Color StyleWriter
4100 and 4500

Basics

Color StyleWriter 4000 Series

Overview

The Color StyleWriter 4000
Series printers are desktop
color bubble-jet printers
for personal use.

Color StyleWriter 4500 and 4100 Differences

The Color StyleWriter 4500 and the Color StyleWriter 4100 differ in the following ways:

- Color StyleWriter 4500 can produce photo-quality prints.
- Color StyleWriter 4500 can print on banner (z-fold) paper.
- Color StyleWriter 4500 prints slightly faster than the Color StyleWriter 4100.

Ink Cartridge Configurations

The Color StyleWriter 4500 and 4100 can be configured with
• Color ink cartridge
• High-performance black ink cartridge

The Color StyleWriter 4500 can also be configured with
• Color ink cartridge
• PhotoGrade ink cartridge.

In the Color StyleWriter 4500, replace the black cartridge with the PhotoGrade ink cartridge for photo-quality printing.

Resume

Power

Troubleshooting LEDs

The Color StyleWriter 4500 and 4100 have two LEDs, Power and Resume, that can aid in troubleshooting the printer. See the Troubleshooting chapter for more information.
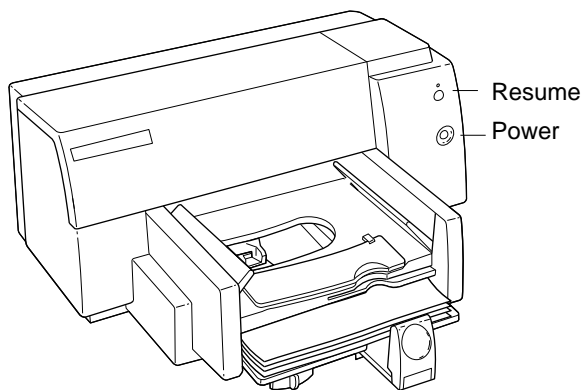
Ink-jet Technology

Overview

Thermal ink-jet technology involves applying heat to a tiny measure of ink until it expands and forms a bubble. As the bubble continues to expand and burst, it is propelled through one of the nozzles on the ink cartridge. This process is repeated up to 8,000 times per second.

Each ink cartridge on the Color StyleWriter 4500 and 4100 has 48 nozzles. On the black ink cartridge, all 48 nozzles are used for black ink. On the color and PhotoGrade cartridges each color (cyan, magenta, and yellow) has 16 nozzles each.
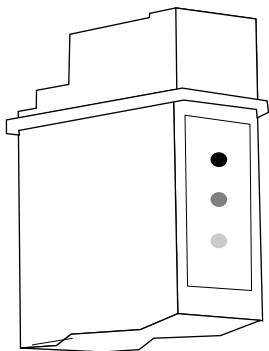
Photo Printing Technology

The Color StyleWriter 4500 uses multiple dye-load technology to produce photorealistic print-outs. Two ink cartridges are used to produce these results: the color and the photo ink cartridges. The color cartridge contains cyan, magenta, and yellow inks. The PhotoGrade cartridge contains cyan, magenta, and yellow inks mixed with a black pigment.

The three additional colors in the PhotoGrade cartridge quadruples the number of ink color ratios that can be printed in a given area. The resulting colors produced from the PhotoGrade cartridge are more subtle shades and hues. The PhotoGrade cartridge also produces smaller ink droplets, which can be layered on top of each other to vary the intensity.
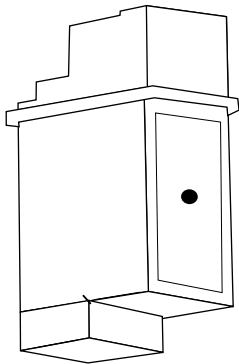
Ink Cartridge Identification

Caution: Do not get the printer's ink on your hands or clothes. Although the ink is water soluble, it contains dyes that will stain.

Note: The Color StyleWriter 4500 includes three ink cartridges: black, color, and PhotoGrade.

The Color StyleWriter 4100 includes only the black and color cartridges.

Color Cartridge   Black Cartridge

High-Performance, Black-Only Ink Cartridge

The black ink cartridge contains black ink only.

Color Ink Cartridge

The color ink cartridge contains cyan, magenta, and yellow inks.

Color PhotoGrade Ink Cartridge

The PhotoGrade ink cartridge contains cyan, magenta, yellow inks and black pigment.

Important: The Color StyleWriter 4500 includes the ink cartridge and PhotoGrade paper. For photorealistic results, the kit contents must be used together. These parts cannot be used in the Color StyleWriter 4100.

6105

Identifying Replacement Ink Cartridges

The ink cartridges used with the Color StyleWriter 4100 and 4500 have a generic cartridge labels. There is no Apple logo or Apple part number on the cartridge. To identify a cartridge, refer to the small numeric part number on the label. This number can be cross-referenced to the appropriate Apple Marketing number in the chart that follows.

Identify ink cartridges by cross referencing the chart below.

Apple Marketing Part Number	Product Description	HP Cartridge
M5694G/A	Color Ink Cartridge (CSW 4100 & 4500)	6107
M5693G/A	Black Ink Cartridge (CSW 4100 & 4500)	6106
M5692G/A	Color PhotoGrade Ink Cartridge (4500 only)	6104

Note: Apple ink cartridges can be found at most Apple authorized dealers, as well as most office product and computer superstores. Catalog and mail order houses which specialize in Macintosh products, such as MacWarehouse, MacMall, and MacZone carry a complete selection of genuine Apple Printer Supplies. You can also call the Apple Reseller Referral number at 1-800-538-9696, which will refer you to an authorized Apple dealer in your area.

Recommended Paper

Apple recommends Apple Color Ink-Jet PREMIUM PLUS Coated Paper. It is the coated paper of choice to use with the Color StyleWriter 4100 and 4500 ink-jet printer.

- Letter size p/n M4792G/A
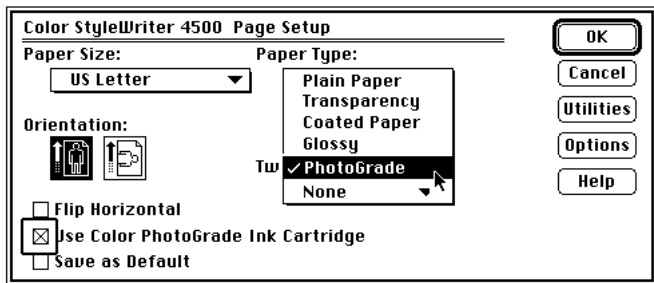- A4-size p/n M4791G/A.

Printing a Photograph

The Color StyleWriter 4500 has the capability to produce photo-quality printouts. Follow these procedures

1   Remove the black print cartridge and replace it with the PhotoGrade Ink cartridge.

2   Load the PhotoGrade paper into the sheet feeder so the whiter side faces you.

```
Color StyleWriter 4500  Page Setup
Paper Size:              Paper Type:              [ OK ]
  US Letter      ▼        Plain Paper            [ Cancel ]
                          Transparency
Orientation:              Coated Paper           [ Utilities ]
                          Glossy
  ▐📖▌ ▐📄▌         Tw  ✓PhotoGrade            [ Options ]
                          None          ▼        [ Help ]
  ☐ Flip Horizontal
  ☒ Use Color PhotoGrade Ink Cartridge
  ☐ Save as Default
```

3 Choose Page Setup from the File menu.

4 In the Page Setup dialog box, select PhotoGrade from the Paper Type pop-up menu.

5 Select the "Use Color PhotoGrade Ink Cartridge" option.

6 Click Print.

Printing a Banner

Follow these steps to print on banner (z-fold) paper using the Color StyleWriter 4500.

```
Color StyleWriter 4500  Page Setup
Paper Size:              Paper Type:                    OK
  US Letter               Plain Paper    ▼            Cancel
→ Banner US Letter                                    Utilities
  US Legal                Scaling (%): 100            Options
  Executive
  A4                      Two-Sided Printing:          Help
→ Banner A4                 None           ▼
  A5
  B5-JIS                  Ink Cartridge

  No. 10 Envelope
  C6 Envelope
  DL Envelope
```

1 Choose Page Setup from the File menu.

2 In the Page Setup dialog box, choose either Banner US Letter or Banner A4 from the Paper Size pop-up menu.
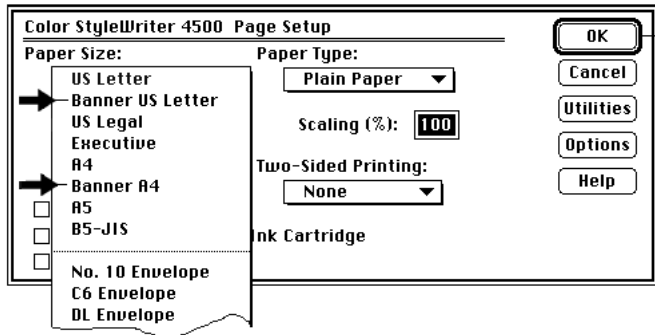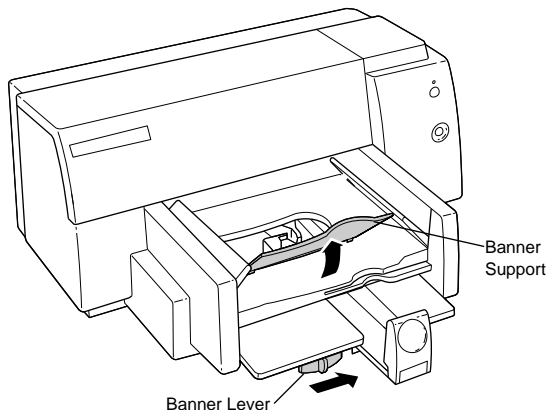
3   Slide the banner lever
    to the right until it
    clicks into place.

4   Remove all paper from
    the input tray.

5   Flip up the banner
    support in the output
    tray.

6   Put the paper in the
    input tray, with a torn
    edge at the top of the
    stack, facing lengthwise
    into the printer.

Banner
Support

Banner Lever

7   Slide the paper width and
    length adjusters so they
    touch the edges of the
    stack of paper.

8   Click Print.

    Note: When printing
    stops, press the Resume
    button as many times as
    necessary to advance the
    remaining banner paper
    out of the printer.

Special Servicing Considerations

Banner Calibration

After replacing the logic board or ink cartridges you must re-calibrate the Color StyleWriter 4500 banner printing. Performing this calibration requires using the Color StyleWriter 4500 Banner Calibration utility found in the Diagnostic folder on the Companion CD. Refer to Additional Procedures for more information.

Capping Assembly Replacement

If a Color StyleWriter 4100 or 4500 printer is brought in for service, and the customer has had the printer for awhile, replace the capping unit.

Capping Assembly 4100: 922-3010

Capping Assembly 4500: 922-2855

Mechanical Assembly Screws

Important: Do not touch/remove mechancial assembly screws (for any reason) that are not called out in the Take Apart chapter for the Color StyleWriter 4000 Series. Doing so will put the printer out of alignment and will require installing a new mechanical assembly.

Specifications

Color StyleWriter 4000 Series

Characteristics

Print Methods   Serial bubble jet ink-on-demand

Throughput   **Best:**
Up to one page per minute with the black ink cartridge
Up to .3 page per minute for color
Normal:
Up to three pages per minute with the black ink cartridge
Up to .8 page per minute for color
Draft:
Up to five pages per minute with the black ink cartridge
Up to 1.7 pages per minute for color

Actual speed depends on the documents printed and the Macintosh
used.

Note: The Color StyleWriter 4100 prints at slightly slower
rates: up to four pages per minute with the black ink cartridge,
and up to 1.4 pages per minute for color.

Interfaces
- High-speed serial RS-422 port supports serial connection
- Printer can be hooked up to LocalTalk, but not as a shared
  printer.

Graphics

Resolution

Black:
Best: 600 x 600 dpi
Normal: 600 x 300 dpi
Draft: 300 x 300 dpi
Color & Black:
All Modes (plain paper): 300 x 300 dpi
All Modes (other media paper): 600 x 300 dpi
Color & Photo:
Best & Normal (photograde paper): 600 x 300 dpi

Note: The Color StyleWriter 4100 cannot print using the photo ink cartridge.

Print Media

Cut Sheets

Plain paper, coated (recommended for color picture output)
Color PhotoGrade paper (required for photorealistic color output)
LTR, LGL, Executive, A4, A5, B5
U.S. Letter (LTR): 8.5 x 11 in. (215.9 mm x 279.4 mm)
U.S. Legal (LGL):   8.5 x 14 in. (215.9 mm x 355.6 mm)
U.S. Executive: 7.25 x 10.5 in. (184.1 x 266.7 mm)
A4: 8.3 x 11.7 in. (210 mm x 297 mm)
A5: 5.8 x 8.3 in. (148.5 x 210 mm)
B5: 7.2 x 10.1 in. (182 x 257 mm)
Weight: 16-36 lb.   Capacity: 100 sheets

Labels

Avery paper labels designed for inkjet printers
Letter, A4
Capacity: 25 sheets.

Banner   U.S. Letter Banner: 8.5 x 11 in. (216 x 279 mm)
                         U.S. A4 Banner: 8.5 x 14 in. (216 x 356 mm)
                         Weight: 20 lbs.   Capacity: 20 sheets

> **Note:** The Color StyleWriter 4100 cannot print on banner paper.

Cards   U.S. 4 x 6: 4 x 6 in. (101.6 x 152.4 mm)
                         U.S. 5 x 8: 5 x 8 in. (127 x 203.3 mm)
                         A6: 4.1 x 6 in. (105 x 148.5 mm)
                         Height: 3.9 x 5.8 in. (100 x 148 mm)
                         Weight: 29-53 lbs.   Capacity: 30 cards

Transparencies   Coated transparencies, most inkjet transparencies
                         Capacity: 50 sheets

Envelopes   #10: 9.5 x 4.12 in. (241.3 x 104.4 mm)
DL: 4.33 x 8.66 in. (110 x 220 mm)
C6: 4.49 x 6.38 in. (114 x 162 mm)
A2: 4.375 x 5.75 in. (111 x 146 mm)
Weight: 20-24 lbs.   Capacity: 20 envelopes

Printable Area

Paper, Labels, & Transparencies

U.S. Letter: 8.5 x 11 in. (215.9 mm x 279.4 mm)
U.S. Legal: 8.5 x 14 in. (215.9 mm x 355.6 mm)
U.S. Executive: 7.25 x 10.5 in. (184.1 x 266.7 mm)
A4: 8.3 x 11.7 in. (210 mm x 297 mm)
Top margin:.26 in. (6.6 mm)
Bottom margin:.59 in. (14.9 mm)
Left & right margins: .25 in. (6.4 mm)
A5: 5.8 x 8.3 in. (148.5 x 210 mm)
Top margin: 26 in. (6.6 mm)
Bottom margin: .84 in. (21.3 mm)
Left & right margins: .25 in. (6.4 mm)
B5: 7.2 x 10.1 in. (182 x 257 mm)
Top margin: 26 in. (6.6 mm)
Bottom margin: .59 in. (14.9 mm)
Left & right margins: .25 in. (6.4 mm)

Envelopes   **#10**: 9.5 x 4.12 in. (241.3 x 104.4 mm)
                       DL: 4.33 x 8.66 in. (110 x 220 mm)
                       C6: 4.49 x 6.38 in. (114 x 162 mm)
                       A2: 4.375 x 5.75 in. (111 x 146 mm)
                       Top margin: .84 in. (26 mm)
                       Bottom margin: .29 in. (6.6 mm)
                       Left & right margins: 0.125 in. (3.2 mm)

Cards   **U.S. 4 x 6**: 4 x 6 in. (101.6 x 152.4 mm)
                       U.S. 5 x 8: 5 x 8 in. (127 x 203.3 mm)
                       A6: 4.13 x 6 in. (105 x 148.5 mm)
                       Height: 3.9 x 5.8 in. (100 x 148 mm)
                       Top margin: 0.26 in. (6.6 mm)
                       Bottom margin: 21.3 in. (.84 mm)
                       Left & right margins: 0.25 in. (6.4 mm)

Ink Cartridges

Type   Black ink cartridge with integrated ink tank and print head
                    Three-color ink cartridge with three ink tanks (cyan, magenta,
                        yellow) and integrated print head
                    Color PhotoGrade ink cartridge with three ink tanks and integrated
                        print head

Ink Color   Black
                    Color (Cyan, magenta, yellow)
                    PhotoGrade (Cyan, magenta and yellow dyes, and Black pigment)

Shelf Life   6 months (installed in printer)
                    18 months (in original package)

Print Cartridge Life   Black ink cartridge
    650 pages at 5% coverage
Color ink cartridge
    350 pages at 15% coverage
PhotoGrade ink cartridge
    250 pages at 15% coverage

Typical Usable Ink   Black ink cartridge
    40 ml
Color & PhotoGrade ink cartridges
    7.6 ml per tank

Number of Nozzles   Black ink cartridge
    48 nozzles
Color and PhotoGrade ink cartridges
    48 nozzles (16 per color)

Environmental

Acoustic Noise Level   Best: 48 dB
                            Normal: 50 dB
                            Draft: 52 dB

Temperature   Operating: 41–104°F (5-40°C)
                            Storage: -40-140°F (-40-60°C)

Humidity   10–80% (noncondensing)

Electrical

Electrical Requirements   AC power adapter
U.S./Japan: 102-132 VAC, 60 Hz ± 3%
UK/Australia: 204-264 VAC, 50 Hz
Europe: 196-253 VAC, 50 Hz

Power Consumption   Powered Off (plugged in): 2 W
Powered On (non-printing): 4.5 W
Powered On (printing): 12 W

Physical

Dimensions   Height: 7.9 in. (199 mm)
                        Width: 17.2 in. (436 mm)
                        Depth: 16 in. (405 mm)

Weight   11.6 lb (5.3 kg)

Take Apart

Color StyleWriter 4000 Series

Output Tray

Output Tray

1 Slide the output tray out and remove it from the printer.
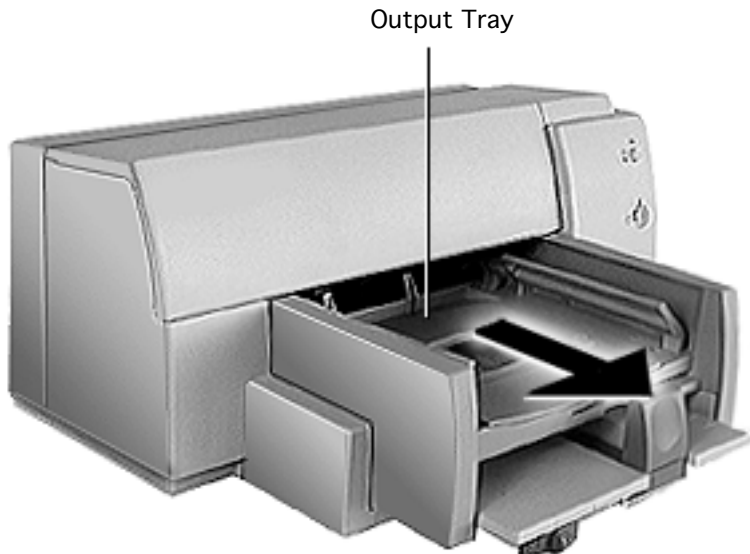
Access Door

Access Door

No preliminary steps are required before you begin this procedure.

Note: Removing the access door is not required, but it may allow you to remove the top cover more easily.

Hinge

Hinge

Access Door

1 Pull the access door off of the two hinges on the top cover.
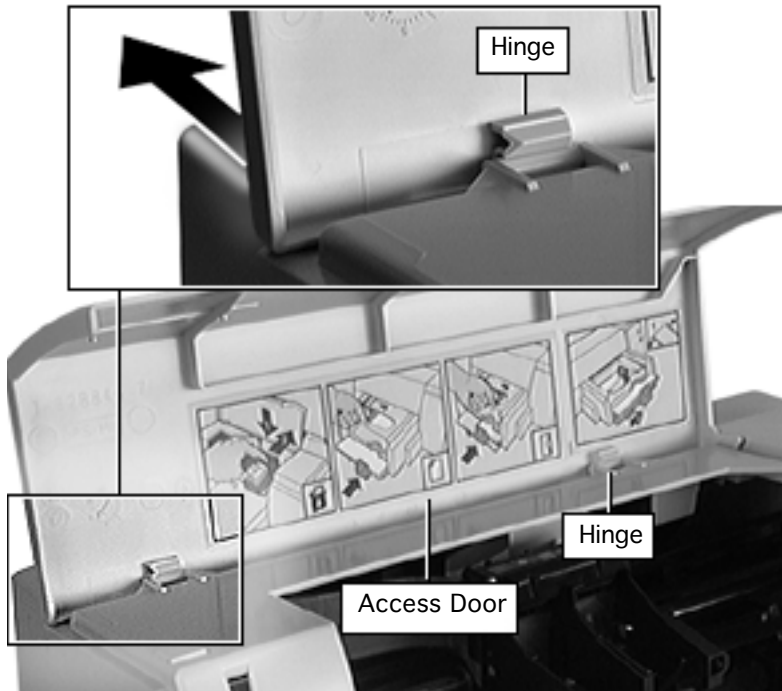
Banner Lever

Before you begin, remove the output tray.

