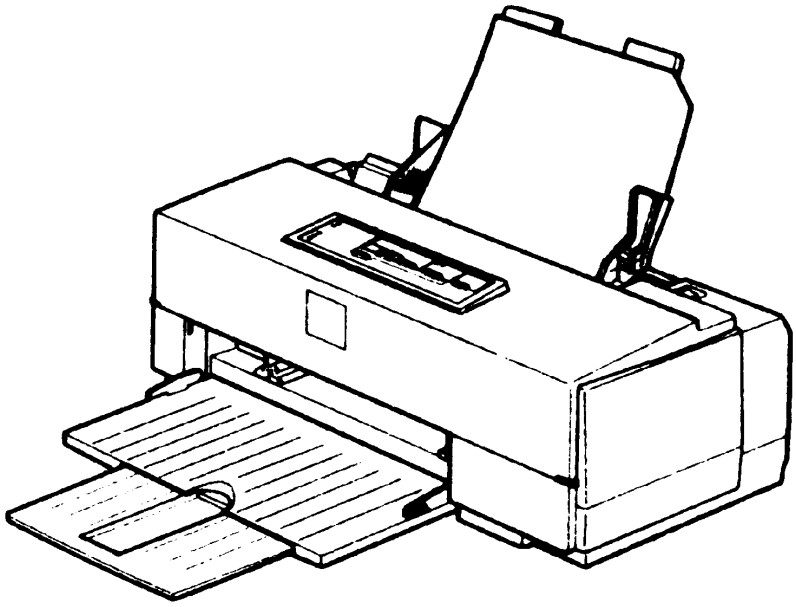
EPSON COLOR INKJET PRINTER

Stylus-500

SERVICE MANUAL



EPSON

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PREFACE

This document provides supplementary information to describe the EPSON Stylus COLOR 500, which is a follow-on version of the EPSON Stylus COLOR II. Therefore, you must refer to this information in conjunction with the EPSON Stylus COLOR II Service Manual for details on any subjects common to both printers.

1.1 FEATURES

The EPSON Stylus COLOR 500 is a small-footprint, personal-use color ink jet printer. The major new features of this printer are:

❏ Newly developed black and color inks

High-quality black printing
Deep color printing

❏ Simple control panel operation

3 No lock switches
4 LED lamps

❏ A new design for the left guide edge locking mechanism in the ASF (auto sheet feeder)

Table 1-1. Consumables

Model	Description
S020093	Monochrome ink cartridge
S020097	Color ink cartridge
S041059	EPSON premium paper for 360 dpi printing (A4)
S041025	EPSON premium paper for 360 dpi printing (A4)
S041060	EPSON premium paper for 360 dpi printing (Letter)
S041061	EPSON premium paper for 720 dpi printing (A4)
S041026	EPSON premium paper for 720 dpi printing (A4)
S041062	EPSON premium paper for 360 dpi printing (Letter)
S041067	EPSON premium paper for 360 dpi printing (Legal)
S041048	EPSON premium paper for 360 dpi printing (Legal)
S041071	High-quality glossy paper (A4)
S041072	High-quality glossy paper (Letter)
S041063	Transparency film (A4)
S041064	Transparency film (Letter)
S041054	EPSON premium card stock for 720 dpi printing (A6)

1.2 SPECIFICATIONS

This section provides detailed information about the EPSON Stylus COLOR 500.

1.2.1 Printing Specification

Table 1-2. Character Tables and Typefaces

Character Tables		Bitmap fonts	Scalable fonts	
		EPSON Roman EPSON Sans Serif EPSON Courier EPSON Prestige EPSON Script	EPSON Roman EPSON Sans Serif	EPSON Roman T EPSON Sans Serif H
Standard version	Italic PC437 (U.S., Standard Europe) PC850 (Multilingual) PC860 (Portuguese) PC861 (Icelandic) PC863 (Canadian-French) PC865 (Nordic) BRASCII Abicomp	Supported	Supported	Supported
NLSP version	Italic PC437 (U.S., Standard Europe) PC850 (Multilingual)	Supported	Supported	Supported
	PC437 Greek PC852 (East Europe) PC853 (Turkish) PC855 (Cyrillic) PC857 (Turkish) PC866 (Russian) PC869 (Greek) MAZOWIA (Poland) Code MJK (CSFR) ISO 8859-7(Latin/Greek) ISO Latin 1T (Turkish) Bulgaria (Bulgaria)			Not supported

1.2.2 Electric Specification

Power consumption 120v Approx.18W (ISO10561 Letter pattern)
220-240V Approx. 18W (ISO10561 Letter pattern)
Energy Star compliant

1.3 INTERFACES

1.3.1 Hardware Interfaces

This section fully describes the EPSON Stylus COLOR 500 interfaces. The printer offers both a parallel and serial interface, standard.

1.3.1.1 Parallel Interface

Forward Channel

Transmission mode:	8 bit parallel, IEEE-1284 compatibility mode
Synchronization:	$\overline{\text{STROBE}}$ pulse
Handshaking:	BUSY and $\overline{\text{ACKNLG}}$ signal
Signal level:	TTL compatible level (IEEE-1284 level 1 device)
Connector type:	57-30360 (Amphenol or equivalent)

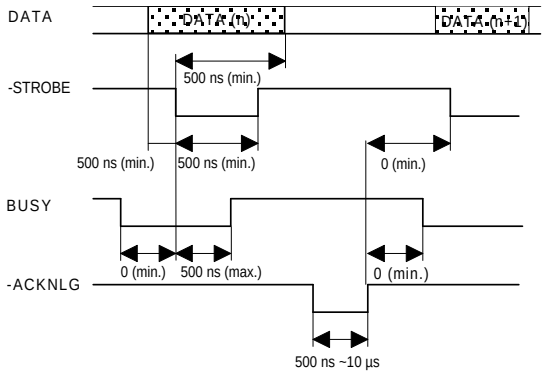
The BUSY signal is set to HIGH before either $\overline{\text{ERROR}}$ is set LOW or PE is set HIGH, and BUSY is held HIGH until all these signals return to the inactive state. The BUSY signal goes HIGH in the following cases:

- During data entry (See data transmission timing).
- When the input data buffer is full.
- When the $\overline{\text{INIT}}$ signal is at a LOW level, or during hardware initialization.
- During a printer error condition (see $\overline{\text{ERROR}}$ signal).
- During self-test printing.
- In default setting mode.
- When the parallel interface is not selected.

The $\overline{\text{ERROR}}$ signal is LOW when the printer is in one of the following conditions:

- Printer hardware error (fatal error condition).
- Paper-out error.
- Release lever operation error.

The PE signal is HIGH during a paper-out error.



* : The rise and fall time of every output signal must be less than 120 ns.
The rise and fall time of every input signal must be less than 200 ns.

Figure 1-1. Data Transmission Timing

Table 1-4 shows the connector pin assignments and signals for the 8-bit parallel interface.

Table 1-3. Connector Pin Assignments and Signals (Forward Channel)

Pin No.	Signal Name	Return GND Pin	I/O	Description
1	$\overline{\text{STROBE}}$	19	I	This is strobe pulse. Reading of data is performed at the falling edge of this pulse.
2 ~ 9	DATA 0 ~ 7	20 ~ 27	I	Signals DATA0 ~ DATA7 represent data bits 0 to 7, respectively. When a DATA signal is HIGH, the data is logical 1 and when LOW, data is logical 0.
10	$\overline{\text{ACKNLG}}$	28	O	This signal is a negative pulse indicating that the printer can accept more data.
11	BUSY	29	O	When this signal is HIGH, the printer cannot receive data.
12	PE	28	O	When this signal is HIGH, the printer detects a paper-out error.
13	SLCT	28	O	This signal is always HIGH when the printer is powered on.
14	$\overline{\text{AFXT}}$	30	I	
15	NC	—	—	Not connected.
31	$\overline{\text{INIT}}$	30	I	The falling edge of a negative pulse or a LOW signal on this line causes the printer to initialize. A 50 μs pulse, minimum, is necessary.
32	$\overline{\text{ERROR}}$	29	O	When this signal is LOW, the printer detects an error.
36	$\overline{\text{SLIN}}$	30	I	Not used.
18	Logic H	—	O	Pulled up to +5 V via 3.9 KΩ resistor.
35	+5 V	—	O	Pulled up to +5 V via 3.3 KΩ resistor.
17	Chassis GND	—	—	Chassis ground.
16, 33 19 - 30	GND	—	—	Signal ground.
15, 34	NC	—	—	Not used.

Reverse Channel

Transmission mode: IEEE-1284 nibble mode.

Connector: See forward channel.

Synchronization: Refer to the IEEE-1284 specification.

Handshaking: Refer to the IEEE-1284 specification.

Data transmission timing: Refer to the IEEE-1284 specification.

Signal level: Refer to the IEEE-1284 specification.

Table 1-4. Connector Pin Assignments and Signals (Reverse Channel)

Pin No.	Signal Name	Return GND Pin	I/O	Description
1	Host Clk	19	I	Host clock signal.
2 ~ 9	DATA0 ~ 7	20 - 27	I	DATA0 ~ DATA7 signals represent data bits 0 to 7, respectively. Each signal is at a HIGH level when data is logical 1 and at a LOW level when data is logical 0. These signals are used to transfer the extensibility request values (described in IEEE-P1284) to the printer.
10	PtrClk	28	O	Printer clock signal.
11	Ptr Busy / Data Bits 3, 7	29	O	Printer busy signal and reverse channel transfer data 3 or 7.
12	Ack Data Req / Data Bits 2, 6	28	O	Acknowledge data request signal and reverse channel transfer data bit 2 or 6.
13	Xflag / Data Bits 1, 5	28	O	X-flag signal and reverse channel transfer data bits 1 or 5.
14	Host Busy	30	I	Host busy signal.
31	$\overline{\text{INIT}}$	30	I	Not used.
32	$\overline{\text{Data Avail}}$ / Data Bits 0, 4	29	O	Data available and reverse channel data bits 0 or 4.
36	1284-Active	30	I	Active signal for IEEE-P1284 mode.
18	Logic-H	—	O	Pulled up to +5 V via 3.9K Ω resistor.
35	+5 V	—	O	Pulled up to +5 V via 3.3K Ω resistor.
17	Chassis GND	—	—	Chassis ground.
16, 33 19 - 30	GND	—	—	Signal ground.
15, 34	NC	—	—	Not connected.

Note: I / O refers to direction of the signal flow from the view of the printer.

Extensibility Request
The printer responds affirmatively when the extensibility request values are 00H or 04H. That means:

00H: Request Nibble Mode Reverse Channel Transfer
04H: Request Device ID;

Return Data Using Nibble Mode Channel Transfer.

Device ID
The printer sends following device ID string when it is requested:

ESC/P2 mode	X24E mode
00H 3AH	00H 3BH
MFG: EPSON;	MFG: EPSON;
CMD:ESCPL2-00	CMD: PRPXL24-00
MDL: Stylus COLOR 500;	MDL: Stylus COLOR 500;
CLS: PRINTER;	CLS: PRINTER;

Note: 00H denotes a hexadecimal value of zero.

1.4 POWER AND CONTROL PANEL OPERATIONS

This section describes the controls used to operate the EPSON Stylus COLOR 500.

1.4.1 Power Switch

The Power switch is in the right rear corner of the printer.

⚠CAUTION

This switch is for the primary power supply circuit. Therefore, you must put the printer in the waiting condition to make it cap the head before power off.

1.4.2 CONTROL PANEL

The control panel for this printer is in the center of the upper case. The panel has 3 non-lock type pushbuttons and 4 LEDs.

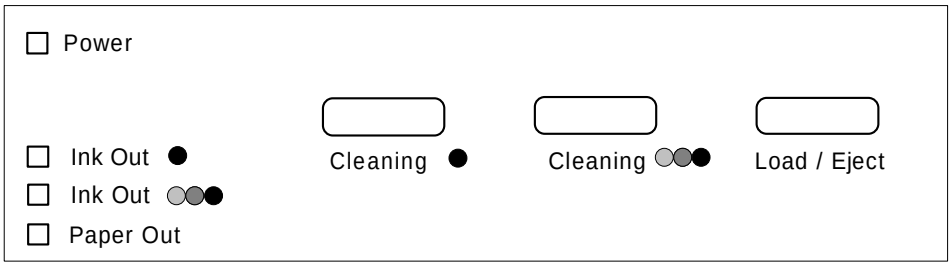


Figure 1-2. Panel Appearance

1.4.2.1 Buttons and Indicators

Cleaning (Black)

This button makes the printer perform the black head cleaning.

Cleaning (Color)

This button makes the printer perform the color head cleaning.

Load / Eject

This button loads and ejects paper.

❏ After you hold down Load / Eject for 3 seconds, the printer carriage moves to the ink cartridge installation position. When Load / Eject is pressed again, the CR returns to the home position.

Indicators

Power

Lights when the printer's Power switch is On, and AC power is supplied.

Ink Out (Black)

Lights when there is no ink in the black ink cartridge, and blinks when the black ink cartridge is low.

Ink Out (Color)

Lights when there is no ink in the color ink cartridge, and blinks when the color ink cartridge is low.

Paper Out

Lights during a paper out, and blinks during a paper jam.

1.4.3 Panel Functions at Power On

The table below gives functions for different button combinations at power on.

Table 1-5. Panel Functions at Power On

Button	Pressed along with Power On
Cleaning (Black)	Starts demonstration print.
Load / Eject	Enters the default setting mode.
Load / Eject + Cleaning (Black)	Enters the printer adjustment mode.
Cleaning (Color)	Starts LQ self-test printing.
Load / Eject + Cleaning (Color)	Enters the ink smudge prevention mode.
Cleaning (Black) + Cleaning (Color)	Enters hex dump mode.
Load / Eject + Cleaning (Black) + Cleaning (Color), Load / Eject less than 3 seconds	Enters reset mode for the EEPROM and Timer IC. (Factory and service use only.)

Note : 1. "+" indicates pressing one button while holding the other button(s) down.
2. EEPROM and Timer IC resets are for use by authorized servicers only.

1.4.4 Printer Conditions and Status

This section describes how the printer indicates status and error conditions using LEDs.

Table 1-6. Indicator Status

Printer Status	LEDs			
	Power	**Ink Out (Black)**	**Ink Out (Color)**	**Paper Out**
Power on condition	On	—	—	—
Data exist	Blinks	—	—	—
Ink sequence	Blinks	—	—	—
Ink cartridge change mode	Blinks	—	—	—
Paper out	—	—	—	On
Paper jam condition	—	—	—	Blinks
No ink cartridge or Ink end (black)	—	On	—	—
Ink level low (black)	—	Blinks	—	—
No ink cartridge or Ink end (color)	—	—	On	—
Ink level low (color)	—	—	Blinks	—
Maintenance request	Blinks Rapidly	Blinks Rapidly	Blinks Rapidly	Blinks Rapidly
EEPROM and timer reset	—	On for 1 second only		
Fatal error	Blinks Rapidly	On	On	On

Notes: When transparency paper is selected, unidirectional printing is selected.

— Does not affect status listed in the left-hand column.

1.4.5 Default Settings

This printer has user-selectable default settings, which it refers to at initialization. The default (and factory) settings are listed in the table on the next page.

1.4.5.1 Setting Method

The method of setting defaults is shown in the flowchart below.

