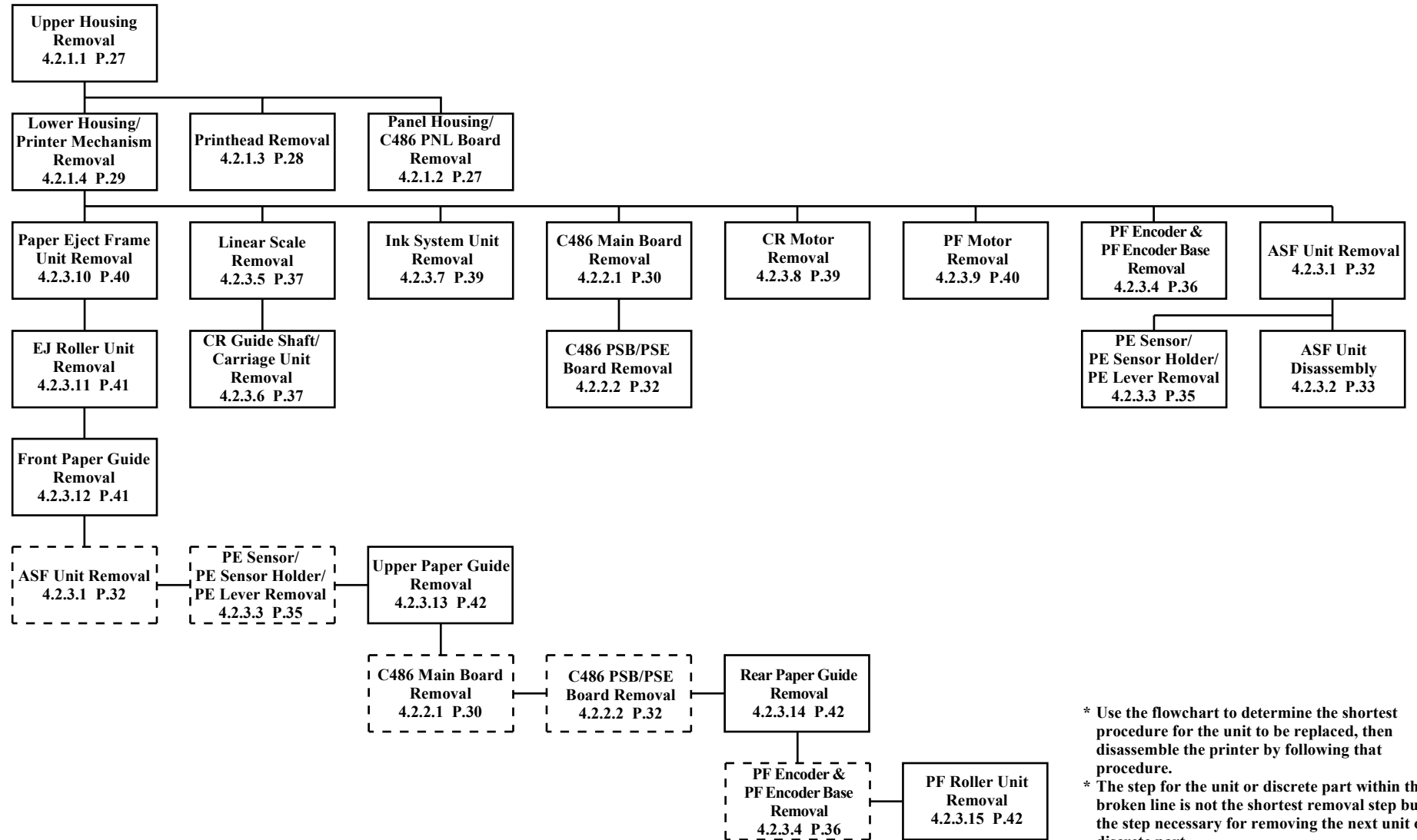| Name	Supplier	Parts No.
Phillips Screw Driver (No.1)	EPSON	1080530
Phillips Screw Driver (No.2)	EPSON	1080532
Tweezers	EPSON	1080561
Acetate Tape	EPSON	1003963

4.1.3 Screws

The screws used in the printer are as shown in Table 4-2. Make sure you always use the correct type and number of screws for the assembling part.

Table 4-2. Screw Specifications

Abbreviation	Description
C.B.P	Cross-recessed Binding Head P-tight screw
C.B.S	Cross-recessed Binding Head S-tight screw
C.C	Cross-recessed Cup Head screw

4.2 Disassembly

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

```
Upper Housing
Removal
4.2.1.1  P.27
   │
   ├──────────────┬──────────────┐
   │              │              │
Lower Housing/   Printhead      Panel Housing/
Printer Mechanism Removal       C486 PNL Board
Removal          4.2.1.3  P.28  Removal
4.2.1.4  P.29                   4.2.1.2  P.27
```

Paper Eject Frame Unit Removal 4.2.3.10 P.40	Linear Scale Removal 4.2.3.5 P.37	Ink System Unit Removal 4.2.3.7 P.39	C486 Main Board Removal 4.2.2.1 P.30	CR Motor Removal 4.2.3.8 P.39	PF Motor Removal 4.2.3.9 P.40	PF Encoder & PF Encoder Base Removal 4.2.3.4 P.36 · ASF Unit Removal 4.2.3.1 P.32
EJ Roller Unit Removal 4.2.3.11 P.41	CR Guide Shaft/ Carriage Unit Removal 4.2.3.6 P.37		C486 PSB/PSE Board Removal 4.2.2.2 P.32			PE Sensor/ PE Sensor Holder/ PE Lever Removal 4.2.3.3 P.35 · ASF Unit Disassembly 4.2.3.2 P.33
Front Paper Guide Removal 4.2.3.12 P.41						

```
ASF Unit Removal     PE Sensor/           Upper Paper Guide
4.2.3.1  P.32   ──    PE Sensor Holder/ ── Removal
(broken line)         PE Lever Removal     4.2.3.13  P.42
                      4.2.3.3  P.35
                      (broken line)
                             │
C486 Main Board   ──  C486 PSB/PSE      ── Rear Paper Guide
Removal               Board Removal        Removal
4.2.2.1  P.30         4.2.2.2  P.32        4.2.3.14  P.42
(broken line)         (broken line)
                                              │
                      PF Encoder &       ── PF Roller Unit
                      PF Encoder Base        Removal
                      Removal               4.2.3.15  P.42
                      4.2.3.4  P.36
                      (broken line)
```

* Use the flowchart to determine the shortest procedure for the unit to be replaced, then disassemble the printer by following that procedure.
* The step for the unit or discrete part within the broken line is not the shortest removal step but is the step necessary for removing the next unit or discrete part.

Figure 4-1. Disassembling Flowchart

4.2.1 Housing Removal

4.2.1.1 Upper Housing Removal

1. Remove 4 screws (C.B.P 3x10) holding the Upper Housing.
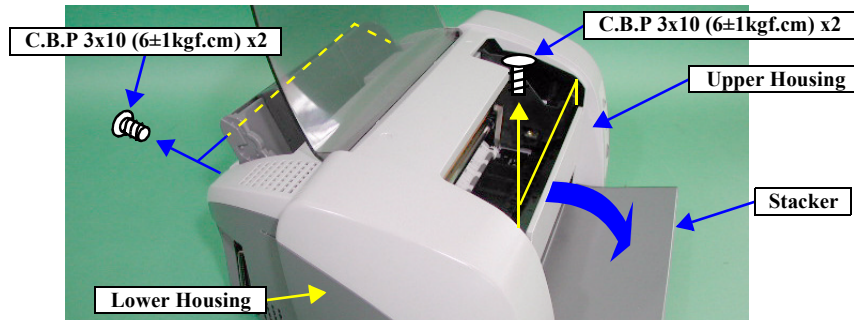
2. Open Stacker.

Figure 4-2. Upper Housing Removal 1

3. Follow the order shown in Figure 4-3 to release 5 hooks from the Lower Housing. (Use a pair of tweezers to press hooks 1 and 2 into slots and release while pressing in the direction of the arrow. Hooks 4 and 5 can be released by pressing them through the slots with a pair of tweezers.)
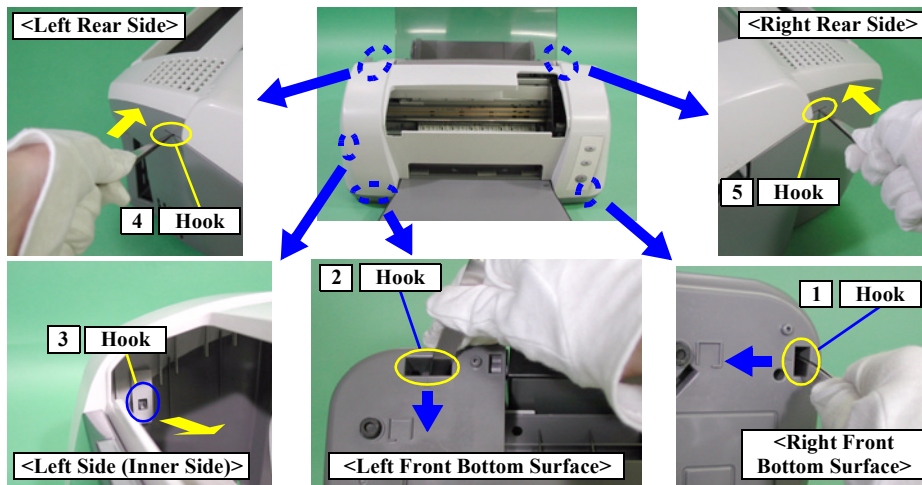

Figure 4-3. Upper Housing Removal 2

4. While slightly lifting Upper Housing, follow the order shown below to remove (1) 1 screw (C.B.S 3x6) and (2) FFC (from C486 PNL Board). Then remove the Upper Housing.
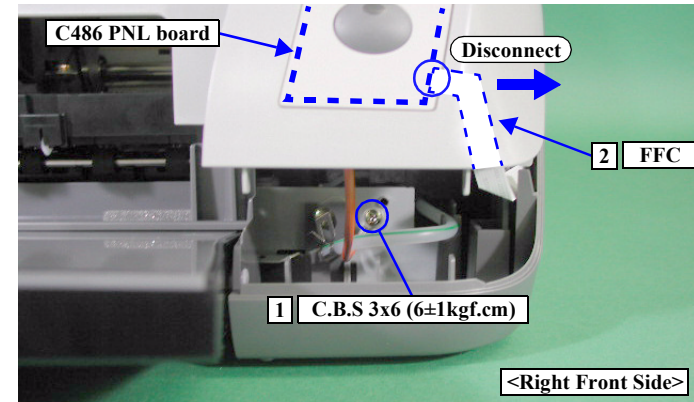
Figure 4-4. Upper Housing Removal 3

4.2.1.2 Panel Housing/C486 PNL Board Removal

1. Remove Upper Housing. (See Section 4.2.1.1)

2. While pressing inward the 2 hooks holding the Panel Housing, remove the Panel Housing by pushing it in the direction of arrow A.
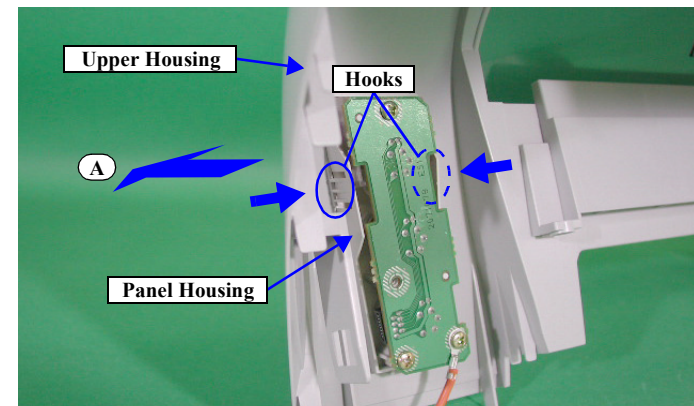
Figure 4-5. Panel Housing/C486 PNL Board Removal 1

3. Remove 3 screws (C.B.P 3x8) holding the C486 PNL Board, then remove the C486 PNL Board from the Panel Housing.
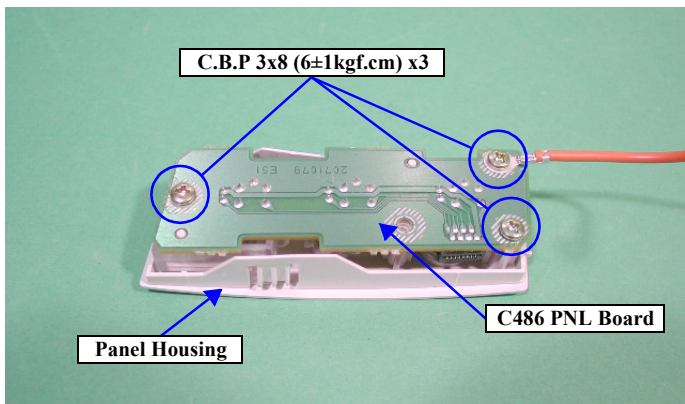
Figure 4-6. Panel Housing/C486 PNL Board Removal 2

4.2.1.3 Printhead Removal

1. Remove Upper Housing. (See Section 4.2.1.1)

2. Use a pair of tweezers to push and lift one side of the Spring Cartridge at a time from the 2 slots of the Carriage Unit, then remove the Spring Cartridge from the Carriage Unit.
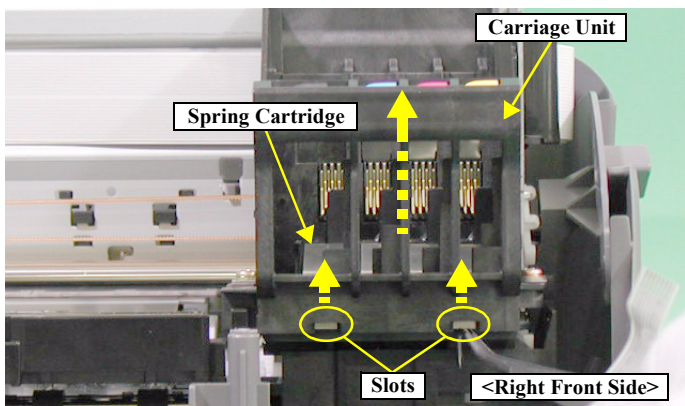