Note: The Color StyleWriter 4100 does not include the Banner Lever.
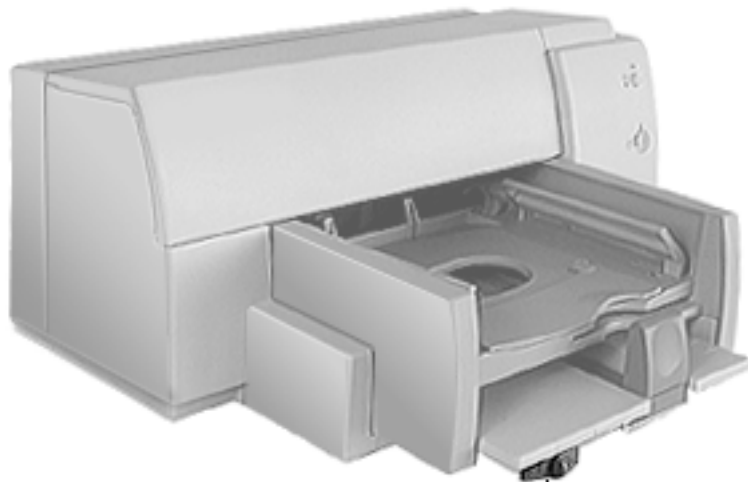
Banner Lever
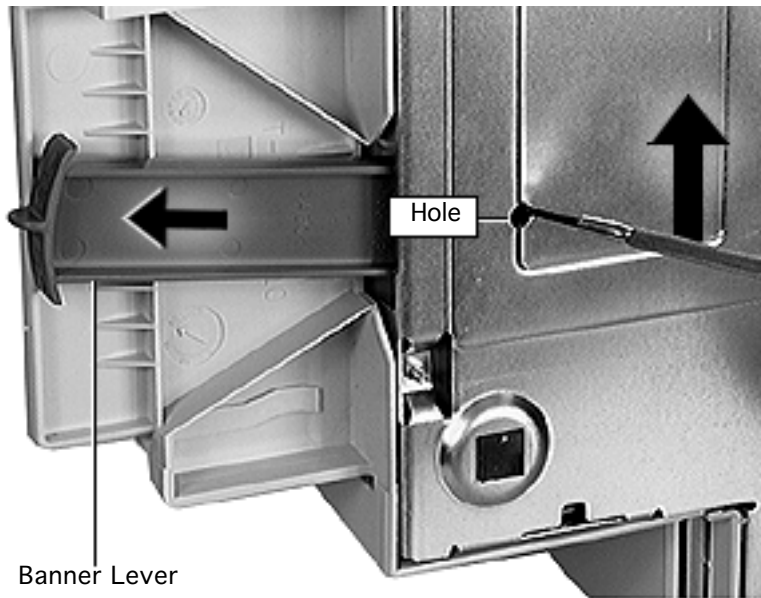
Hole

Banner Lever

1. Rest the printer on its side with the bottom facing you.

2. Move the banner level to the right.

3. Insert a small flatblade screwdriver into the access hole of the printer's base.

4. Push and release the latch.

5. Pull the banner lever off of the base.

Length Adjuster

No preliminary steps are required before you begin this procedure.

Length Adjuster

Opening #2   Opening #1
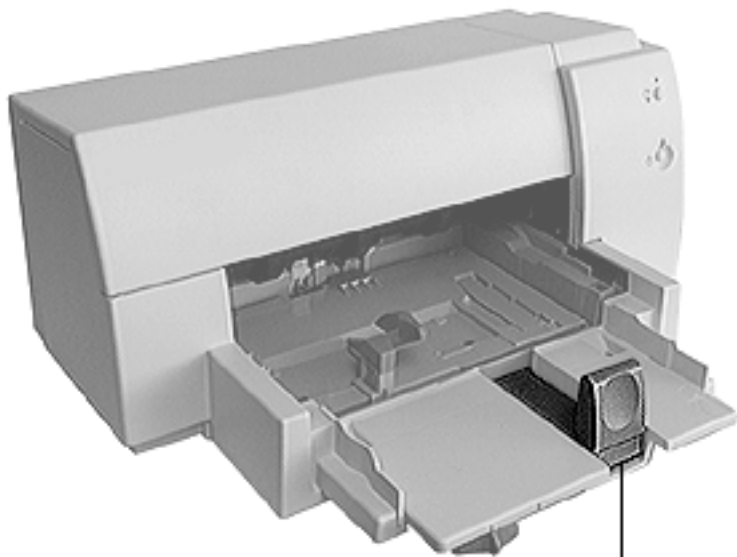
Latch

Length Adjuster
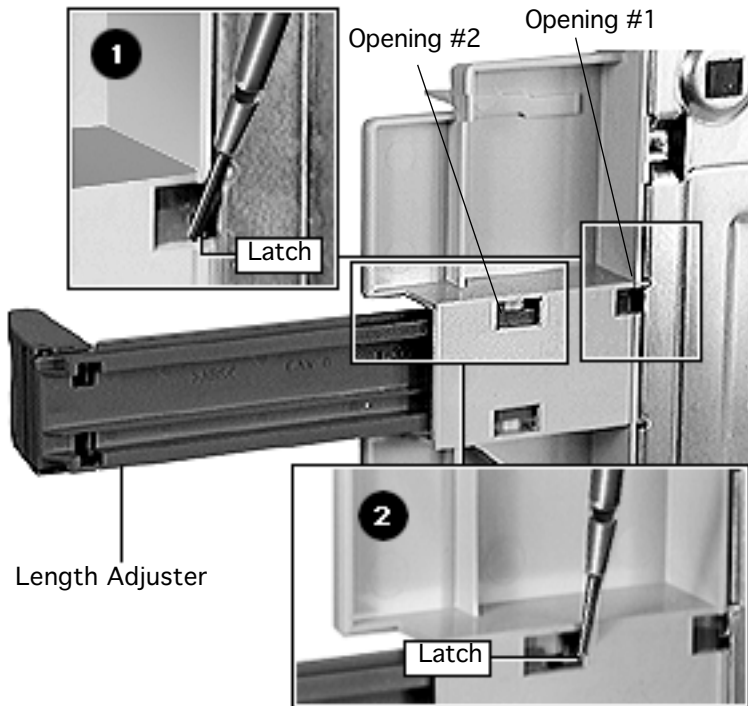
Latch

1. Rest the printer on its side.

2. Pull the length adjuster straight out until it stops.

3. Press and release latch at opening #1 with a flatblade screwdriver. while holding latch, pull the length adjuster out until is catches at second opening.

4. Repeat step at opening #2. Pull length adjuster from top cover.

Input Tray

Before you begin, remove
the output tray.
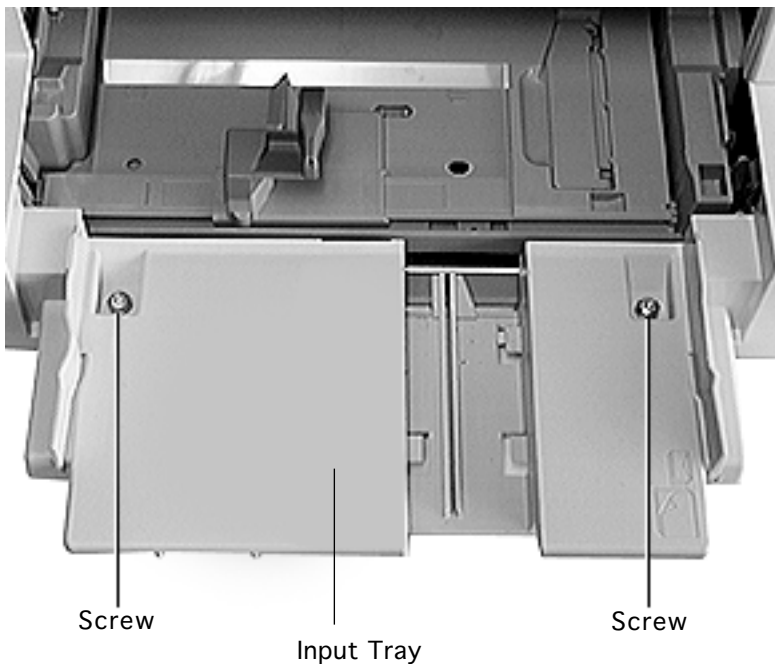
1 Set the printer down on its base.

2 Using a T-20 Torx screwdriver, remove the two screws from the Input Tray.

Note: To remove all remaining screws inside the printer, use a T-10 Torx screwdriver.

Screw

Input Tray

Screw

I/O Cover

No preliminary steps are required before you begin this procedure.
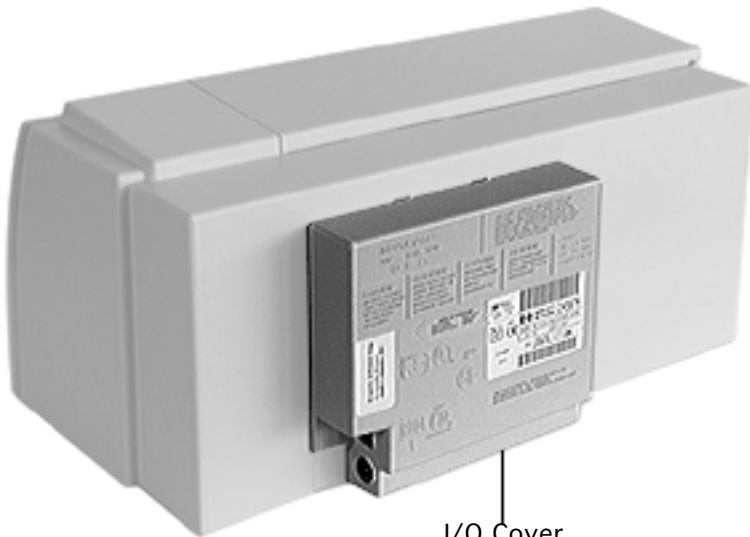
I/O Cover

Hole

Hole

I/O Cover

1 Rest the printer on its side.

2 Locate the two holes (A and B) on the base near the I/O cover.

3 Insert a jeweler's screwdriver into the holes, and push the latches straight in until they unsnap from the base.

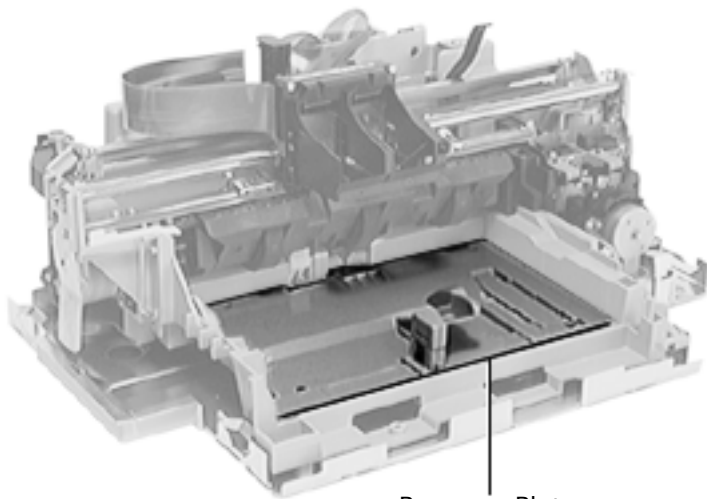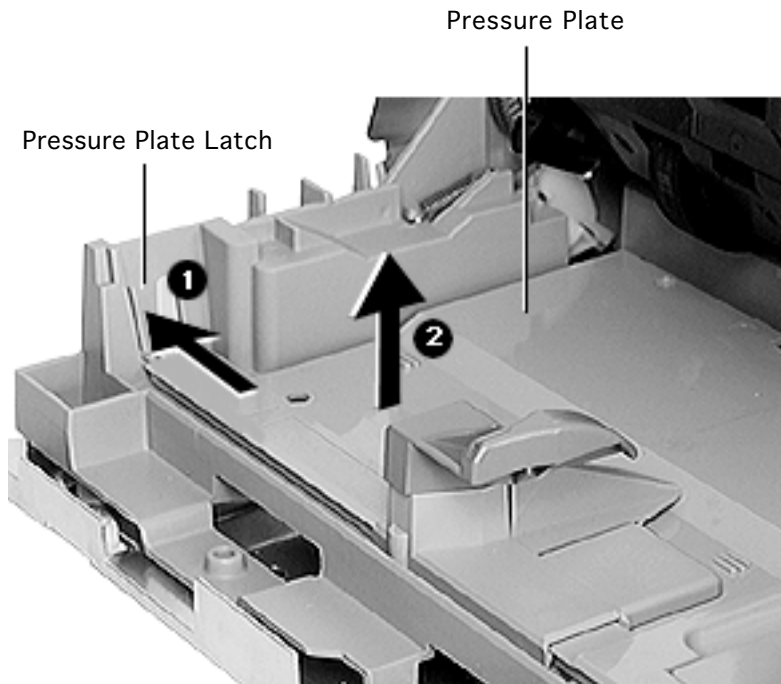4 Rotate the I/O cover away from the base along its hinges and lift it from the top cover.

Top Cover

Top Cover

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover

Note: Keypad and keypad cable are part of the top cover.
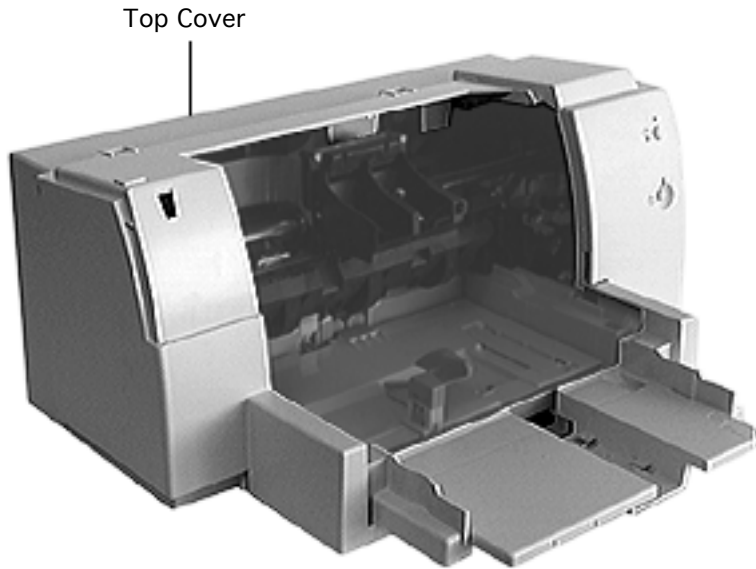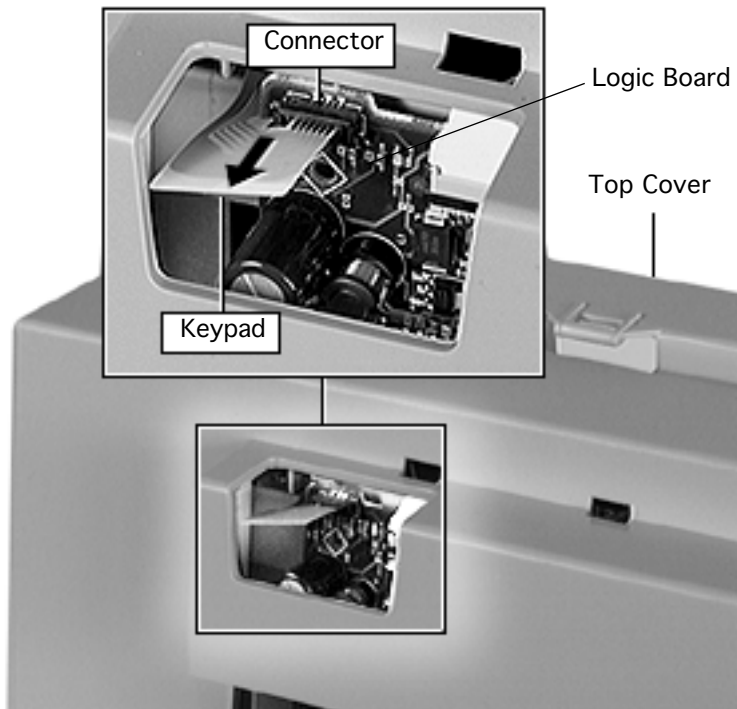
1 Rest the printer upright on a flat surface.

2 Disconnect the keypad cable from the connector on the logic board.

Note: To prevent damage to the keypad cable, you must disconnect it before removing the top cover.

Latch
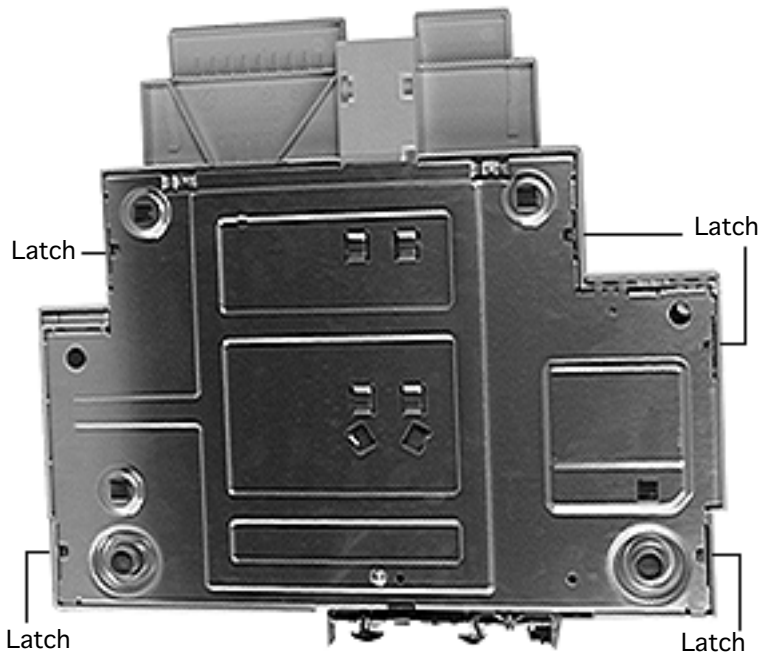
Latch

Latch

Latch

3 Locate the five latches on the base of the printer: three on the right and two on the left.

4 Starting with the latch nearest the input tray, use a small flatblade screwdriver to disconnect the latches. Push the latches towards the outside of the printer, and at the same time, pull the cover away from the bottom of the printer.

Note: It may be easier to unlatch the right side first.
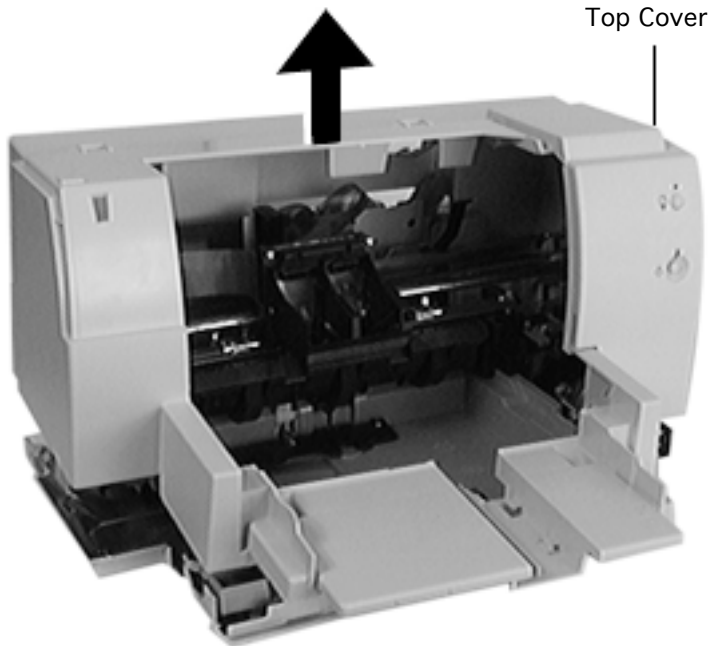
Top Cover

5 After all five latches are released, lift off the top cover.

Caution: Be careful when lifting off the top cover. The edges along the base may be sharp.