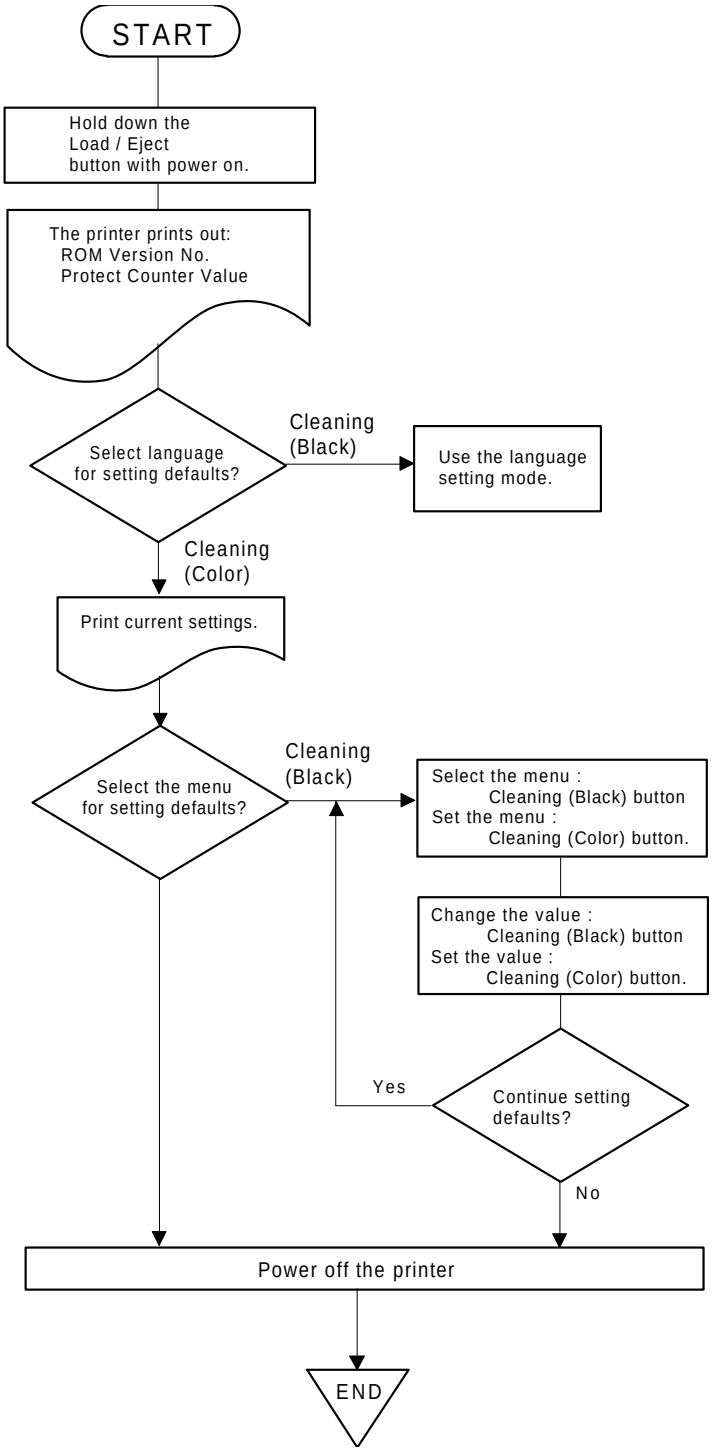


Figure 1-3. Default Setting Flowchart

1.4.5.2 Setting Menus

The default setting menus are:

Table 1-7. Default Settings

Menus	Settings (Underlines Indicate Factory Default Settings)
Print direction	Auto / Bi-D / Uni-D
Font	Roman / Sans Serif / Courier / Prestige / Script / Roman T / Sans Serif H
Pitch	10 cpi / 12 cpi / 15 cpi / 17.1 cpi / 20 cpi / Proportional
I/F mode	Auto / Parallel / Serial
Auto I/F wait mode	10 seconds / 30 seconds
Software	ESC/P2 / IBM X24E
Auto CR (IBM mode only)	On / Off
AGM (IBM mode only)	On / Off
Character tables (standard version)	Italic U.S.A. Italic France Italic Germany Italic U.K. Italic Denmark Italic Sweden Italic Italy Italic Spain 1 PC 437 PC 850 PC 860 PC 863 PC 865 PC 861 BRASCII Abicomp
Character tables (NLSP version)	Italic U.S.A. Italic France Italic Germany Italic U.K. Italic Denmark Italic Sweden Italic Italy Italic Spain 1 PC 437 PC 437 Greek PC 850 PC 853 PC 855 PC 852 PC 857 PC 866 PC 869 MAZOWIA Code MJK ISO 8859-7 ISO Latin 1T Bulgaria
Auto line feed	On / Off
Network I/F mode	Off: Used in standalone environment On: Used in network environment
Loading position	3 mm / 8.5 mm / Others *1
Thick paper	Envelopes / Index cards (portrait)
Economy mode	On / Off

Note *1. Other settings are set using special commands for the EEPROM.

1.5 INK CARTRIDGE SPECIFICATIONS

Black

Type	Exclusive cartridge
Model	S020093
Color	Black
Print capacity	620 pages / A4 (LQ Roman EQMA text)
Ink Life	2 years from production
Storage temperature	20 °C ~ 40 °C (–4° F ~ 104° F) Storage, less than a month at 40 °C (104° F) –30 °C ~ 40 °C (86° F ~ 104° F) Packing storage, less than a month at 40 °C (104° F) –30 °C ~ 60 °C (86° F ~ 140° F) Transit, under 120 hours at 60° C (140° F) and less than a month at 40° C (104° F)
Dimensions	19.8 mm (W) × 52.7 mm (D) × 38.5 mm (H) 0.8" (W) x 2.1" (D) x 1.5" (H)

Color

Type	Exclusive cartridge
Model	S020097
Color	Magenta, cyan, yellow
Print capacity	320 pages /A4 (360 dpi, 5% duty, each color)
Ink Life	2 years from production
Storage temperatures	–20° C ~ 40° C (–4° F ~ 104° F) Storage, less than a month at 40° C (104° F) –30° C ~ 40° C (86° F ~ 104° F) Packing storage, less than a month at 40° C (104° F) –30° C ~ 60° C (86° F ~ 140° F) Transit, less than 120 hours at 60 °C (140° F) and less than a month at 40° C (104° F)
Dimensions	42.9 mm (W) × 56.8 mm (D) × 38.5 mm (H) 1.7" (W) x 2.2" (D) x 1.5" (D)

1.6 MAIN COMPONENTS

The main components of the EPSON Stylus COLOR 500 are designed for easy removal and repair. The main components are:

❏ Main Board (C161 MAIN)

❏ Power Supply Board (C160 PSB/PSE)

❏ Panel Board (C161 PNL)

❏ Mechanism

❏ Housing

1.6.1 Main Board (C161 MAIN)

This board consists of a CPU (TMP95C061F), a gate array (E05B12), ROM (CG), PROM, DRAM, EEPROM, motor driver ICs, printhead driver circuits, etc.

1.6.2 Power Supply Board (C160 PSB/PSE)

This power supply board is the same as the one used for the Stylus Color IIs. This board consists of a transformer, a switching FET, regulator IC, diode bridge, etc. This board has two ratings for input AC voltages.

2.1 OVERVIEW

This section describes operating principles of the EPSON Stylus COLOR 500 printer mechanism and electrical circuits.

2.2 OPERATING PRINCIPLES OF THE PRINTER MECHANISM

2.2.1 Principles of the Printing Operation

The printhead operates in one of two modes to eject ink from each nozzle:

- Normal state

  No electrical charge is applied to the piezoelectric element attached to the back of the cavity, and pressure inside the cavity is kept at a constant level.

- Ejecting state

  The head data signal is applied to the specific nozzle control line to select the active nozzle for printing, and the piezoelectric element is gradually charged by the drive voltage. Charging the piezoelectric element bends the vibration plate to compress the cavity. Then, ink is ejected from the nozzle.

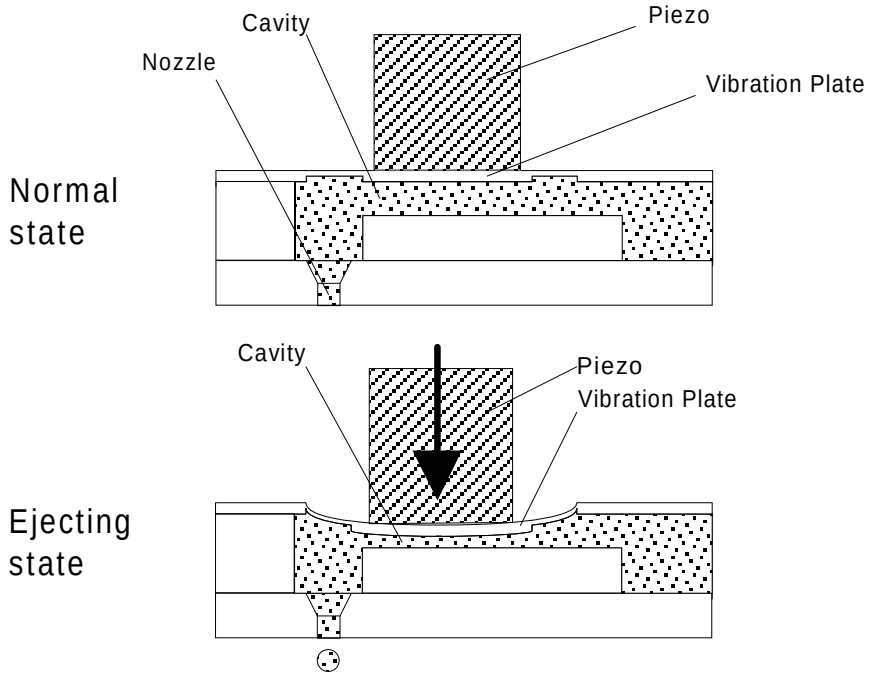


Figure 2-1. Principles of the Printing Operation

When the ink charge or printhead cleaning operation is performed, ink in the cavity is vacuumed out with a pump mechanism. During printing, on the other hand, ink is simultaneously supplied from the ink cartridge and ejected from the nozzle, depending on changes in the volume of the cavity.

A thermistor is attached to the side of the color printhead driver board to monitor the temperature, because the viscosity of the ink varies, depending on the temperature. The detected temperature level is fed back to the printhead drive voltage control circuit to change the time of the Tc pulse.

2.3 OPERATING PRINCIPLES OF THE ELECTRICAL CIRCUITS

The EPSON Stylus COLOR 500 contains the following circuit board units:

- ❑ C161 MAIN / C198 MAIN Board (main control circuit board)
- ❑ C160 PSB/PSE Board (power supply circuit board). This board is the same as for the Stylus COLOR.
- ❑ C161 PNL (control panel board)

In addition to the circuit boards above, part of the printhead driver circuit is built on a separate circuit board installed in the carriage unit; the printhead is attached directly to this board. The figure below shows a block diagram of the electrical circuitry.

2.3.1 Operating Principles of the Main Control Circuit

The main control circuit for this printer is the C161 MAIN Board. This circuit is controlled by a 16-bit TMP96C061AF CPU (IC1), running at a 12.5 MHz internal clock (25 MHz external clock). A 4M DRAM (CAS method) on this board is controlled by the CPU itself. The CPU manages the serial interface control (RS-422 for Mac).
C198 MAIN board equips with the hybrid IC for monochrome head common driver circuit.
Gate array E05B12 (IC2) manages printhead driver control, the external Centronics® parallel I/F, the control panel, and the motor control. The main board also is equipped with a 93C46 EEPROM (IC11) to store certain parameters, such as the printer mechanism control parameter, default setting parameters, as well as the special counter value used for printhead (ink management) protection. The NJU6355E timer IC (IC10) counts each time the printer is cleaned and keeps track of how long since the printer has been used, allowing the printer to be cleaned only when necessary.

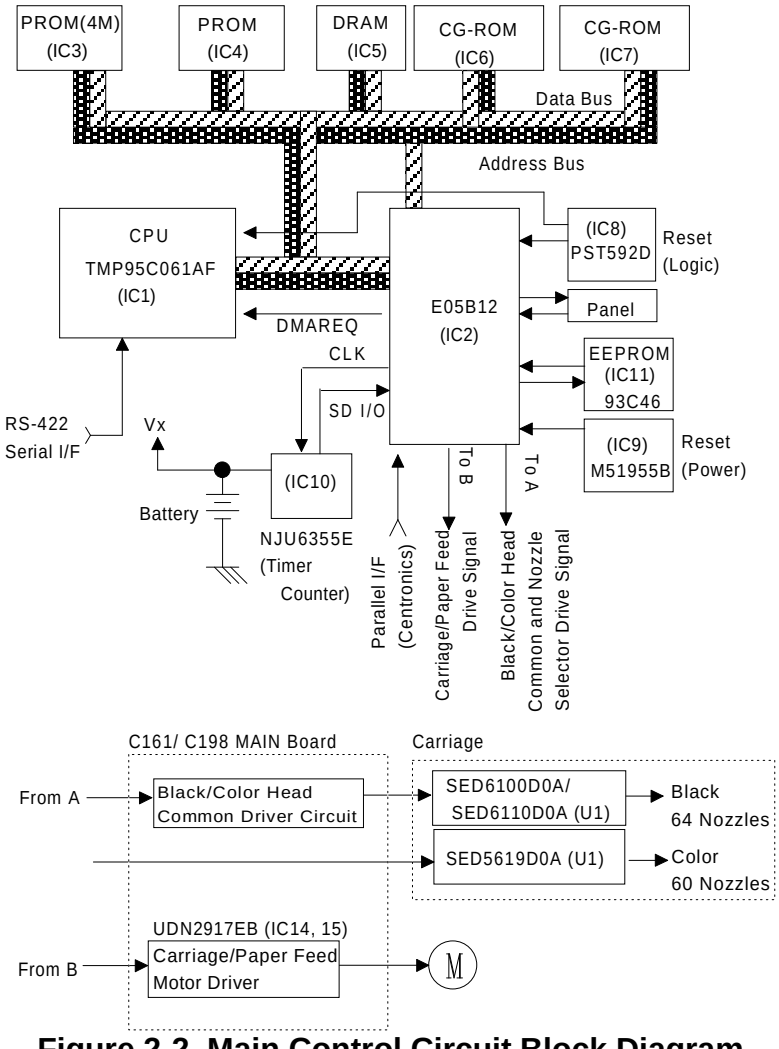


Figure 2-2. Main Control Circuit Block Diagram

2.3.1.1 Printhead Driver Circuit

The printhead driver circuit for this printer is composed of the following two parts:

- ❑ Common driver circuit (trapezoidal drive pulse generation)
- ❑ Head driver circuit (nozzle control built on the printhead)

The SED6100D0A/SED6110D0A monochrome printhead driver circuit for the 64-dot head on the carriage acts as a nozzle selector to drive the black printhead nozzles selectively. The SED5619D0A 60-dot (Y, M, C $\times$ 20) thermal head driver in the color printhead's driver circuit on the carriage also acts as a nozzle selector to drive the color head nozzles selectively. Print data is converted to serial data by gate array E05B12 (IC2) and is output from port BHSO to the black head driver circuit or output from port CHSO to the color head driver circuit. Then, head driver SED6100D0A/ SED6110D0A or SED5619D0A latches the head data when gate array E05B12 outputs the BHLAT or CHLAT signal, and the latched data becomes 64-bit parallel data for the black head, or 60-bit parallel data for the color head. One bit corresponds to each nozzle.

When data transfer and nozzle selection are complete, gate array E05B12 outputs the common driver pulse Pc (charge pulse) and Pd (discharge pulse) to the common driver circuit. The common driver circuit then generates the trapezoidal pulse and applies it to the printhead as a common driver pulse. After this, the nozzle selected by the head data is activated to eject ink.

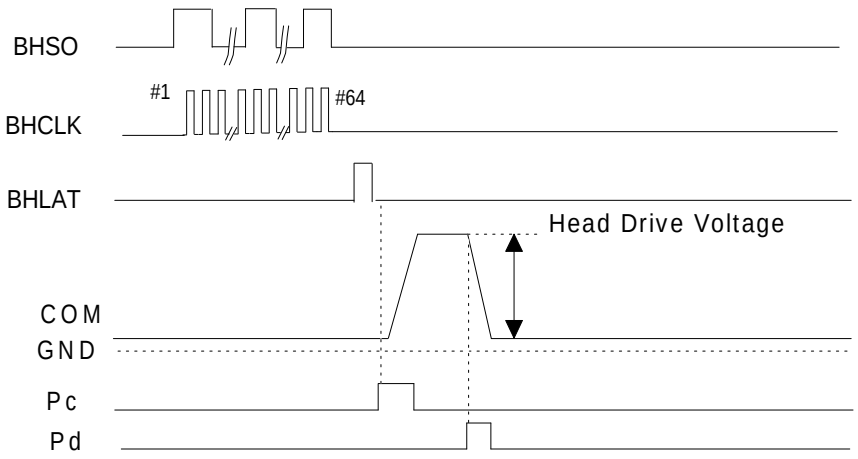


Figure 2-2. Print Data Transmission Timing

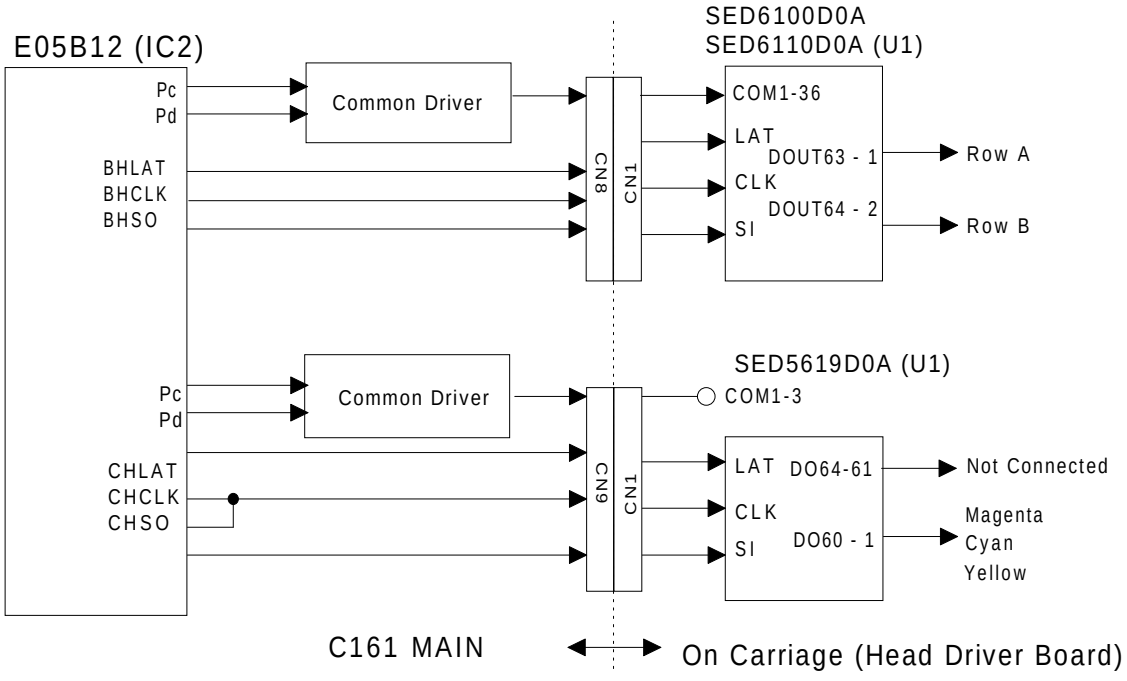


Figure 2-3. Printhead Driver Circuit Block Diagram

2.4 INK SYSTEM MANAGEMENT

The ink system is controlled to protect the printhead and ink supply system and ensure high-quality output.