Figure 4-7. Printhead Removal 1

3. Remove 2 screws (C.B.P (P4) 3x8) holding the Fastener Head, then remove the Fastener Head in the direction of arrow A.
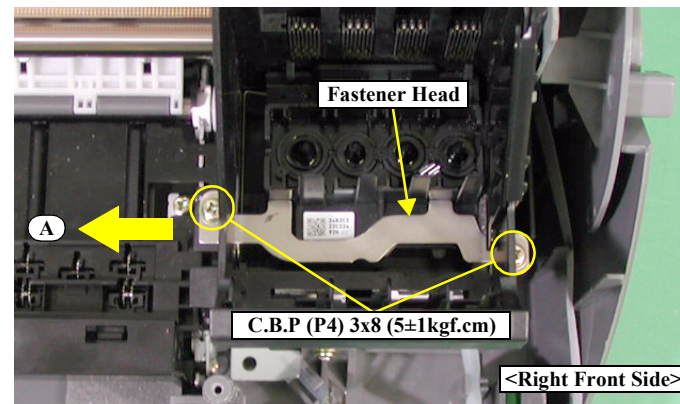
Figure 4-8. Printhead Removal 2

4. Push Carriage Lock Lever forward, then shift Carriage Unit to the left side.

5. Use the order shown below to release 4 hooks, then remove Cable Head Holder from Carriage Unit in upward direction.
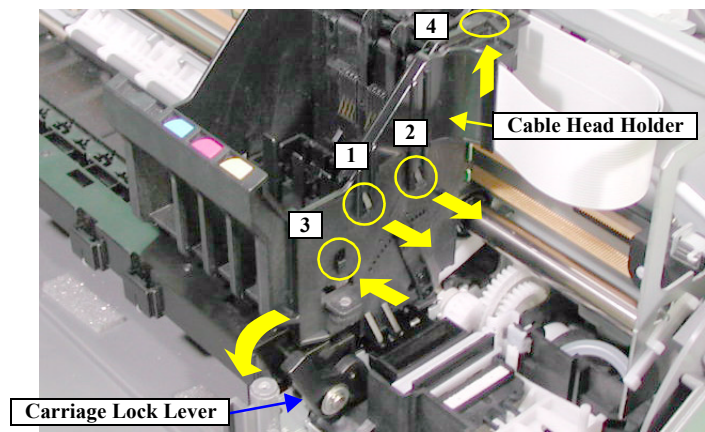
Figure 4-9. Printhead Removal 3

6. While avoiding 2 hooks, follow order shown below to remove Printhead from Carriage Unit.
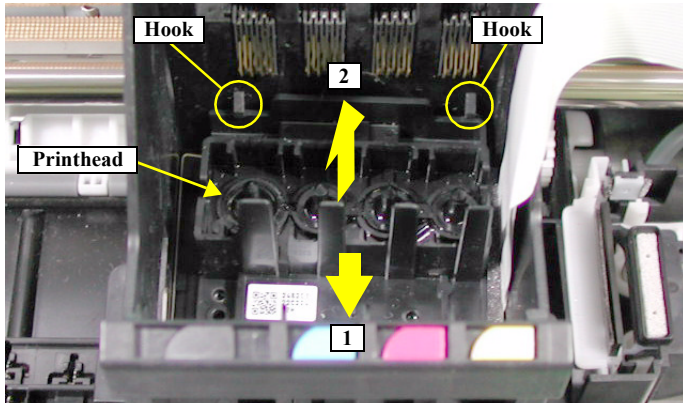
Figure 4-10. Printhead Removal 4
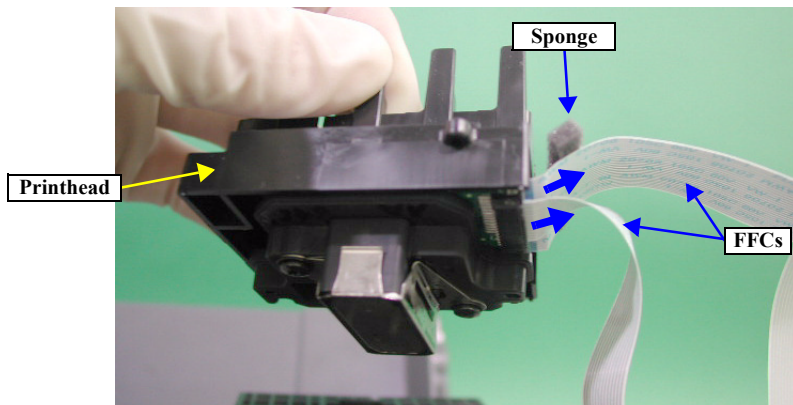
7. Remove 2 FFCs from the Printhead.

Figure 4-11. Printhead Removal 5

CAUTION	When the FFC has been replaced, be sure to attach sponge as shown in lower left diagram. Because double-sided tape is attached to FFC service parts, simply installing sponge is sufficient.

ADJUSTMENT REQUIRED	When removing or replacing the Printhead, the adjustments are necessary. Refer to "Chapter 5 Adjustment" for the adjustment procedure.

4.2.1.4 Lower Housing/Printer Mechanism Removal

1. Remove Upper Housing. (See Section 4.2.1.1)

2. Remove 4 screws (C.B.P 4x12: 3, C.B.S 3x8: 1) holding Printer Mechanism.
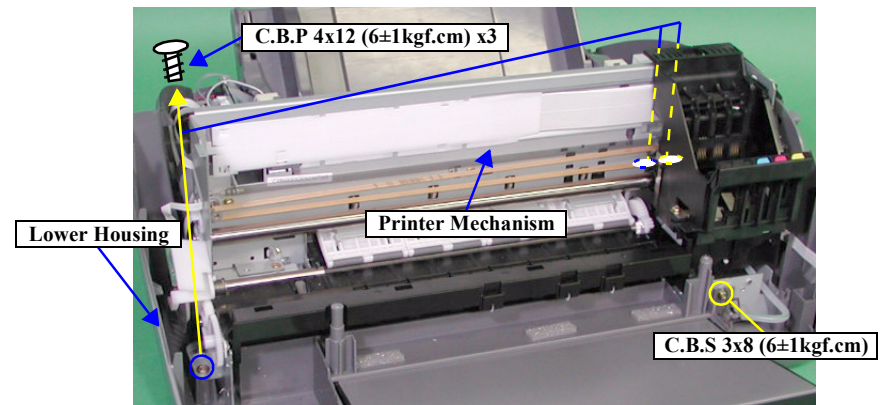
Figure 4-12. Lower Housing/Printer Mechanism Removal 1

3. As shown below, remove AC Cable Cover and Ink Tube from Lower Housing and C486 Main Board.

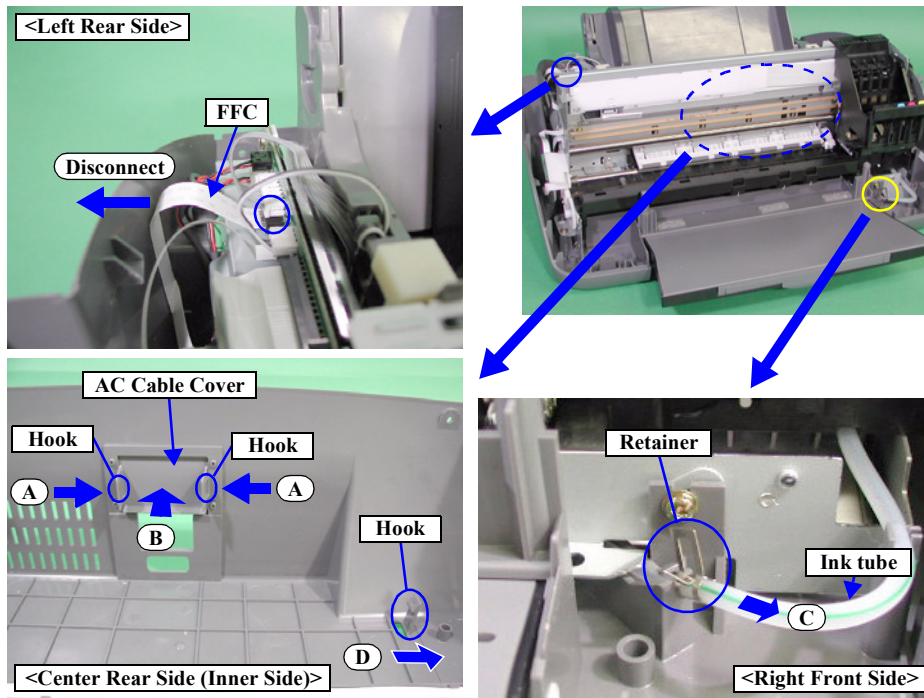| AC Cable Cover	: Release while pushing 2 hooks in direction of arrow A, then remove cover by pushing out in direction of arrow B.
Ink tube	: While pressing inward both edges of retainer, remove Ink Tube in direction of arrow C.

Figure 4-13. Lower Housing/Printer Mechanism Removal 2

4. As shown above (lower left photo), while releasing hook in direction of arrow D, lift Printer Mechanism and remove from Lower Housing.

WARNING

Make sure the tip of the waste ink tube is located at correct position when reassembling the waste ink tube. Otherwise it will cause ink leakage.

ADJUSTMENT REQUIRED

When replacing the Printer Mechanism, the adjustments are necessary. Refer to "Chapter 5 Adjustment" for the adjustment procedures.

4.2.2 Board Removal

4.2.2.1 C486 Main Board Removal

1. Remove Printer Mechanism. (See Section 4.2.1.4)

2. Remove all cables from C486 Main Board and peel off acetate tape in 2 places.
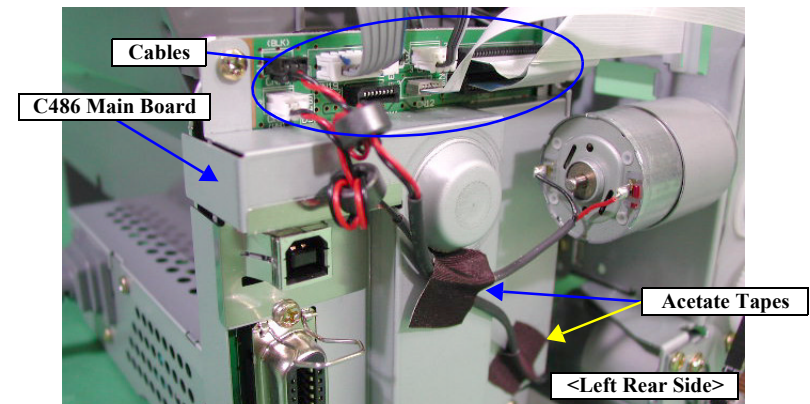

Figure 4-14. Main Board Removal 1

3. Remove 4 screws (C.B.S 3x6: 1, C.B.S 3x8: 2, C.B.S 3x16: 1) holding C486 Main
    Board, then remove Printer Mechanism from C486 Main Board in upward
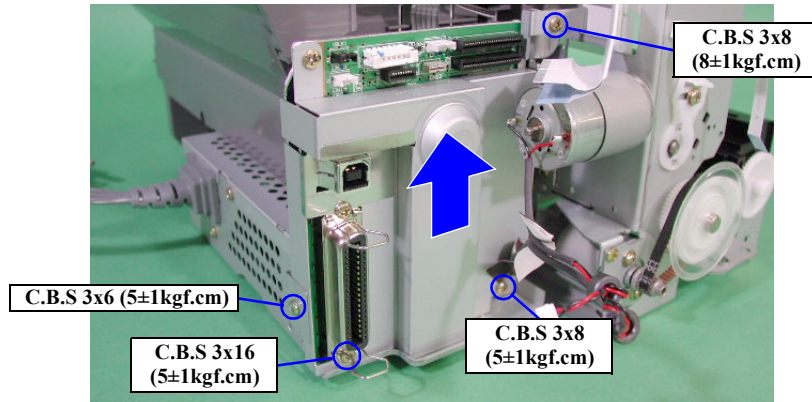   direction.

Figure 4-15. Main Board Removal 2

WARNING ■ The CN19 cable on the C486 Main Board has a specified
            installation direction. The pin connected to the blue line of the
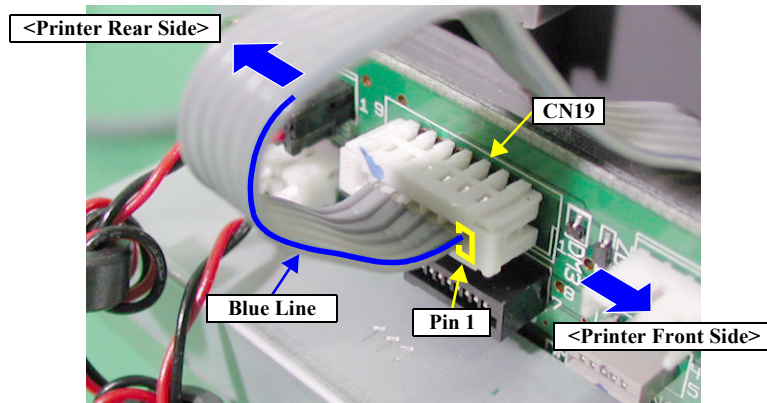   cable should be inserted into the Pin 1 side of the connector.

Figure 4-16. CN19 Connection Direction

WARNING ■ When C486 Main Board has been replaced by a service part, the
            installation screw holes do not have threads, as shown below.
            When installing C486 Main Board to the Printer Mechanism,
            metal chips that are formed in the process can become a source
            for shorting the printer. For this reason, use a brush to clean 2
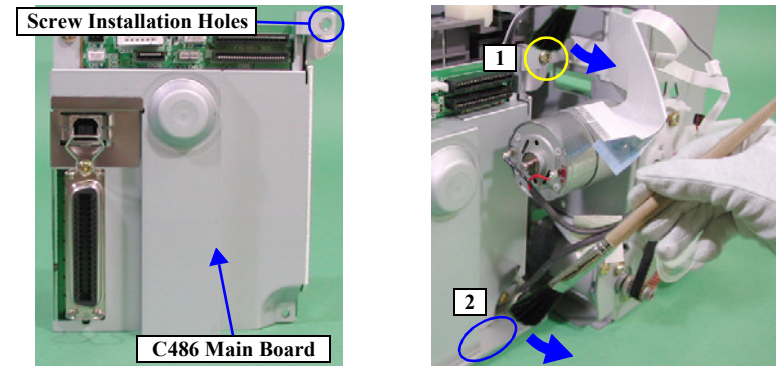   places in the order shown below and remove the metal chips.

Figure 4-17. Metal Chips Removal

CHECK POINT   C486 Main Board has no ROM and is established as a service part
               by the Socket attachment.

ADJUSTMENT REQUIRED   When replacing the C486 Main Board, the adjustments are
                       necessary. Refer to "Chapter 5 Adjustment" for the adjustment
                       procedures.