Important: Do not remove or loosen any screws that are not described in the following procedures. Doing so may affect print quality and require replacement of the entire mechanical assembly.

Pressure Plate
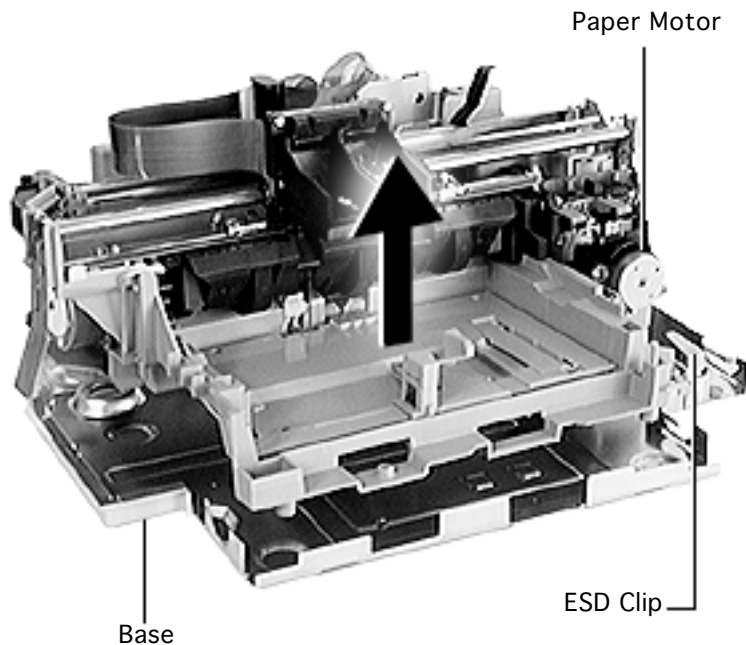
Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

Pressure Plate

Pressure Plate

Pressure Plate Latch

1. Press the pressure plate latch outward.

2. Lift up the left side of the pressure plate.

3. Remove the pressure plate.

Base

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

Base

Paper Motor
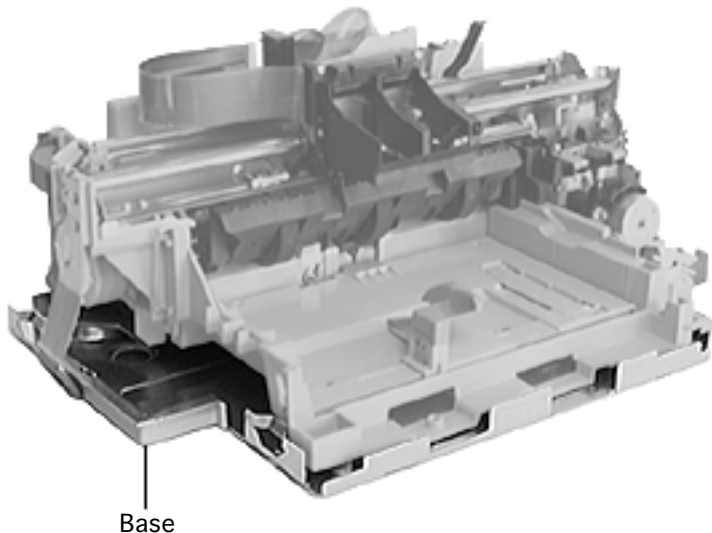
ESD Clip

Base

Note: The printer is not attached to the base by any screws or retainer clips

1 Lift the printer from the base.

2 Remove the ESD clip from the base.

   Replacement Note: The ESD clip must touch the bottom of the paper motor to ensure proper grounding.
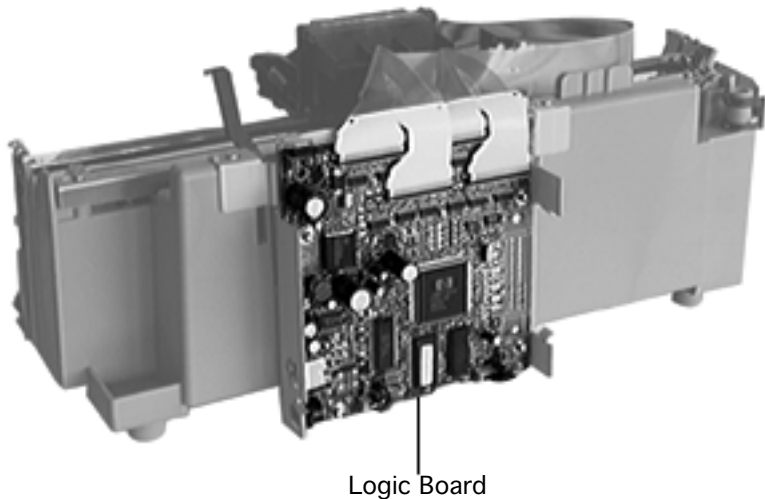
Logic Board

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

Caution: Review the ESD precautions in Bulletins/Safety.
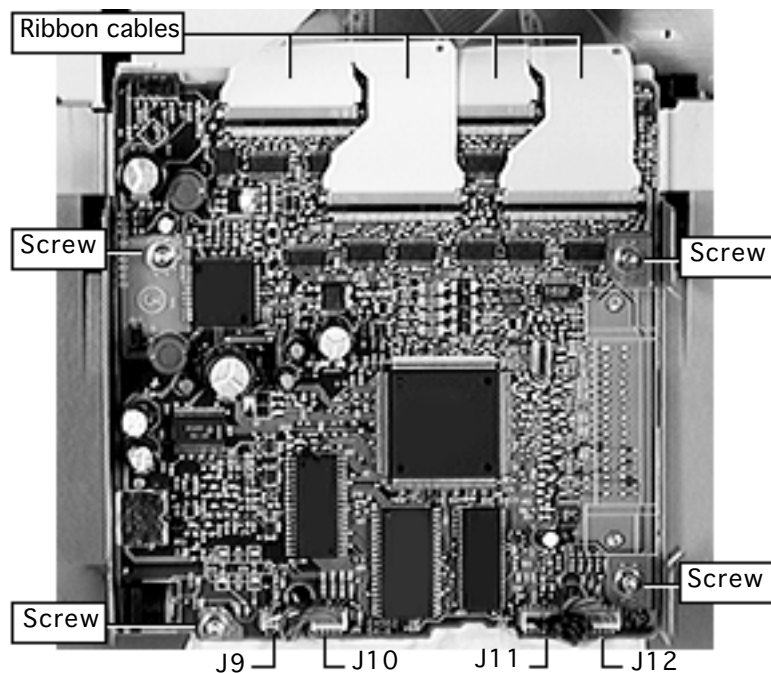
Logic Board

Note: The logic board contains NVRAM, which contains the information used to determine the position of the banner lever. Replacing the logic board, mechanical assembly, drive gear, or paper feed motor requires re-calibration of the printer.

See "Banner Calibration" in Additional Procedures for more information.

> **Note:** The Color StyleWriter 4100 does not provide banner printing. No calibration is required for that printer.

Ribbon cables
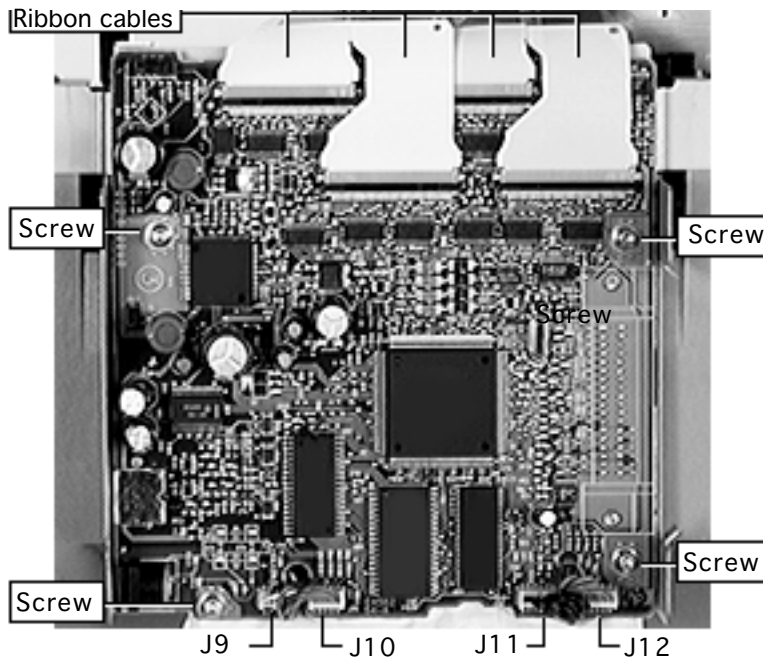
Screw

Screw

Screw

Screw

J9   J10   J11   J12

1 Disconnect the ribbon cables by loosening each end of the black plastic tab securing the ribbon cables to the logic board.

2 Disconnect the remaining four cables:
   • J9: Carriage Motor
   • J10: Service Station
   • J11: Sensor board
   • J12: Paper motor

   ⚠**Warning:** Connector J9 should be removed carefully to prevent the connector from pulling apart.

Ribbon cables

Screw

Screw

Screw

Screw

Screw

Screw

J9   J10   J11   J12

3 Using a T-10 Torx
  screwdriver, remove
  the four mounting
  screws.

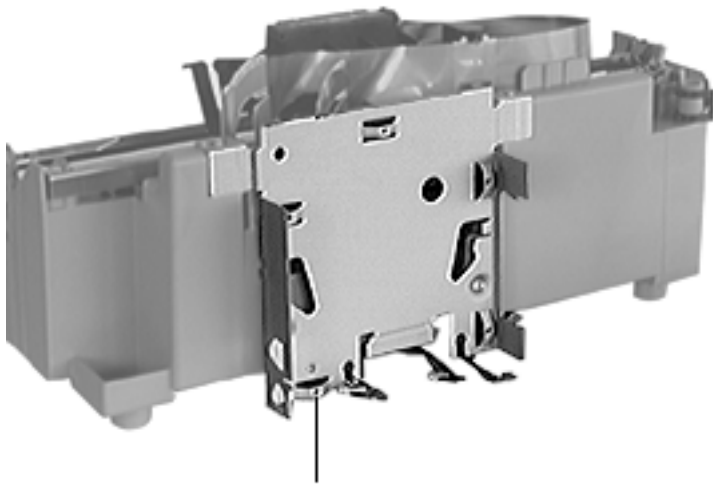4 Remove the logic board
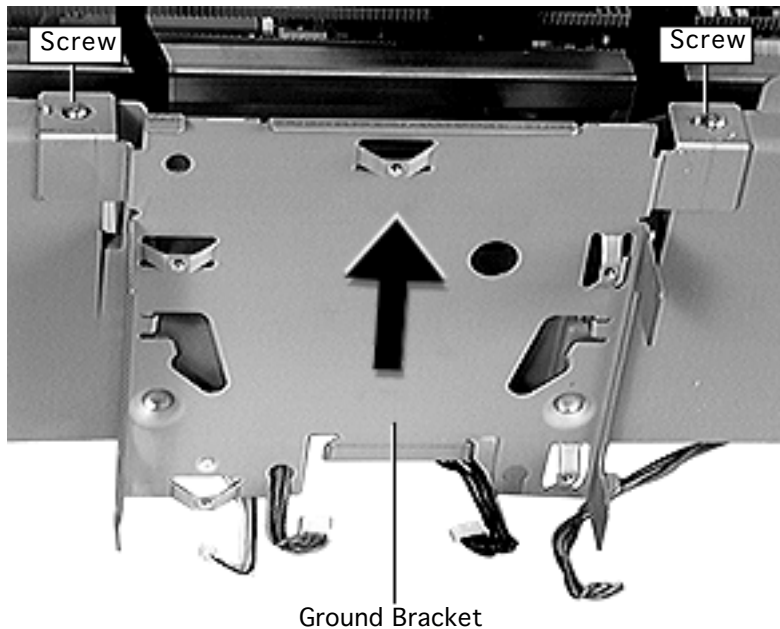 from the printer.

Ground Bracket

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Logic board

Ground Bracket

Screw

Screw

Ground Bracket

1 Remove the two screws from the ground bracket.

2 Lift and remove the bracket from the printer.

Note: Once the ground bracket is removed, the remaining parts comprise the mechanical assembly. The base is not included with the mechanical assembly.

Sensor Board

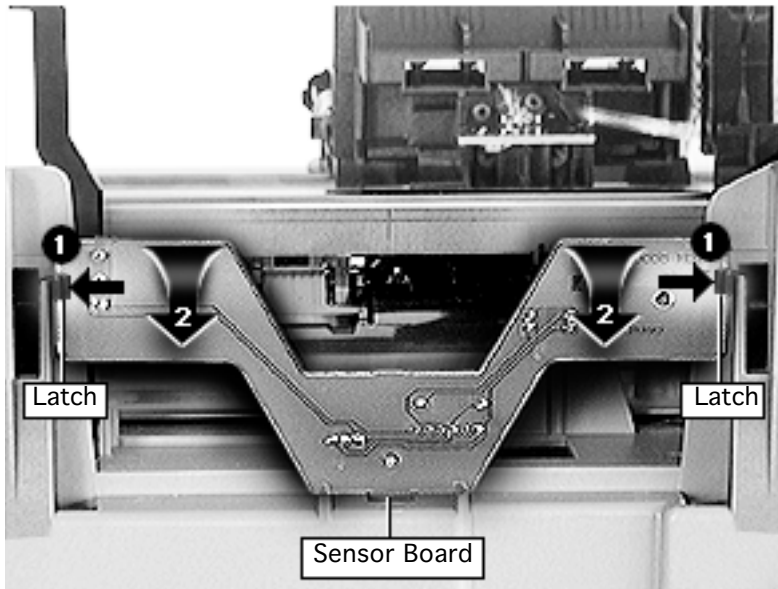Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Logic board
- Ground Bracket

Caution: Review the ESD precautions in Bulletins/ Safety.
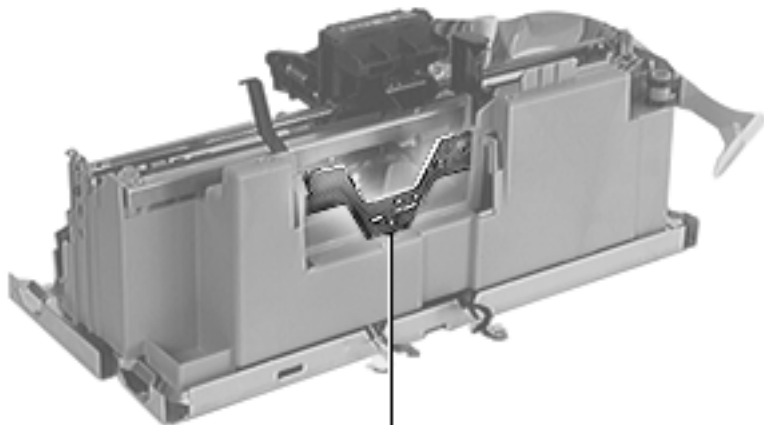
Sensor Board

Latch

Latch

Sensor Board

1 Spread the latches outward.

2 Tilt the sensor board forward and remove it along with its cable.

   Replacement Note: Put the cable through the chassis opening. Insert the bottom of the sensor board first. Tilt the board away from the chassis and align the guide pin against the board's centering guide-hole. Rotate the sensor board toward the chassis and snap it into place.
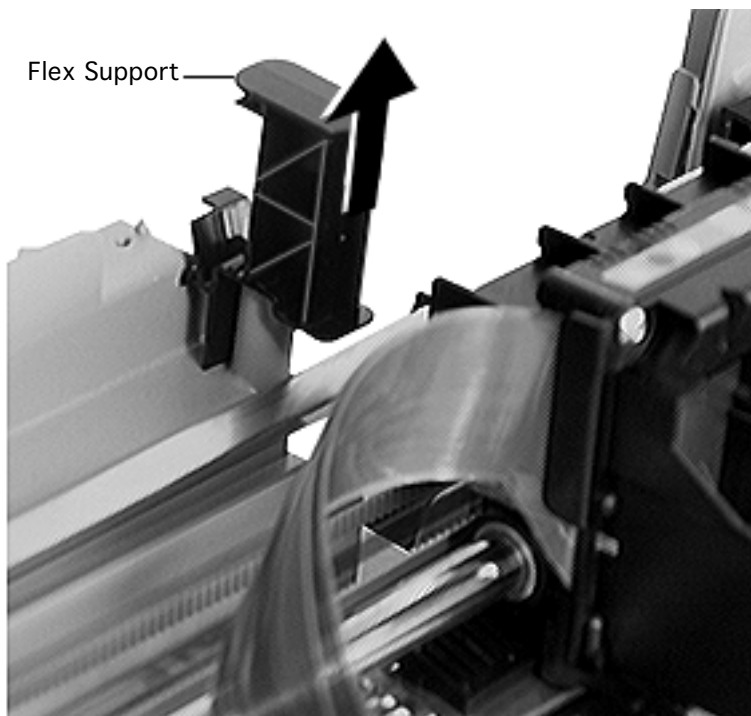
Flex Support
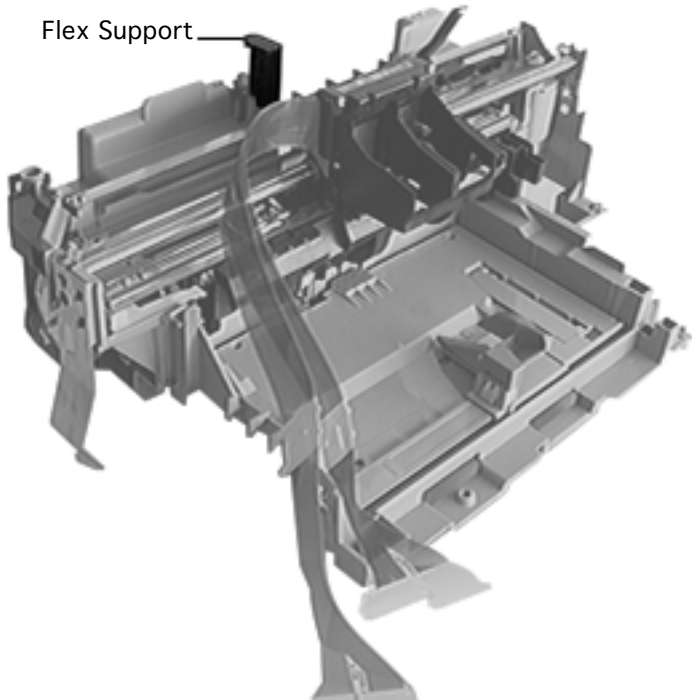
Flex Support

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Logic board
- Ground Bracket

Caution: Review the ESD precautions in Bulletins/Safety.

Flex Support

1 Pull the flex support straight up and remove it from the chassis.
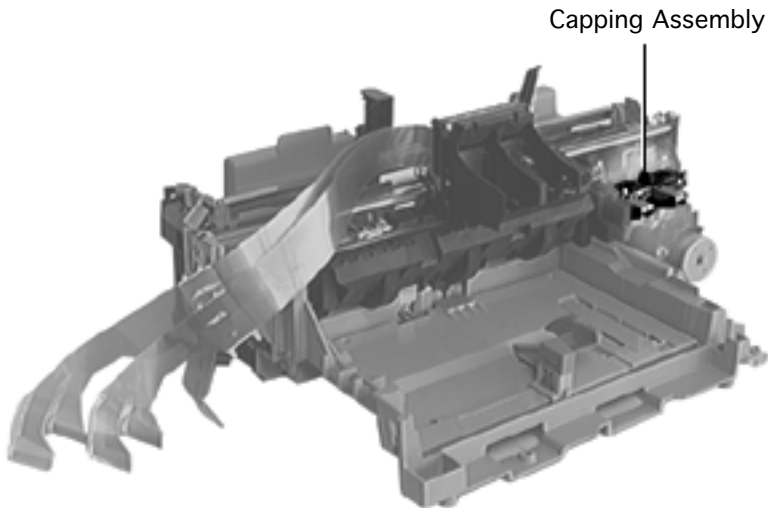
Capping Assembly

Capping Assembly

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

Caution: Review the ESD precautions in Bulletins/Safety.