2.4.1 Counter

EEPROM 93C46 (IC11) on the main board stores certain counter and timer values used for controlling ink system operation. The counters are stored in the EEPROM on the main board, and while the printer is on, this data is stored into the RAM on the main board.

❏ Ink Consumption Counter — This counter value is stored in the EEPROM on the main board, and while the printer is on, the data is stored in RAM on the main board. This counter is always reset when the ink cartridge is removed.

3.1 OVERVIEW

This section describes procedures for disassembling the main components of the printer. Unless otherwise specified, disassembled units or components can be reassembled by reversing disassembly procedures, so no assembly procedures are included. Precautions for any disassembly or assembly procedure are described under the heading "Disassembly/Assembly Points". Adjustments required after assembly are described under the heading "Required Adjustments".

3.1.1 Precautions for Disassembling the Printer

⚠WARNING

- ❑ ***Disconnect the power cable before disassembling or assembling the printer.***
- ❑ ***Wear goggles to protect your eyes from ink. If ink gets in your eye, flush it with fresh water and see a doctor immediately. If ink comes into contact with your skin, wash it off with soap and water. If irritation occurs, contact a physician.***
- ❑ ***A lithium battery is installed on the C161 MAIN/C198 MAIN board of this printer. Be sure to observe the following instructions when servicing the battery:***
  1. ***Keep the battery away from any metal or other batteries so that electrodes of opposite polarity do not come in contact with each other.***
  2. ***Do not heat the battery or place it near fire.***
  3. ***Do not solder on any part of the battery. (Doing so may result in leakage of electrolyte from the battery, burning, or explosion. The leakage may affect other devices close to the battery.)***
  4. ***Do not charge the battery. (An explosive gas may be generated inside the battery, and cause burning or explosion.)***
  5. ***Do not dismantle the battery. (The gas inside the battery may hurt your throat. Leakage, burning, or explosion may also result.)***
  6. ***Do not install the battery in the wrong direction. (This may cause burning or explosion.)***

⚠CAUTION

There is danger of explosion if the battery is incorrectly replaced. Replace only with the same or equivalent type, recommended by the manufacturer. Dispose of used batteries according to the government's laws and regulations.

ATTENTION

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

⚠CAUTION

- ❑ ***Never remove the ink cartridge from the carriage unless specified to do so.***
- ❑ ***When transporting the printer after installing the ink cartridge, be sure to pack the printer for transportation without removing the ink cartridge.***
- ❑ ***Use only recommended tools for disassembling, assembling, or adjusting the printer.***
- ❑ ***Apply lubricants and adhesives as specified. (See Chapter 6.)***
- ❑ ***Make specified adjustments when you disassemble the printer. (See Chapter 4.)***

3.2 DISASSEMBLY AND ASSEMBLY

⚠CAUTION

Follow the precautions in Section 3.1.1 when disassembling the printer.

This section consists of the topics shown in the diagram below. See the exploded view of the printer in the Appendix, if necessary.

3.2.1 ASF (Auto Sheet Feeder) Assembly Removal

1. Remove the upper housing assembly. (See EPSON Stylus COLOR II Service Manual, Section 3.2.1.)
2. Disconnect the PS sensor cable from connector CN11 on the C161 / C198 MAIN board.
3. Remove 2 CBS (3x8) screws, a plain washer, and a spacer securing the ASF assembly to the base frame.
4. Move the paper guide to the stopper on the ASF paper support, and bend the back of the left guide toward the rear.
5. Remove the ASF assembly by lifting from the rear of the printer and pulling it back.

DISASSEMBLY/ASSEMBLY POINTS

- ***Do not install with the power supply cable under the ASF assembly.***
- ***To attach the ASF assembly to the base frame, insert the projections from the ASF assembly into corresponding holes in the base frame.***

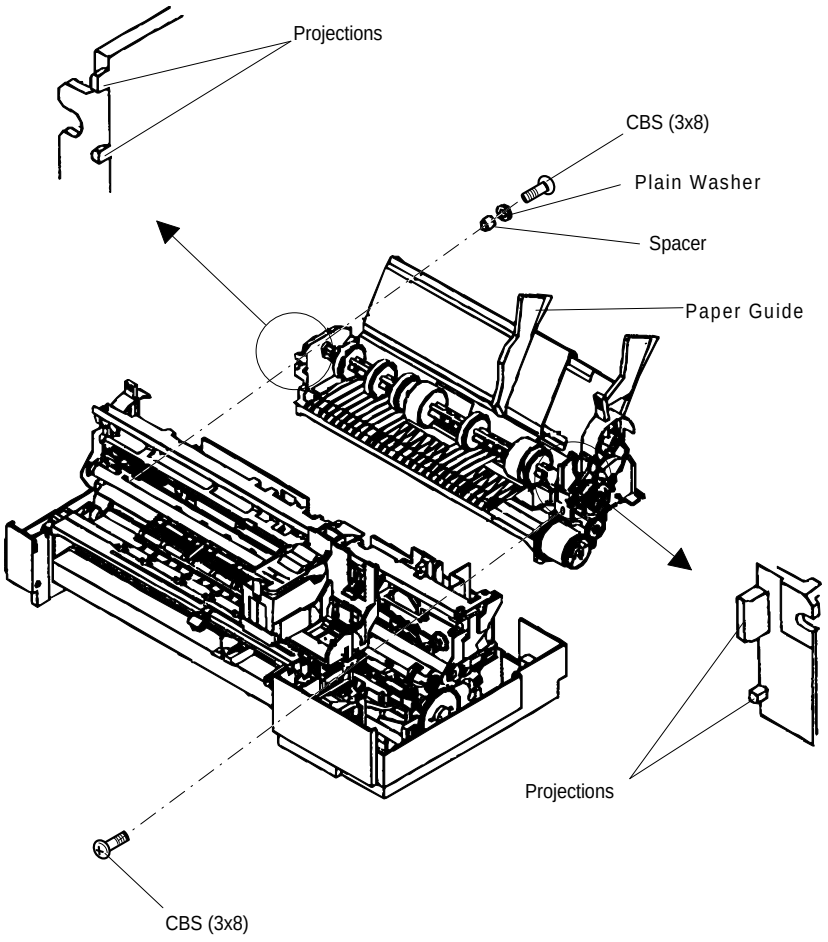


Figure 3-1. ASF Assembly Removal

3.2.2 Black Head Removal

⚠CAUTION

Although the EPSON Stylus COLOR 500's printhead is not compatible with the printhead for the Stylus COLOR II, either printhead can fit in the other printer physically. So, take care not to misassemble the printer with the wrong printhead.

1. Remove the upper housing assembly. (See EPSON Stylus COLOR II Service Manual, Section 3.2.1.)
2. Remove the cartridge sensor cable from the cartridge sensor connector.
3. Remove the black cartridge lever from black ink cartridge holder H.
4. Remove the CBS (2.5x8) screw securing cartridge holder H to the carriage unit. Disengage the hooks for cartridge holder H that secure it to the carriage unit. Remove holder H by pulling it upward.
5. Remove the head fastening pin from the carriage unit.
6. Remove the black printhead.
7. Disconnect the black cartridge sensor harness from the printhead.

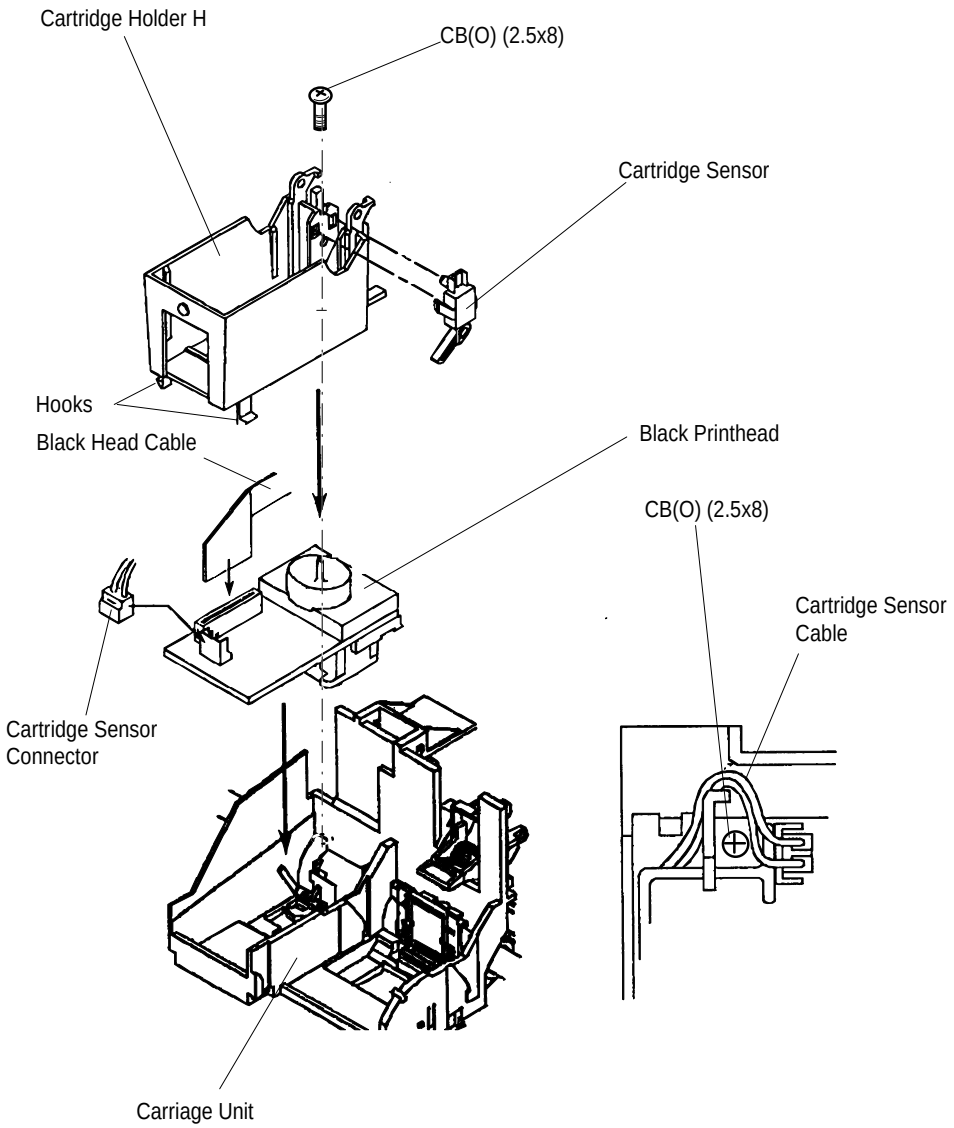


Figure 3-2. Black Head Removal

⚠CAUTION

- ❑ ***After you remove the ink cartridge, always install a new cartridge immediately.***
- ❑ ***The ink cartridge always must be installed in carriage unit so that the printhead does not dry up.***
- ❑ ***The carriage unit must be moved to carriage home position and fixed to the base frame with the CR clamp so that it does not move during transport. (See EPSON Stylus COLOR II Service Manual, Section 3.2.10.) Otherwise, the carriage may receive permanent damage.***

DISASSEMBLY/ASSEMBLY POINT

- ❑ ***Fit the head fastening pin completely into the notch in the carriage unit. (Refer to EPSON Stylus COLOR II Service Manual, Figure 3-21.)***
- ❑ ***Install the cartridge sensor cable in the carriage unit as shown in the EPSON Stylus COLOR II Service Manual, Figure 3-21.***

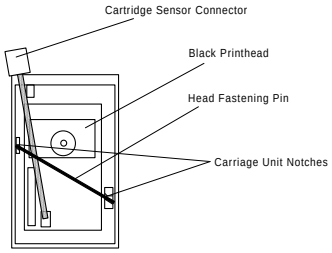


Figure 3-3. Inside the Carriage Unit

REQUIRED ADJUSTMENT

After removing or changing the black head, perform the following adjustments:

1. Black head angle adjustment (See EPSON Stylus COLOR II Service Manual, Section 4.1.4)

2. Black-color head vertical adjustment (See EPSON stylus COLOR II, Service Manual, Section 4.1.5)

3. Head gap adjustment (See EPSON Stylus COLOR II Service Manual, Section 4.1.3)

4. Bi-D alignment adjustment (See EPSON Stylus COLOR II Service Manual, Section 4.1.2)

⚠CAUTION

The following data is written on the printheads:

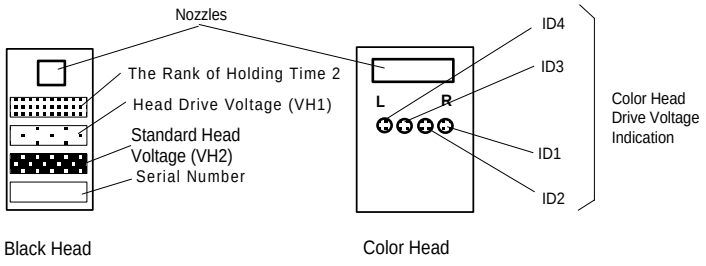


Figure 3-4. Data Found on the Printhead

3.2.3 Color Head Removal

1. Remove the upper housing assembly. (See EPSON Stylus COLOR II Service Manual, Section 3.2.1.)
2. Push the head fastening lever back, and remove the color printhead with the color ink cartridge up.
3. Disconnect the color head cable from the color printhead.