4.2.2.2 C486 PSB/PSE Board Removal

1. Remove C486 Main Board. (See Section 4.2.2.1)

2. Remove 2 screws (C.B.S 3x6) holding C486 PSB/PSE Board.

3. After shifting C486 PSB/PSE Board temporarily in the direction of arrow A, release the hook, then pull the board in the direction of arrow B and remove it from the Printer Mechanism.
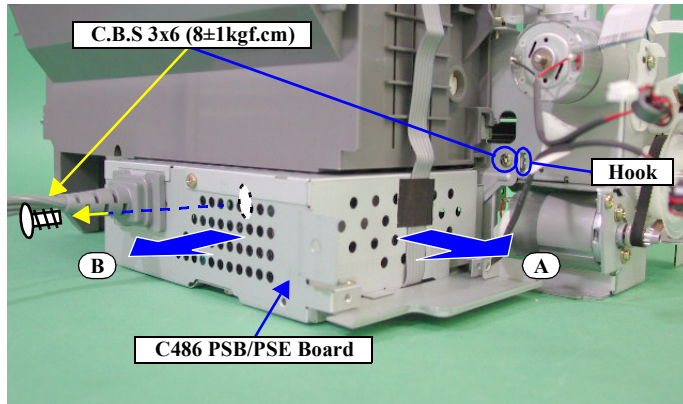

Figure 4-18. C486 PSB/PSE Board Removal

ADJUSTMENT REQUIRED

When replacing the C486 PSB/PSE Board, the adjustments are necessary. Refer to "Chapter 5 Adjustment" for the adjustment procedures.

4.2.3 Printer Mechanism Disassembly

4.2.3.1 ASF Unit Removal

1. Remove Printer Mechanism. (See Section 4.2.1.4)

2. Disconnect connector CN4 from C486 Main Board, unfasten it from the wrapped location, then remove the CN4 cable by pulling it through the slot in the ASF Unit.

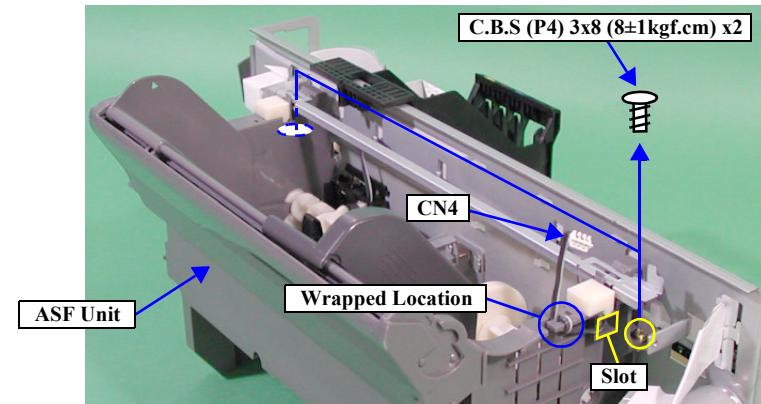3. Remove 2 screws (C.B.S (P4) 3x8) holding the ASF Unit.

Figure 4-19. ASF Unit Removal 1

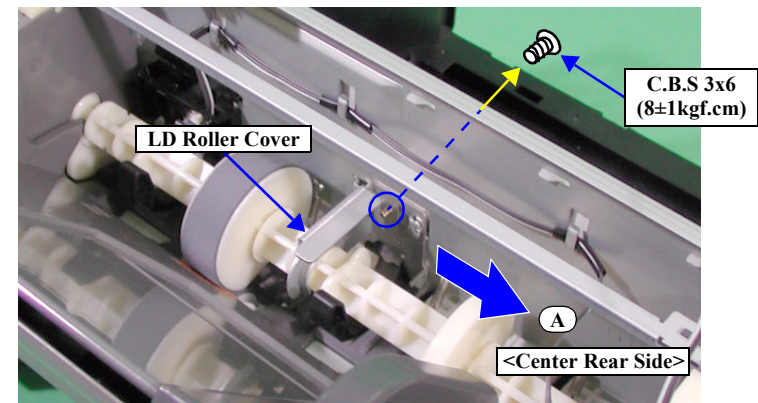4. Remove 1 screw (C.B.S 3x6) holding the LD Roller Cover and then shift LD Roller Cover in direction of arrow A.

Figure 4-20. ASF Unit Removal 2

5.   Release the union location between Pump Frame and ASF Unit.

CAUTION !	**Be careful because pulling strongly on Pump Frame can cause it to break.**

6.   Push Head Cable Cover with pair of tweezers, shift it to the right and temporarily release its hold.

7.   Allow ASF Unit to rotate in direction of arrow A, the remove ASF Unit together with LD Roller Cover from Printer Mechanism.
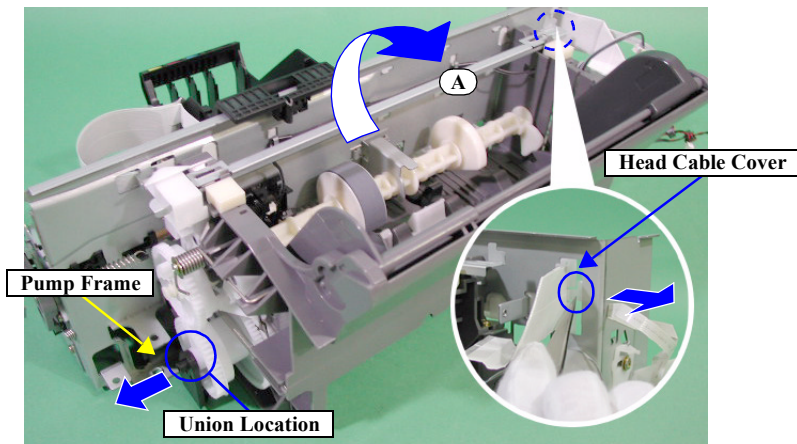

Figure 4-21. ASF Unit Removal 3

REASSEMBLY	**When installing ASF Unit, be sure to install it while Main Board and PSB/PSE Board are not installed. If this procedure is ignored, the Pump Frame may interfere with the ASF Unit and result in damage.**

4.2.3.2 ASF Unit Disassembly

1.   Remove ASF Unit. (See Section 4.2.3.1)

2.   After releasing the hook holding the Paper Back Cam, let the control of Torsion Spring move in the direction of arrow A, then remove the Paper Back Cam from the ASF Unit.

3.   Follow order shown below to remove these items from ASF Unit: (1) Clutch Gear and Clutch. (2) Extension Spring 1.47. (3) Change Lever. (4) Combination Gear Ratchet 65.6.

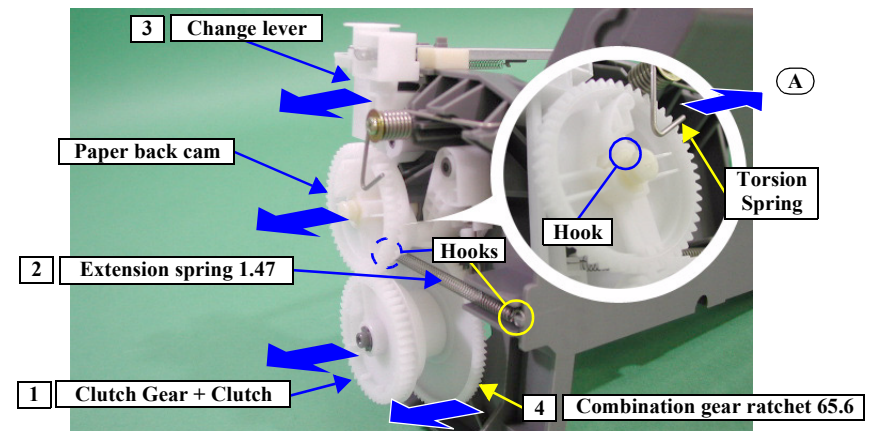| CAUTION !	■ **If Clutch Gear and Clutch are not removed with a pair of tweezers as described in Step 3, it is possible that the Extension Spring 0.143 inside could be lost.** ■ **When removing Extension Spring 1.47, be careful not to lose it.**

Figure 4-22. ASF Unit Disassembly 1

4.   Release Extension Spring 1.67 from hooks on ASF Frame and ASF Trigger Lever, then remove spring.

CAUTION !	**When removing Extension Spring 1.67, be careful not to lose it.**

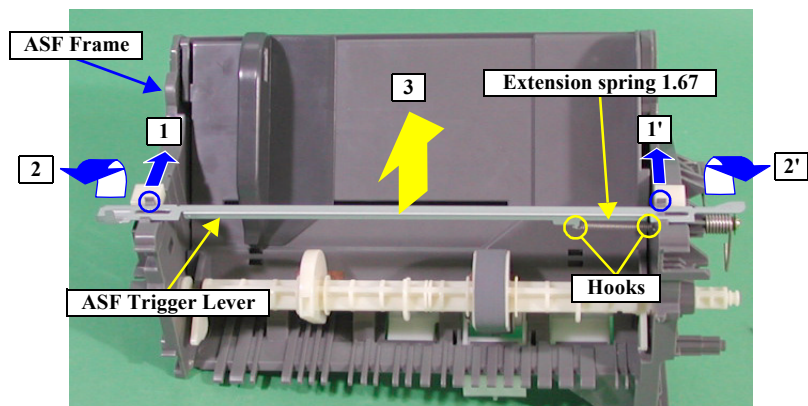5. Follow the order below to remove ASF Trigger Lever from ASF Frame.

Figure 4-23. ASF Unit Disassembly 2

6. Follow the order below using a common screwdriver to release the Hopper (left side) attachment from the ASF Frame, then remove the Hopper from the ASF Frame.
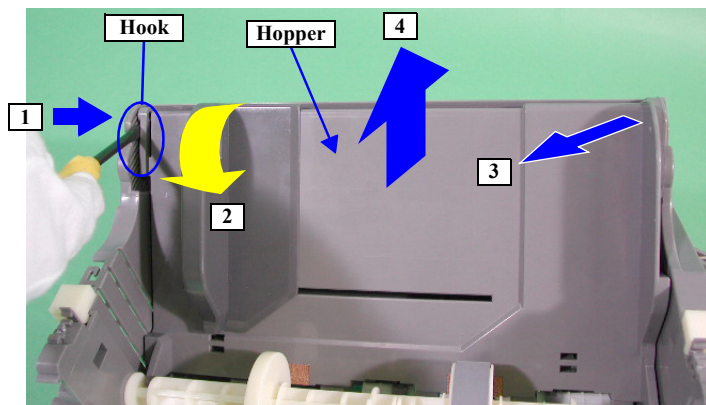

Figure 4-24. ASF Unit Disassembly 3

7. Allow the Compression Spring 2.9 to rotate to the left from the ASF Frame, then remove it.

8. While spreading the left side surface of the ASF Frame toward the outside, follow the order shown below to remove LD Roller Shaft.
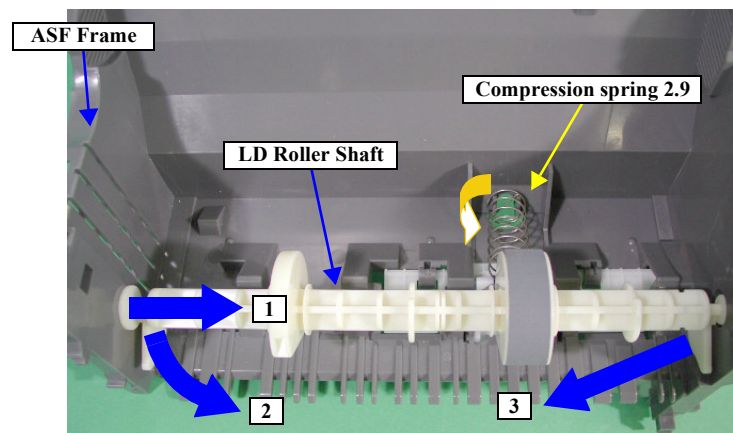

Figure 4-25. ASF Unit Disassembly 4

9. Release Extension Spring 2.25 from hooks on ASF Frame and Retard Roller Holder, then remove spring.

10. Pull the protrusion of the Retard Roller Holder fastened to the ASF Frame away from the ASF Frame in the direction of the arrow for one side and then the other. Then remove Retard Roller along with Retard Roller Holder.
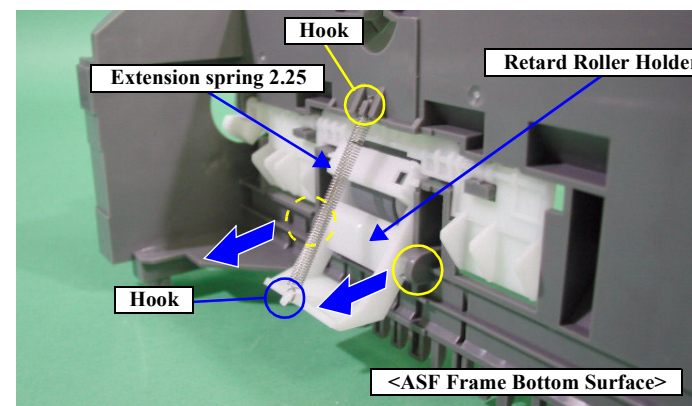

Figure 4-26. ASF Unit Disassembly 5

REASSEMBLY

ASF Unit Assembly Points

1. **Set Clutch Spring (when assembling Clutch and Clutch Gear)**
2. **Position Paper Back Support Lever (when setting the Paper Back Cam to LD Roller Shaft at first step)**
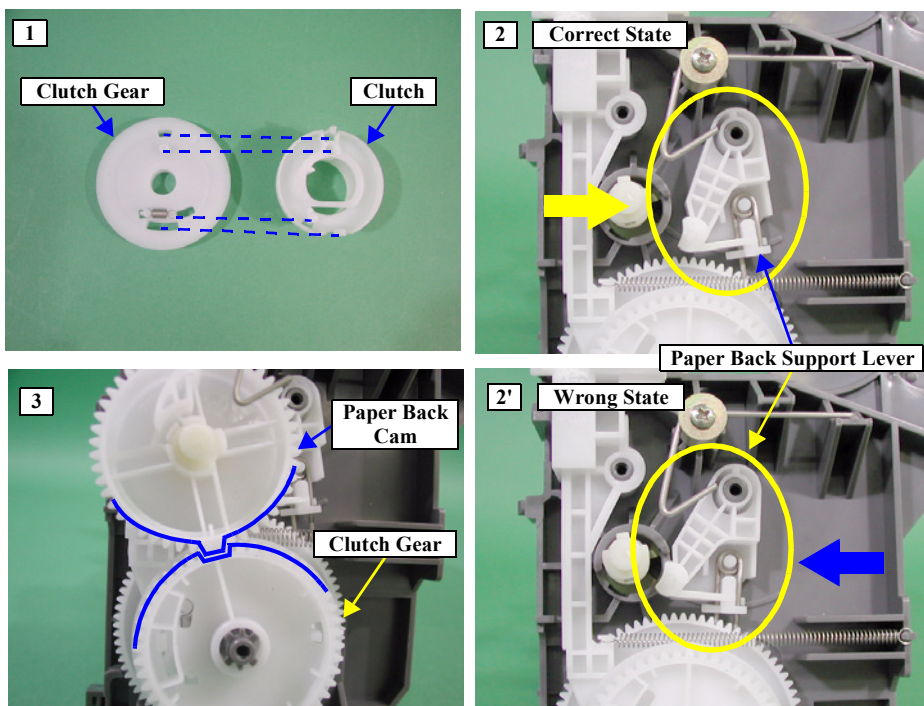3. **Align phase (when inserting Paper Back Cam into LD Roller Shaft at last step)**