Capping Assembly   Latch   Latch
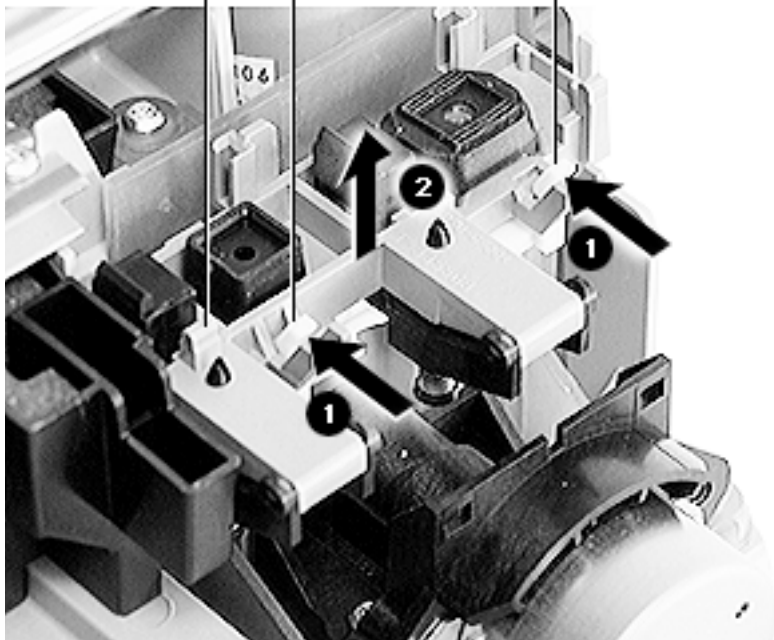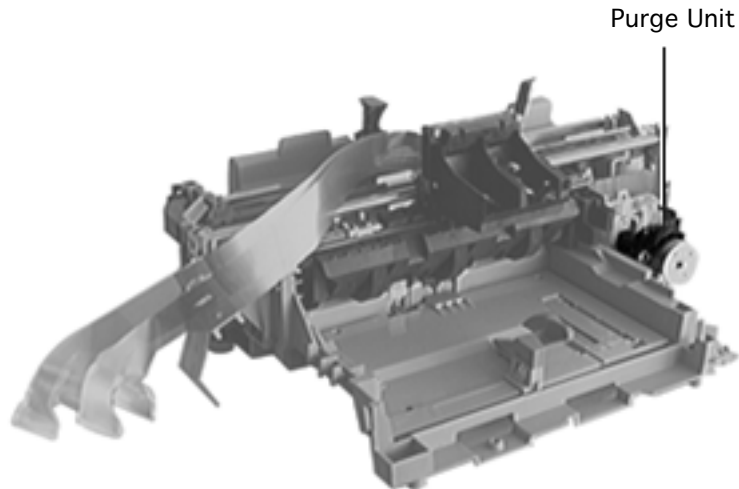

1 Press and release the two retaining latches.

2 Remove the capping assembly from the printer.

   Caution: Do not touch the rubber caps on the capping assembly. Finger oils can damage the ink cartridge pens.

   Note: Rubber cap parts can crack and wear over time causing premature failure of the print nozzles. Inspect the capping assembly when the unit is in for repair.

Purge Unit

Purge Unit

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Capping assembly

Caution: Review the ESD precautions in Bulletins/ Safety.

Note: You can remove the purge unit without first removing the encoder strip and carriage belt only if you use a long screwdriver.

1 Disconnect the cable attached to the motor.

2 Remove the two screws.

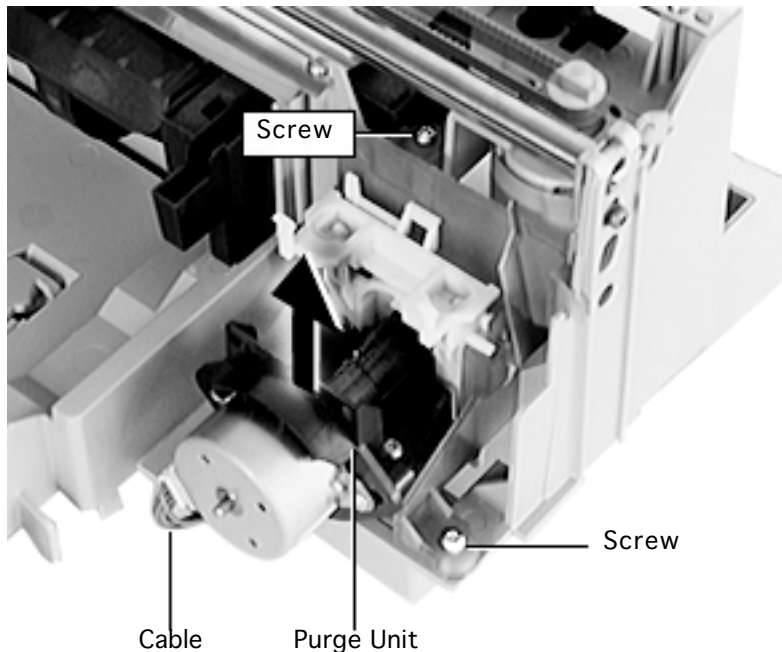3 Lift the purge unit up and out to remove it from the printer.

Carriage Motor

Carriage Motor

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Capping assembly
- Purge Unit

Caution: Review the ESD precautions in Bulletins/Safety.

1 Relax tension on the carriage belt by pushing in on the idler hub.

2 Lift the carriage belt off the carriage motor pulley.

3 Disconnect the carriage motor cable from the logic board.

⚠️**Warning:** Connector J9 should be removed carefully to prevent the connector from pulling apart.

4 Remove the two screws at the top of the carriage motor.

Idler Hub

Idler Hub
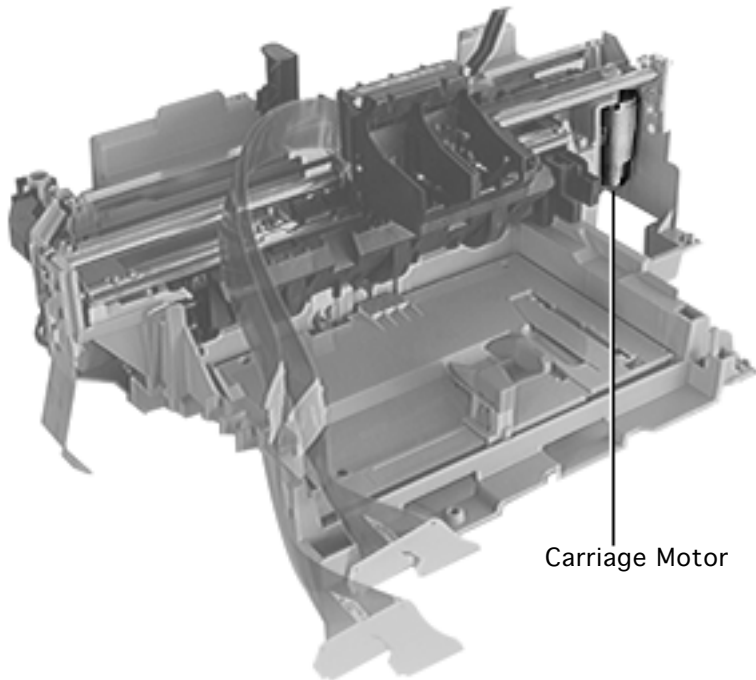
Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

Caution: Review the ESD precautions in Bulletins/Safety.

1 Relax tension on the carriage belt by pushing in on the idler hub.

2 Lift the carriage belt off the carriage motor pulley.

3 Slide the idler hub out of the tension bracket.
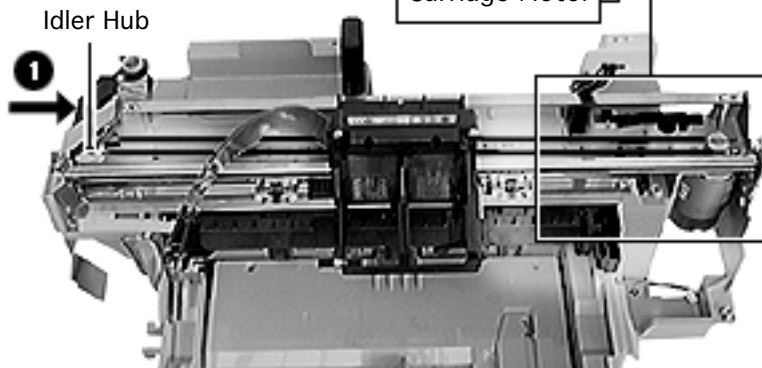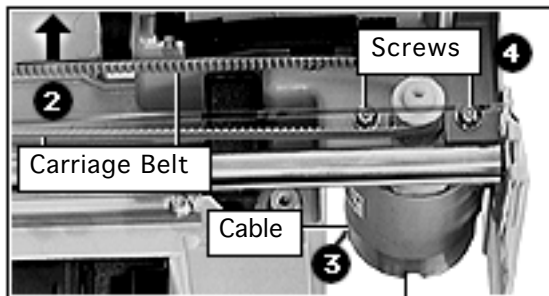
Tension Bracket

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Idler hub

Caution: Review the ESD precautions in Bulletins/Safety.

Tension Bracket

Tension Bracket
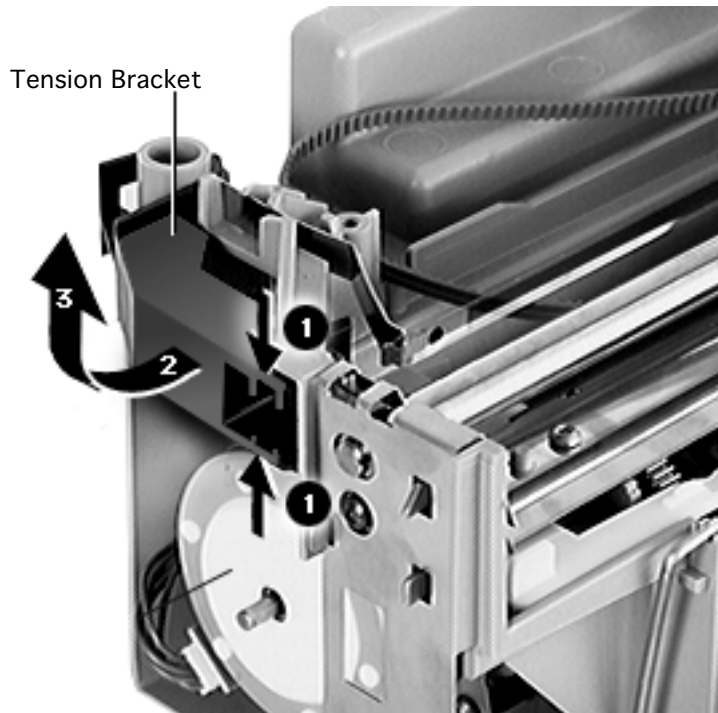
1 Squeeze the tension
   bracket together.

2 Once the spring tension
   is relaxed, swing the
   tension bracket and
   spring clear of the
   chassis.

3 Lift the tension bracket
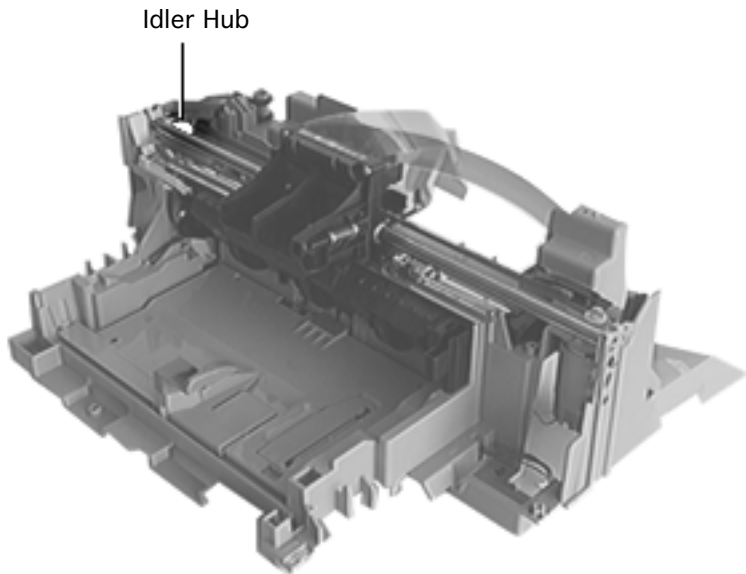   and spring off the
   chassis.

Paper Motor

Paper Motor

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

Caution: Review the ESD precautions in Bulletins/ Safety.

Note: The "Paper Motor" topic includes the paper motor and the cluster gear.

1 Disconnect the paper motor cable.

2 Remove the two screws and remove the paper motor from the printer.

Note: (4500 only) Replacing the logic board, mechanical assembly, drive gear, or paper feed motor requires re-calibration of the printer.

See "Banner Calibration" in Additional Procedures for more information.
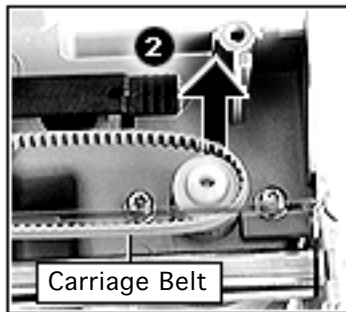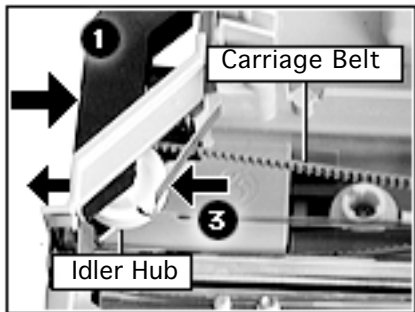
Drive Gear

3 Remove the drive gear.
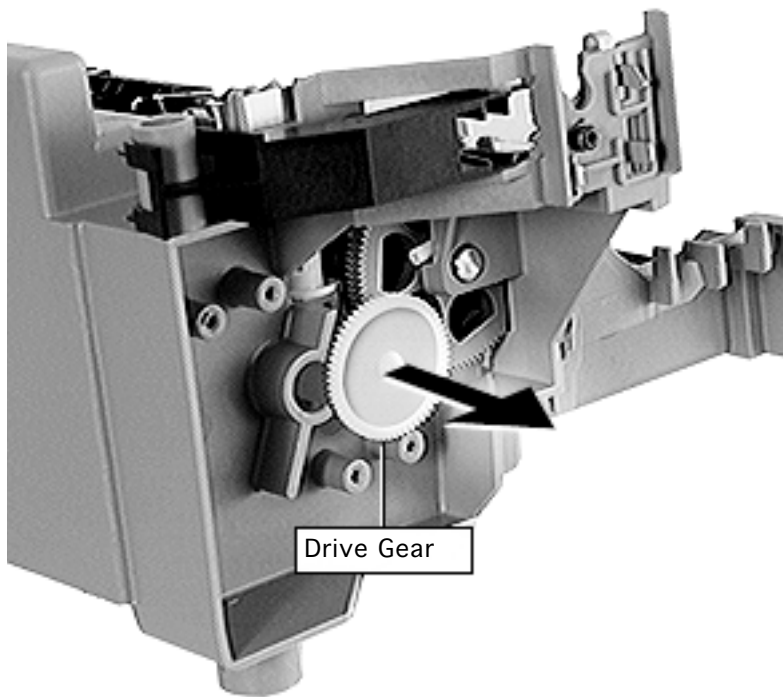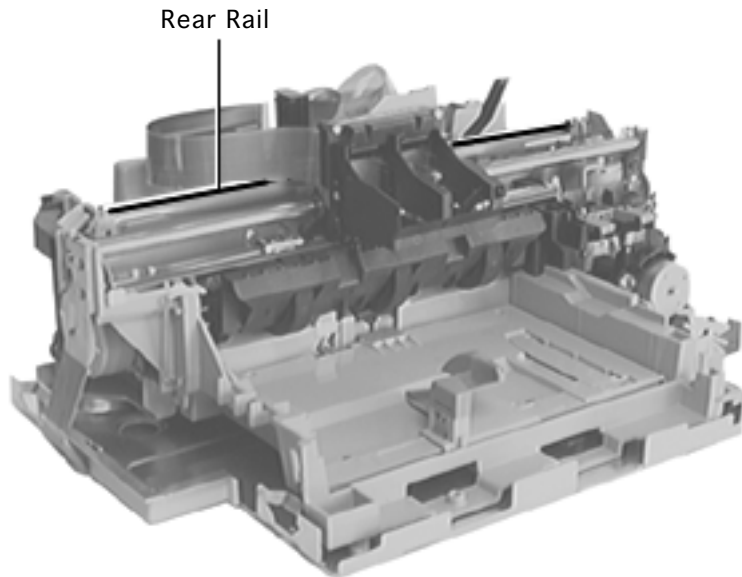
Rear Rail
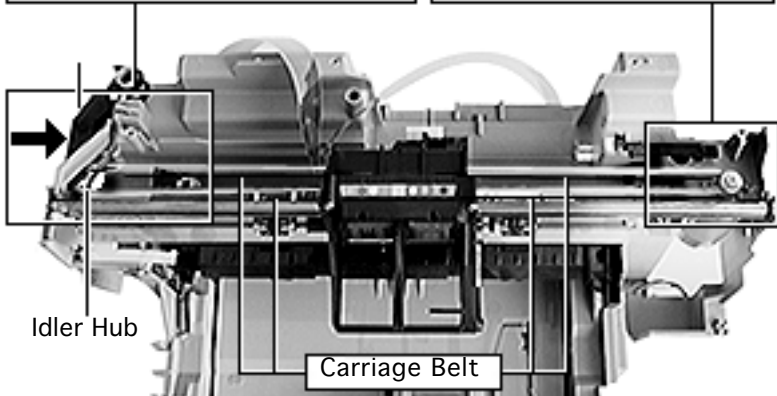
Rear Rail

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

Caution: Review the ESD precautions in Bulletins/Safety.

Screw   Rear Rail   Screw

1 Remove the two screws attaching the real rail to the chassis.

2 Remove the rear rail from the chassis.

   Replacement Note: The access door sensor lever must be installed before replacing the rear rail.
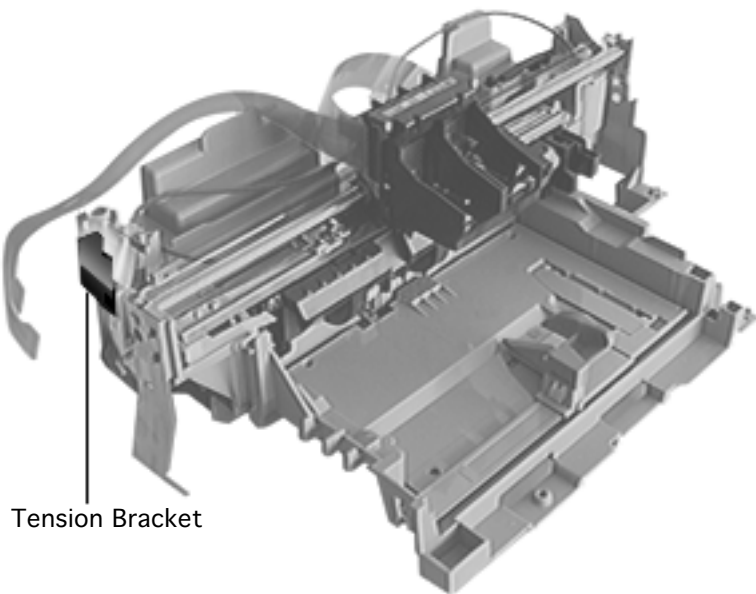
Front Cover Actuator
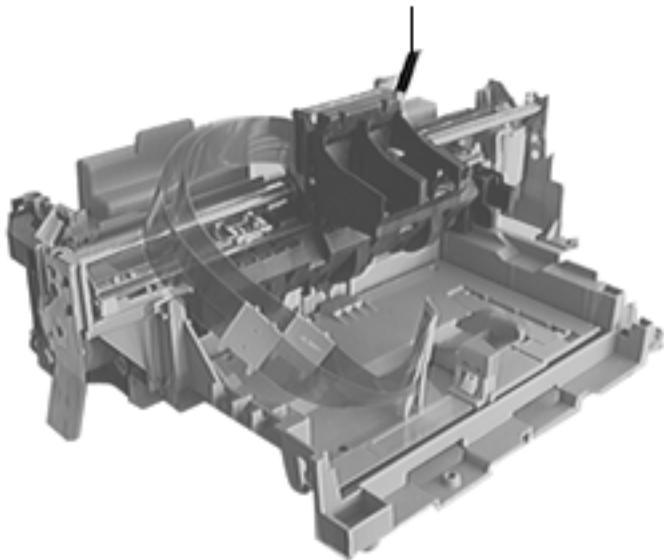
Front Cover Actuator

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Rear rail

Caution: Review the ESD precautions in Bulletins/Safety.