DISASSEMBLY/ASSEMBLY POINT

- ❑ ***Attach the color printhead to the carriage by installing the color printhead so that the color head can be seen projecting from the hole in the right side of the carriage window.***
- ❑ ***Place the color head cable so it is attached by the projection of head fastening lever.***

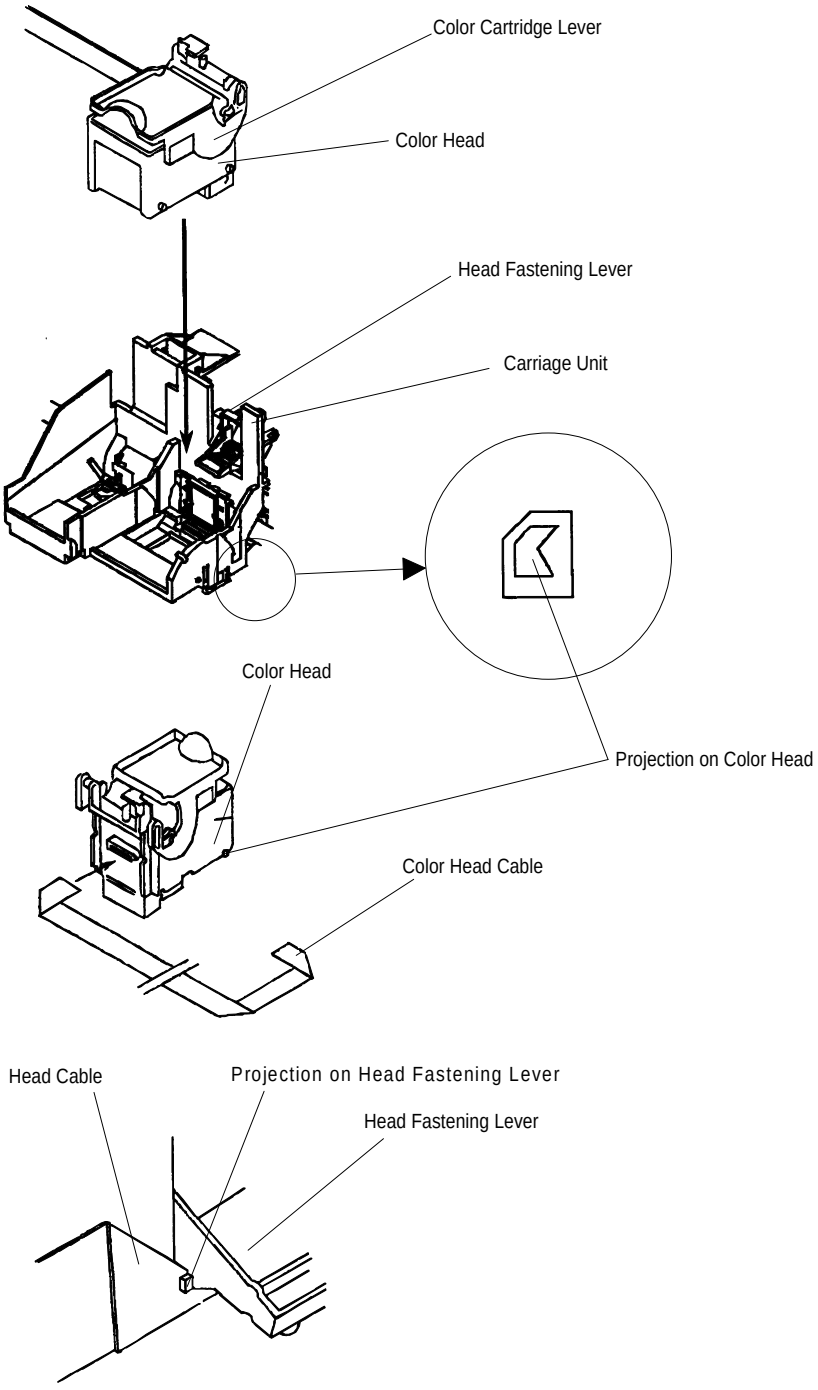


Figure 3-5. Color Head Removal

⚠CAUTION

- ❑ ***After removing an ink cartridge, always install a new cartridge immediately.***
- ❑ ***The ink cartridge always must be installed in the carriage unit, so the printhead does not dry up.***
- ❑ ***The carriage unit must be moved to carriage home position and fixed to base frame with the CR clamp so that it does not move during transport. (See EPSON Stylus COLOR II Service Manual, Section 3.2.10.) Otherwise, the carriage may receive permanent damage.***

REQUIRED ADJUSTMENT

After removing or changing the color head, perform the following adjustments:

1. ***Head data writing operation (See EPSON Stylus COLOR II Service Manual, Section 4.1.3.)***
2. ***Color head angle adjustment (See EPSON Stylus COLOR II Service Manual, Section 4.1.5.)***
3. ***Bi-D alignment adjustment (See EPSON Stylus COLOR II Service Manual, Section 4.1.6.)***
4. ***Black-color head vertical adjustment (See EPSON stylus COLOR II Service Manual, Section 4.1.7.)***
5. ***Head gap adjustment (See EPSON Stylus COLOR II Service Manual, Section 4.1.8.)***

⚠CAUTION

The data shown in Figure 3-4 is written on the printheads:

- ❑ ***If the value of VH2 is the same as VH1, HV2 is abbreviated. So, input the value of HV1 as VH2.***

3.2.4 Printer Mechanism Removal

3.2.4.1 Drive Roller Removal

1. Remove the printer mechanism. (See EPSON Stylus COLOR II Service Manual, Section 3.2.4.)
2. Remove the pump unit. (See EPSON Stylus COLOR II Service Manual, Section 3.2.6.1.)
3. Remove the carriage unit. (See EPSON Stylus COLOR II Service Manual, Section 3.2.6.5.)
4. Remove the lower paper guide assembly. (See EPSON Stylus COLOR II Service Manual, Section 3.2.6.6.)
5. Remove the grounding spring connecting between the M/B shield plate and PF drive roller assembly on the left side of the printer.
6. Disengage one end of the 46.3 torsion spring from the base frame. Then remove the upper paper guides and the left upper paper guide from the base frame.
7. On the left and right frames on the each side of the printer, turn bushing 10 to disengage it from the frame. Then remove the drive roller assembly pulling it upward.

⚠CAUTION

For paper feed accuracy, be careful not to hurt or mar the teeth of spur gear 43.2.

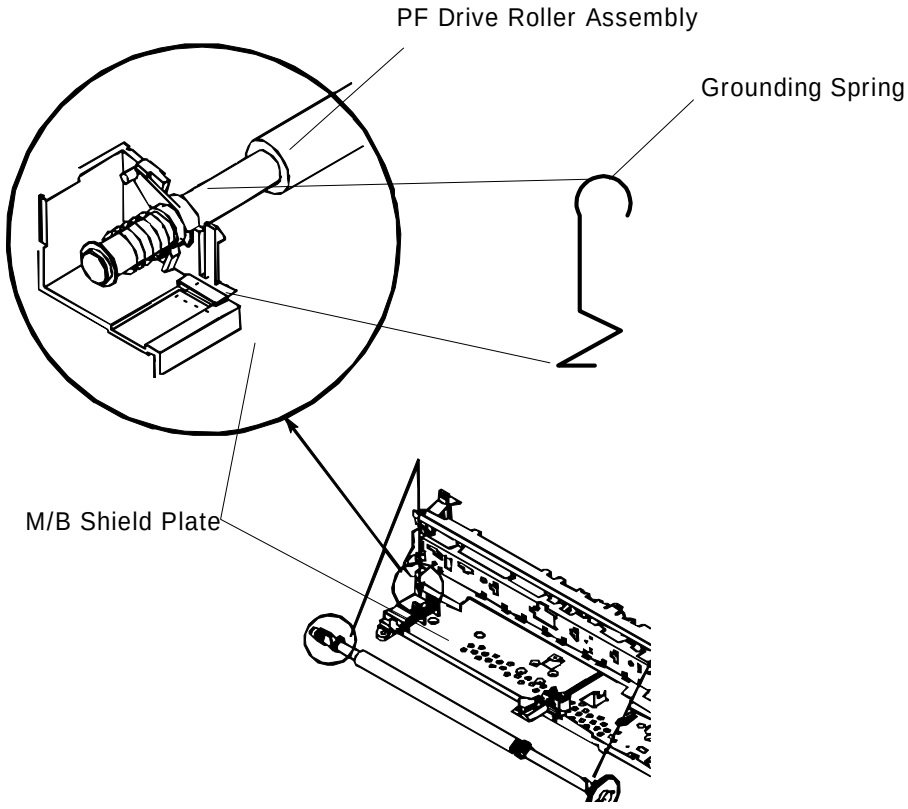


Figure 3-6. Remove the Grounding Spring

4.1 OVERVIEW

This section describes adjustments required when the printer is disassembled and assembled for repair. Since this printer has both black and color heads, it needs new adjustments not required for previous printers. Perform the appropriate adjustments by referring to the following table.

⚠CAUTION

- ❑ ***Always perform adjustments in the order indicated.***
- ❑ ***When printing adjustment patterns, use the exclusive 720 dpi paper.***
- ❑ ***Always install a new ink cartridge immediately after removing the old one at returning to user.***

Table 4-1. Required Adjustments

Work Performed	Adjustment Required
After disassembling or replacing parts in the printer mechanism	1. Writing head data (See Section 4.1.2.) 2. Bi-D alignment adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.6.) 3. Black - color head vertical adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.7.) 4. Head gap adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.8.)
After replacing the C161 / C198 MAIN board or the printer mechanism	1. Writing destination data (See Section 4.1.1.) 2. Writing head data (See Section 4.1.2.) 3. Bi-D alignment adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.6.) 4. Black - color head vertical adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.7.) 5. Head gap adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.8.)
After replacing or disassembling the black head (board)	1. Writing head data (See Section 4.1.2.) 2. Black head angle adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.4.) 3. Bi-D alignment adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.6.) 4. Black - color head vertical adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.7.) 5. Head gap adjustment (See EPSON Stylus COLOR II service manual, Section 4.1.8.)
After replacing or disassembling the color head (board)	1. Writing head data (See Section 4.1.2.) 2. Color head angle adjustment (See EPSON Stylus COLOR II service manual Section 4.1.5.) 3. Bi-D alignment adjustment (See EPSON Stylus COLOR II service manual Section 4.1.6.) 4. Black - color head vertical adjustment (See EPSON Stylus COLOR II service manual Section 4.1.7.) 5. Head gap adjustment (See EPSON Stylus COLOR II service manual Section 4.1.8.)

Table 4-1. Required Adjustments (continued)

Work Performed	Adjustment Required
After replacing or disassembling both the color and black heads	1. Writing head data (See Section 4.1.2.) 2. Black head angle adjustment (See EPSON Stylus COLOR II service manual Section 4.1.4.) 3. Color head angle adjustment (See EPSON Stylus COLOR II service manual Section 4.1.5.) 4. Bi-D alignment adjustment (See EPSON Stylus COLOR II service manual Section 4.1.6.) 5. Black - color head vertical adjustment (See EPSON Stylus COLOR II service manual Section 4.1.7.) 6. Head gap adjustment (See EPSON Stylus COLOR II service manual Section 4.1.8.)
After replacing or disassembling the carriage unit	1. Platen gap adjustment (See EPSON Stylus COLOR II service manual Section 4.1.1.) 2. Writing head data (See Section 4.1.2.) 3. Black head angle adjustment (See EPSON Stylus COLOR II service manual Section 4.1.4.) 4. Color head angle adjustment (See EPSON Stylus COLOR II service manual Section 4.1.5.) 5. Bi-D alignment adjustment (See EPSON Stylus COLOR II service manual Section 4.1.6.) 6. Black - color head vertical adjustment (See EPSON Stylus COLOR II service manual Section 4.1.7.) 7. Head gap adjustment (See EPSON Stylus COLOR II service manual Section 4.1.8.)

4.1.1 Writing the Destination Data

The setup value that specifies the printer destination is stored in an EEPROM on the C161 / C198 MAIN board. Therefore, this setup value must be rewritten to the EEPROM when the printer mechanism, the main board, or the EEPROM chip is replaced, or whenever the EEPROM is reset.

⚠CAUTION

Before writing the destination, you must set the Interface Setting to the Parallel interface•or Auto Select setting.

1. Connect a PC to the target printer using a parallel interface cable and turn the printer on.
2. Load BASIC on the PC, and run the program. Load 720 dpi paper into the printer. Then the main menu appears as shown below:

```
EPSON STYLUS COLOR 500 Adjustment Program Customer data <>  **/**/**
( Customer data input            ) .... 1
( Adjustment/Print Inspection ) .... 2

(  END                                ) .... E

Select Menu :? ■
```

3. Choose **1** first. The Destination setting menu appears on the display.

```
Factory Setting
(1st : Program Ver. 0 : Standard        1 : Japan           )
(2nd : Market        0 : Standard       1 : NLSP            )
(3rd : C.G. Table    0 : Italic U.S.A   1 : PC437  2 : PC866)

Memory-SW data (3 col data) :? ■
```

4. Refer to Table 4-3 to input a 3-digit number for the destination (For example, USA: 000). Then the main menu appears again.

Table 4-2. Customer Data

Destination	Code	Destination	Code	Destination	Code	Destination	Code
EAI	000	EDG	001	EIS	001	ETT	000
EAI (Latin America)	000	EFS	001	EIB	001	EHK	001
EAL	000	EUL	001	EDG (NLSP)	011	Russia	012
ESP	000	EUL (Northern Europe)	001	EUL (Middle East)	001	Korea	200
Thai	300						

5. Choose **2** to enter the adjustment mode. The adjustment select menu appears as follows:

```
EPSON STYLUS COLOR 500 Adjustment Program Rev. x
Customer :      Customer data <xxx>
0. Initial Ink Charge
1. Head Voltage Values
2. Angular Head Adjustment
3. Bi-D Adjustment
4. Head Liner Adjustment
5. Head-GAP Timing Adjustment
6. Head Data Indication

9. Customer data charge / END

Select Menu ? ■
```

Note: The ink consumption counter is always reset when the ink cartridge is removed.

6. After another adjustment, you type **9** and press **Enter**. The destination data is installed into the printer and the main menu appears on the display. If you want end the program, press the **E** key.

⚠CAUTION

The values you have set are not saved permanently in the EEPROM until the printer is turned off. Turn off the printer at once after the adjustments are complete.

11. Turn off the printer.

4.1.2 Writing the Head Data

4.1.2.1 Writing the Head Data

Head data settings for each printhead are stored in the EEPROM on the C161 MAIN/C198 MAIN board. Therefore, these setup values must be rewritten to the EEPROM when the printer mechanism, the main board, or the EEPROM chip is replaced, but the head data and destination settings are not reset whenever the EEPROM is reset by panel operation.

⚠CAUTION

Before writing the destination, you must set the Interface Setting to the Parallel interface•or Auto Select setting.

1. Connect a PC to the target printer using a parallel interface cable and turn the printer on.
2. Load BASIC on the PC and run the program. Load 720 dpi paper into the printer. Then the main menu appears, as shown below:

```
EPSON STYLUS COLOR 500 Adjustment Program Customer data <>  **/**/**
( Customer data input            ) .... 1
( Adjustment/Print Inspection ) .... 2

(  END                                ) .... E

Select Menu :? ■
```

3. Choose **1** first. The Destination setting menu appears on the display.

```
Factory Setting
(1st : Program Ver. 0 : Standard        1 : Japan           )
(2nd : Market        0 : Standard       1 : NLSP            )
(3rd : C.G. Table    0 : Italic U.S.A   1 : PC437  2 : PC866)

Memory-SW data (3 col data) :? ■
```

4. Refer to Table 4-2 to input a 3-digit number for the destination. (For example, USA: 000). Then the main menu appears again.
5. Choose **2** to enter the adjustment mode. The adjustment select menu appears as shown:

```
EPSON STYLUS COLOR 500 Adjustment Program Rev. x
Customer :      Customer data <xxx>
0. Initial Ink Charge
1. Head Voltage Values
2. Angular Head Adjustment
3. Bi-D Adjustment
4. Head Liner Adjustment
5. Head-GAP Timing Adjustment
6. Head Data Indication

9. Customer data charge / END


Select Menu ? ■
```

6. Press **1** to begin writing the printhead data (head voltage values). The display for entering the head voltage values appears. Refer to the printhead circuit boards to enter the appropriate values. (See the illustration below.)

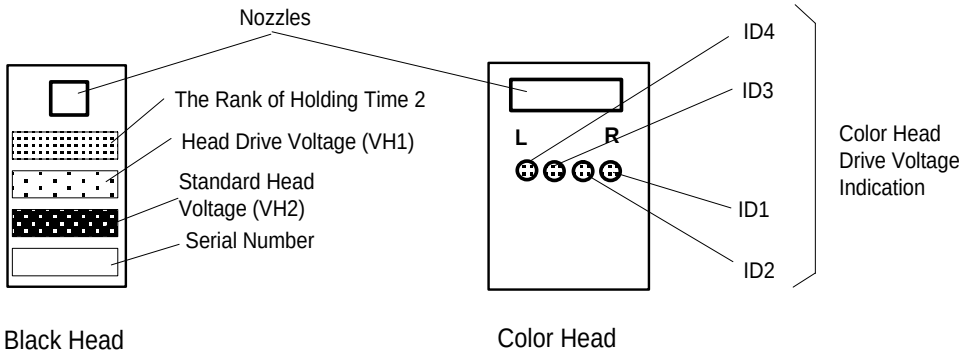


Figure 4-1. Printhead Voltage Values

⚠CAUTION

- ***If the value of VH2 is the same as VH1, HV2 is abbreviated. So, input the value of HV1 as VH2.***
- ***Color printhead data consists of 4 bits of binary data (for example, 0110) taken from the dots labeled ID4 to ID1. Input the values from ID4 to ID1 continuously.***
- ***The value of the ID is 1 when the dot corresponding to that ID is painted black; otherwise, when the dot is not black, the value is 0.***

```
<<<< Head Voltage Value Setting >>>>

Black Head VH value setting
Head Rank  :          ■
Black VH1      :          ■
Black VH2      :          ■

Color Head  VH (4 bit data only!!)
```

7. Press **Return** to exit the setting mode, or press **Space** to continue with adjustments.

⚠CAUTION

Because the values you have set are not stored in EEPROM until the printer is turned off, turn off the printer immediately after completing the adjustments.

8. Turn off the printer.

4.1.2.2 Head Data Indication

Selecting this function, this printer prints out the printhead data in EEPROM on the main board. When the main board is alive, this function is useful to know the printhead data without removing the printheads. As the printed data are descried by Hexa-decimal digits, get the printhead data referring to later translation tables.