Figure 4-27. Assembly Points

4.2.3.3 PE Sensor/PE Sensor Holder/PE Lever Removal

1. Remove ASF Unit. (See Section 4.2.3.1)

2. Disconnect connector from PE Sensor.

3. While lifting PE Sensor Holder upwards, use a pair of tweezers to release 4 hooks holding the PE Sensor Holder starting from the upper direction of the printer by following the order shown below. Then remove the PE Sensor and PE Lever along with the PE Sensor Holder.
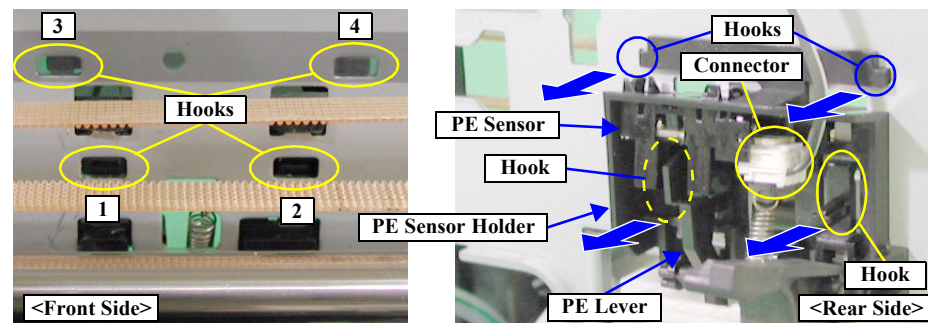

Figure 4-28. PE Sensor/PE Sensor Holder/PE Lever Removal 1

4. Release 3 hooks fastening the PE Sensor to the PE Sensor Holder, then remove PE Sensor from the PE Sensor Holder.

5. Follow the order shown below to remove the PE Lever along with Torsion Spring 0.28 from the PE Sensor Holder.
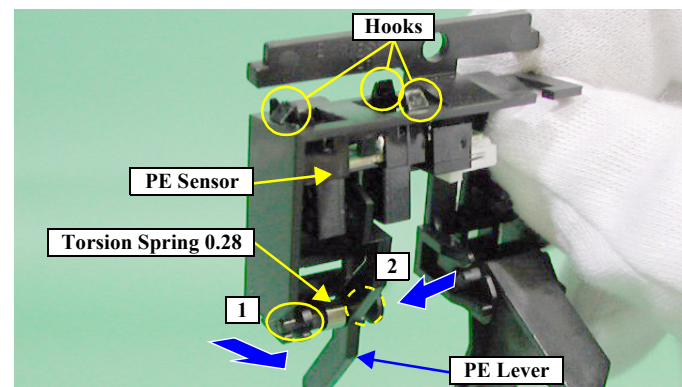

Figure 4-29. PE Sensor/PE Sensor Holder/PE Lever Removal 2

REASSEMBLY

Condition of PE Lever and Torsion Spring 0.28 after installation.
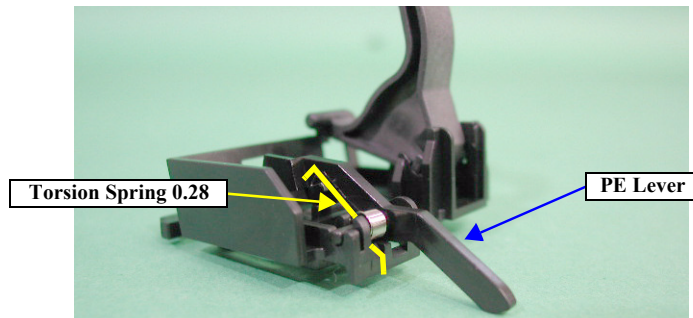

Torsion Spring 0.28

PE Lever

Figure 4-30. Condition of PE Lever after installation.

4.2.3.4 PF Encoder & PF Encoder Base Removal

1. Remove Printer Mechanism. (See Section 4.2.1.4)

2. Release 4 hooks holding PF Encoder Base, then remove PF Encoder Base along with PF Encoder from Printer Mechanism.
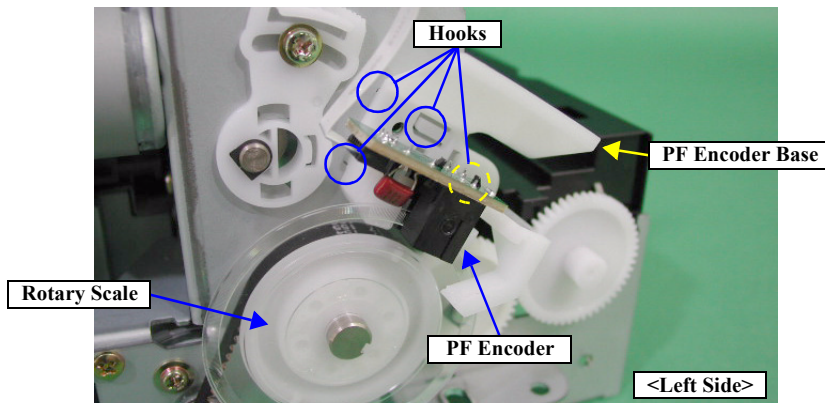

Hooks

PF Encoder Base

Rotary Scale

PF Encoder

<Left Side>

Figure 4-31. PF Encoder & PF Encoder Base Removal

CAUTION !

■ **There are 2 types of the Rotary Scale, the Film type that has been available since first mass production and a new Plastic type. Needed information about details and repair are given below.**

1. In the America, the Film type Rotary Scale available since first mass production has been introduced for patent considerations. In another development, an all new Plastic type Rotary Scales have been introduced.

2. Concerning functioning, because the Film type and Plastic type are completely interchangeable, PF Roller Unit and Printer Mechanism service parts are continuing with the Film type regardless of the developments.

3. After patent concerns are settled in America, both new products and service parts (PF Roller Unit and Printer Mechanism) will use the new Plastic type.

4. Points that should be considered for repair are shown below with relationships between Rotary Scale type and PF Encoder Base type.

Table 4-3. Rotary Scale and PF Encoder Base Relationships

Type of PF Encoder Base / Type of Rotary Scale	Long horn type (1108620)	No horn type (1214696)
Film type	Yes	No (*1)
Plastic type	Yes (*2)	Yes

"Yes" means exchangeability between PF Encoder Base and Rotary Scale. "No" means not exchangeability between these parts.

(*1): In this case, use the Long Horn Type for the PF Encoder Base.

(*2): In this case, because the horn becomes an obstacle, it is necessary to cut off the horn. After consulting the diagram below to confirm the correct location for cutting the horn of the PF Encoder Base, use nippers to cut off the horn.
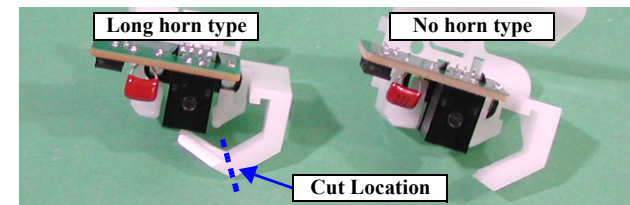

Long horn type

No horn type

Cut Location

Figure 4-32. PF Encoder Base Cut Location

4.2.3.5 Linear Scale Removal

1. Remove Printer Mechanism. (See Section 4.2.1.4)

2. Release Extension Spring 2.94 from Printer Mechanism hook 1.

3. Release right edge of Linear Scale from Printer Mechanism hook 2.

4. Remove Linear Scale by pulling it to the left side from back of Carriage Unit.

5. Allow Linear Scale to rotate 90°, release it from Printer Mechanism hook 3, then remove the Linear Scale along with Extension Spring 2.94 from the Printer Mechanism.
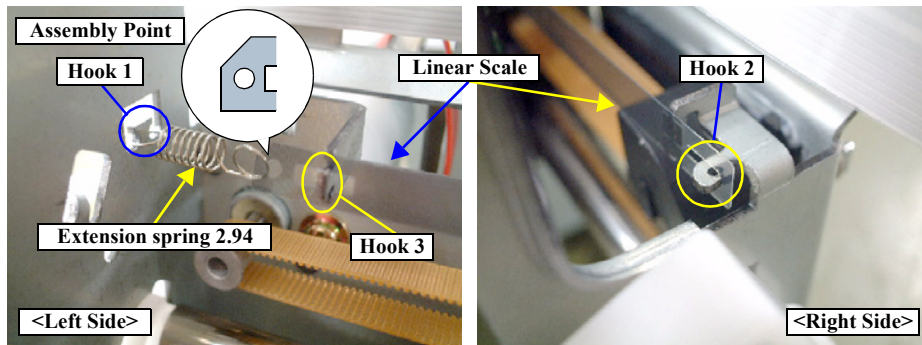

Figure 4-33. Linear Scale Removal

REASSEMBLY

Linear Scale Assembly Point

■ **Pass the Linear Scale through the CR Encoder on the rear side of the Carriage Unit.**
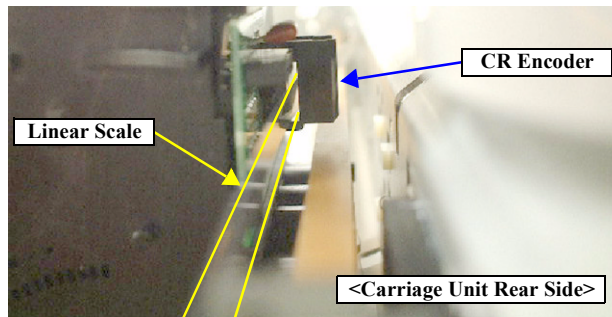

Figure 4-34. Linear Scale Position

4.2.3.6 CR Guide Shaft/Carriage Unit Removal

1. Remove Linear Scale. (See Section 4.2.3.5)

2. Use a common screwdriver to release Extension Spring 26.46 from hooks on Pulley Driven Holder and Printer Mechanism, then remove spring.

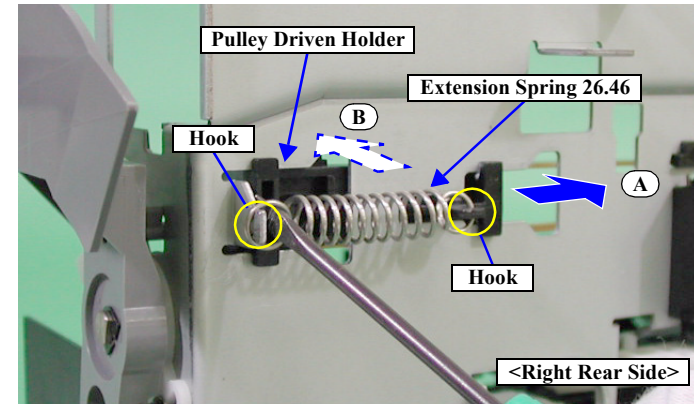3. Shift Pulley Driven Holder in direction of arrow A, the remove it in direction of arrow B.

Figure 4-35. CR Guide Shaft/Carriage Unit Removal 1

4. Follow order shown in Figure 4-36 (lower right photo) to remove these items from the Printer Mechanism: (1) Spacer. (2) PG Lever. (2') Torsion Spring 67.78. (3) Leaf Spring. (4) 1 Screw (C.B.S (P4) 3x6). (5) Bushing.

5. Follow order shown in Figure 4-36 (lower left photo) to remove these items from the Printer Mechanism: (6) Spacer. (7) 1 Screw (C.B.S (P4) 3x6). (8) Bushing.

CHECK POINT ✔ **The Bushings at both sides of the Printer Mechanism can be released from their attachment by allowing the printer to rotate rearward.**

6. Remove CR Guide Shaft from Printer Mechanism in direction of arrow C while taking care not to damage slots in Printer Mechanism.