Front Cover Actuator
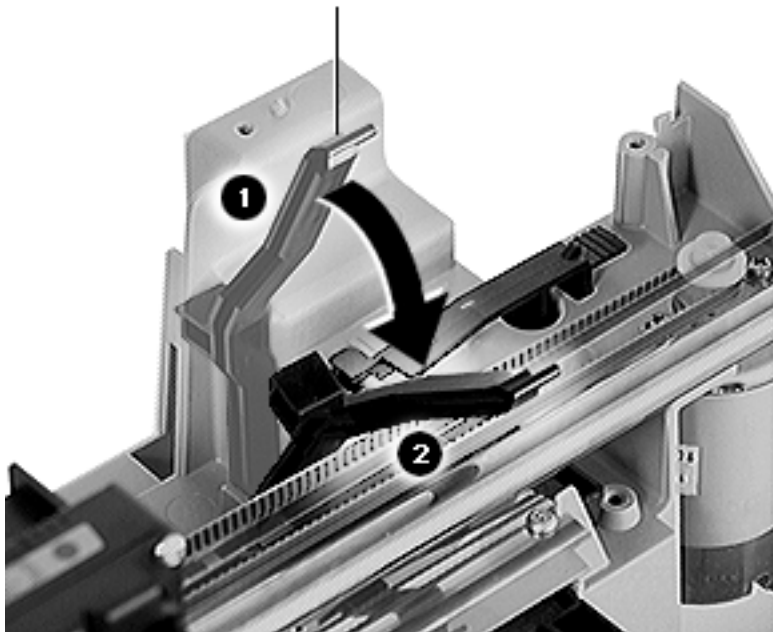
1 Rotate the front cover actuator forward and pull it off.

Replacement Note: You must put the front cover actuator on before attaching the rear rail. The actuator must be in the up position when attaching the rear rail.

Encoder Strip
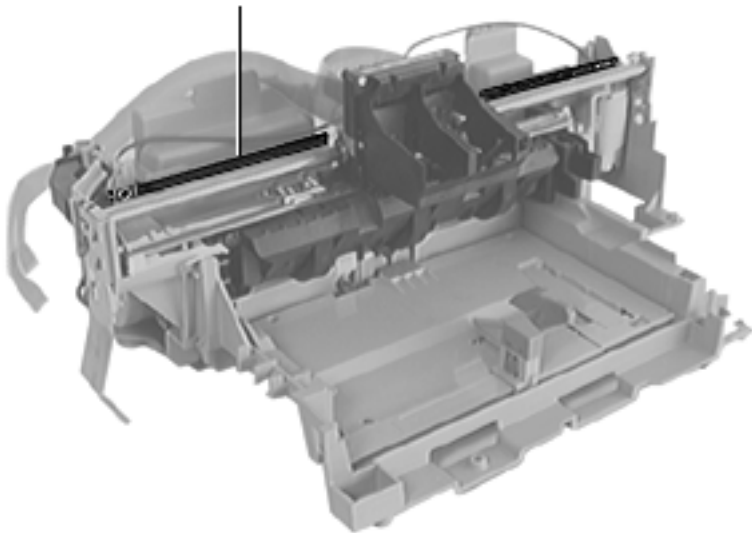
Encoder Strip

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

**Caution:** Review the ESD precautions in Bulletins/Safety.

Encoder
Spring

Encoder
Strip

1   Push in the encoder
    spring to relax the
    tension on the encoder
    strip.

2   Disengage the strip
    from the right carriage
    rod bracket.

3   Slide the free end of this
    strip through the
    carriage and disconnect
    it from the encoder
    spring.

    Replacement Note: The
    encoder strip is
    unidirectional, so there
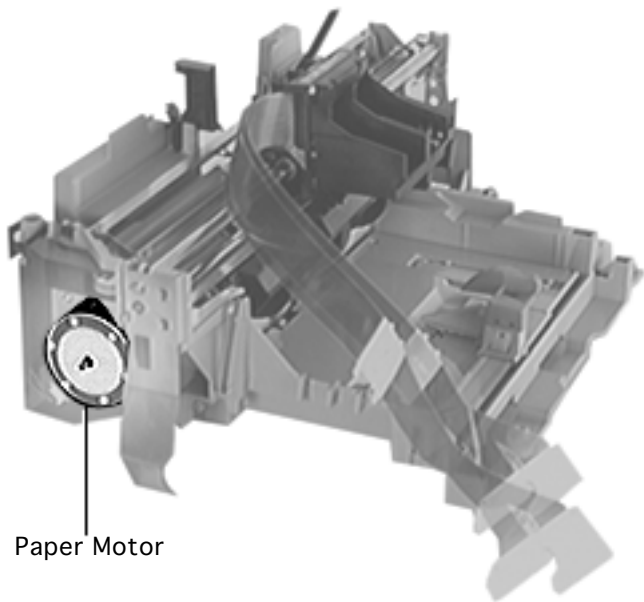   is no specific back or
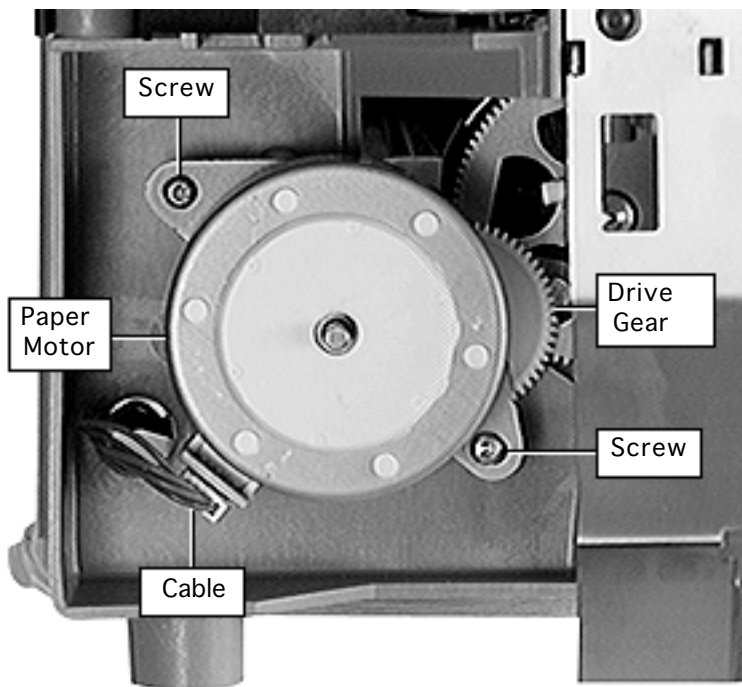   front orientation.

Shaft Clip

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover

Caution: Review the ESD precautions in Bulletins/ Safety.

Shaft Clip

1   Flex the shaft clip away
    from the chassis.

Replacement Note: The
shaft clip must be positioned
correctly to avoid paper
jams and to ensure proper
grounding. Position the clip
so the clip's tab will fit into
the rod's circular groove.
Apply downward force on the
clip until the clip latches
into place. On the base, make
sure the clip is inside and
touching the base.
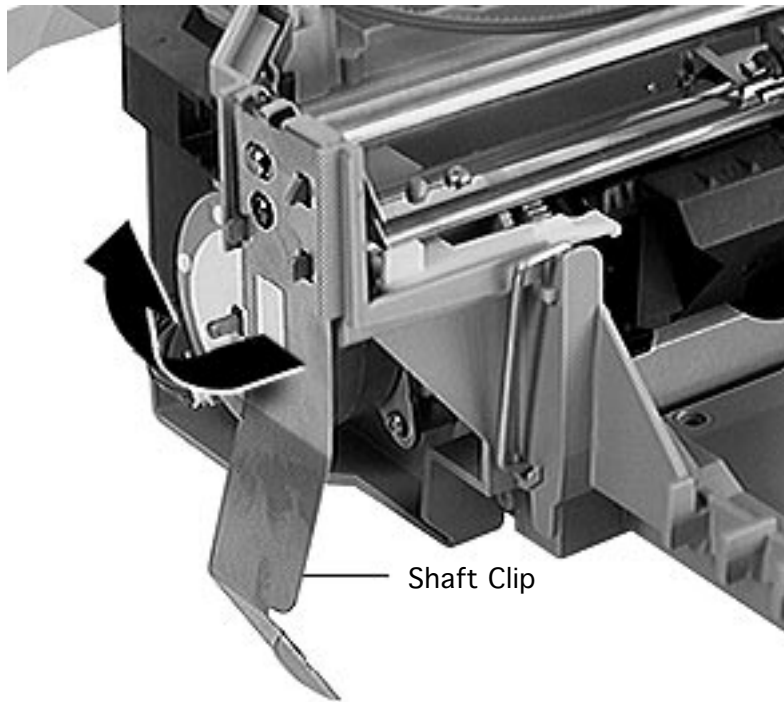
Shaft Clip

Carriage Rod

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Rear rail
- Idler hub
- Tension bracket
- Encoder strip
- Shaft clip
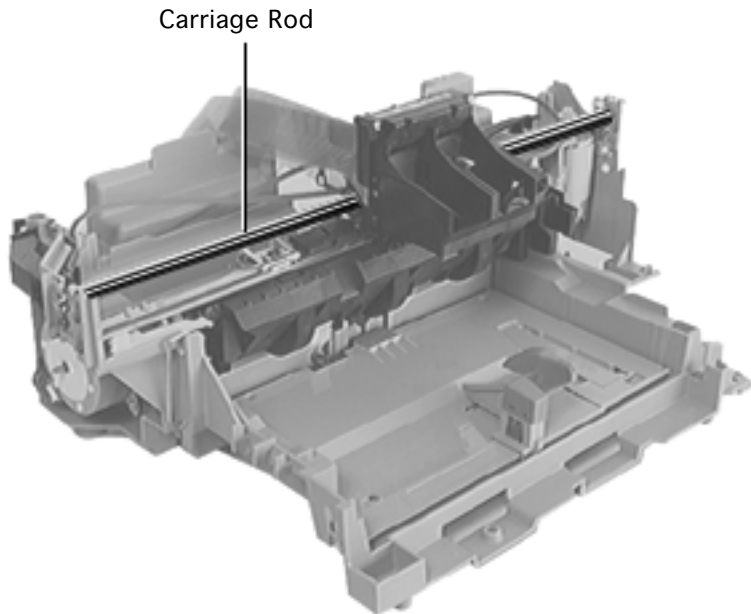
Carriage Rod

Note: Handle the carriage rod and carriage unit carefully. Damage to either part can affect print quality.

1 Lift the left end of the carriage rod from the left bracket.

2 Pull the rod out of the right bracket and through the carriage unit.

   Replacement Note: The carriage rod and carriage unit are not replaceable. You may remove them only to access other parts.
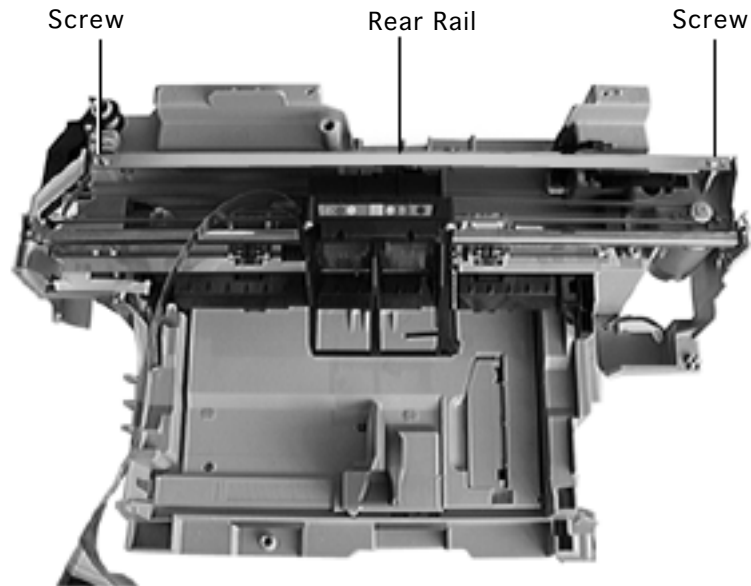
Carriage Belt
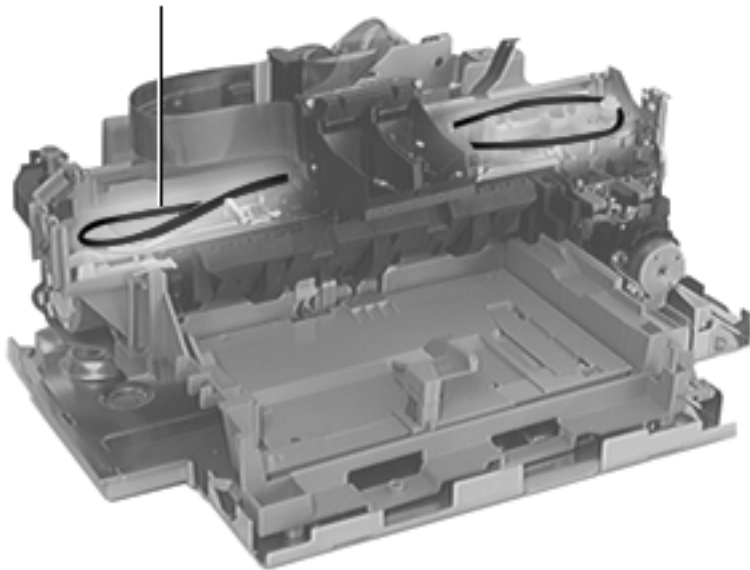
Carriage Belt

Before you begin, remove the following:

- Output tray
- Banner lever
- Length adjuster
- Input tray
- I/O cover
- Top cover
- Rear rail
- Idler hub
- Tension bracket
- Encoder strip
- Shaft retainer clip
- Carriage rod

Carriage Belt   Carriage Unit
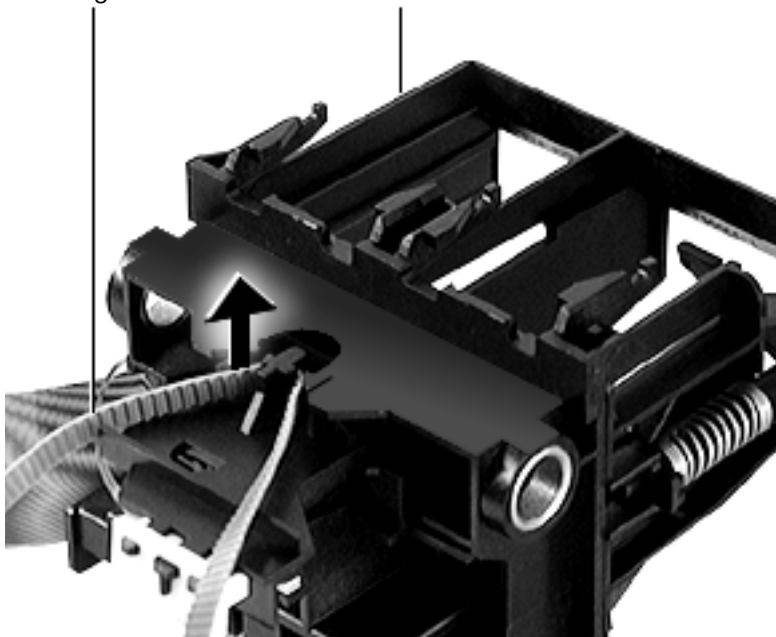
Caution: Review the ESD precautions in Bulletins/Safety.

Note: Handle the carriage unit carefully. Damage to it can affect print quality.

1   Turn the carriage unit upside down and grasp the belt.

2   Form a loop with the belt and lift it free from the carriage.

Replacement Note: The carriage unit is not replaceable. You may remove it only to access other parts.
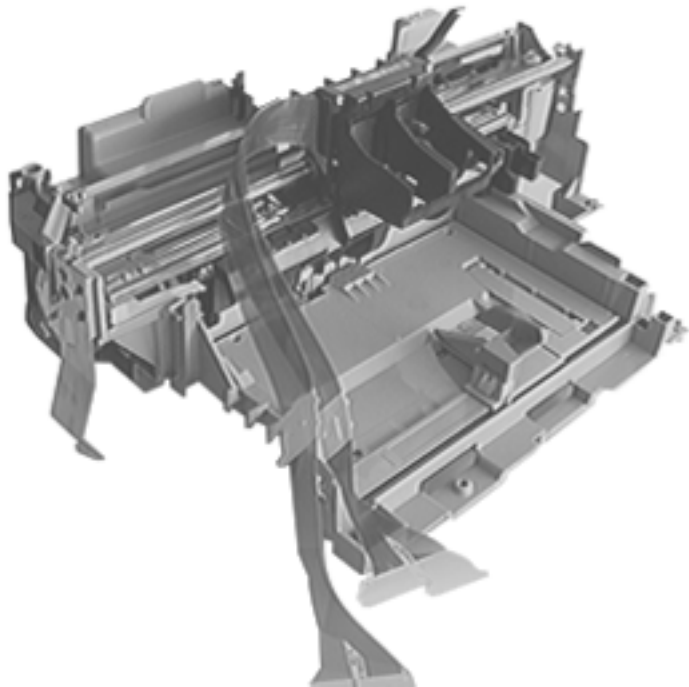
Mechanical Assembly

Before you begin, remove the following:

- Output Tray
- Banner lever
- Length adjuster
- Input Tray
- I/O cover
- Top cover
- Logic board
- Ground bracket
- Base
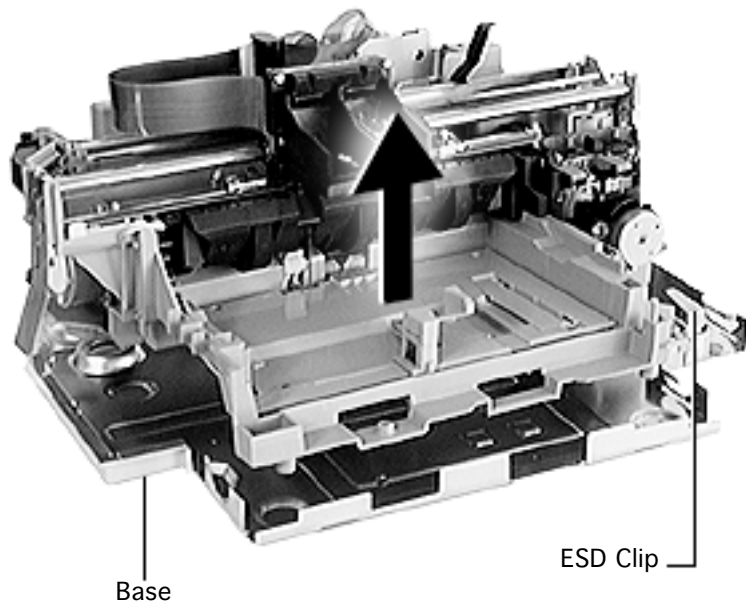
Base

ESD Clip

Note: The base is not included with the mechanical assembly.

1 Remove the ESD clip from the base.

2 Lift the mechanical assembly from the base. The mechanical assembly is not attached to the base by any screws or retainer clip.

Important: See Replacement Note on next page.

Replacement Note: (4500 only) Replacing the logic board, mechanical assembly, drive gear, or paper feed motor requires re-calibration of the printer.