1. Connect a PC to the target printer using a parallel interface cable and turn the printer on.
2. Load BASIC on the PC and run the program. Load 720 dpi paper into the printer. Then the main menu appears, as shown below:

```
EPSON STYLUS COLOR 500 Adjustment Program Customer data <>  **/**/**
( Customer data input             ) .... 1
( Adjustment/Print Inspection ) .... 2

(  END                                ) .... E

Select Menu :? ■
```

3. Choose **1** first. The Destination setting menu appears on the display.

```
Factory Setting
(1st : Program Ver. 0 : Standard        1 : Japan            )
(2nd : Market        0 : Standard       1 : NLSP             )
(3rd : C.G. Table    0 : Italic U.S.A   1 : PC437   2 : PC866)

Memory-SW data (3 col data) :? ■
```

4. Refer to Table 4-2 to input a 3-digit number for the destination. (For example, USA: 000). Then the main menu appears again.
5. Choose **2** to enter the adjustment mode. The adjustment select menu appears as shown:

```
EPSON STYLUS COLOR 500 Adjustment Program Rev. x
Customer :      Customer data <xxx>
0. Initial Ink Charge
1. Head Voltage Values
2. Angular Head Adjustment
3. Bi-D Adjustment
4. Head Liner Adjustment
5. Head-GAP Timing Adjustment
6. Head Data Indication

9. Customer data charge / END


Select Menu ? ■
```

6. Press **6** to choose the head data indication function. The printer prints out head data as followings, and the adjustment select menu appears again.

   For example

   Printed data is as followings;
   Rev. X <***> VH:04232001

   Referring to later translation tables,
   Rev. X means the revision of the adjustment program.
   <***> means the customer data. (Refer to Section 4.1.1.)
   “04" means that the head rank is 2. (Refer to Table 4-3.)
   ”23" means that the head drive voltage (VH1) is 26.52 (V). (Refer to Table 4-4.)
   “20" means that the standard head voltage (VH2) is 27.40 (V). (Refer to Table 4-4.)
   ”01" means that the color head drive voltage is “0001". (Refer to Table 4-5.)

Note *If the main board is inactive, there is no way without removing the printhead once to know head data.*

Table 4-3. Head Rank

Indication	Rank	Indication	Rank
00	0	20	32
01	1	21	33
02	2	22	34
03	3	23	35
04	4	24	36
05	5	25	37
06	6	26	38
07	7	27	39
08	8	28	40
09	9	29	41
0A	10	2A	42
0B	11	2B	43
0C	12	2C	44
0D	13	2D	45
0E	14	2E	46

Table 4-4. Black VH1 / VH2

Indication	Head Voltage	Indication	Head Voltage
3F	18.27	1F	27.70
3E	18.57	1E	27.99
3D	18.86	1D	28.28
3C	19.16	1C	28.58
3B	19.45	1B	28.87
3A	19.74	1A	29.17
39	20.04	19	29.46
38	20.33	18	29.76
37	20.63	17	30.05
36	20.92	16	30.35
35	21.22	15	30.64
34	21.51	14	30.94
33	21.81	13	31.23
32	22.10	12	31.52
31	22.40	11	31.82
30	22.69	10	32.11
2F	22.98	0F	32.41
2E	23.28	0E	32.70
2D	23.57	0D	33.00
2C	23.87	0C	33.29
2B	24.16	0B	33.59
2A	24.46	0A	33.88
29	24.75	09	34.17
28	25.05	08	34.47
27	25.34	07	34.76
26	25.63	06	35.06
25	26.93	05	35.35
24	26.22	04	35.65
23	26.52	03	35.94
22	26.81	02	36.24
21	27.11	01	36.53
20	27.40	00	36.83

Table 4-5. Color Head Drive Voltage

Indication	ID 4	ID 3	ID 2	ID 1
F9	1	0	0	0
FA	1	0	0	1
FB	1	0	1	0
FC	1	0	1	1
FD	1	1	0	0
FE	1	1	0	1
FF	1	1	1	0
00	0	0	0	0
01	0	0	0	1
02	0	0	1	0
03	0	0	1	1
04	0	1	0	0
05	0	1	0	1
06	0	1	1	0
07	0	1	1	1

6.1 PREVENTIVE MAINTENANCE

Although this printer is designed so that no specific maintenance is required on a regular basis, it is recommended that you clean the printer thoroughly whenever you get a chance to do so. You can clean:

- Outer case

  Use a soft, clean cloth, dampened with mild detergent, if necessary.

- Auto sheet feeder

  If the inside of the auto sheet feeder is dirty (dusty), carefully brush away all dust and dirt using a soft brush. If the pickup roller of the sheet feeder is dirty, clean its surface with a soft, clean cloth.

- Inside the printer

  If you notice any dust or dirt that has accumulated inside the printer when you open the outer case for repair, remove all dust and dirt using a small vacuum cleaner designed for such purposes.

- ***Never use paint thinner, trichloroethylene, or ketone-based solvents for cleaning. These chemicals can damage the components of the printer.***

⚠ WARNING

⚠ CAUTION

- ***Do not use a hard or abrasive brush for cleaning.***
- ***Be careful not to damage the components of the printer when using a vacuum cleaner.***
- ***A lithium battery is installed on the C161 MAIN board of this printer. Be sure to observe the following instructions when servicing the printer or storing the after-service parts:***
  1. ***Keep the battery away from any metal or other batteries so that electrodes of opposite polarity do not come in contact with each other.***
  2. ***Do not heat the battery or place it near fire.***
  3. ***Do not solder on any part of the battery. (Doing so may result in leakage of electrolyte from the battery, burning, or explosion. The leakage may damage devices close to the battery.)***
  4. ***Do not charge the battery. (An explosive gas may be generated inside the battery, and cause burning or explosion.)***
  5. ***Do not dismantle the battery. (The gas inside the battery may hurt your throat. Leakage, burning, or explosion may also result.)***
  6. ***Do not install the battery in the wrong direction. (This may cause burning or explosion.)***

6.2 SERVICE MAINTENANCE

Certain maintenance is required when the printer detects an error or when you observe a decline in print quality.

6.2.1 Printhead Cleaning

If print quality deteriorates, clean the printhead using the built-in printhead cleaning function. The printer also has an automatic printhead cleaning cycle to ensure the proper nozzle operation for ink ejection as well as to preserve its best condition. Therefore, to avoid wasting ink, perform this printhead cleaning operation only if print quality declines.

1. Press the Cleaning ● button for black head cleaning and press the Cleaning ●●● button for color head cleaning.
2. After printhead cleaning, the printer returns into previous condition automatically.

⚠CAUTION

The printhead cleaning operation is usually performed in waiting condition. And this function is able to performed in printing condition too. But we recommend to perform it in waiting condition to prevent from the irregular paper feeding.

6.3 LUBRICATION AND ADHESIVEs

The printer must be lubricated properly when the printer is disassembled for component replacement, or if the mechanical noise exceeds a certain level. EPSON recommends only the lubricants listed in table below for this printer, both of which have been tested extensively and found to comply with the requirements of this printer mechanism. Figure 6-1 shows the lubrication points and adhesive points.

Table 6-1. Recommended Lubricants

Type	Name	Quality	Part No.	Availability
Oil	O-8	40 cc	1019753	E
Grease	G-20	40 gm	B702000001	E
	G-26	40 gm	B702600001	E
Adhesive	NEJI LOCK #2 (G)	1000 g	B730200200	E

Note: E = EPSON Exclusive product (Not commercially available)

Table 6-2. Lubrication and Adhesive Points

Ref. No.	Lubrication/Adhesive Point	Lubricant
1	The contact point of the right pulley assembly shaft with spur gear 28.5 and spur gear 15.	G-26 (3-5 mg)
2	The sliding surface of the gear guide shaft with spur gear 12.9	O - 8 (1/2 turn of teeth surface)
3	The surface of the spur gear guide shaft	G-26 (3-5 mg)
4	The contact point of the right frame shaft with spur gear 80/40	G-26 (3-5 mg)
5	The contact point of the PF roller assembly compression spring with the plain washer	G-26 (3-5 mg)
6	The right and left surfaces of the PF drive roller assembly under the lower paper guide assembly	G-26 (3-5 mg)
7	The contact point of the eject roller ground plate with the lower paper guide	G-26 (3-5 mg)
8	Carriage unit oil pad	O-8 (0.3 ml)
9	The surface of the CR guide shaft	O-8 (unify and thin)
10	The both sides of the CR guide shaft	G-20 (3-5 mg)
11	The contact point of PG transmission lever with PG lever	G-26 (1-3 mg)
12	The surface of PG lever where it contacts the base frame	G-26 (3-5 mg)
13	The sliding surface of the base frame with carriage unit	G-26 (3-5 mg)
14	The point of shaft #4 in the right frame	G-26 (3-5 mg)
15	The surface of spur gear 22.4 where it contacts the release cam	G-26 (3-5 mg)
16	The contact point of the PF roller assembly with the grounding spring	G-26 (3-5 mg)
(1)	From the color head angle adjust lever to the cartridge unit	NEJI LOCK #2 (1-3 mg)
(2)	From the black head angle adjust lever to the cartridge unit	NEJI LOCK #2 (1-3 mg)

⚠ CAUTION

❑ ***Do not apply too much lubricant, as it may stain the mechanism or cause it to malfunction.***

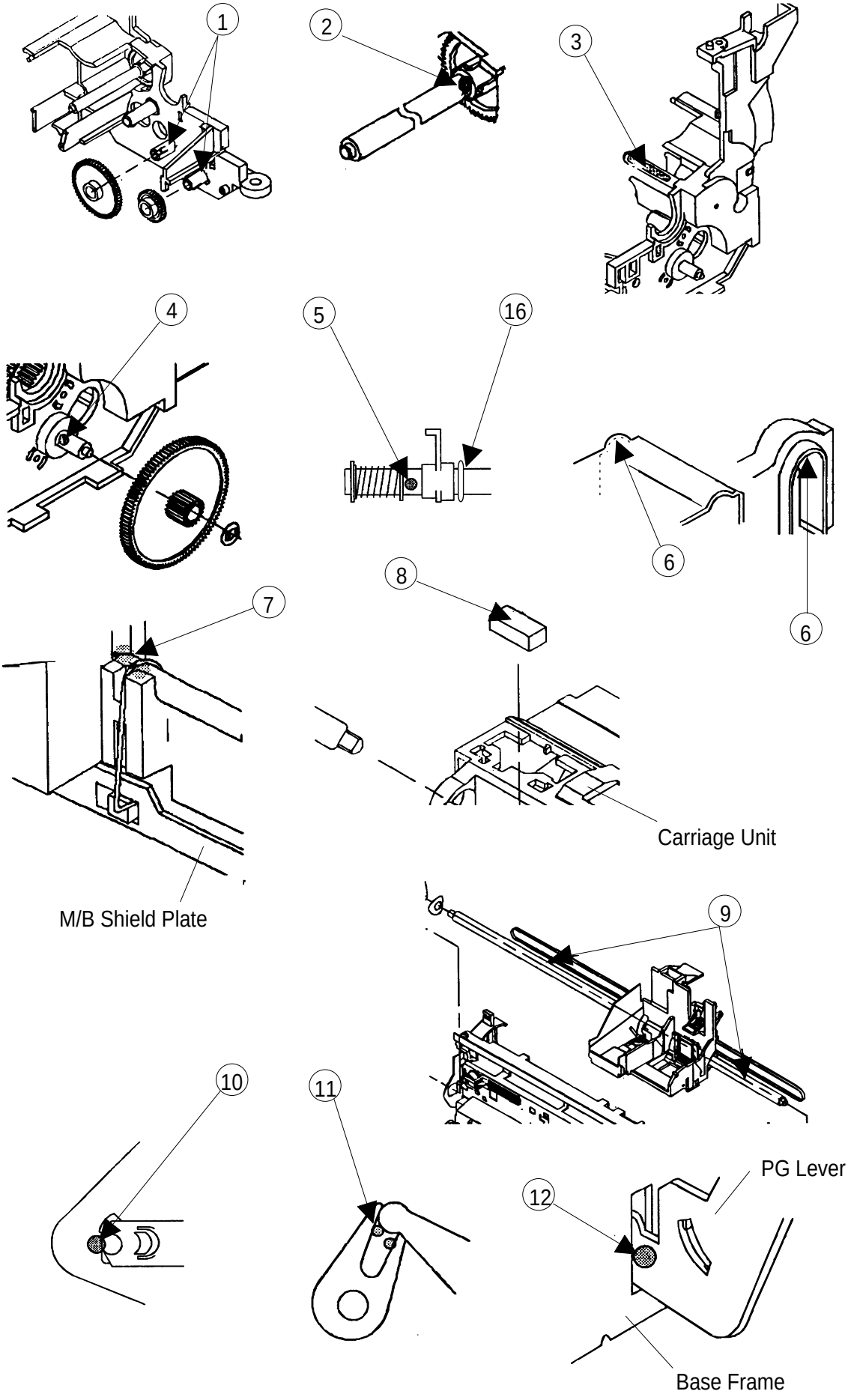


Figure 6-1. Lubrication Points and Adhesive Points (1)

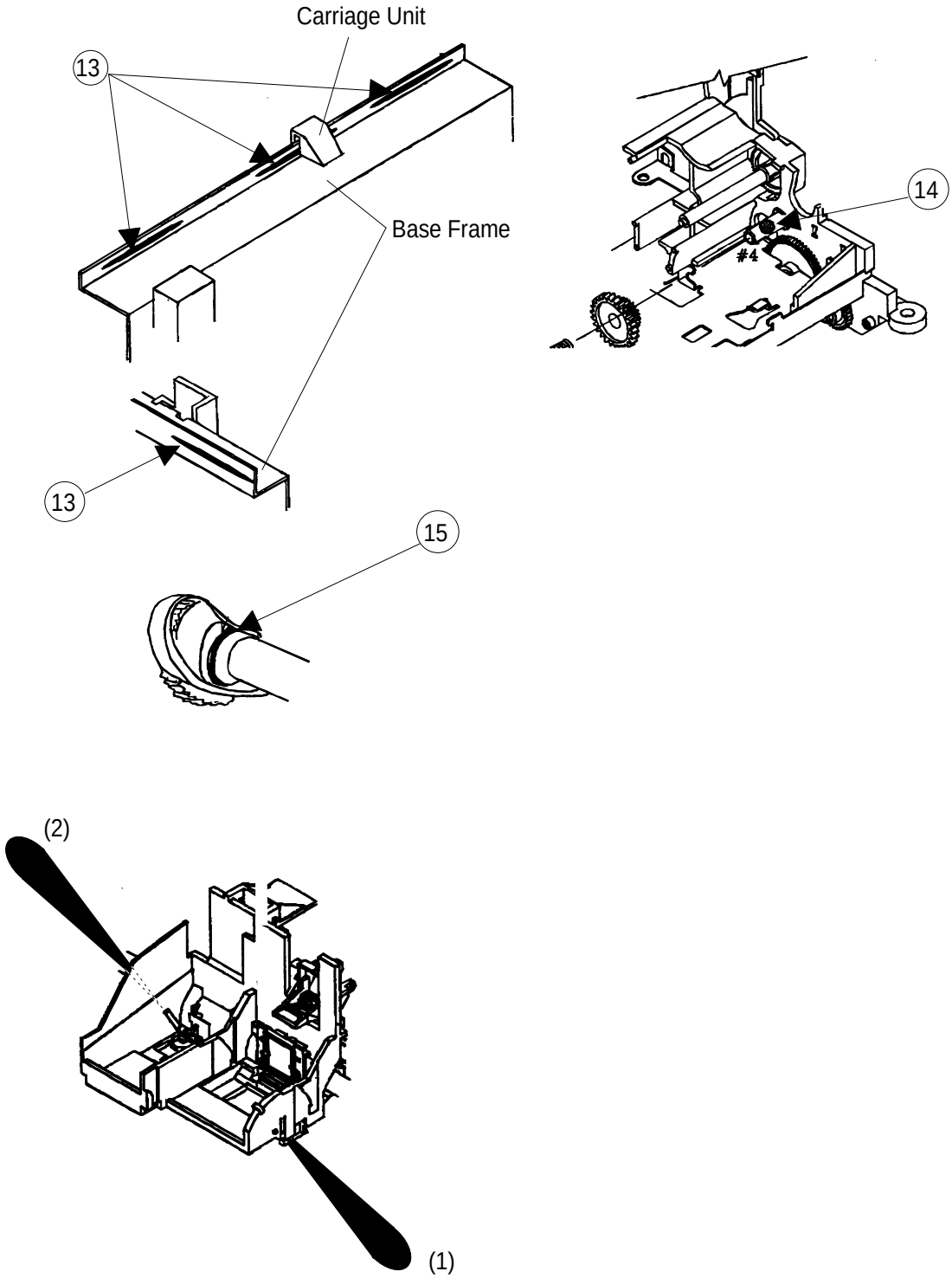


Figure 6-2. Lubrication Points and Adhesive Points (2)

A.1 CONNECTOR SUMMARY

The figure below shows the interconnection between the major components of the EPSON Stylus COLOR 500.