7. Allow Carriage Unit to rotate in direction of arrow D and remove Carriage Unit from Printer Mechanism.
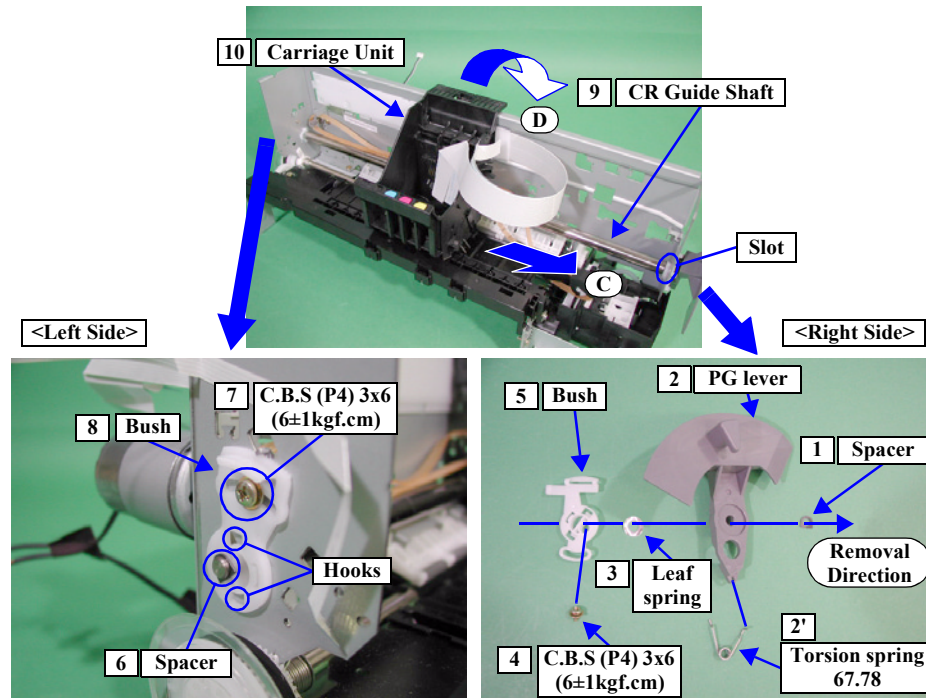

Figure 4-36. CR Guide Shaft/Carriage Unit Removal 2

8. Disconnect FFC from connector on Relay Board of Carriage Unit, then remove Carriage Unit.
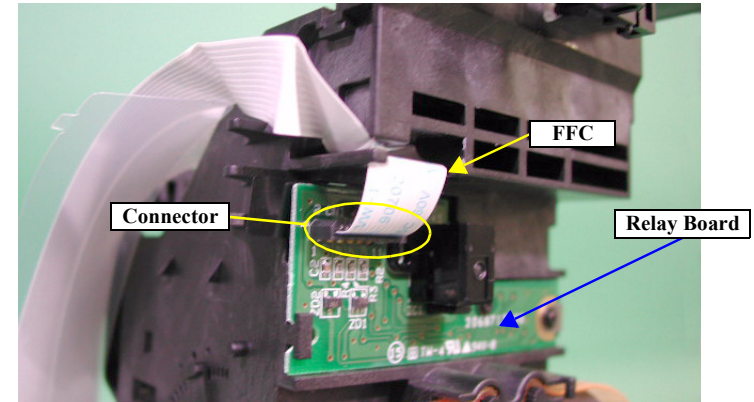

Figure 4-37. CR Guide Shaft/Carriage Unit Removal 3

CAUTION Be careful when installing the Bushings at each side of the Printer Mechanism because the Left Bushing and Right Bushing have different shapes. (See Figure 4-36)

REASSEMBLY ■ Leaf Spring Installation
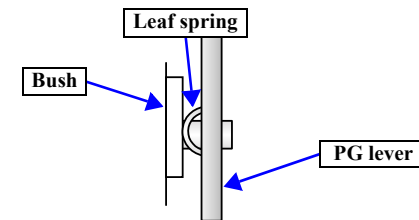

Figure 4-38. Leaf Spring Installation

ADJUSTMENT REQUIRED When removing or replacing the CR Guide Shaft/Carriage Unit, the adjustments are necessary. Refer to "Chapter 5 Adjustment" for the adjustment procedure.

4.2.3.7 Ink System Unit Removal

1. Remove Printer Mechanism. (See Section 4.2.1.4)

2. Remove 2 screws ((1)C.B.S 3x8, (2) C.B.S 3x6) holding the Ink System Frame, then remove the Ink System Frame from the Printer Mechanism.

3. Remove 2 screws ((3)C.B.S 3x8, (4) C.B.S 3x6) holding the Ink System Frame from the Printer Mechanism.
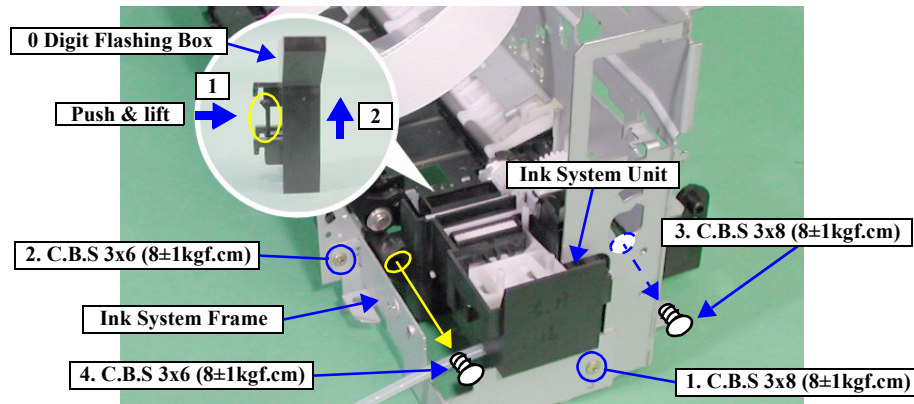

Figure 4-39. Ink System Unit Removal

4. When ASF Unit is installed, release union location of Pump Frame and ASF Unit. (See Section 4.2.3.1 Step 4)

5. Remove Ink System Unit from the Printer Mechanism.

6. Follow the order shown above to remove the 0 Digit Flashing Box from the Printer Mechanism.

> **CAUTION !**
>
> Use a pair of tweezers to replace the Cleaner Blade. While doing this, do not touch the Printhead with the tweezers. In addition, do not touch the Printhead with bare hands.
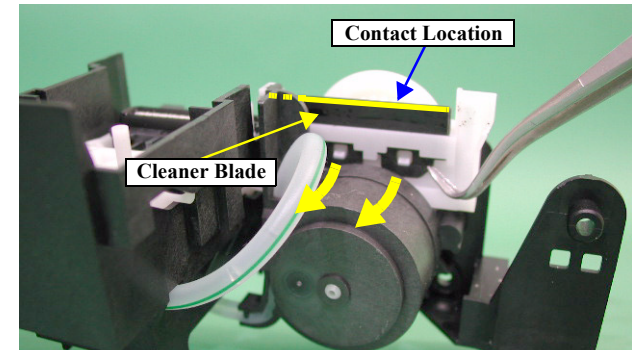

Figure 4-40. Cleaner Blade Handling

4.2.3.8 CR Motor Removal

1. Remove Printer Mechanism. (See Section 4.2.1.4)

2. Disconnect CN14 connector from C486 Main Board.

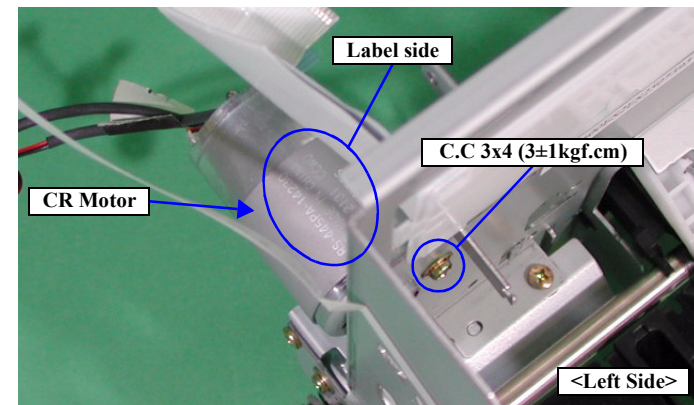3. Remove 1 screw (C.C 3x4) holding CR Motor, then remove CR Motor.

Figure 4-41. CR Motor Removal

REASSEMBLY | When installing CR Motor, install it with the label of the motor facing upwards.

ADJUSTMENT REQUIRED | When replacing the CR Motor, the adjustments are necessary. Refer to "Chapter 5 Adjustment" for the adjustment procedure.

4.2.3.9 PF Motor Removal

1. Remove Printer Mechanism. (See Section 4.2.1.4)

2. Disconnect CN13 connector from C486 Main Board.

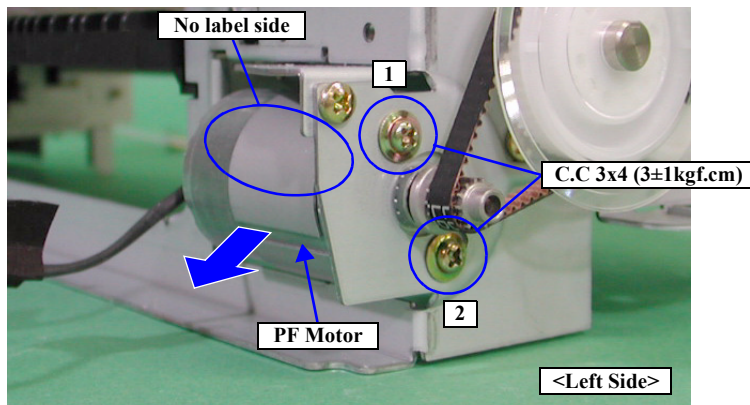3. Remove 2 screws (C.C 3x4) holding PF Motor, then remove PF Motor.

No label side

1

C.C 3x4 (3±1kgf.cm)

PF Motor

2

<Left Side>

Figure 4-42. PF Motor Removal

REASSEMBLY |
■ Installation of screws holding PF Motor
1. Follow order shown in lower left diagram to set screws temporarily.
2. Pull PF Motor in direction shown by arrow in lower left diagram, then while maintaining tension on the Timing Belt completely fasten the PF Motor. (Completely tighten.)
■ When installing the PF Motor, the label of the PF Motor should not be visible from the rear side of the Printer Mechanism. If the label is visible, rotate it 180° and reinstall it.

ADJUSTMENT REQUIRED | When removing or replacing the PF motor, the adjustments are necessary. Refer to "Chapter 5 Adjustment" for the adjustment procedure.

4.2.3.10 Paper Eject Frame Unit Removal

1. Remove Printer Mechanism. (See Section 4.2.1.4)

2. While releasing the hooks at each side (2 hooks) holding the Paper Eject Frame Unit, let it rotate in the direction of arrow A, then remove it upwards.
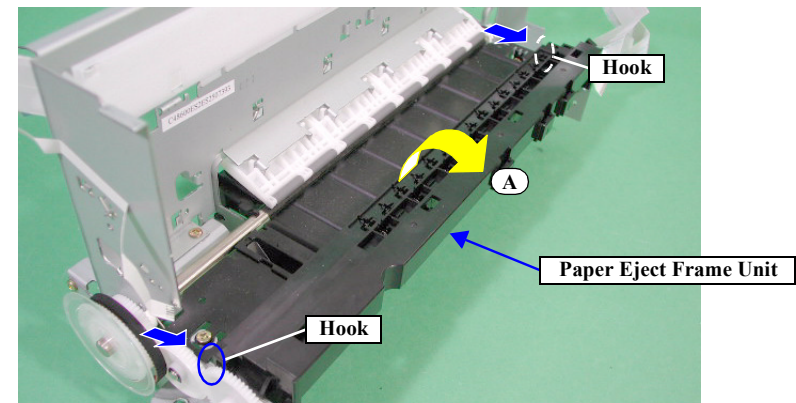

Hook

A

Paper Eject Frame Unit

Hook

Figure 4-43. Paper Eject Frame Unit Removal

4.2.3.11 EJ Roller Unit Removal

1. Remove Paper Eject Frame Unit. (See Section 4.2.3.10)

2. Remove Grounding Wire from Printer Mechanism.

3. Release hook for Bushing 5 located at each side of EJ Roller Unit, then let Bushing 5 rotate 90° upwards.

4. Remove EJ Roller Unit along with 3 Holders in upwards direction.
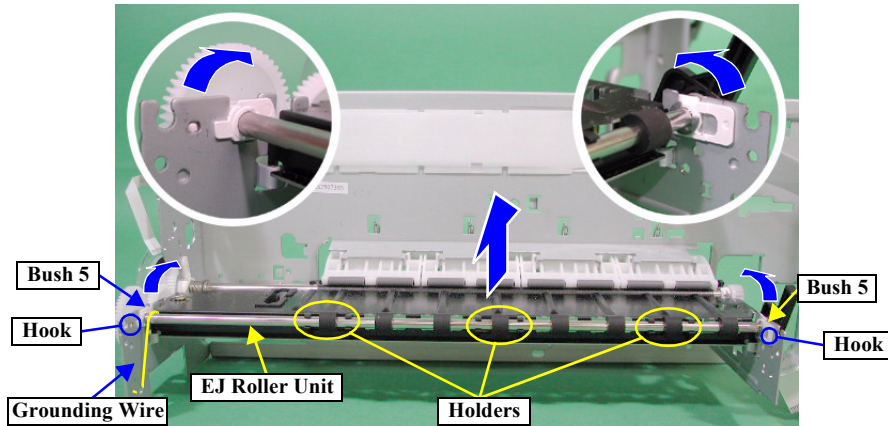
Figure 4-44. EJ Roller Shaft unit Removal

■ **When installing EJ Roller Unit, be careful about the direction of the CR Lock.**
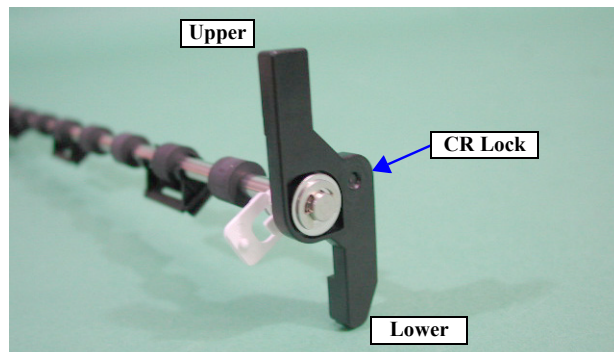
Figure 4-45. CR Lock Direction

4.2.3.12 Front Paper Guide Removal

1. Remove EJ Roller Unit. (See Section 4.2.3.11)

2. Remove 2 screws (C.B.S 3x6) holding Front Paper Guide.

3. Remove Front Paper Guide upwards while being careful that the Front Paper Guide hook at the left side does not touch Spur Gear 28.8.

Figure 4-46. Front Paper Guide Removal

When installing Front Paper Guide, be careful not to damage Spur Gear 28.8.