See "Banner Calibration" in Additional Procedures for more information.
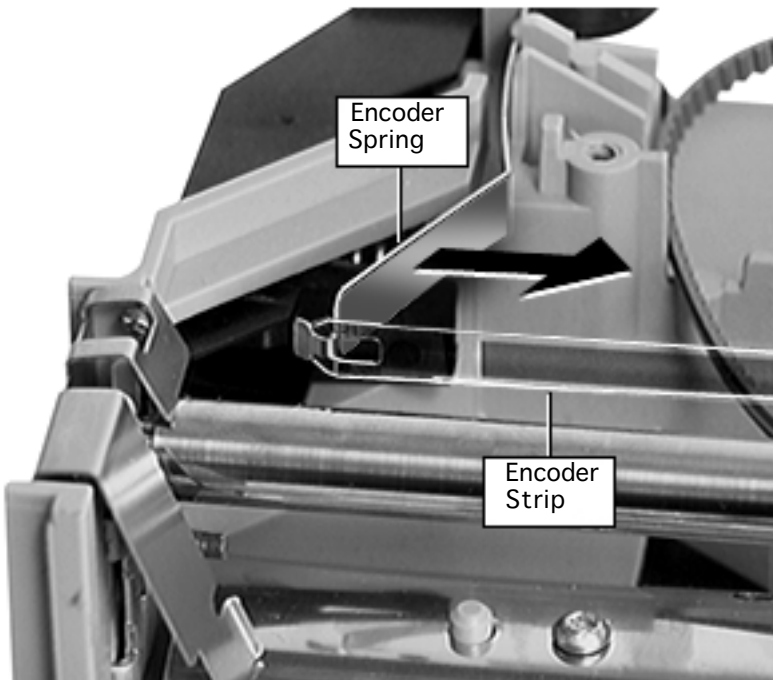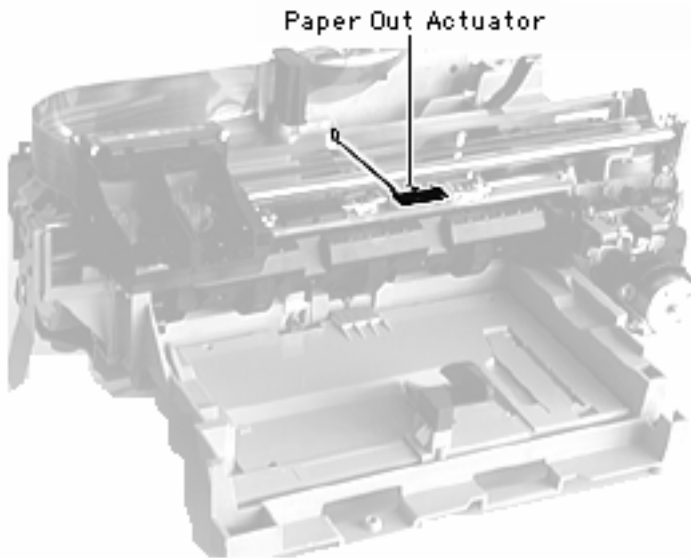
Paper Out Actuator

Paper Out Actuator
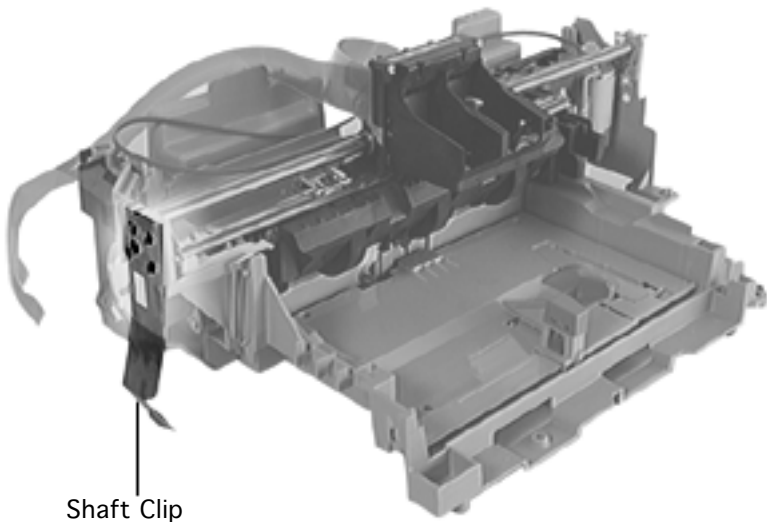
Before you begin, remove the following:

- Output Tray
- Banner lever
- Length adjuster
- Input Tray
- I/O cover
- Top cover

Paper-out Actuator

Arm

Tab
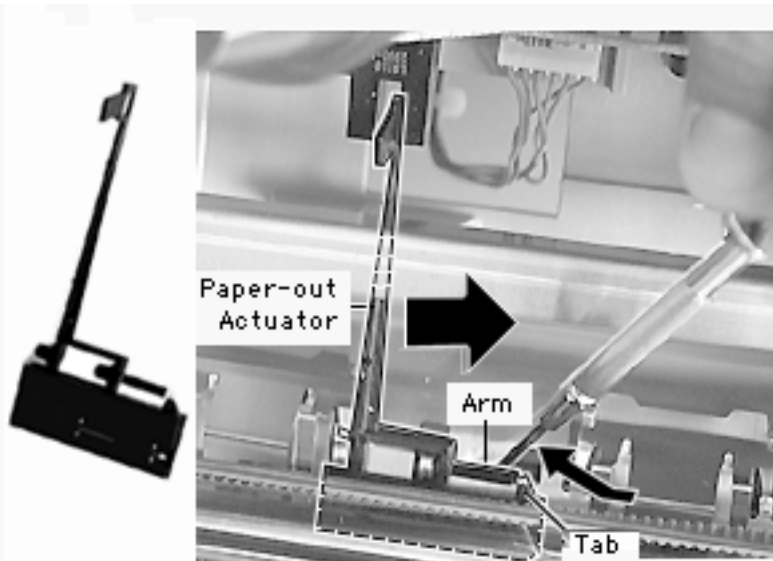
1 With a jeweler's screwdriver, very gently pry the plastic arm up and over the metal tab on the chassis.

   Note: The plastic is extremely fragile.

2 With the arm disengaged, slide the paper out actuator to the right.

3 Free the actuator from underneath the carriage rod to remove it from the printer.

Troubleshooting

Color StyleWriter 4000 Series

General

The Symptom Charts included in this chapter will help you diagnose specific symptoms related to your product. Because cures are listed on the charts in the order of most likely solution, try the first cure first. Verify whether or not the product continues to exhibit the symptom. If the symptom persists, try the next cure. (Note: If you have replaced a module, reinstall the original module before you proceed to the next cure.)

If you are not sure what the problem is, or if the Symptom Charts do not resolve the problem, refer to the Flowchart for the product family.

For additional assistance, contact Apple Technical Support.

Error Messages and LEDs

The Color StyleWriter 4500 and Color StyleWriter 4100 have two LEDs that can aid in troubleshooting the printer: Resume LED and Power LED. To interpret these LEDs, refer to Symptom Charts/LEDs later in this chapter.
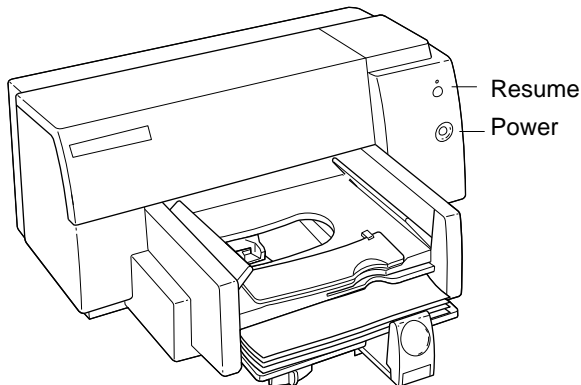
The printer software also gives error messages to pinpoint errors.

Make sure the printer is hooked up to a Macintosh and that the Color StyleWriter 4100/4500 printer driver software is installed.

The color print cartridge is not installed. Install a color print cartridge. Click Cancel to terminate printing.

Cancel

Diagnostic Tests and Sample Pages

The following table summarizes the diagnostic tests and sample pages that you can run using the Power and Resume buttons. Perform the tests with printer power on and plain paper in the paper tray; press and hold down the Power button while pressing the Resume button. For more information, refer to Additional Procedures.

Diagnostic Test/Printout	Power Button	Resume Button
Sample Page	HOLD DOWN	Press once (hold briefly)
Continuous Sample Page	HOLD DOWN	Press 10 times
Diagnostic Self Test	HOLD DOWN	Press 5 times
Extended Diagnostic Test	HOLD DOWN	Press 12 times
Clean Print Heads/Ink Cartridges	HOLD DOWN	Press 7 times

Symptom Charts

Operation

No power

1 Check power cable connections and recycle power to printer.
2 Replace power adapter and retest.
3 Reseat logic board connectors. Replace logic board.
4 Replace main cover with control panel board.

Does not print

1 Refer to LEDs later in this chapter.
2 Turn on printer and restart computer.
3 Check interface cable and connector. Replace interface cable.
4 Open Chooser and verify correct printer driver and port.
5 Replace printer driver.
6 Reseat logic board connectors. Replace logic board.

Carriage unit does not move to center when front cover is open and printer is on

1 Refer to "Fixing Carriage Stalls" in Additional Procedures.
2 Reseat logic board connectors. Replace logic board.

Carriage collides with left side

1 Make sure clutch actuator is not interfering with carriage movement. Reposition clutch actuator. See "Fixing Carriage Stalls" in Additional Procedures for actuator location.
2 Remove obstructions from carriage and paper paths.
3 Clean excessive ink or oil from encoder strip, carriage assembly, and carriage path components.
4 Replace encoder strip.
5 Check mechanical assembly for damage and proper operation. Replace faulty or damaged mechanical assembly.
6 Reseat logic board connectors. Replace logic board.

Carriage collides with right side	1	Make sure purge unit and capping assembly do not interfere with carriage movement.
	2	Manually slide carriage. Remove obstructions from carriage and paper paths.
	3	Replace any part interfering with carriage movement.
	4	Check mechanical assembly for damage and proper operation. Replace faulty or damaged mechanical assembly.
	5	Reseat logic board connectors. Replace logic board.
	6	Check carriage motor cable connection.
	7	Replace carriage motor.
I/O failure	1	Check interface cable and connector.
	2	Replace interface cable.
	3	Reseat logic board connectors. Replace logic board.

Ink cartridge won't lock in carriage	1	Verify correct ink cartridge. Refer to Basics.
	2	Replace ink cartridge.
	3	Remove and reinstall capping assembly. If faulty replace capping assembly.
	4	Replace mechanism.

Short pen life	1	Replace ink cartridge.
	2	Replace capping assembly.
	3	Check purge unit connection. If connected, replace purge unit.

No print or printer locks up	1	Recycle power to printer. This may require unplugging from power outlet.
	2	Replace mechanical assembly.
	3	Reseat logic board connectors. Replace logic board.
	4	Replace main cover with control panel board.

Stops printing

1. Make sure clutch actuator is not interfering with carriage movement. Reposition clutch actuator. See "Fixing Carriage Stalls" in Additional Procedures for actuator location.
2. Remove obstructions from carriage and paper paths.
3. Replace any part interfering with carriage movement.
4. Reseat logic board connectors and retest.
5. Replace logic board.
6. Replace carriage motor.
7. Replace mechanical assembly.

Leaky cartridge

1. Clean ink damaged parts. Replace ink damaged parts.
2. Replace ink cartridge.
3. Replace mechanical assembly.
4. Reseat logic board connectors. Replace logic board.
5. Replace capping assembly.

Erratic or slow
movement

1. Manually slide carriage. Remove obstructions from carriage and paper paths.
2. Check mechanical assembly for damage and proper operation. Replace faulty or damaged mechanical assembly.
3. Inspect carriage rod. If damaged, replace mechanical assembly.
4. Reseat power adapter connectors and retest.
5. Perform "Fiber Track Cleaning" in Additional Procedures.
6. Inspect and clean purge unit. Check connection.
7. If problem persists, replace purge unit.
8. Reseat logic board connectors. Replace logic board.
9. Replace damaged carriage belt.
10. Replace mechanical assembly.
11. Verify that paper-out actuator contacts sensor board. If not, replace paper-out actuator.
12. If actuator contacts sensor board, replace sensor board.
13. Replace carriage motor.

Rejects cartridge

1 Perform "Print Head Cleaning" in Additional Procedures.
2 Replace ink cartridge.
3 Clean flex contacts in carriage assembly and remove/
   reinstall flex cable.
4 Verify that paper-out actuator contacts sensor board. If not,
   replace actuator.
5 If actuator contacts board, replace sensor board.
6 Replace mechanical assembly.
7 Reseat logic board connectors. Replace logic board.

Paper feeds
continuously

1 Manually slide carriage. Remove obstructions from carriage
   and paper paths.
2 Verify that paper-out actuator contacts sensor board. If not,
   replace actuator.
3 If actuator contacts board, replace sensor board.
4 Reseat logic board connectors. Replace logic board.

Grinding, squeaking
or scraping noise

1 Manually slide carriage. Remove obstructions from carriage
   and paper paths.
2 Replace any part interfering with carriage movement.
3 Inspect and replace frayed or cut carriage belt.
4 Inspect carriage rod. If damaged, replace mechanical
   assembly.
5 Replace mechanical assembly.
6 Replace paper feed motor.
7 Replace drive gear.
8 Replace pivot spring.
9 Verify that paper-out actuator contacts sensor board. If not,
   replace actuator.
10 If actuator contacts sensor board, replace sensor board.
11 Remove pressure plate and check for obstructions.
12 Reseat logic board connectors. Replace logic board.

Knocking or clicking noise	1	Manually slide carriage. Remove obstructions from carriage and paper paths.
	2	Check mechanical assembly for damage and proper operation. Replace faulty or damaged mechanical assembly.
	3	Inspect and replace frayed or cut carriage belt.
	4	Inspect carriage rod. If damaged, replace mechanical assembly.
	5	Replace drive gear.
	6	Replace carriage motor.
Bidirectional misalignment	1	Make sure encoder strip is properly routed through carriage.
	2	Manually slide carriage. Remove obstructions from carriage and paper paths.
	3	Replace any part interfering with carriage movement.
	4	Make sure carriage motor screws are properly seated.
	5	Replace carriage motor.

Paper bonding	1	If problem is with PhotoGrade cartridge while printing over LocalTalk, change to serial connection and print in foreground.
	2	Make sure paper adjustment levers are not applying too much pressure to paper.
	3	Make sure Input tray is properly installed.
	4	Replace mechanical assembly.
Burning smell	1	Visually inspect motors. Replace damaged motor.
	2	Reseat logic board connectors. Replace logic board.
	3	Replace mechanical assembly.
No trouble found	1	Run Self Tests. Refer to Additional Procedures.
	2	Perform Diagnostic Tests. Refer to Additional Procedures.
No response when used with G3 computer		Upgrade to the Color StyleWriter 4500 driver, version 1.1 or later. Refer to this URL online: http://www.apple.com/support/

Paper

Paper sticks together
1. Fan paper and remove excess sheets from paper tray.
2. Verify that media meets specifications.
3. Stack media against right wall of In Tray.
4. Verify that paper-out actuator contacts sensor board. If not, replace actuator.
5. If actuator does contact sensor board, replace board.
6. Remove pressure plate and check for obstructions.
7. Replace pressure plate.
8. Replace mechanical assembly.

Paper skews

1 Perform diagnostic test to verify that print skew is out of specification. Refer to Additional Procedures.
2 Keep stack of media between 1/4 and 3/4 inch high in Input tray.
3 Verify that media meets specifications.
4 Make sure width adjuster is against media.
5 Make sure Input tray is firmly installed.
6 If margin on left side of page gets larger toward bottom of paper, cause is likely Input tray. Try replacing width adjuster.
7 Perform Banner Adjustment. See Additional Procedures.
8 If margin on right side of page gets larger near bottom of paper, chassis is likely cause. Replace mechanical assembly.
9 Remove pressure plate and check for obstructions.
10 Replace pressure plate.
11 Replace mechanical assembly.

Paper jams	1	Remove media from paper path. Refer to Additional Procedures.
	2	Verify media meets specifications.
	3	Check paper feed motor connection. If connected, replace paper feed motor.
	4	Remove pressure plate and check for obstructions.
	5	Replace pressure plate.
	6	Inspect pivot assembly for damage or obstructions.
	7	Replace mechanical assembly.
Paper doesn't load completely	1	Clean rollers.
	2	Inspect paper-out actuator and verify contacts sensor board. If damaged or not making contact, replace actuator.
	3	If actuator does contact sensor board, replace board.
	4	Remove pressure plate and check for obstructions.
	5	Replace pressure plate.
	6	Replace mechanical assembly.
	7	Reseat logic board connectors. Replace logic board.

Paper doesn't eject

1   Inspect "wings" to be sure they are properly and completely installed.
2   Remove and reinstall Out tray.
3   Remove media from paper path. Refer to Additional Procedures.
4   Verify media meets specifications.
5   Inspect clutch actuator
6   Make sure clutch actuator is not interfering with carriage movement. Reposition clutch actuator. See "Fixing Carriage Stalls" in Additional Procedures for actuator location.
7   Replace logic board.

Paper feeds
continuously

1 Inspect paper-out actuator and verify contacts sensor board. If damaged or not making contact, replace actuator.

2 If actuator does contact sensor board, replace board.

3 Remove pressure plate and check for obstructions.

4 Replace pressure plate.

5 Check paper feed motor connection. If connected, replace paper feed motor.

6 Check operation of mechanical assembly. If damaged, replace mechanical assembly.

7 Reseat logic board connectors. Replace logic board.

Print Quality

Missing dots

1 Perform "Fiber Track Cleaning" in Additional Procedures.
2 Perform "Print Head Cleaning" in Additional Procedures.
3 Make sure ink cartridges are set firmly.
4 Use only specified paper, envelopes, transparencies, and backprint film.
5 Replace ink cartridge. See Additional Procedures chapter.
6 Reseat logic board connectors. Replace logic board.

Carriage moves but printer doesn't print

1 Be sure tape is removed from ink cartridges.
2 Perform "Print Head Cleaning" in Additional Procedures.
3 Replace ink cartridge. See Additional Procedures.
4 Reseat logic board connectors. Replace logic board.
5 Replace mechanical assembly.

Incomplete print

1 Use only specified paper, envelopes, transparencies, and backprint film.
2 Perform "Print Head Cleaning" in Additional Procedures.
3 Check that carriage clears clutch actuator. See "Fixing Carriage Stalls" in Additional Procedures.
4 Replace ink cartridge. See Additional Procedures.
5 Reseat logic board connectors. Replace logic board.
6 Replace mechanical assembly.

Blurring or fuzzy printing

1 Use only specified paper, envelopes, transparencies, and backprint film.
2 Remove and reseat interface cable.
3 Perform "Fiber Track Cleaning" in Additional Procedures.
4 Perform "Print Head Cleaning" in Additional Procedures.
5 Replace ink cartridge. See Additional Procedures.
6 Reseat logic board connectors. Replace logic board.
7 Replace purge unit.
8 Replace mechanical assembly.

Underlines or streaks	1	Use only specified paper, envelopes, transparencies, and backprint film.
	2	Perform "Fiber Track Cleaning" in Additional Procedures.
	3	Perform "Print Head Cleaning" in Additional Procedures.
	4	Replace ink cartridge. See Additional Procedures.
	5	Reseat all connectors.
	6	Replace logic board.
	7	Check operation of mechanical assembly. If damaged, replace mechanical assembly.

Prints wrong color	1	Perform "Print Head Cleaning" in Additional Procedures.
	2	Replace ink cartridge. See Additional Procedures.
	3	Reseat all connections.
	4	Replace logic board.
	5	Replace mechanical assembly.

Fails Printer Tests

1 Use only specified paper, envelopes, transparencies, and backprint film.
2 Perform "Fiber Track Cleaning" in Additional Procedures.
3 Perform "Print Head Cleaning" in Additional Procedures.
4 Replace ink cartridge. See Additional Procedures.
5 Reseat all connectors.
6 Replace logic board.
7 Check operation of mechanical assembly. If damaged, replace mechanical assembly.

LEDs

Power and Resume
lights off

1 Check power connections and power source.
2 Recycle power to printer.
3 Replace power cord.
4 Replace power adapter and retest.
5 Reseat logic board connectors. Replace logic board.

Power and Resume
lights blinking in
unison, printer
won't print

1 Verify printer has paper and ink cartridges.
2 Make sure ink cartridges are properly seated.
3 Check for carriage stall. Refer to Additional Procedures.
4 Check for paper jam. Refer to Additional Procedures.
5 Reseat logic board connectors. Replace logic board.
6 Check that paper out actuator properly contacts sensor
   board. If not, replace actuator.
7 If paper-out actuator is properly positioned, replace sensor
   board.

Power and Resume
lights flashing
alternately, printer
won't print

1 Close top cover.
2 Check printer connections.
3 Verify proper printer driver and printer port are selected.
4 Perform printer self tests. Refer to "Printer Tests" in
   Additional Procedures.
5 Send another file.
6 Replace printer cable.
7 Check for carriage stall. Refer to Additional Procedures.
8 Check for paper jam. Refer to Additional Procedures.
9 Reseat logic board connectors. Replace logic board.
10 Replace mechanical assembly.
11 Verify that paper-out actuator contacts sensor board. If not,
   replace actuator.
12 If actuator contacts board, replace sensor board.

Power and Resume
lights on steady,
printer won't print

1 Try recycling power to printer.
2 Reseat logic board connectors. Replace logic board.
3 Replace mechanical assembly.

Power light on but
Resume light
flashing, printer
won't print

1 Install media. Make sure media is not buckled in IN tray and
   paper length and width adjusters are firmly against media
   stack.
2 Check for paper jam. See Additional Procedures.
3 Install ink cartridge or replace empty ink cartridge. Make
   sure ink cartridge snaps into place and cover is closed. Refer
   to Additional Procedures.
4 Reseat ink cartridge.
5 Press Resume button. Page should print and eject to OUT tray.