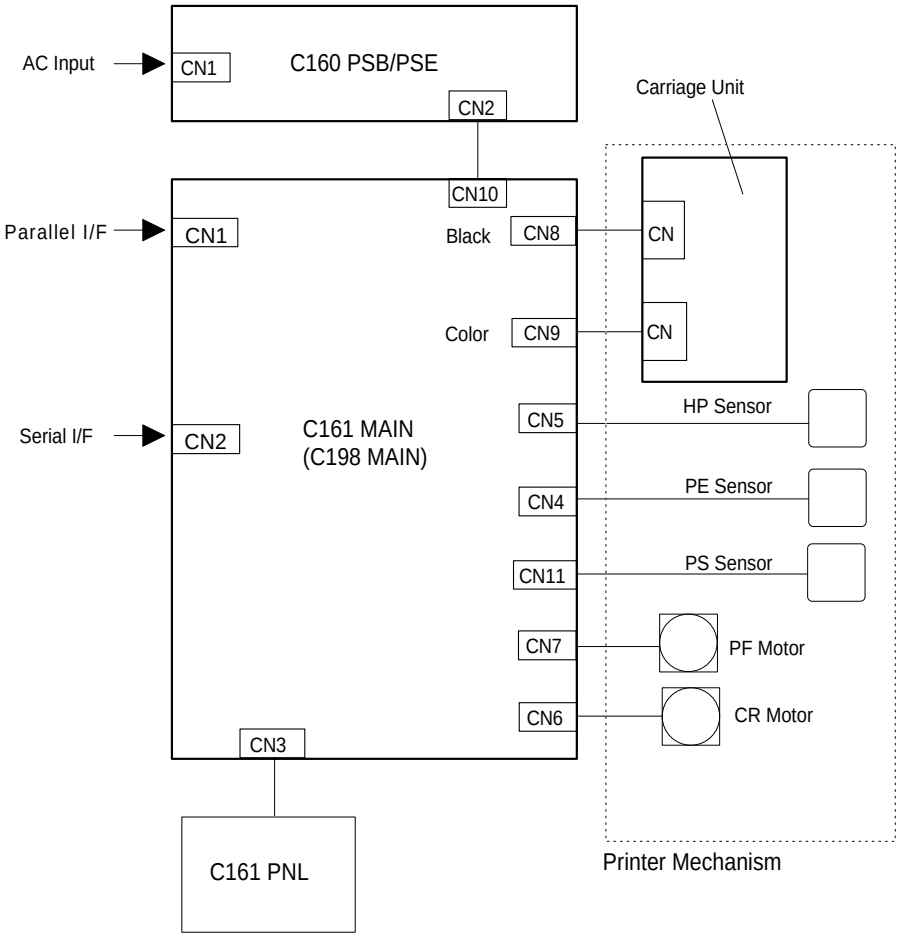


Figure A-1. Interconnection of Main Components

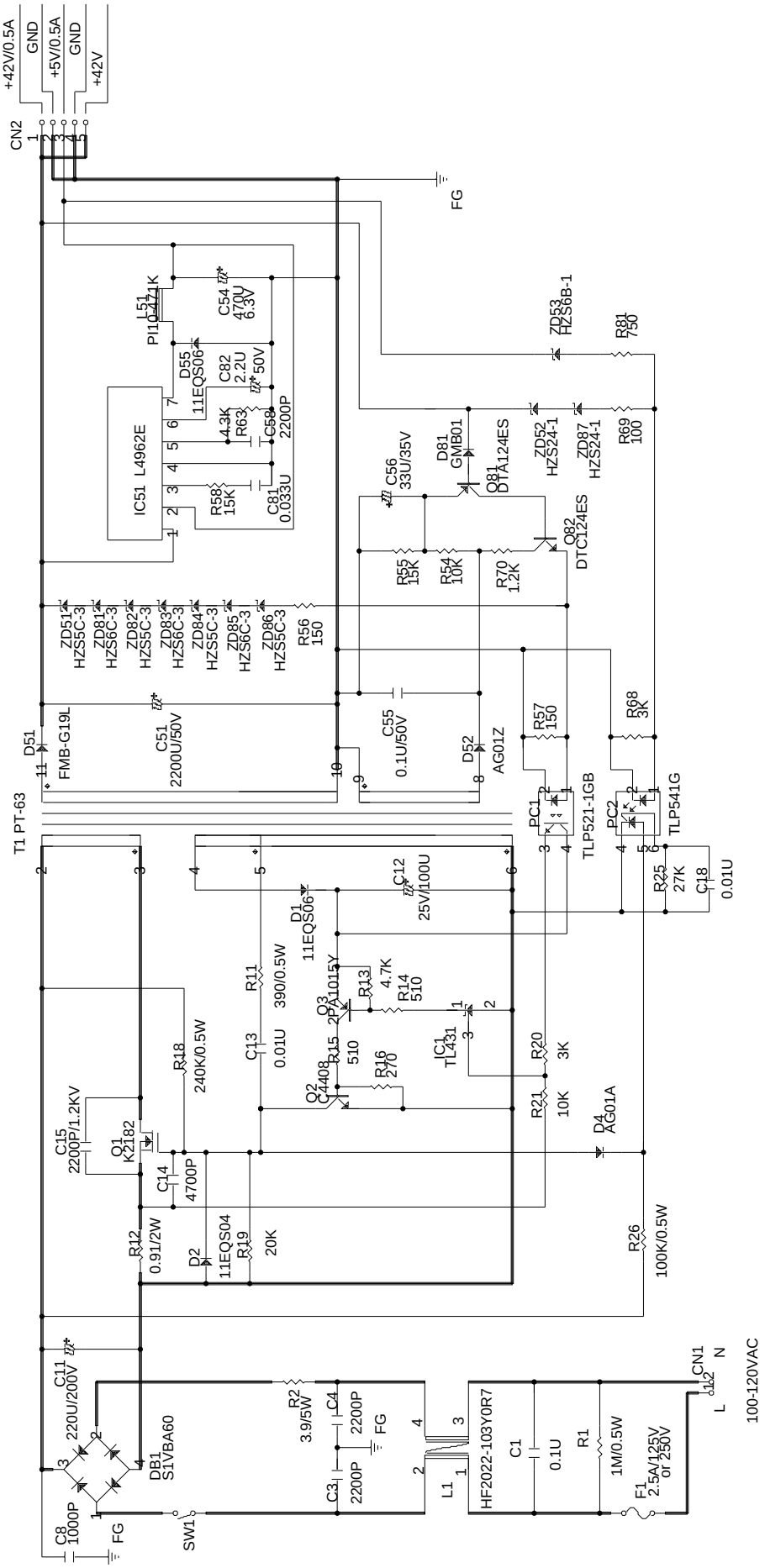


Figure A-4. C160 PSB Board Circuit Diagram

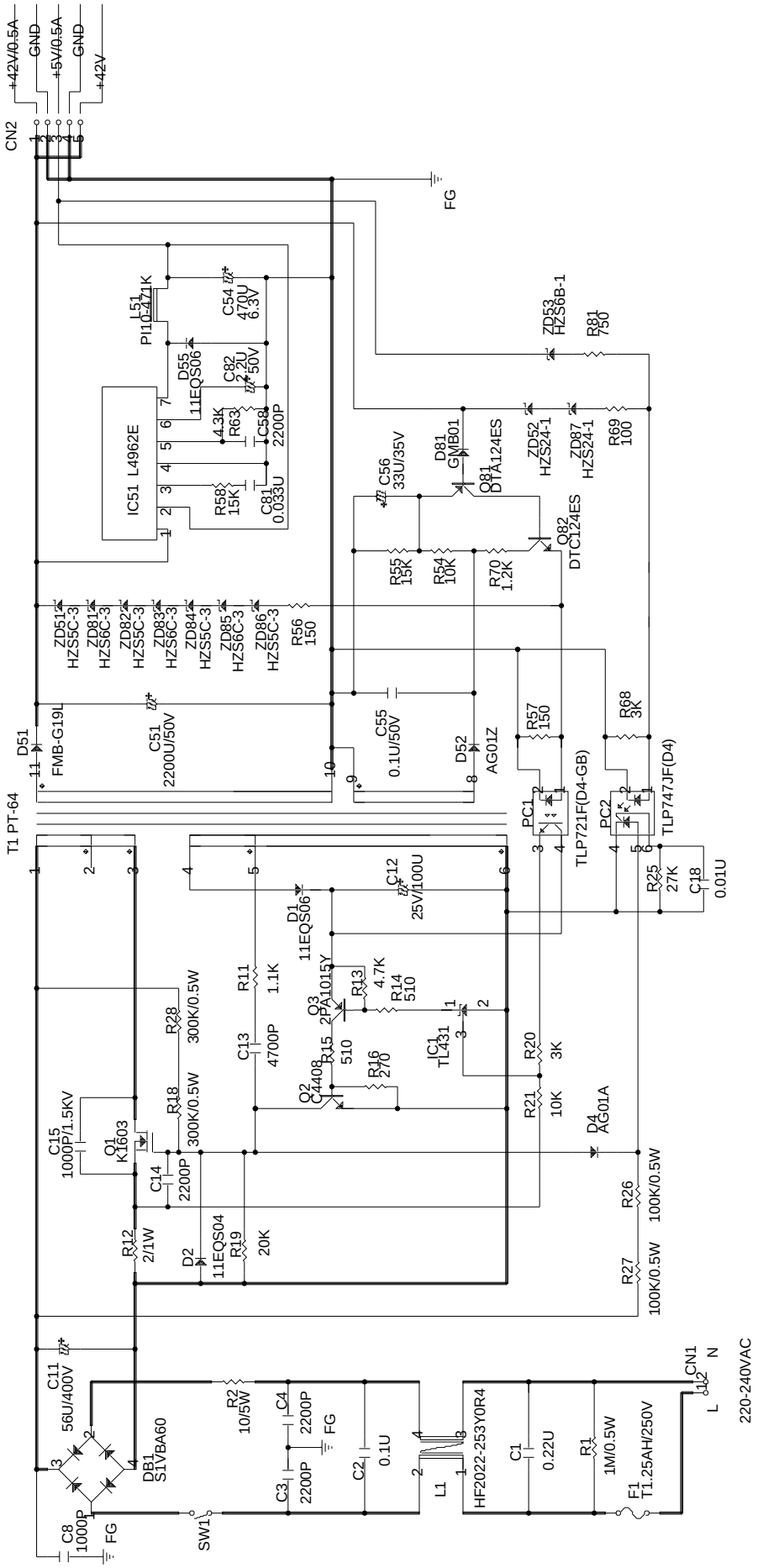


Figure A-5. C160 PSE Board Circuit Diagram

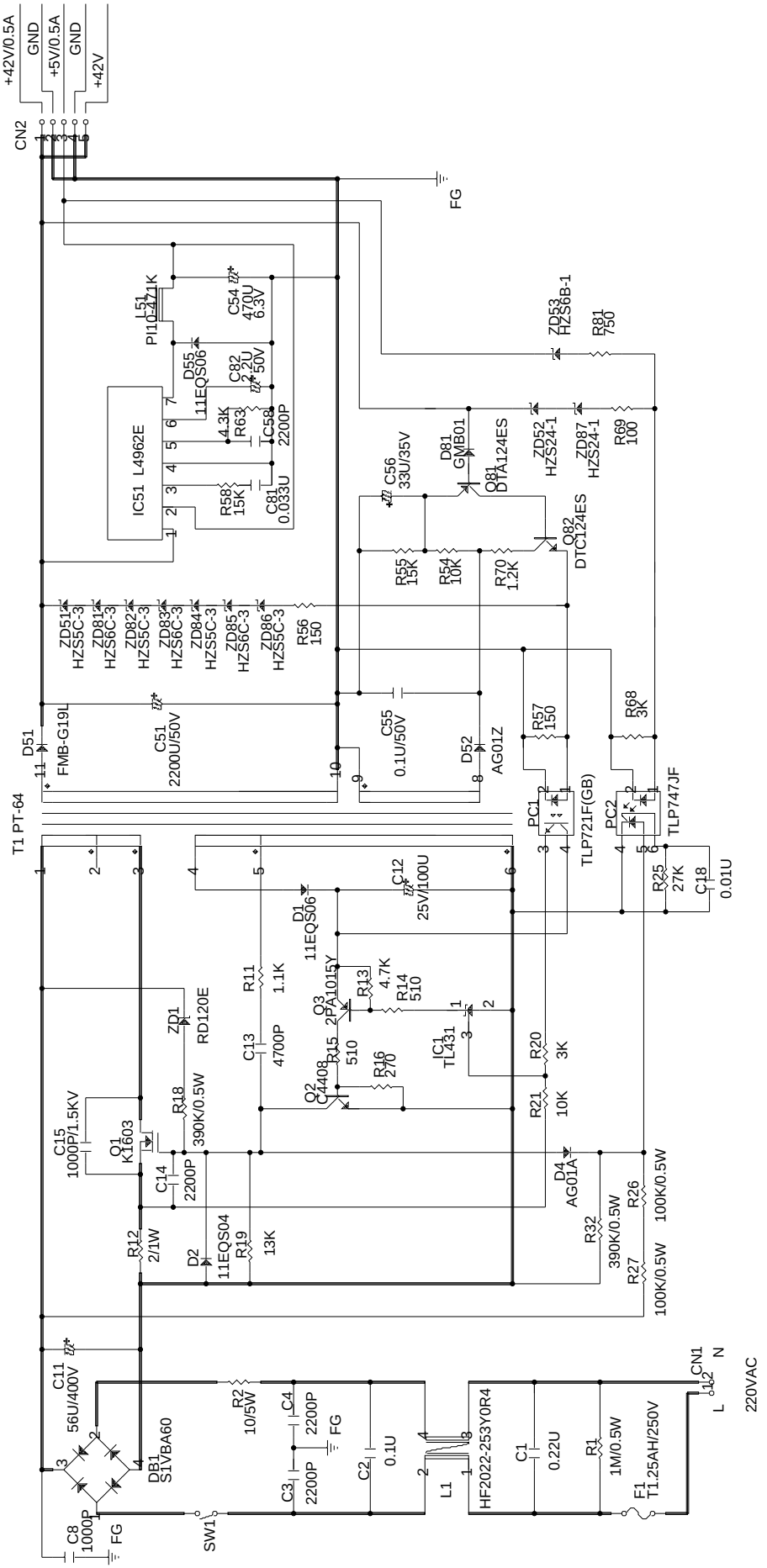
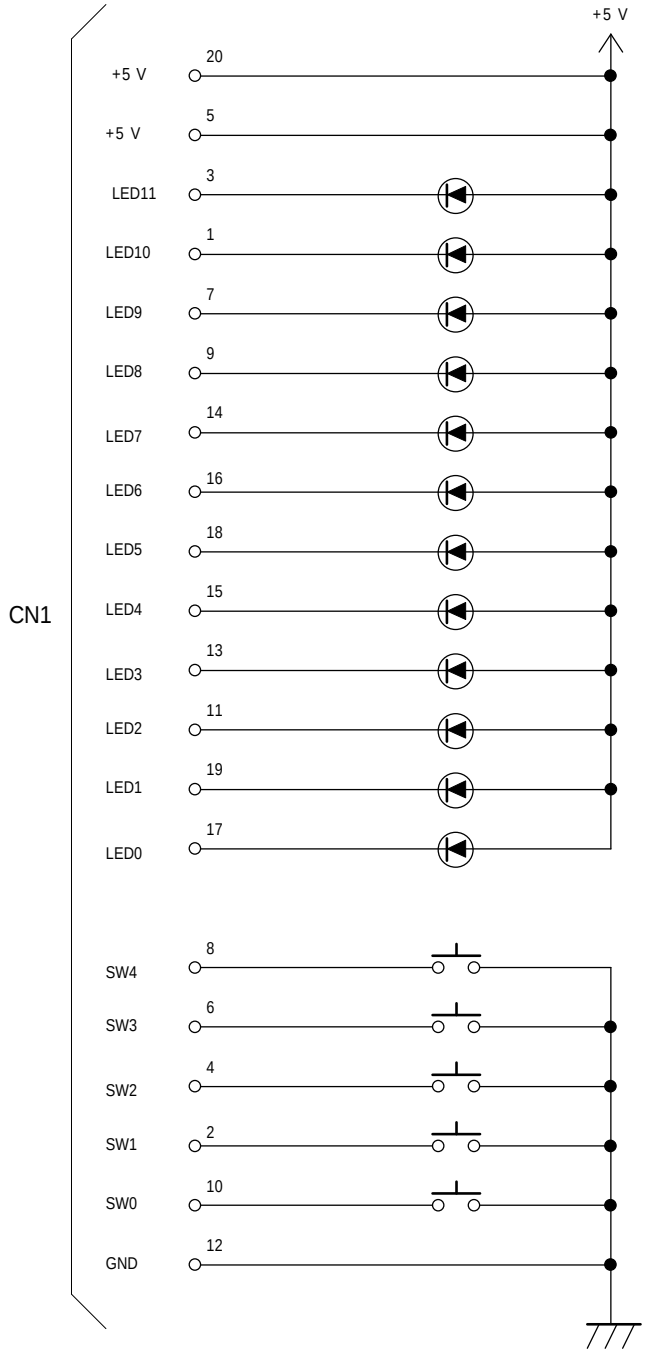
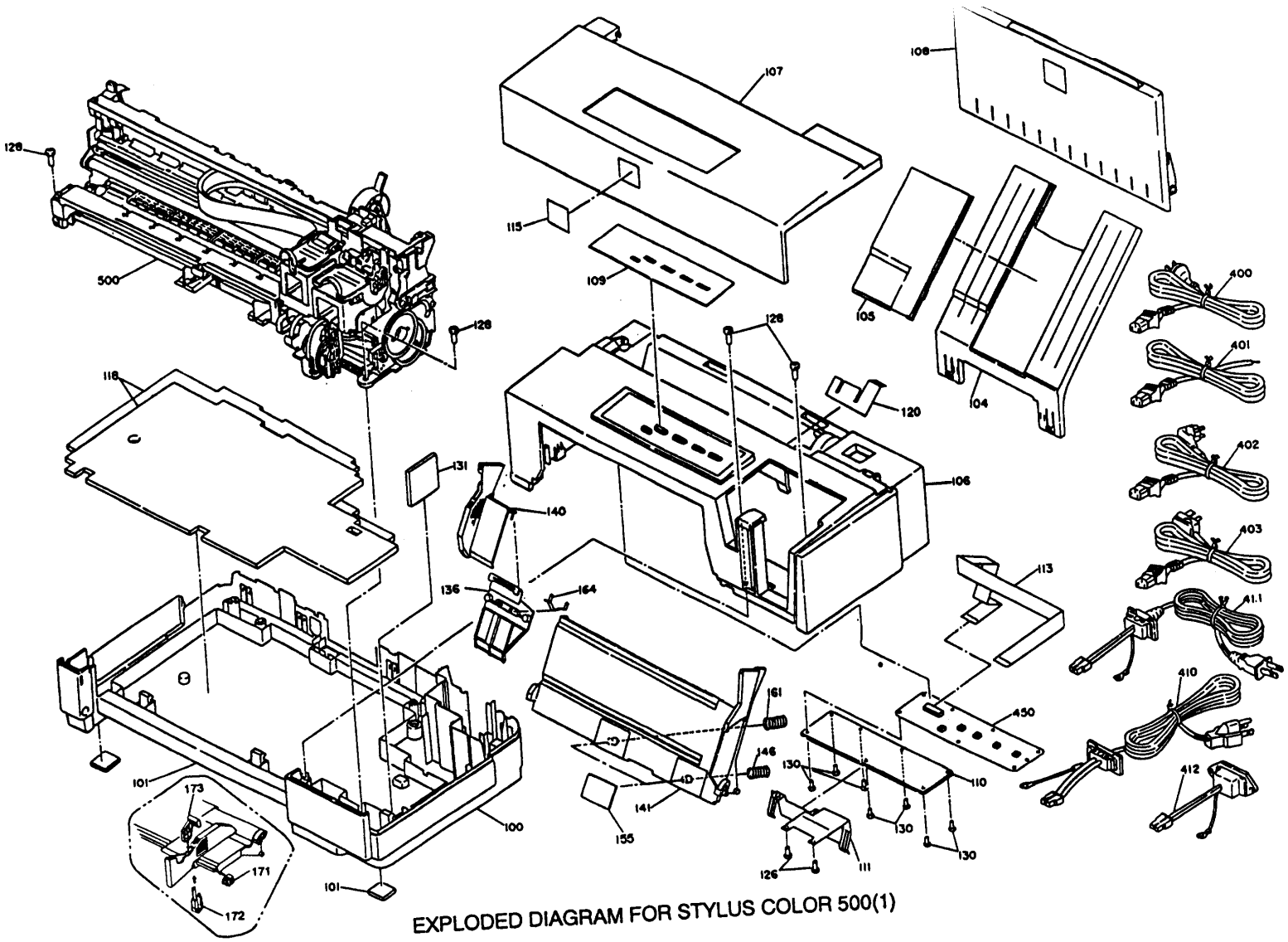