4.2.3.13 Upper Paper Guide Removal

1. Remove Front Paper Guide and PE Sensor Holder. (See Section 4.2.3.12 and 4.2.3.3)

2. Release 2 hooks holding each Extension Spring 4.07, then remove Extension Spring 4.07 (4 springs).
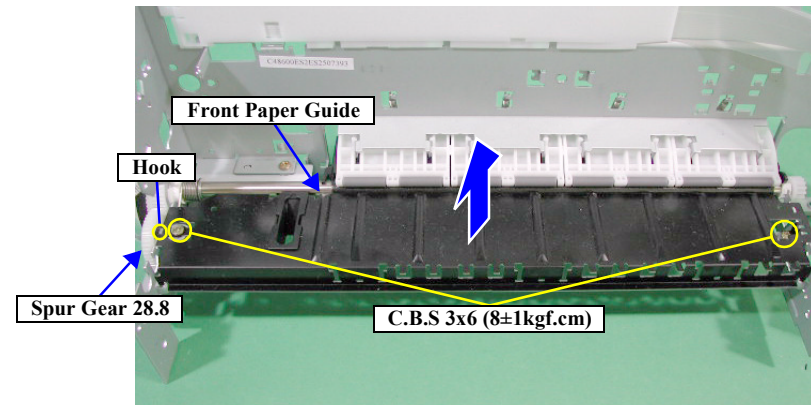
3. Follow order shown below to remove Upper Paper Guide from Printer Mechanism.
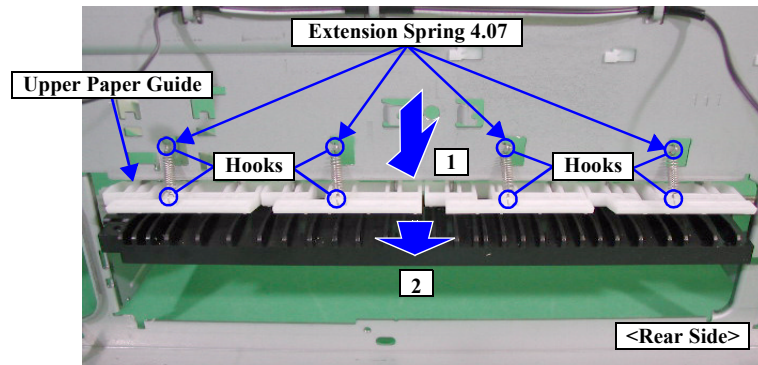
Figure 4-47. Upper Paper Guide Removal

4.2.3.14 Rear Paper Guide Removal

1. Remove Upper Paper Guide and C486 PSB/PSE Board. (See Section 4.2.3.13 and 4.2.2.2)

2. Release Rear Paper Guide from right side hook, then shift Rear Paper Guide in direction of arrow A.

3. Release 2 hooks fastening Rear Paper Guide to PF Roller Unit, then remove Rear Paper Guide by pushing it in direction of arrow B.
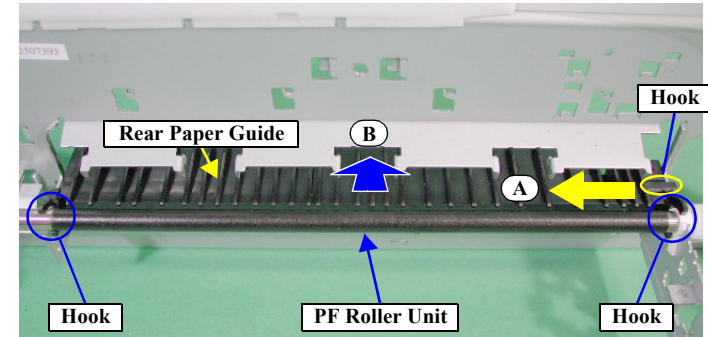
Figure 4-48. Rear Paper Guide Removal

> **REASSEMBLY**
>
> **When installing Rear Paper Guide, if hooks are not completely fastened, the ASF Unit cannot be properly set.**

4.2.3.15 PF Roller Unit Removal

1. Remove Rear Paper Guide. (See Section 4.2.3.14)

2. Use tweezers to remove leg of Compression Spring 4.89 from Printer Mechanism.

3. Use tweezers to release left and right Bushing 8 fastening PF Roller Unit to Printer Mechanism, then allow the PF Roller Unit to rotate in directions shown by arrows A and B.

4. Follow the order shown below to remove PF Roller Unit from Printer Mechanism.
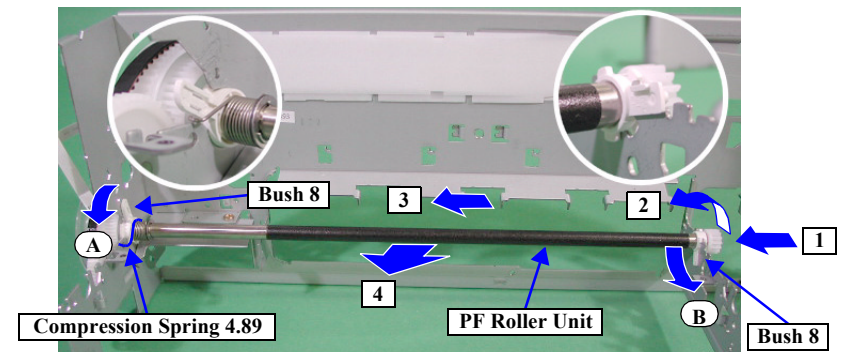
Figure 4-49. PF Roller Unit Removal

ADJUSTMENT

5.1 Overview

This section describes all adjustment procedures for Stylus C82.

5.1.1 Conditions for Each Adjustment

The Stylus C82 adjustment program is Epson's first use of a sequential program for performing mechanical/electrical adjustments in an established order. The program will use an interactive method to guide you through suitable adjustments that correspond to repairs that have actually been made. This chapter only lists the adjustment conditions.

CAUTION
!

- ■ **The adjustment program only operates with PCs running Win95/Win98.**
- ■ **When performing ink charge for a cartridge currently in use (same as initial ink charge), an ink out error may be generated during the operation. If this occurs, replace the ink cartridge and try the operation again.**
- ■ **There are mainly two functions on the Stylus C82 adjustment program. One is the sequential adjustment mode depending on your repaired/removed parts, and another one is the particular adjustment mode for the old hand at repair or, if you've already decided a specific adjustment option. Basically, Epson recommend you to adopt sequential adjustment mode anytime.**

Table 5-1. Adjustment Program Supported Functions

Category	Items	Conditions	Purpose
Adjustment	Back up operation	Try in stages before changing the circuit board.	If the results can be read out, easy repairs may be possible without performing many adjustments.
	EEPROM initialization	Performed after circuit board replacement regardless of result from Backup try described above.	This operation allows the firmware to recognize differences between Japanese made parts and foreign made parts and optimizes the ID check performed between the main circuit board and the ink cartridge.
	Head ID input	Performed after printhead and main board replacement.	If this is not performed, the printing will become unstable and result in poor operation such as continuous generation of Head Hot Error (Fatal Error indicator).
	Head angular adjustment	Performed after printhead removal/replacement.	If this slips, vertical lines will zigzag and letters will slope like italics.
	Bi-D adjustment	Performed after printhead, main board and CR motor replacement. (Not necessary if only main board was replaced and Backup was successful.)	When bi-directional printing is being performed, the targeted ink impact position is adjusted for alignment regardless of the direction of CR motion. (User adjustment possible with Utility on the Driver.)
	PF adjustment	Performed after printhead, main board and PF motor replacement. (Not necessary if only main board was replaced and Backup was successful.)	Sliding will occur if PF motor revolution speed becomes high during high speed printing. Correcting this at PF motor control reduction table eliminates sliding even during high speed printing, preventing appearance of white lines. (User adjustment possible with Utility on Driver.)
	PF belt tension adjustment	Performed after PF motor removal/replacement.	• To reduce the load on the PF Motor. • To ensure precision of paper feeding.

Table 5-1. Adjustment Program Supported Functions

Category	Items	Conditions	Purpose
Adjustment (Cont.)	USB ID input	Performed after main board replacement. (Not necessary if only main board was replaced and Backup was successful.)	A unique ID is created by inputting the printer's serial number into the USB ID. This prevents conflicts with ID of other connected USB devices.
	1st dot position adjustment	Performed after main board replacement or CR/CR Guide Shaft removal (or mechanical disassembly in those areas).	Confirms and adjusts suitable position for first printing at top of paper.
	CR motor drive dispersion	1. CR motor heat control correction max value registered in EEPROM after CR motor, PS board and Main board replacement. (Not necessary if only main board was replaced and Backup was successful.) 2. Suitable heat control correction value for starting CR motor drive dispersion sequence registered after CR guide shaft removal/replacement.	Calculated by converting the mechanism load from current flowing to CR motor. By precisely calculating CR motor heat timing based on this data and registering it in EEPROM, safeguard operation timing is optimized for continuous operation of CR. To prevent motor coil burn damage, adjustment is necessary after corresponding part replacement.
	PG Adjustment	1. Performed after mechanism replacement. 2. Performed after carriage or carriage guide shaft removal/replacement.	Ensures correct distance between head surface and paper guide and adjusts parallelism at 0 character side and 80 character side to stabilize print quality.
Check pattern printing	A4 normal paper printing	1. Used for first operation check with recycled parts. 2. Used to switch to adjustment for checking correct printing after ink charging following printhead replacement. 3. Used for print check after completed repairs.	This function checks printing in each print mode and confirms absence of printing problems. Check points for each print pattern are explained in the adjustment program.
Maintenance	Head cleaning	Dot missing generated - 1	Always starts strongest cleaning cycle from among cleaning types supported by Stylus C82. 1. Used to perform cleaning when dot missing occurs with A4 normal paper printing during adjustment or after ink charge. 2. Use during recovery of main functions when recycled parts generate simple instance of dot missing.
	Ink charge	Dot missing generated - 2	Used for recovery of ink absorption at same level of initial ink charge for dot missing not recoverable by head cleaning described above.
	Ink charge for Jig	Supplies ink from special ink pack without using ink cartridge and performs adjustment.	Ink is absorbed from a specialized ink pack at the factory through a special schedule ink supply jig. Used when performing continuous adjustments. Suitable for full-service repair centers.
	Refurbishment	Used when performing refurbishment operation.	Used to fill the printhead with special shipping fluid at the factory through a special schedule shipping fluid substitution jig. This function is necessary for performance of refurbishment (new part recycling) at full-service repair centers.
	Protection counter	Clears counter value to 0 when a maintenance error is generated or replacing the waste fluid pad.	Same as left.
Appendix	EEPROM Data	Used when analyzing.	Same as left.

C H A P T E R

6

MAINTENANCE

6.1 Overview

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

6.1.1 Cleaning

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

> **CAUTION**
>
> ■ **Never use chemical solvents, such as thinner, benzine, and acetone to clean the exterior parts of printer like the housing. These chemicals may deform or deteriorate the components of the printer.**
> ■ **Be careful not to damage any components when you clean inside the printer.**
> ■ **Do not scratch the surface (coated part) of PF roller assembly. Use soft brush to wipe off any dusts. Use a soft cloth moistened with alcohol to remove the ink stain.**

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

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

☐ ASF LD Roller
   When cleaning ASF internal rollers with an adhesive surface cleaning sheet, after setting the cleaning sheet, press the Paper Feed switch while pressing on the paper with one hand. Because this printer is a 2 roller type (LD Roller and Retard Roller), perform cleaning a second time with the adhesive surface of the cleaning sheet facing rearward.

6.1.2 Service Maintenance

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

☐ **Head Cleaning:**
   4 methods of recovering Dot Missing are shown below.

   1. Press Ink Switch on control panel.

   2. Execute cleaning with printer driver.

   3. Execute strong cleaning with Adjustment Program.

   4. Execute Ink Charge with Adjustment Program.

☐ **Maintenance Error Clear:**
   Maintenance errors cannot be cleared from the control panel, which is different from previous models. They can only be handled by the Adjustment Program. (See "Chapter 5 Adjustment" for details.)

   ■ Overflow Counter Limit:
      Overflow Counter (Protection Counter) >= 44436

   ■ Timing for Replacing the Waste Ink Pad:
      By checking the accurate Protection Counter with the Adjustment Program, the recommended replacement time for a new Waste Ink Pad can be seen. (See "Chapter 5 Adjustment" for details.)

   ■ After the Replacement:
      Clear the Overflow Counter (Protection Counter):
      The Protection Counter can only be cleared with the Adjustment Program.

6.1.3 Lubrication

The types lubricants used in the Stylus C82 are specified by SEIKO EPSON. Lubricate the printer if necessary under the following conditions:

- Grease has been wiped off during cleaning.
- Printer has been disassembled/assembled.
- Specific part(s) in the printer has been replaced.

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

Table 6-1. Grease Applied to the Stylus C82

Type	Name	EPSON Code	Supplier
Grease	G-26	1080614	EPSON
	G-46	1039172	
	G-63	1218320	

CAUTION	■ **No adhesion is used in the Stylus C82.** ■ **When applying G-46 without changing any parts, use the Flux Dispenser (1049533) to apply one coat to specified areas. Because it is necessary to apply G-46 when replacing old parts with new parts, soak the parts in G-46 as shown in the photograph on page 50.**

Table 6-2. Lubrication Points

Fig No.	Lubrication Point/Type	Remarks
6-1	**\<Lubrication Point\>** • Driven Roller x 8 **\<Lubrication Type\>** • G-46 **\<Lubrication Amount\>** • Soak in basin containing G-46 and remove immediately.	• Joint use of Flux Dispenser is recommended.
6-2	**\<Lubrication Point\> (No.1)** • Paper Back Lever shaft socket (2 places) **\<Lubrication Type\>** • G-26 **\<Lubrication Amount\>** • Shaft socket entire length	• Use a brush to apply it.
	\<Lubrication Point\> (No.2) • Paper Back Lever left end **\<Lubrication Type\>** • G-46 **\<Lubrication Amount\>** • Soak in basin containing G-46 and remove immediately.	• Joint use of Flux Dispenser is recommended.
6-3	**\<Lubrication Point\>** • Paper Back Support Lever **\<Lubrication Type\>** • G-46 **\<Lubrication Amount\>** • Soak in basin containing G-46 and remove immediately.	• Joint use of Flux Dispenser is recommended.