Additional Procedures

Color StyleWriter 4000 Series
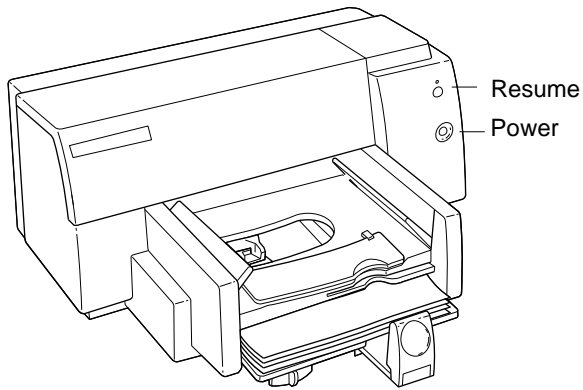
Figure: Power and Resume Buttons

Printer Tests

Self Test

Follow these steps to print the self test sample page.

1   With the printer on, press the Resume button until the printer begins printing.

2   Release the Resume button.

The printer will print one copy of the self test sample page (see the following pages).

Color StyleWriter 4100

The Color StyleWriter 4100 self test sample page is shown at left.

The Color StyleWriter 4500
self test sample page is
shown at left.
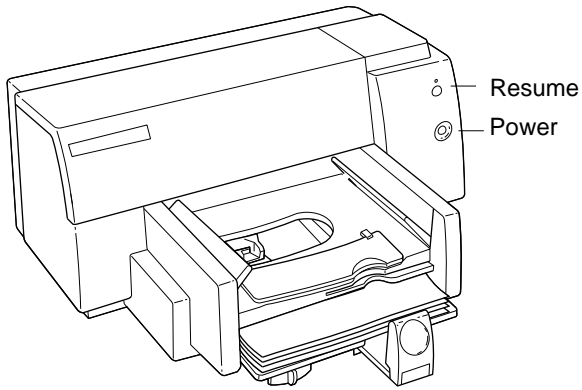
Figure: Power and Resume Buttons

Continuous Print Self Test

To print the sample page continuously:

1   With the printer on, press and hold the Power button.

2   Press the Resume button 10 times.

3   Release the Power button.

Note: To stop the continuous printing test you must unplug the printer.
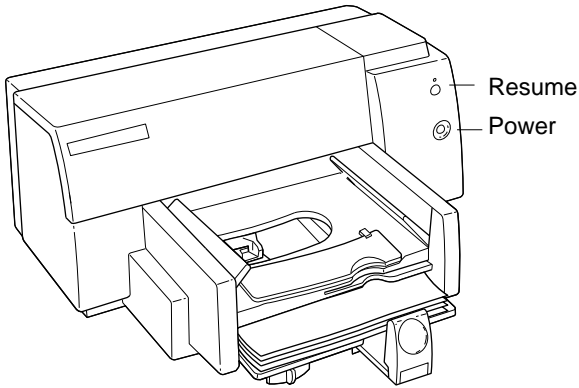
Figure: Power and Resume Buttons

Diagnostic Test

To print the diagnostic self-test:

1 With the printer on, press and hold the Power button.

2 Press the Resume button 5 times.

3 Release the Power button.

The printer will print out the diagnostic self-test page shown on the next page.

| = A   ⬅   Diagnostic Test   B =
Print Skew Test upper

Nozzle
Pattern

```
Pen    Right: M photo
       Left:  R color
Model Name:    Color StyleWriter 4500
Model Number:  C5881A3647
Revision: 1.0
Date: 1996/11/27 01:16:39
Pen state:     TA:24.69 KR:40 CR:73 KO:60 CO:60 KP:28 CP:38
Status:        OK
I/O:           RS-422-A High-speed serial
```

Print Skew Test lower

| | = C   ⬅   ===============   D =

Figure: Diagnostic Self-Test Page

Interpreting the Diagnostic Test

All interpretations refer to the Diagnostic Self-Test Page shown on the preceding page.

Nozzle Patterns

The black and colored diagonal test patterns verify that all dots on each cartridge are firing. If dots are missing, refer to "Symptom Charts/Print Quality" in Troubleshooting.

Print Cartridge Identification

 The letters identifies the cartridge type (K=black; C=color).

Model Name

The model name indicates the model of the printer, such as the Color StyleWriter 4500.

Model Number

Model number provides the part number of the printer.

Revision

Revision notes the firmware version installed.

Date

Date contains the date and time that the firmware was installed.

Pen State

Pen State is used after calibrating the printer. Refer to "Calibration" later in this chapter for interpretation.

Status

Status indicates the printer's status and any failures.

I/O

I/O identifies I/O serial type RS-422A for Macintosh.

Print Skew Test

The Print Skew test measures the print margins to ensure that paper moves through the printer properly and printing does not appear tilted. To test for print skew:

1 Print the Diagnostic Self-Test page.

2 Fold the top edge of the page down towards the bottom, aligning the left edge of the paper without creasing the paper.
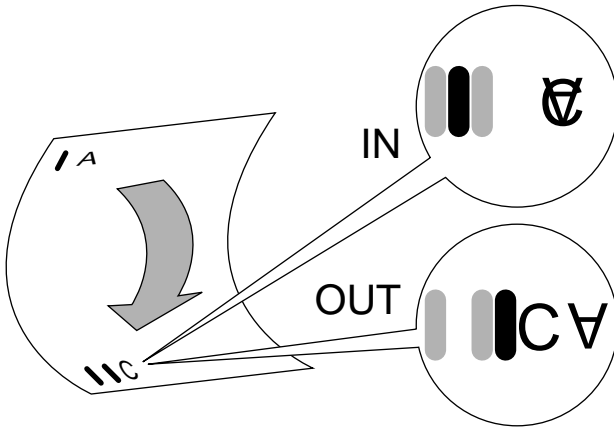
Figure: Print Scew Test Page
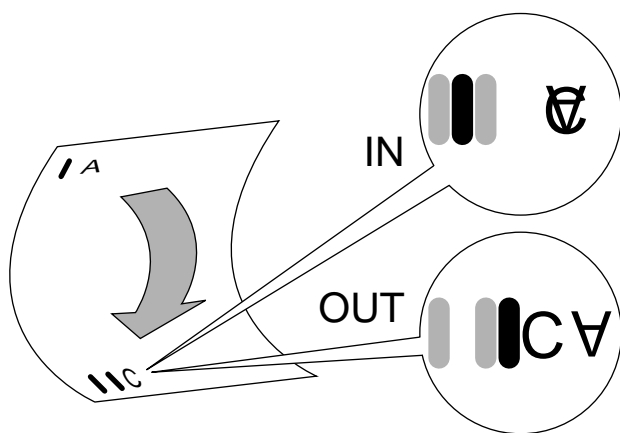
3 Note where the vertical line left of the A falls in relation to the two vertical lines to the left of the C.
  - If the single vertical line falls between the two vertical lines, the print skew is within product specification.
  - If these lines do not match up, print skew is out of specification. See "Print Skew" in Troubleshooting.

Extended Diagnostic Test

To print the Extended Diagnostic Test page:

1   With the printer on, press and hold the Power button.

2   Press the Resume button 12 times.

3   Release the Power button.

The printer will print out the Extended Diagnostic Test page shown on the next page.
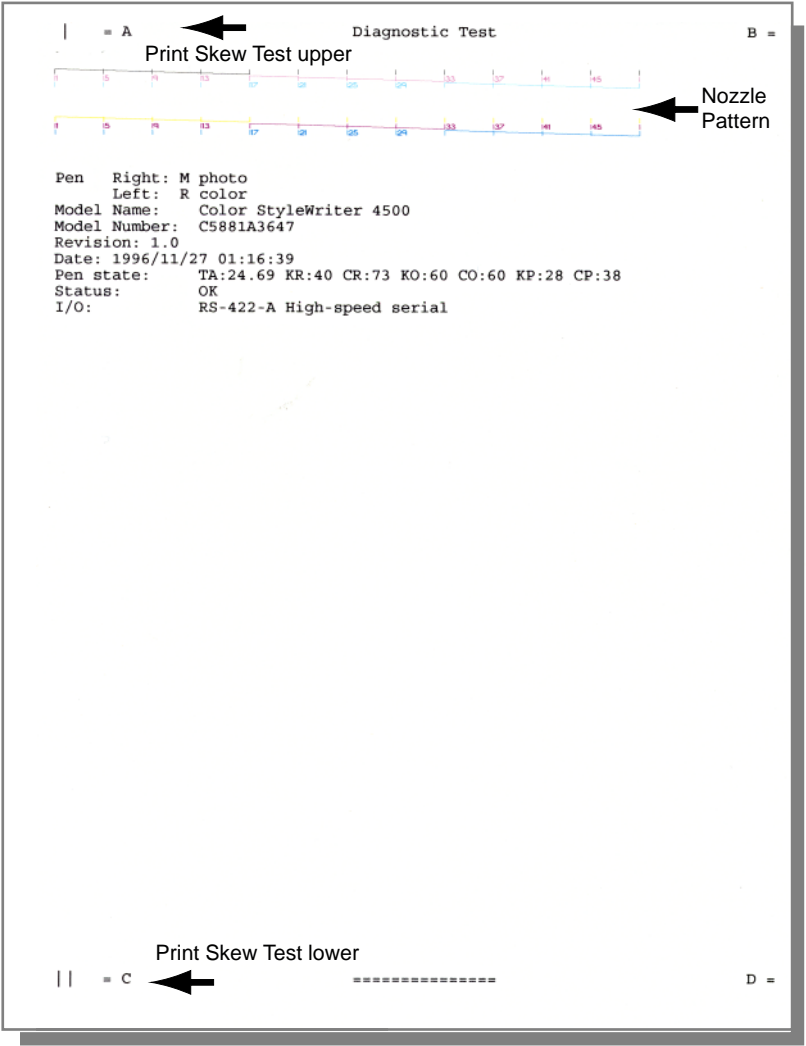
| = A   Extended Diagnostic Test   B =

 Nozzle Pattern

```
Pen    Right: M photo
       Left:  R color
Model Name:     Color StyleWriter 4500
Model Number:   C5881A3647
Revision: 1.0
Date: 1996/11/27 01:16:39
Pen state:      Ok
Status:         OK
I/O:            RS-422-A High-speed serial

PVT:            status: 8   pad: 1
Flash:          no
0x 0-0x13: 20 c4 14  0  0  0  0  0  0  3  0  0  0 ff  0  0  5  0  1 55
0x14-0x27:  0  0  0 14  0  0 ff ff ff ff d6 e2  0  0  0  4  0  0  4 b0
0x28-0x3b: 17 43 6f 6c 6f 72 20 53 74 79 6c 65 57 72 69 74 65 72 20 34
0x3c-0x4f: 35 30 30 20  0 ff ff ff ff ff ff ff ff 14 43 6f 6c 6f 72 53
0x50-0x63: 74 79 6c 65 57 72 69 74 65 72 34 30 30 30  0 ff ff ff ff ff
0x64-0x77: ff ff ff ff ff ff ff ff 18  0  0  5  a  3  1  6 ff ff ff ff
0x78-0x8b:  6 7a  0 20  0 20  0 20  a  6  0  0  7 d0  0  f 42 40  0  f
0x8c-0x9f: 42 40  3  a 3c  2  5 dc  1  1 ff ff ff ff ff ff c3 50  1 f5
0xa0-0xb3:  0 67  1 81  2 f9 ff ff ff ff ff ff ff ff  0 32 f9  c fb 68
0xb4-0xc7:  8 34  4 e2  2 f4  b 36  1 2c 18  1 62 ff  2 18 18 70 a2 6c
0xc8-0xdb: 81  0  0 ea 60 ff 30  5 b4  3 42 1c fc 1c b6  0  0 24 52  1
0xdc-0xef: b1  1 54 ac fe b6 fc 4a  b 36 b2  3 1e  3  0 a5  0  0  0  0
0xf0-0xff:  0 ff 40  0  1 a5 46  c  0  3 ff  0  0  0  0  0
NVM Revision: 5.0
```
NMV

|| = C   ================   D =

Figure: Extended Diagnostic Test Page

Print Head Cleaning

Use the following cleaning procedure to correct blurred characters, horizontal white streaks, and missing dots. No preliminary steps are required.

Caution: Do not get the printer's ink on your hands or clothes. Although the ink is water soluble, it contains dyes that will stain.

Note: Cleaning the print head sprays quantities of ink. Do this procedure sparingly if you wish to conserve ink.

Resume

Power

Cleaning Procedure

Follow these steps to clean the print head.

1 With the printer on, press and hold the Power button.

2 Press the Resume button 7 times.

3 Release the Power button.

The printer cleans the print head and prints a test page in the process.
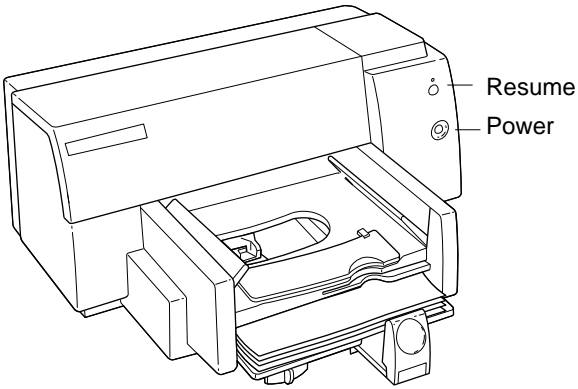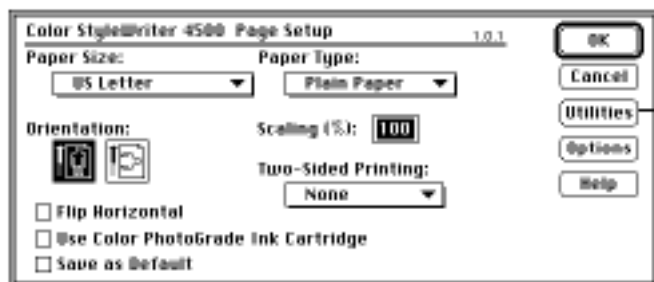
Alternatively, you may also clean the print cartridges as follows:

Color StyleWriter 4500 Page Setup   1.0.1

Paper Size: Paper Type:
US Letter   Plain Paper

Orientation: Scaling (%): 100
                               Two-Sided Printing:
                               None

☐ Flip Horizontal
☐ Use Color PhotoGrade Ink Cartridge
☐ Save as Default

OK
Cancel
Utilities ——— Click Utilities
Options
Help

1 Select Page Setup from any document, or select File/Print Window from the Finder, and click Utilities.

Color StyleWriter 4500 Utilities   1.0.1

Clean Print Cartridge: Start ┐
Align Print Cartridges: Start │

OK
Cancel
Help

Click Start

2 From the Utilities window, find Clean Print Cartridges and click Start.
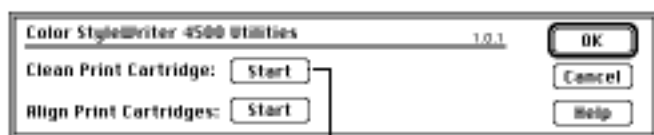
◀ |||| ▶

Verifying the Cleaning Procedure

The cleaning procedure produces a print-out like the one shown on the next page. This print-out consists of three parts:

- Set of two groups of diagonal lines (black and colored) at the top of the page.
- Bands of black and color in the middle of the page.
- Set two groups of diagonal lines (black and colored) at the bottom of the page.
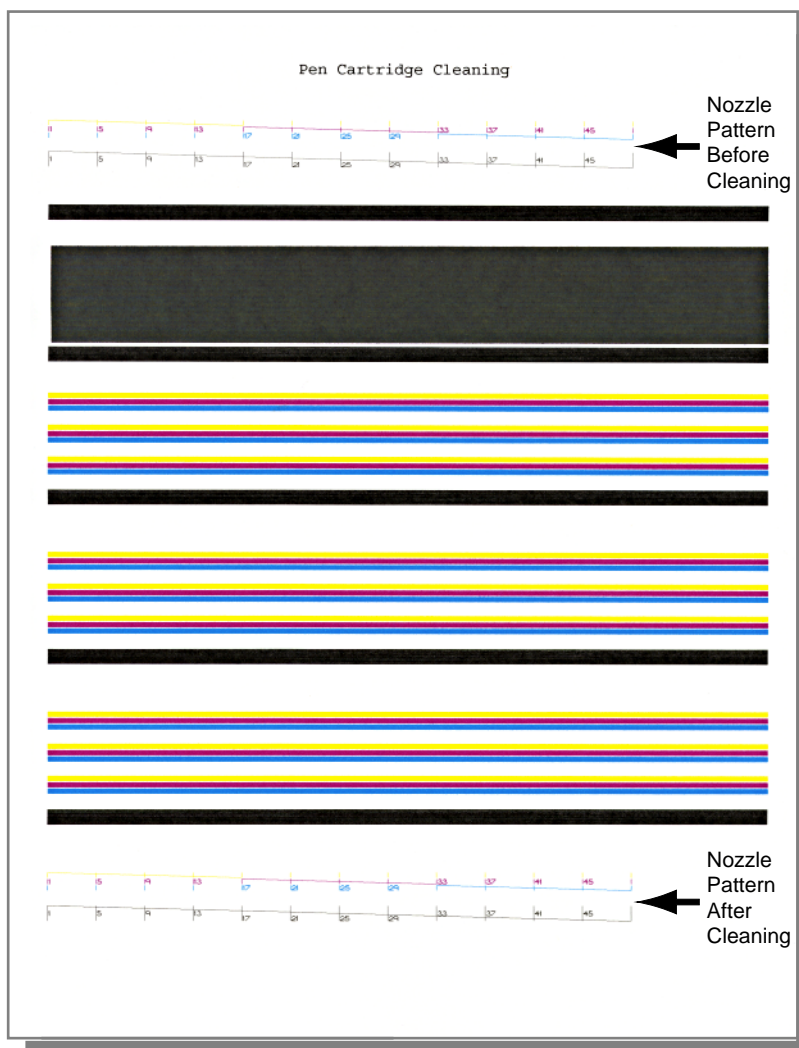
Figure: Print-out After Cleaning Print Heads

Use this information to verify whether the cleaning procedure was successful:

1   Inspect the two diagonal lines (black and colored) at the top of the page.
     • If you see a gap in a line, one or more dots are clogged in the ink cartridge that produced the line.

2   Inspect the bottom group of lines for gaps.
     • If the gap present in the top group of lines is not repeated in the bottom group of lines, the cleaning routine was successful.
     • If the gap remains in the bottom group of lines, repeat the cleaning routine. If the problem persists after repeating the cleaning procedure three times, replace the cartridges.

Fiber Track Cleaning

Small fibers can attach themselves to ink residue on the carriage unit or ink cartridge and drag through the wet ink on the page, causing fine streaks of ink or print smear. These streaks are called "fiber tracks."

To clean ink and debris from around the ink cartridge nozzle plate and the carriage unit, perform the following steps.

1 Remove the ink cartridges. Refer to "Replacing Ink Cartridges" later in this chapter.

   Caution: Do not leave the ink cartridges uncapped for more than 8 minutes, or the nozzles may clog.
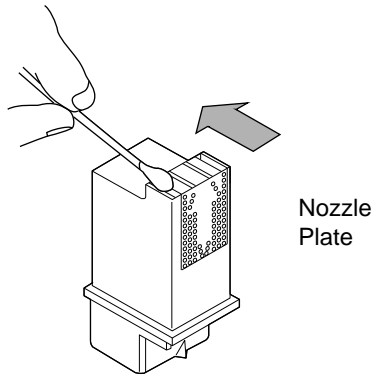
2   Inspect the print head of
    each ink cartridge for
    ink and debris buildup.

3   If there is noticeable
    ink buildup or even a
    single fiber, clean each
    nozzle with a moistened
    foam rubber swab.

    Note: Do not wipe across
    or toward the nozzle
    plate.

    Note: Use distilled water
    and a clean foam rubber
    swab (or a clean, lint-
    free cloth) to clean the
    print head nozzles.

Nozzle
Plate
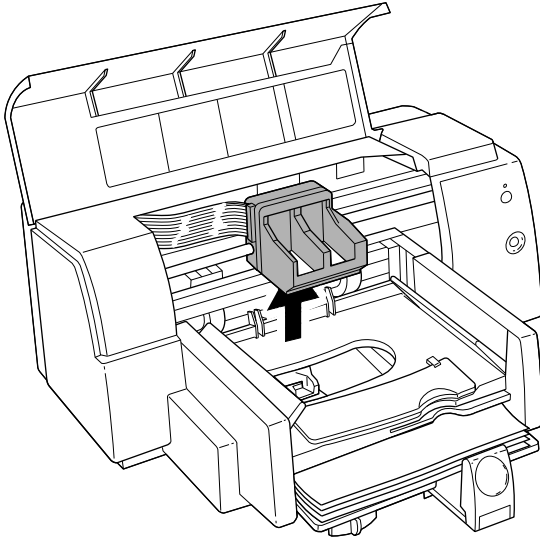
4   Inspect the underside of the ink cartridge cradle for build-up.