Figure A-6. C160 PSE (Korean) Board Circuit Diagram

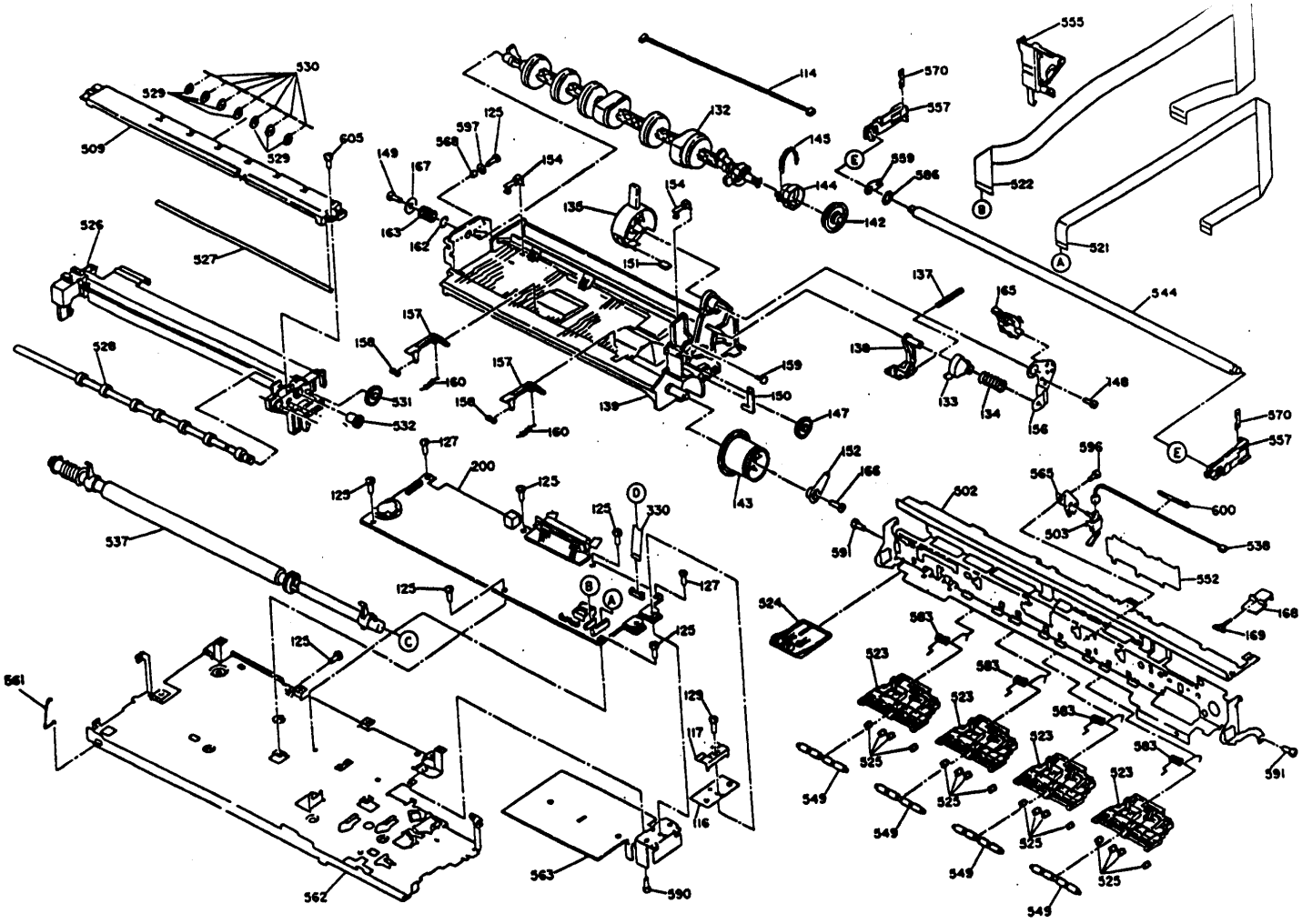


LED0	GREEN
LED1	NOT MOUNTED
LED2	NOT MOUNTED
LED3	NOT MOUNTED
LED4	NOT MOUNTED
LED5	RED
LED6	RED
LED7	RED
LED8	NOT MOUNTED
LED9	NOT MOUNTED
LED10	NOT MOUNTED
LED11	NOT MOUNTED
SW0	NOT MOUNTED
SW1	NOT MOUNTED
SW2	MOUNTED
SW3	MOUNTED
SW4	MOUNTED

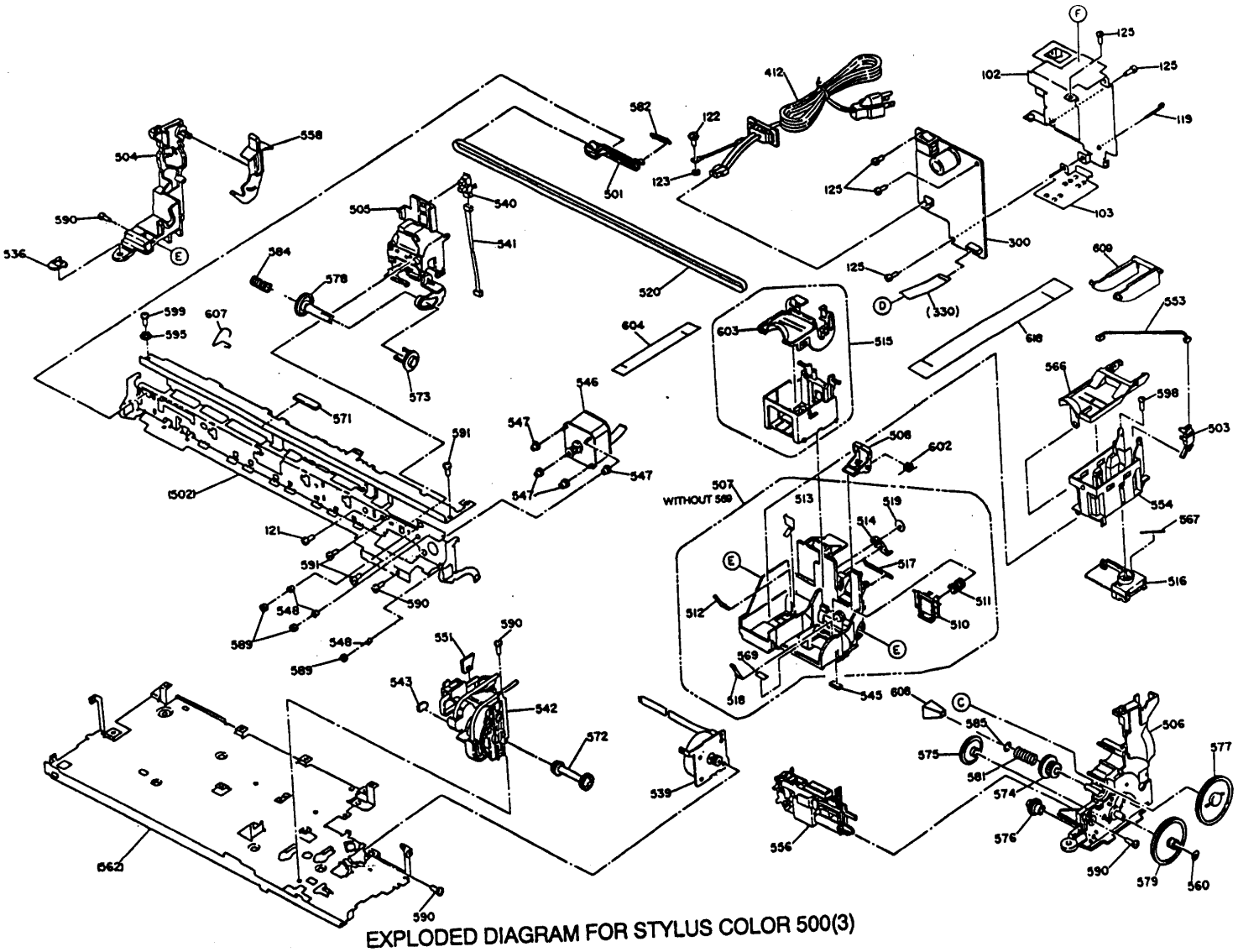
Figure A-7. C161 PNL Board Circuit Diagram



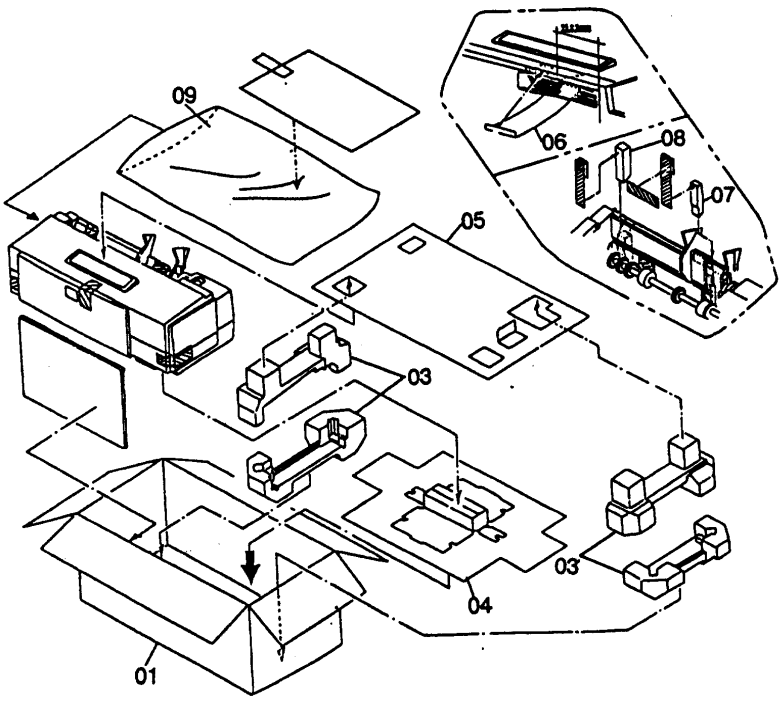
EXPLODED DIAGRAM FOR STYLUS COLOR 500(1)



EXPLODED DIAGRAM FOR STYLUS COLOR 500(2)

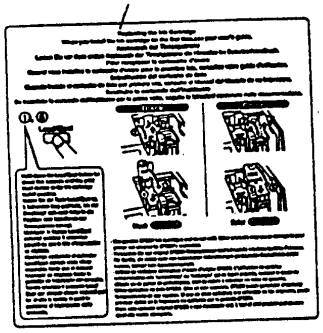


EXPLODED DIAGRAM FOR STYLUS COLOR 500(3)

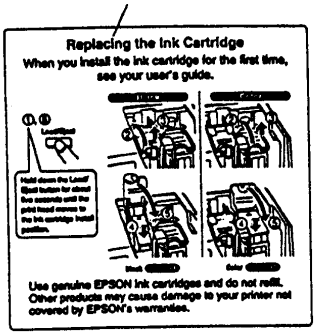


PACKING MATERIAL FOR STYLUS COLOR 500

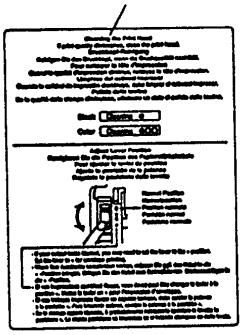
180 EUROPE



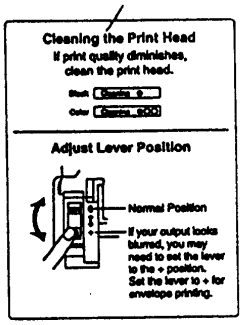
180 USA, S.E.ASIA, OCEANIA



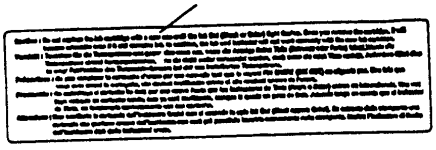
181 EUROPE



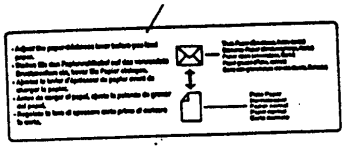
181 USA, S.E.ASIA, OCEANIA



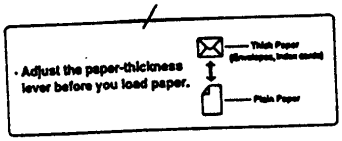
182 EUROPE



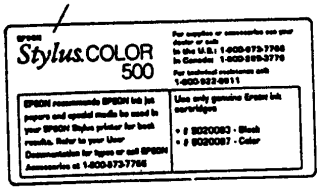
182 USA, S.E.ASIA, OCEANIA



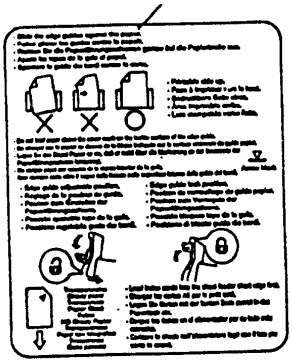
184 USA, S.E.ASIA, OCEANIA



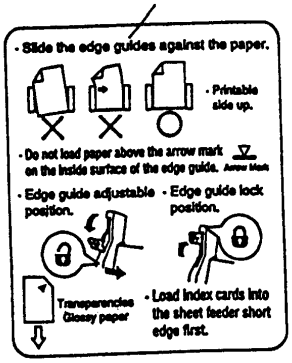
187 USA ONLY



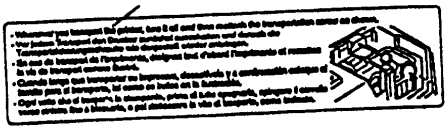
185 EUROPE



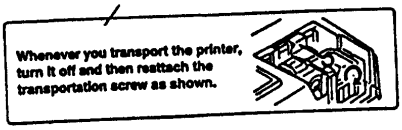
185 USA, S.E.ASIA, OCEANIA



186 EUROPE



186 USA, S.E.ASIA, OCEANIA



EXPLODED DIAGRAM FOR STYLUS COLOR 500(4)

STYLUS COLOR 500

PARTS PRICE LIST

COUNTRY: USA

Release Date: 5/18/98

EPSON PartFinder Version: 04

EPSON AMERICA, INC.