Table 6-2. Lubrication Points

Fig No.	Lubrication Point/Type	Remarks
6-4	**\<Lubrication Point\>** • LD Roller Shaft left/right ends **\<Lubrication Type\>** • G-46 **\<Lubrication Amount\>** • Soak in basin containing G-46 and remove immediately.	• Joint use of Flux Dispenser is recommended.
6-5	**\<Lubrication Point\>** • Combination Gear Ratchet 65.6 & Spur Gear 48 **\<Lubrication Type\>** • G-46 **\<Lubrication Amount\>** • Soak in basin containing G-46 and remove immediately.	• Joint use of Flux Dispenser is recommended.
6-6	**\<Lubrication Point\>** • The right end of PF Roller unit on metal surface a circle. **\<Lubrication Type\>** • G-26 **\<Lubrication Amount\>** • $\phi 1$ x 3mm	• Do not attach the grease to the paper path. • Be carefully not lubricate on coated surface. • Do not touch coated surface of PF Roller. • Use a brush to apply it.
6-7	**\<Lubrication Point\>** • Carriage Unit Shaft Socket **\<Lubrication Type\>** • G-63 **\<Lubrication Amount\>** • Shaft Socket Inner Side	• Use a brush to apply it.

| Fig No.	Lubrication Point/Type	Remarks
6-8	**\<Lubrication Point\>** • Pulley Driven Holder **\<Lubrication Type\>** • G-26 **\<Lubrication Amount\>** • $\phi 1$ x 2mm x 4points	• Use a brush to apply it.
6-9	**\<Lubrication Point\>** • Main Frame Upper Part back side (Between Change Lever and Main Board Unit) **\<Lubrication Type\>** • G-26 **\<Lubrication Amount\>** • $\phi 1$ x entire length	• Use a brush to apply it.
6-10	**\<Lubrication Point\>** • Joint between ASF Trigger Lever and ASF Frame **\<Lubrication Type\>** • G-26 **\<Lubrication Amount\>** • Protrusion surface area	• Use a injector to apply it.
6-11	**\<Lubrication Point\>** • ASF Trigger Lever Right End **\<Lubrication Type\>** • G-26 **\<Lubrication Amount\>** • Corner surface area	• Use a brush to apply it.
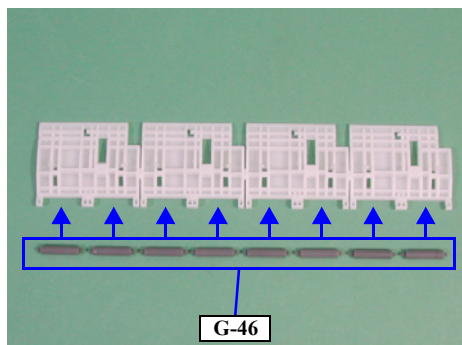
Figure 6-1. Driven Roller
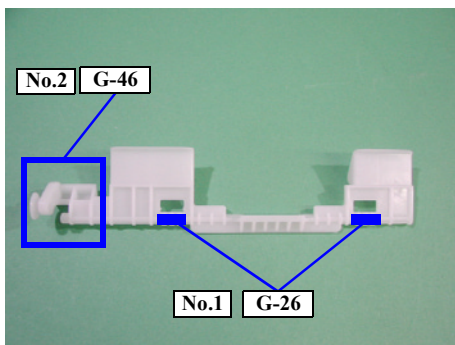
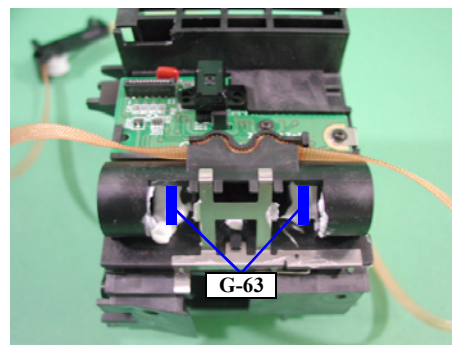**Figure 6-2. Paper Back Lever**

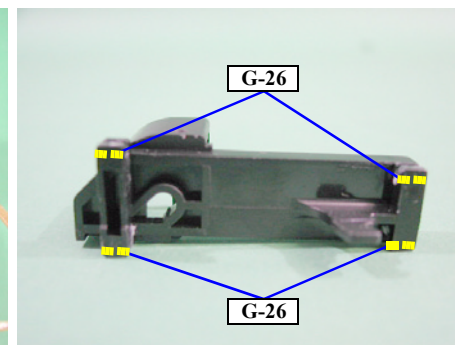**Figure 6-7. Carriage Unit**

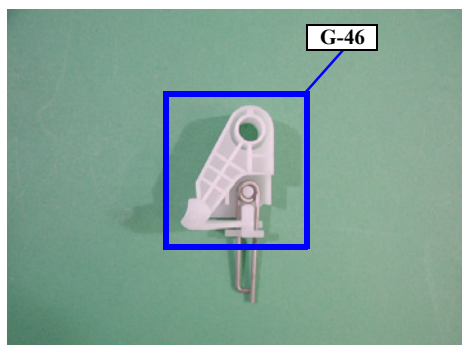**Figure 6-8. Pulley Driven Holder**
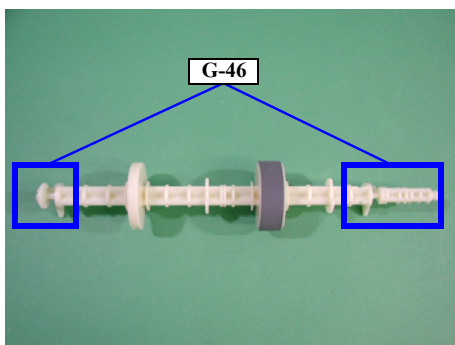
Figure 6-3. Paper Back Support Lever
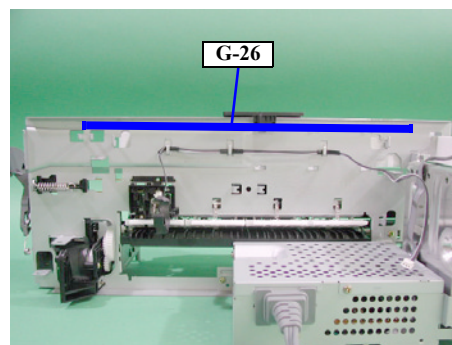
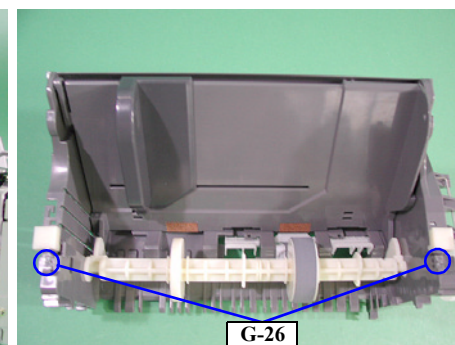**Figure 6-4. LD Roller Shaft**
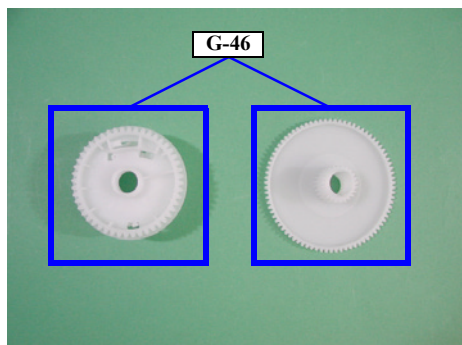
Figure 6-9. Main Frame

Figure 6-10. ASF Unit

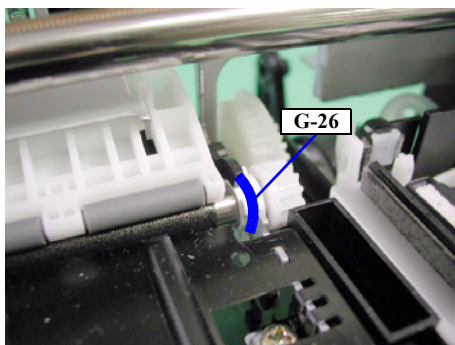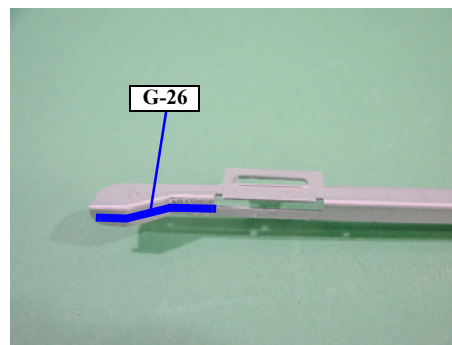**Figure 6-5. Clutch Gear**

Figure 6-6. PF Roller

Figure 6-11. ASF Trigger Lever

APPENDIX

7.1 Connector Summary

7.1.1 Major Component Unit

The Major component units of this printer are as follows.

☐ Main Board (C486 MAIN)

☐ Power Supply Board (C486 PSB/PSE)

☐ Panel Board (C486 PANEL)

See the following tables for the connector summary for the C486 MAIN Board and each connector's pin assignment.

Table 7-1. Connector Summary for C486 MAIN

Connector	Function	Ref.
CN1	For connection with the Parallel Interface	-
CN3	For connection with the USB	-
CN4	For connection with the PE sensor	Table 7-2
CN8, CN9	For connection with the Printhead	Table 7-3, Table 7-4
CN12	For connection with the PF encoder	Table 7-5
CN13	For connection with the PF motor	Table 7-6
CN14	For connection with the CR motor	Table 7-7
CN19	For connection with the Power supply board	Table 7-8
CN20	For connection with the Panel board	Table 7-9

Table 7-2. CN4 - PE sensor

Pin	Signal Name	I/O	Function
1	PE	In	Sensor detect signal
2	GND	-	Ground
3	PEV	-	Sensor power supply

Table 7-3. CN8 - Printhead

Pin	Signal Name	I/O	Function
1	GND	-	Ground
2	COM	Out	Head drive pulse (trapezoid waveform)
3	VBS	Out	Power for nozzle selector IC
4	COM	Out	Head drive pulse (trapezoid waveform)
5	VBS	Out	Power for nozzle selector IC
6	COM	Out	Ground
7	VBS	Out	Power for nozzle selector IC
8	COM	Out	Head drive pulse (trapezoid waveform)
9	GND	-	Ground
10	GND	-	Ground
11	TH	In	Thermistor detect signal
12	VCC3.3	Out	Logic power supply (+3.3V)
13	GND	-	Ground
14	NC	-	Not connected
15	GND	-	Ground
16	ENCA	In	Encoder feed back signal ch.A
17	EVDD	Out	Power for CR encoder
18	ENCB	In	Encoder feed back signal ch.B
19	GND	-	Ground
20	CRST	Out	Reset signal for address counter of CSIC
21	GND	-	Ground
22	CSCK	IN/Out	Clock signal for CSIC read/write
23	CVDD	Out	Power for CSIC memory

Table 7-3. CN8 - Printhead

Pin	Signal Name	I/O	Function
24	CSD	Out	CSIC serial data
25	GND	-	Ground
26	COO	In	Cartridge out signal

Table 7-4. CN9 - Printhead

Pin	Signal Name	I/O	Function
1	GND	-	Ground
2	SI2	Out	Print data output for color nozzles
3	GND	-	Ground
4	SI1	Out	Print data output for black nozzles
5	GND	-	Ground
6	SCK	Out	Serial clock
7	GND	-	Ground
8	CH	Out	Charge signal for the Trapezoidal wave-form
9	GND	-	Ground
10	AND2	In	Abnormal temperature section circuit for the color nozzles
11	GND	-	Ground
12	AND1	In	Abnormal temperature section circuit for the black nozzles
13	GND	-	Ground
14	LAT	Out	Head data latch pulse output by 64 bit
15	VCC3.3	Out	Power for CSIC chip
16	NCHG	Out	Source signal for driving Trapezoidal wave-form

Table 7-4. CN9 - Printhead

Pin	Signal Name	I/O	Function
17	GND	-	Ground
18	COM	Out	Head drive pulse (trapezoid waveform)
19	VBS	Out	Power for nozzle selector IC
20	COM	Out	Head drive pulse (trapezoid waveform)
21	VBS	Out	Power for nozzle selector IC
22	COM	Out	Head drive pulse (trapezoid waveform)
23	VBS	Out	Power for nozzle selector IC
24	COM	Out	Head drive pulse (trapezoid waveform)
25	GND	-	Ground
26	VHV	Out	+42V for the common voltage

Table 7-5. CN12 - PF encoder

Pin	Signal Name	I/O	Function
1	GND	-	Ground
2	ENB	In	Feed-back signal from PF encoder ch. B
3	VCC	Out	Power for the PF encoder
4	ENA	In	Feed-back signal from PF encoder ch. A
5	GND	-	Ground

Table 7-6. CN13 - PF motor

Pin	Signal Name	I/O	Function
1	PF-A	Out	Phase drive signal (-A)
2	PF-B	Out	Phase drive signal (-B)

Table 7-7. CN14 - CR motor

Pin	Signal Name	I/O	Function
1	CR-A	Out	Phase drive signal (-A)
2	CR-B	Out	Phase drive signal (-B)

Table 7-8. CN19 - Power supply board

Pin	Signal Name	I/O	Function
1	+42V	Out	Power supply
2	GND	-	Ground
3	+5V	Out	Logic power supply
4	PSC	Out	Power on/off switch (CPU monitors)
5	GND	-	Ground
6	+42V	Out	Power supply

Table 7-9. CN20 - Panel board

Pin	Signal Name	I/O	Function
1	LED1	Out	LED drive signal 1
2	SW1	In	Panel switch on/off 1
3	LED2	Out	LED drive signal 2
4	SW2	In	Panel switch on/off 2
5	LED0	Out	LED drive signal 0
6	GND	-	Ground
7	SW0	In	Panel switch on/off 0
8	VCC	Out	Power for the panel board

7.1.2 EEPROM Address Map

Table 7-10. EEPROM address map

Address	Explanation	Setting	QPIT setting	Factory settings
00H	Password		0FH	-
01H			5AH	
02H	Ink counter A		00H	00H
03H				
04H	Ink counter R0		00H	00H
05H				
06H	Ink counter R80		00H	00H
07H				
08H	Ink flag1	bit7 : Reserved bit6 : CSIC chg. seq2. required bit5 : In manual Cleaning seq. bit4 : Initial fill required bit3 : Head Hot bit2 : Ink cleaning seq. bit1 : Reserved bit0 : Time stamp occurred	00H	00H
09H	Ink flag2	bit7 : C CSIC chg. seq1. required bit6 : M CSIC chg. seq1. required bit5 : Y CSIC chg. seq1. required bit4 : Bk CSIC chg. seq1. required bit3 : C 1st cartridge bit2 : M 1st cartridge bit1 : Y 1st cartridge bit0 : Bk 1st cartridge	00H	00H
0AH	CL2 KK-Counter		00H	00H
0BH	TCL accumulate Counter		00H	00H

Table 7-10. EEPROM address map (continued)

Address	Explanation	Setting	QPIT setting	Factory settings
0CH	CSIC1 ink name1		00H	00H
0DH	CSIC2 ink name1		00H	00H
0EH	CSIC3 ink name1		00H	00H
0FH	CSIC4 ink name1		00H	00H
10H | 13H	Ink counter Cb		00H | 00H	00H | 00H
14H | 17H	Ink counter Cy		00H | 00H	00H | 00H
18H | 1BH	Ink counter Cc		00H | 00H	00H | 00H
1CH | 1FH	Ink counter Cm		00H | 00H	00H | 00H
20H 21H	Printing time		00H	00H
22H 23H	CL time		00H	00H
24H 25H	Current time		00H	00H
26H	Interface selection	0 : Auto 1 : Parallel 3 : USB	00H	00H
27H	Interface time-out	0 to 255 (by second, value of 0 means 10 seconds)	0AH	0AH
28H	IEEE1284.4 for parallel	0 : Auto 1 : On 2 : Off	00H	01H
29H	IEEE1284.4 for USB	0 : Auto 1 : On 2 : Off	00H	01H

Table 7-10. EEPROM address map (continued)

Address	Explanation	Setting	QPIT setting	Factory settings
2AH	I/F control flags	bit7 : Reserved bit6 : Reserved bit5 : Reserved bit4 : Reserved bit3 : ECP speed 　　　(0=Fast, 1=Slow) bit2 : Compatibility speed 　　　(0=Fast, 1=Slow) bit1 : ECP mode 　　　(0=Off, 1=On) bit0 : IEEE1284 mode 　　　(0=On, 1=Off)	00H	00H
2BH	CR duty Data for heat		00H	00H
2CH	PF duty Data for hear		00H	00H
2DH	Fatal Error Code for Sequence	00h　　　: No error 01h　　　: Memory free error 02h　　　: Board very hot or very cold 03h　　　: DRAM error 04h　　　: Timer IC initialize error 05h　　　: Not detect mechanism edge 06h　　　: Failure CR home seeking 1 07h　　　: Failure CR home seeking 2 08h　　　: CR lock retry not complete 09h-0Ch : Motor sequence error 0Dh　　　: Bk anode hot error 0Eh　　　: Color anode hot error	00H	00H

Table 7-10. EEPROM address map (continued)

Address	Explanation	Setting	QPIT setting	Factory settings
2EH	Fatal Error Code for DC	00h : No error 01h-0Ch : CR motor control error FBh-FFh : PF motor control error	00H	00H
2FH	CR Measurement Adjust Factor		00H	00H
30H	Measurement data ave. CR (Hi Byte)		00H	00H
31H	Measurement data ave. CR (Lo Byte)		00H	00H
32H	Measurement data PF Iout ave. Higher Speed		00H	00H
33H	Measurement data PF Iout ave. Lower Speed		00H	00H
34H	1st dot position adjustment		00H	00H
35H	PF position adjustment (Black)		00H	00H
36H	PF position adjustment (Color)		00H	00H
37H	Bi-D adjustment for ECO (Black)	$-60 <= n <= +60$	00H	(*1)
38H	Bi-D adjustment for ECO (Color)	$-60 <= n <= +60$	00H	(*1)
39H	Bi-D adjustment for VSD4 (Black)	$-60 <= n <= +60$	00H	(*1)
3AH	Bi-D adjustment for VSD4 (Color)	$-60 <= n <= +60$	00H	(*1)
3BH	Bi-D adjustment for VSD3 (Black)	$-60 <= n <= +60$	00H	(*1)
3CH	Bi-D adjustment for VSD3 (Color)	$-60 <= n <= +60$	00H	(*1)
3DH	Bi-D adjustment for VSD2 (Black)	$-60 <= n <= +60$	00H	(*1)

Table 7-10. EEPROM address map (continued)

Address	Explanation	Setting	QPIT setting	Factory settings
3EH	Bi-D adjustment for VSD2 (Color)	$-60 <= n <= +60$	00H	(*1)
3FH	Bi-D adjustment for VSD1 (Black)	$-60 <= n <= +60$	00H	(*1)
40H	Password		0FH	-
41H			5AH	
42H	Head actuator rank ID for Vh1L		00H	(*1)
43H	Head actuator rank ID for Vh2L		00H	(*1)
44H	Head actuator rank ID for Vh2S		00H	(*1)
45H	Head actuator rank ID for Vh3L		00H	(*1)
46H	Head actuator rank ID for Vh3S		00H	(*1)
47H	Head actuator rank ID for Vh4S		00H	(*1)
48H	Wait Time at Paper loading for Economy	0 to 254 (by 10msec) 255 : Special	00H	(*1)
49H	EEPROM Version		41H	-
4AH | 4DH	Reserved		00H	(*1)
4EH	CR Trigger offset 80 column side	-128 to 127 (by 1/180inch)	00H	(*1)
4FH	CR Trigger offset Home column side	-128 to 127 (by 1/180inch)	00H	(*1)
50H	Head actuator rank ID for Tc		00H	(*1)
51H	TG Maker		*	-
52H	CSIC printer name		00H	A9H : World 29H : Japan

Table 7-10. EEPROM address map (continued)

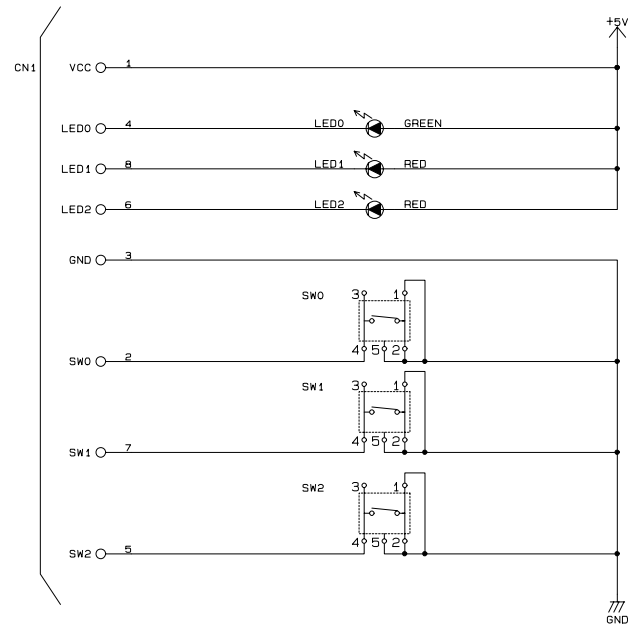| Address	Explanation	Setting	QPIT setting	Factory settings
53H | 64H	USB ID		00H | 00H	(*1) | (*1)
65H | 7EH	Model name		00H | 00H	- | -
7FH	Market ID	0 : STD 1 : Japan 2 : Custom	00H	00H : World 01H : Japan

NOTE: *Refer to 3.1.1.3 Fatal Error (page 22) for details of all error codes.*

*NOTE:* *(*1) : Adjusted at factory.*


7.2 Exploded Diagram

An exploded diagram is not provided in the Stylus C82 Service Manual. If consultation of an exploded diagram is necessary, see the exploded diagram attached to the Stylus C82 Parts List.

7.3 Electrical Circuits

```
                                                                    +5V
                                                                     ↑
  CN1     VCC  ○──1──────────────────────────────────────────────●
                    
          LED0 ○──4─────────────LED0    GREEN────────────────────●
                    
          LED1 ○──8─────────────LED1    RED──────────────────────●
                    
          LED2 ○──6─────────────LED2    RED──────────────────────●
                    
          GND  ○──3─────────────────────────────────────────────●
                                SW0   3○    1○
                                        ○──○
                                      4○ 5○ 2○
          SW0  ○──2─────────────────────────────────────────────●
                                SW1   3○    1○
                                        ○──○
                                      4○ 5○ 2○
          SW1  ○──7─────────────────────────────────────────────●
                                SW2   3○    1○
                                        ○──○
                                      4○ 5○ 2○
          SW2  ○──5─────────────────────────────────────────────●
                                                              ▽▽▽
                                                              GND
```

```
Model: Stylus C82
Board: C486 PNL
Rev. : A
Sheet: 1 of 1
```

Model: Stylus C82
Board: C486 MAIN
Rev.: A
Sheet: 1 of 1
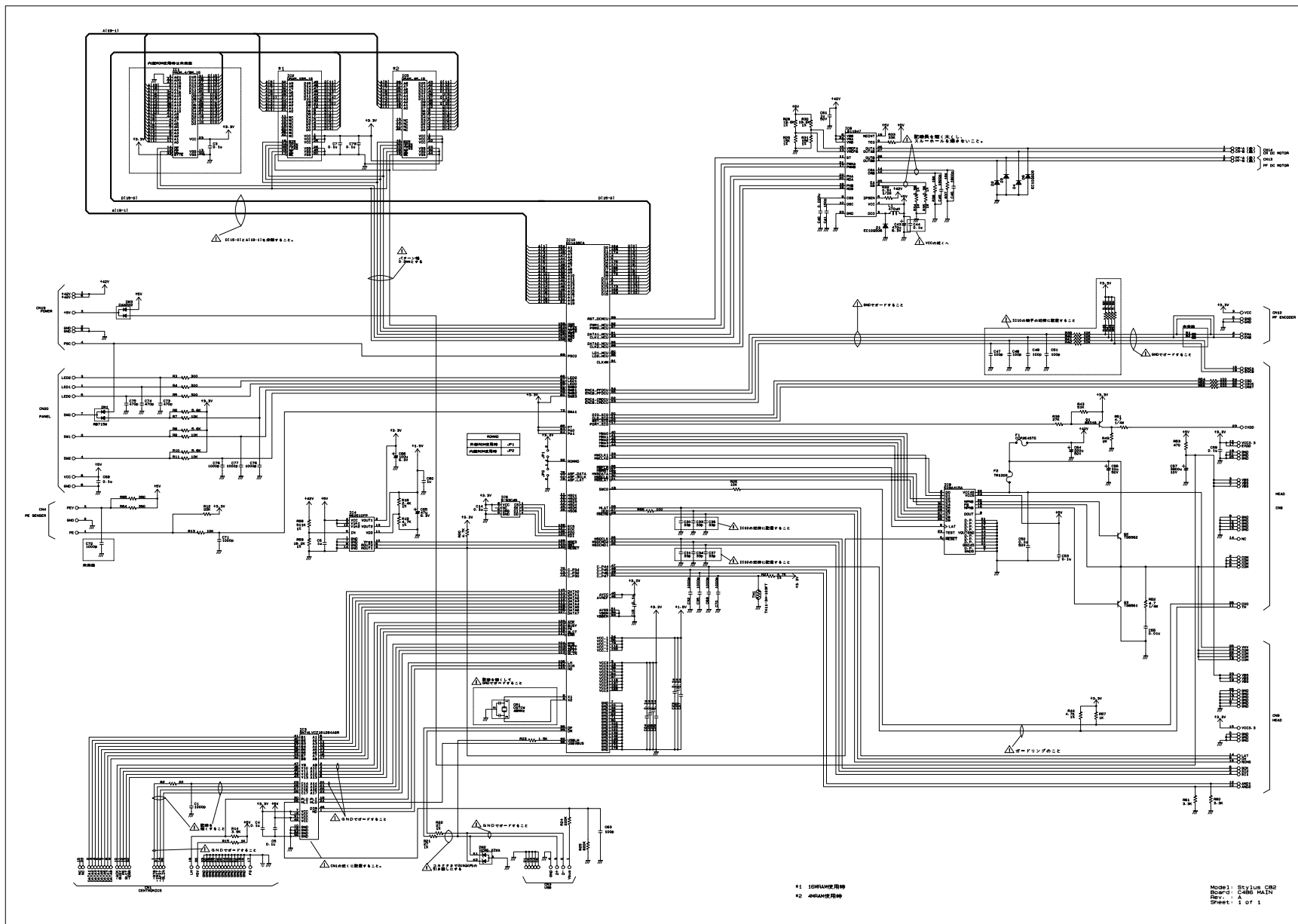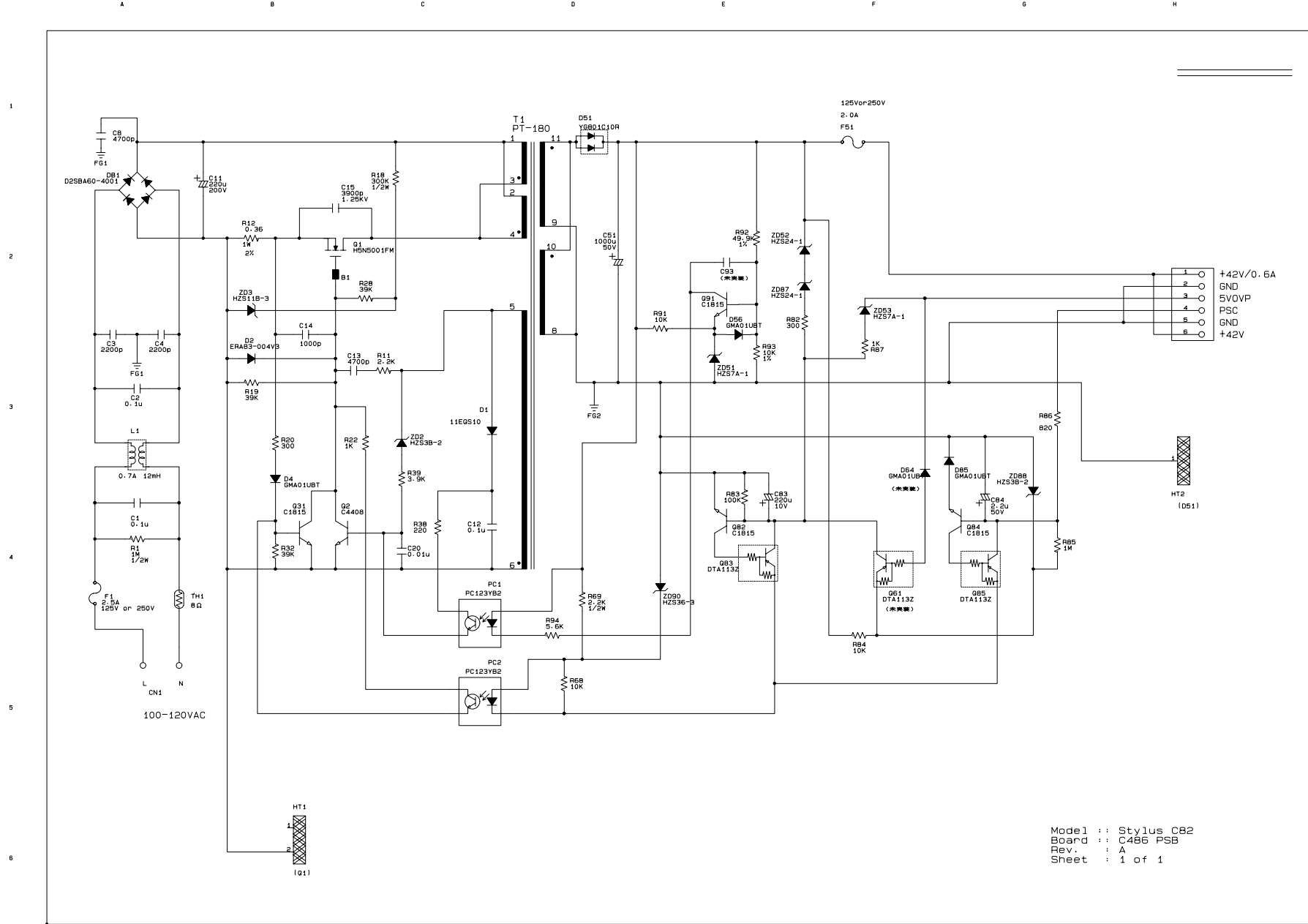
Model :: Stylus C82
Board :: C486 PSB
Rev. :: A
Sheet : 1 of 1