CONTENTS SUBJECT TO CHANGE WITHOUT NOTICE

Section: **01 CASE BLOCK** Model: **STYLUS COLOR 500** Country: **USA**

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
*	1026323	PACK CLEANING SHEET	1	15.12		S
100	1023222	HOUSING LOWER STYLUS COLOR2	1	38.76		S
101	1004605	FOOT	2	0.27		S
102	1023234	SHIELD PLATE,P/S,MAIN	1	6.80		S
103	1024182	SHIELD PLATE,P/S,SUB	1	2.00		S
104	1023226	PAPER GUIDE MAIN	1	15.60		S
105	1023238	PAPER GUIDE CENTER	1	5.92		S
106	1030237	EPI #103023700D0, HOUSING UPPR ASSY	1	0.00		B
107	1023223	COVER PRINTER	1	19.08		S
108	1024143	STACKER ASSY.,PAPER EJECT	1	27.18		S
109	1029951	SHEET PANEL STYLUS 500	1	8.80		S
110	1025832	FASTENING PLATE,PANEL BOARD	1	3.00		S
111	1023242	GROUNDING PLATE,PANEL	1	5.68		S
113	2018040	CABLE,PANEL	1	12.72		S
114	2018707	HARNESS,ASF	1	3.80		S
115	1029953	LOGO PLATE STYLUS 500	1	2.20		S
116	1024138	SHEET HEAT CONDUCTOR	1	3.68		S
117	1024233	FASTENING PLATE,TR	1	1.30		S
118	1029057	POROUS PAD, INK JET	2	16.38		S
119	X522000010	WIRE BAND (SKB-1M)	1	0.27		S
120	1029253	SHEET,SEPERATORCROW	1	1.20		S
121	B010303411	C.B.SCREW (M3X8)	1	0.27		S
122	B045800115	C.B.(O) SCREW M4X8	1	0.27		S
123	B070200411	HEXAGON NUT (M4)	1	0.43		S
125	B300204311	C.B.S.SCREW (M3X8)	12	0.27		S
126	1005019	C.B.P-TITE SCREW, 3X8,F/ZN	2	0.27		S
127	1012350	C.B.P.-TITE SCREW 3X10,F/ZN	3	0.40		S
128	1024145	C.B.P.SCREW,4X12,F/ZN	2	0.40		S
129	1002674	C.B.S-TITE SCREW (M3X12)	1	0.27		S
130	1025569	C.B.P. TITE(S-P2),3X12,F/ZN	7	0.40		S
131	1026156	POROUS PAD SUPPORT	1	0.80		S
132	1025871	ROLLER ASSY.,PAPER LOAD	1	24.72		S
133	1023251	LEVER RELEASE,SEPERATOR CROW	1	1.60		S
134	1023252	COMPRESSION SPRING 1.96	1	0.40		S
135	1023254	LEVER,SEPERATOR CROW	1	3.40		S
136	1030235	HOLDER,SHAFT,TRANSMISSION;C	1	3.52		S
137	1023261	EXTENSION SPRING, 9.8	1	0.40		S
138	1023264	SEPERATOR CROW	1	1.30		S
139	1023266	FRAME,PAPER LOAD	1	21.66		S
140	1029237	EDGE GUIDE;B	1	4.16		S
141	1029484	HOPPER;B STYLUS 500	1	14.16		S

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
142	1023282	SPUR GEAR 27.2	1	0.80		S
143	1023284	COMBINATION GEAR,27.2,36	1	3.40		S
144	1024116	CLUTCH	1	3.40		S
145	1024117	EXTENSION SPRING 590	1	0.40		S
146	1024118	COMPRESSION SPRING,1.078	1	0.40		S
147	1024125	SPUR GEAR,19.2	1	0.80		S
148	1024130	C.B.P.-TITE SCREW,3X6,F/ZN	1	0.43		S
149	1024145	C.B.P.SCREW,4X12,F/ZN	1	0.40		S
150	1024438	FASTENING PLATE,ASF	1	1.60		S
151	1024621	PAD,LEVER,RELEASE	1	0.40		S
152	1024622	FASTENING PLATE,COMBINATION GEAR	1	1.60		S
153	1024855	TORSION ROD	1	1.30		S
154	1024856	HOLDER,TORSION ROD	2	0.80		S
155	1024857	CORK,PAPER LOAD	2	1.30		S
156	1024858	MOUNTING PLATE,ASF DETECTOR	2	1.60		S
157	1024860	PAPER GUIDE,ASF	2	1.30		S
158	1024861	ROLLER,PAPER GUIDE ASF	2	1.30		S
159	1024866	BUSHING ASF	1	1.30		S
160	1025389	EXTENSION SPRING,0.461	2	0.40		S
161	1025390	COMPRESSION SPRING,1.079	1	0.40		S
162	1025666	WASHER,PLAIN,8X9.50X0.3,S/NA	1	0.40		S
163	1025667	COMPRESSION SPRING,8.907	1	0.40		S
164	1025897	PRESSING PLATE,EDGE GUIDE:B	1	3.40		S
165	2014283	DETECTOR,LEAF,81	1	3.61		S
166	B310206611	C.B.B. SCREW (M4X16)	1	0.43		S
167	1001680	WASHER,PLAIN	1	0.25		S
168	1026157	CLAMP,CR	1	3.80		S
169	1026158	METAL FITTING, CR	1	10.00		S
170	B310206511	C.B.B. SCREW M4X14	2	0.27		S
171	1029485	BUSHING,LEVER,EDGE GUIDE	1	1.40		S
172	1029486	LEVER,EDGE GUIDE,SUPPORT	1	1.20		S
173	1029250	LEVER,EDGE GUIDE	1	1.20		S
180	1029938	LABEL CAUTION,EUROPE	1	1.40		S
180	1029940	LABEL CAUTION,USA, STYLUS 500	1	1.40		S
181	1029941	LABEL CAUTION 2 EUROPE	1	1.40		S
181	1029943	LABEL,CAUTION,2C , USA	1	1.20		S
182	1025805	LABEL,CAUTION,3	1	0.37		S
184	1029944	LABEL,PAPER CHANGE EUROPE	1	0.40		S
184	1029946	LABEL,PAPER SET, EUROPE	1	0.40		S
185	1029947	LABEL,PAPER SET, EUROPE	1	0.40		S
185	1029949	LABEL,PAPER SET, USA STYLUS 500	1	0.80		S

Section: **01 CASE BLOCK** Model: **STYLUS COLOR 500** Country: **USA**

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
186	1026217	LABEL, FASTEN,CR	1	0.25		S
186	1029950	LABEL,FASTEN CR STYLUS 500	1	0.80		S
187	1029955	LABEL ACCESSORY STYLUS 500	1	0.80	FOR USA	S
450	2022155	BOARD ASSY.,PANEL,STYLUS 500	1	28.62		S
IC3	2022426	EP-ROM TDB05 STYLUS 500	1	168.20		S

Section: **02 CONTROL BOARD BLOCK** Model: **STYLUS COLOR 500** Country: **USA**

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
200	2021739	BOARD ASSY.,MAIN,USA,STYLUS 500	1	271.71	WITHOUT IC3	S

Section: **03 CONTROL BOARD BLOCK** Model: **STYLUS COLOR 500** Country: **USA**

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
200	2021742	BOARD ASSY.,MAIN STYLUS 500 EUROPE	1	271.71	WITHOUT IC3	S

Section: **04 CONTROL BOARD BLOCK** Model: **STYLUS COLOR 500** Country: **USA**

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
200	2021741	BOARD ASSY MAIN, FOR NLSP	1	271.71	WITHOUT IC3	S

Section: **05 PS BLOCK** Model: **STYLUS COLOR 500** Country: **USA**

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
300	2018212	BOARD ASSY POWER SPLY 120V	1	99.00		S
300	2018213	BOARD ASSY POWER SPLY 220/240V	1	99.00		S

Section: **06 CABLE BLOCK** Model: **STYLUS COLOR 500** Country: **USA**

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
330	2018027	HARNESS	1	3.40		S
400	2002364	POWER CABLE (NON EAI)(VD31303SA-10A	1	24.96		S
401	2006741	POWER CABLE (NON EAI)(BS31303SA-SR-	1	44.51		S
402	2010468	AC CABLE (240V)	1	40.38		S
403	2002365	POWER CABLE VD00303SA-10A 220V	1	42.63		S
403	2008768	POWER CABLE	1	42.63	FOR EHK	S
410	2018026	POWER CABLE ASSY	1	26.16		S
411	2018025	POWER CABLE	1	15.12		S
412	2018028	HARNESS	1	13.08		S

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
500	2022388	PRINTER MECH, STYLUS 500(M4D11)	1	281.25	WITHOUT '*'MARK	S
501	1024103	PULLEY ASSY	1	3.36		S
502	1023210	FRAME BASE	1	18.12		S
503	2017754	DETECTOR PE	2	3.36		S
504	1023211	FRAME LEFT	1	6.80		S
505	1024086	FRAME ASSY,MIDDLE	1	11.44		S
506	1024102	FRAME ASSY,RIGHT	1	13.44		S
507	1024100	CARRIAGE ASSY	1	28.20		S
508	1023281	LEVER HEAD,FASTEN	1	1.30		S
509	1023292	HOLDER,STAR WHEEL	1	9.36		S
510	1023285	HOLDER,SPRING	1	1.30		S
511	1023286	COMPRESSION SPRING7.79	1	0.40		S
512	1023315	LEVER ADJUST,H	1	0.80		S
513	1023318	GROUNDING PLATE,HEAD	1	0.80		S
514	1023323	LEVER,CHANGE	1	1.30		S
515	F049001	PRINT HEAD IJ60-OAC COLOR	1	68.64		S
516	F046030		1			
517	1023324	ROD SPRING	1	0.80		S
518	1023750	LEVER,ADJUST, C	1	1.30		S
519	1024139	BUSHING LEVER CHANGE	1	0.80		S
520	1023301	TIMING BELT	1	15.52		S
521	2017339	CABLE,HEAD,C	1	14.80		S
522	2017342	CABLE,HEAD,H	1	12.12		S
523	1023302	PAPER GUIDE UPPER	4	2.40		S
524	1024645	PAPER GUIDE,UPPER,LEFT	1	1.30		S
525	1024887	PAPER GUIDE SUPPORT UPPER	16	0.40		S
526	1023298	PAPER GUIDE,LOWER	1	11.44		S
527	1023894	SHAFT,HOLDER STAR WHEEL	1	3.40		S
528	1023296	ROLLER PAPER EJECT	1	13.08		S
529	1024041	STAR WHEEL ASSY	7	1.60		S
530	1024124	COIL SPRING,STAR WHEEL	7	0.40		S
531	1024125	SPUR GEAR,19.2	1	0.80		S
532	1024126	SPUR GEAR,10.8	1	0.40		S
536	1024617	PRESSING PLATE,PG LOWER	1	0.80		S
537	1024107	ROLLER ASSY,PF,DRIVE	1	34.68		S
538	2017340	HARNESSPE DETECTOR	1	3.00		S
539	2017344	MOTOR ASSY, PF	1	43.80		S
540	2021854	DETECTOR,HP	1	6.80		S
541	2017341	HARNESS, HP	1	3.36		S
542	1024087	PUMP ASSY	1	40.74		S
543	1024859	PRESSING PLATE,PUMP	1	0.80		S

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
544	1023214	SHAFT,CR,GUIDE	1	17.10		S
545	1023322	OIL PAD	1	0.40		S
546	2017343	MOTOR ASSY CR	1	54.95		S
547	1024351	INSULATOR,MOTOR,CR	4	0.80		S
548	1024352	SPACER INSULATOR	3	1.60		S
549	1023999	ROLLER,DRIVEN	4	2.40		S
551	1028109	CLEANER,HEAD,ASP;B	1	7.36		S
552	1023218	HOLDER,HEAD CABLE	1	0.40		S
553	2017346	HARNESS CARRIAGE DETECTOR	1	3.00		S
554	1029239	HOLDER,CARTRIDGE,H;B	1	3.52		S
555	1024854	HOLDER,CABLE	1	2.40		S
556	1029054	CAP ASSY.	1	29.22		S
557	1023215	BUSHING PARALLEL ADJUST	2	1.30		S
558	1023216	LEVER,PG	1	1.60		S
559	1023217	LEVER,TRANSMISSION	1	0.80		S
560	1023219	BUSHING	1	0.80		S
561	1023221	METAL FITTING,GROUNDING	1	0.40	*	S
562	1023232	SHIELD PLATE	1	12.12		S
563	1023245	HEAT SINK,TR	1	10.72		S
565	1029044	MOUNTING PLATE,PE DETECTOR	1	0.80		S
566	1029240	LEVER FASTEN CARTRIDGE;B	1	2.20		S
567	1023321	PIN,FASTEN HEAD	1	0.40		S
568	1024253	SPACER 3X3	1	0.40		S
569	1024354	SPACER,HEAD,C	1	1.30		S
570	1024619	SHEET,BUSHING,PARALLEL ADJUST	2	0.40		S
571	1024620	PAD,GROUNDING PANEL	1	0.40		S
572	1023227	COMBINATION GEAR,12,15	1	3.80		S
573	1023250	SPUR GEAR,14.4	1	0.80		S
574	1023253	COMBINATION GEAR,12,20.8	1	1.30		S
575	1023255	SPUR GEAR,28.5	1	0.80		S
576	1023262	SPUR GEAR 15	1	0.40		S
577	1023306	SPUR GEAR,43.2	1	5.04		S
578	1023307	SPURGEAR,22.4	1	5.92		S
579	1023327	COMBINATION GEAR,8,40	1	5.04		S
580	1024353	GRANDING MOTOR CR	1	0.80		S
581	1025801	COMPRESSION SPRING,0.49	1	0.40		S
582	1023299	EXTENTION SPRING	1	0.40		S
583	1023300	TORSION SPRING	4	1.60		S
584	1028428	COMPRESSION SPRING	1	0.40		S
585	1025414	WASHER,PLAIN6.1X0.5X12,F/N1	1	0.40		S
586	B101253090	LEAF SPRING,6X0.1X10	1	0.40		S

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
589	B070200311	HEXAGON NUT (M3)	3	0.27		S
590	B300204311	C.B.S.SCREW (M3X8)	5	0.27		S
591	1012350	C.B.P.-TITE SCREW 3X10,F/ZN	5	0.40		S
595	B081700611	FLANGE NUT (M4)	1	0.27		S
596	B300204211	C.B.S.(0) SCREW (M3X6)	1	0.27		S
598	1013150	C.B.B-TITE(P2),2.5X8	1	0.40		S
599	1001318	C.B.B.,SCREW, 3X14 F/ZN (M3X14)	1	0.27		S
600	X522000010	WIRE BAND (SKB-1M)	1	0.27		S
602	1025800	TORSION SPRING	1	0.40		S
603	1024831	LEVER CARTRIDGE	1	3.80		S
604	1024829	POROUS PAD HEAD : YMC	1	0.40		S
605	1005019	C.B.P-TITE SCREW, 3X8,F/ZN	1	0.27		S
606	1026852	TORSION SPRING,15.9	1	0.80		S
607	1029019	METAL FITTING,GROUNDING,PF	1	0.32		S
608	1029481	PRESSING PLATE,PLAIN WASHER	1	0.40		S
609	1029252	LEVER,FASTEN CARTRIDGE,SUB	1	1.20		S
618	1024828	POROUS PAD,HEAD;BK	1	0.40		S

Section: **08 PACKING MATERIAL BLO** Model: **STYLUS COLOR 500** Country: **USA**

Ref. No.	Part No.	Description	Qty	Unit Price	Remarks	Type
01	5005182	INDIVIDUAL CARTON STYLUS500,USA	1	8.81		S
01	5005183		1			
01	5005184	INDV CARTON STYLUS500 NON USA	1	5.08		S
03	5005188	PAD PRINTER, STYLUS 500	1	2.21		S
04	5004562	PAD,PRINTER BOTTOM	1	4.08		S
05	5004356	PAD ACCESSORY STYLUS COLOR II	1	0.55		S
06	5004357	PAD,FFC STYLUS COLOR II	1	0.25		S
07	5004358	PAD,ASF,R	1	0.30		S
08	5004359	PAD,ASF,L	1	0.30		S
09	X680634010	PLASTIC PROTECTIVE BAG	1	0.27		S