5   If there is noticeable build-up of ink or a single fiber, wipe each black hook-shaped arm with a clean, moistened foam rubber swab.

6   Reinstall the ink cartridges and plug the power cord back into the printer.

7   Print a self-test page to verify that the problem has been eliminated.

◀■▶

Replacing Ink Cartridges

Note: Replacement ink cartridges do not have an Apple logo or Apple part number. To identify the correct replacement cartridge you must cross-reference a small numeric part number on the label to the Apple marketing number. Refer to "Identifying Replacement Ink Cartridges" in Basics.

Caution: Each ink cartridge contains a print head that sprays the ink onto the paper. Treat the print head gently so you don't damage its tiny nozzles.

Caution: The carrier holds the ink cartridges and moves them back and forth when you are printing a document. Don't slide the carrier by hand or you will damage the printer.

1   Turn on the printer, and open the access door. The carriage moves to the center of the printer.
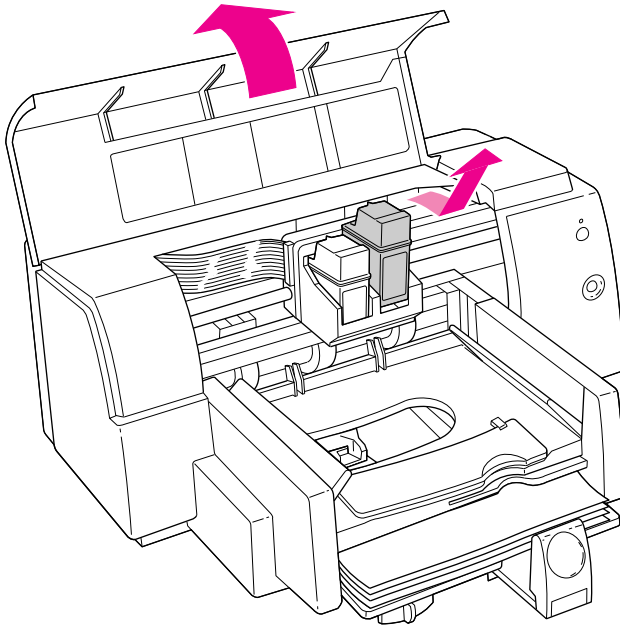
2   With the carriage in the
    center position, unplug
    the power cord at the
    printer and remove the
    ink cartridges.
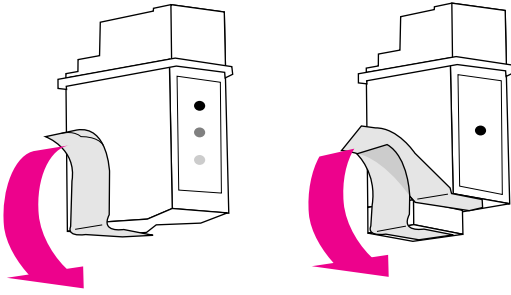
3   Grasp each cartridge by
    its sides and carefully
    remove the tape from the
    cartridge's print head.
    Make sure you remove
    the tape from both
    cartridges.

    Note: You may safely
    touch the colorful caps
    or the black plastic, but
    be careful not to touch
    any other part.

Color Ink
Cartridge

Black Ink
Cartridge
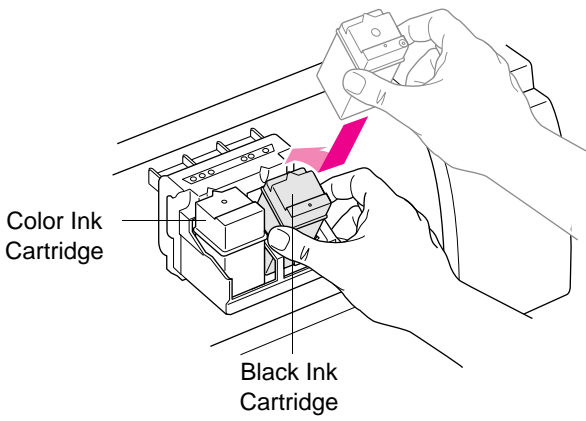
4　Slide the color and black
　ink cartridges down into
　the carrier, and press
　them into place. Press
　until you hear a snap and
　the cartridge fits snugly
　into the carrier.

　Note: The ink cartridges
　should be difficult to
　remove. If a cartridge
　feels loose, it is not
　seated properly.
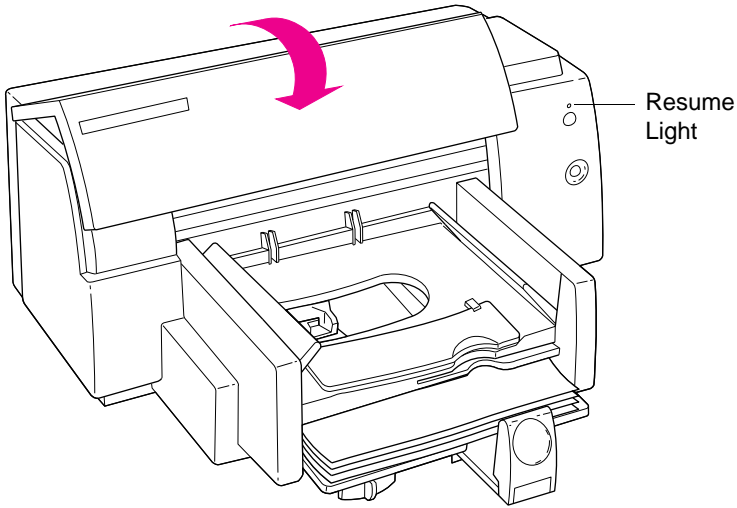
Resume
Light

5   Plug in the power cord
     and close the printer
     cover. You should hear
     the carrier move to the
     right.

     Note: If the resume light
     blinks after you close
     the cover, the ink
     cartridges are not
     installed properly. Turn
     the printer off and
     reseat the ink
     cartridges.

Aligning the Ink Cartridges

Whenever you install a new ink cartridge, follow the steps below to align the cartridges.

1   Make sure there is plain paper in the paper tray and the printer is on.

    Note: If the resume light blinks, the ink cartridges are not installed properly. Refer to "Replacing Ink Cartridges" for additional information.

2   Select Page Setup from the File menu.
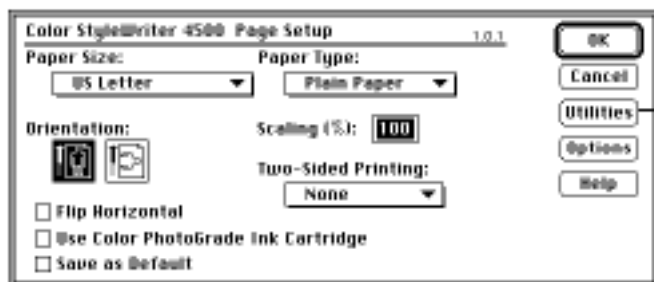
3 In the Page Setup dialog
   box, click Utilities.

4 In the Utilities dialog
   box, find Align Print
   Cartridges and click
   Start.

Color StyleWriter 4500 Page Setup   1.0.1

Paper Size: Paper Type:
[US Letter   ▼]   [Plain Paper   ▼]

Orientation: Scaling (%): [100]

                             Two-Sided Printing:
                             [None   ▼]

☐ Flip Horizontal
☐ Use Color PhotoGrade Ink Cartridge
☐ Save as Default

[OK]
[Cancel]
[Utilities] —— Click Utilities
[Options]
[Help]

Color StyleWriter 4500 Utilities   1.0.1

Clean Print Cartridge: [Start]

Align Print Cartridges: [Start]

[OK]
[Cancel]
[Help]

Click Start

The following process aligns the patterns of ink placed on the page by both print cartridges.

We recommend that you align the cartridges each time either cartridge is replaced.

Cancel   Align

Click Align

5   Read the message that appears, and click Align. Clicking Align produces a print-out like the one shown on the next page.
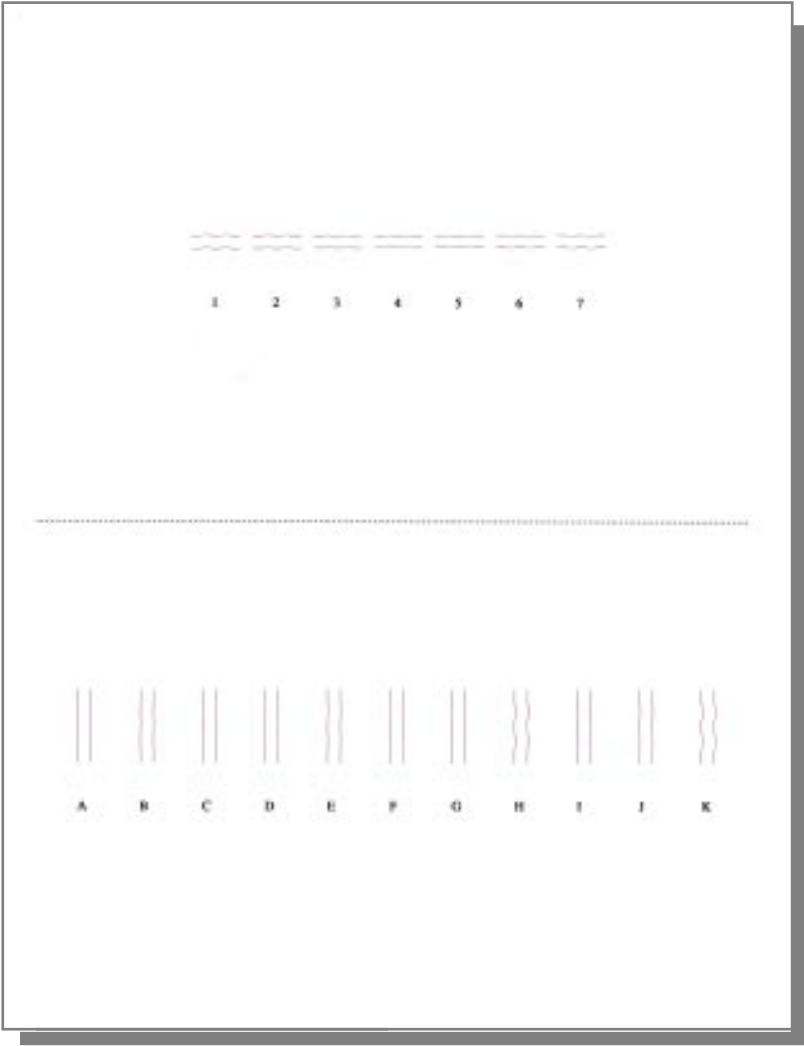
Figure: Ink Cartridge Alignment Page

6   Examine the patterns that appear on the print-out. From the sets of parallel lines, select the horizontal set and the verticle set for which the black and magenta lines are most closely aligned.

Note: If you cannot see black lines, make sure you have removed the tape from the black ink cartridge. If you cannot see magenta lines, make sure the tape is removed from the color cartridge.

Your printer has printed two sets of alignment
patterns. Look at each pattern carefully.
Choose the best aligned pattern, for each set,
then select the corresponding buttons below.

[OK]

○1 ○2 ○3 ○4 ○5 ○6 ●7 ○8 ○9 ○10 ○11

○A ○B ●C ○D ○E ○F ○G ○H ○I ○J ○K
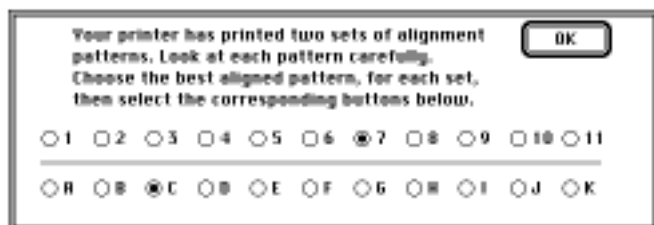
7   In the dialog window
    shown at left, click the
    number and letter
    corresponding to the best
    aligned sets of black and
    magenta parallel lines,
    and then click OK.

    The printer produces
    another print-out like
    the one shown on the
    next page. Use this
    print-out to verify that
    the alignment is
    acceptable.
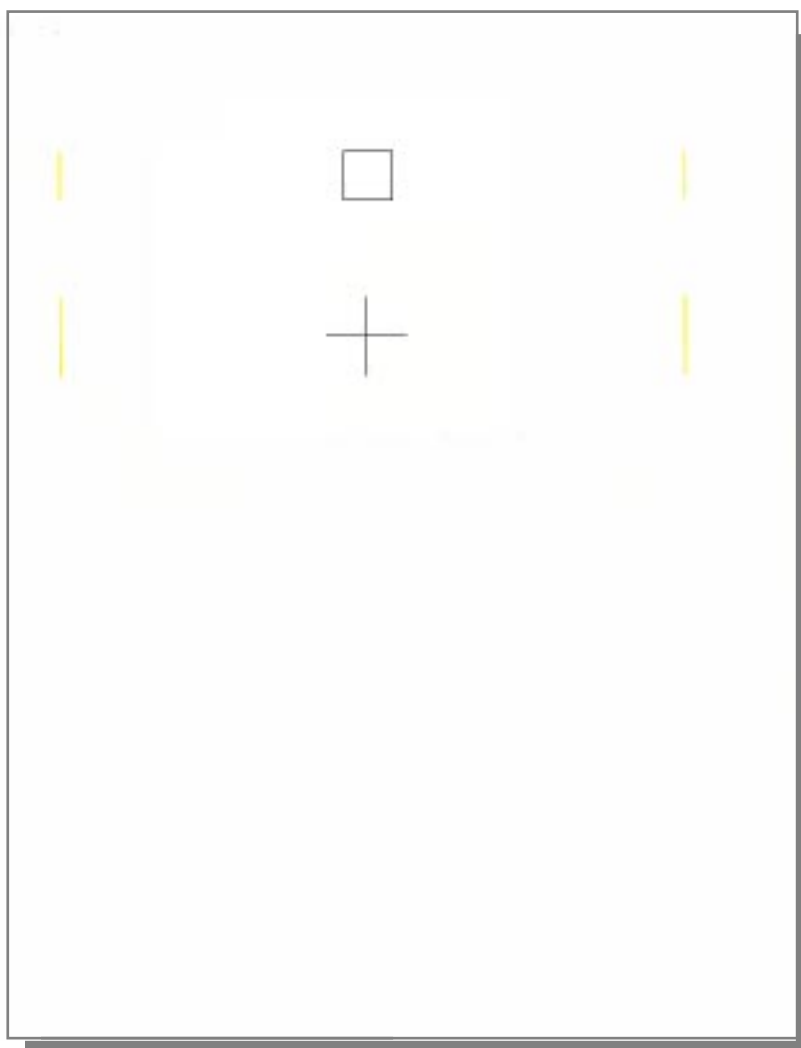
Figure: Ink Cartridge Post-Alignment Page

The alignment procedure is complete. Your printer has printed a square and cross pattern.

Examine each pattern to ensure that all black and magenta segments line up. If they do not, run the alignment process again.

[Align]   [OK]

8   If the pattern on the second printed page is acceptable, click OK in the dialog window shown at left. If the pattern is not acceptable, click Align to repeat the alignment procedure.

Banner Calibration

After replacing the logic board or mechanical assembly you must re-calibrate the Color StyleWriter 4500 banner printing. **Note:** Only the 4500 has banner printing.

Important: Performing this calibration requires using the Color StyleWriter 4500 Banner Calibration utility found on the Companion CD (path: Diagnostic Utilities/Color SW4500 Banner Calibration).

1   Copy the Banner Calibration utility to the computer and make sure the printer is on and connected to the computer's printer port.

2   Set the banner lever to the cut-sheet (left-most) position. The banner lever must be in the cut-sheet position or the paper may be misaligned and banner paper may not be picked.

Color SW4500 Banner Calibration

Port Selection

○ Modem
◉ Printer

Boud Rote

○ 19200
◉ 57600

[Send File]

[Quit]
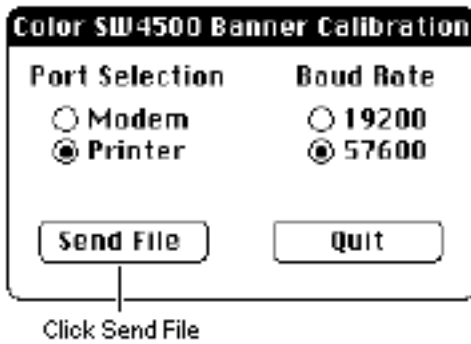
Click Send File

3 Launch the "Color SW4500 Banner Calibration" utility.

4 Select the serial port that is being used by the printer, and click Send File.

5 Wait until the utility completes the calibration routine and prints the slightly modified Diagnostic Test, similar to one shown on the next page.

```
  |      = A                          Diagnostic Test
```

```
Pen    Right:  M photo
       Left:   R color
Model Name:     Color StyleWriter 4500
Model Number:   C5881A3647
Revision: 1.0
Date: 1996/11/27 01:16:39
Pen state:      BUMP:175   FRIC:255
Status:         OK
I/O:            RS-422-A High-speed serial


      Pen State              BUMP Value
```

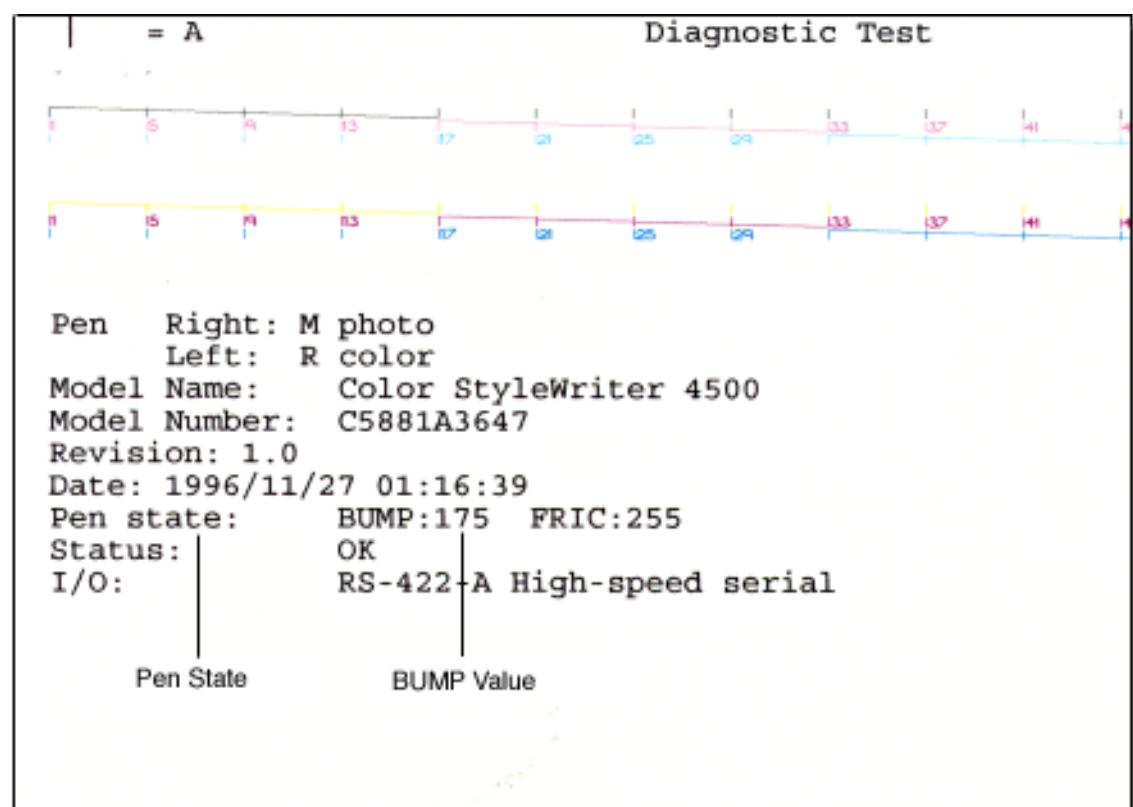**Figure: Banner Calibration Page**

6   Observe the Pen State value on the Diagnostic Test
    printout.

    The Bump value should fall within the range of 140-
    230.
    • If the number is less than 140, verify that the
      banner lever is positioned all the way to the left.
    • If the number is greater than 230, verify that the
      pivot assembly is installed correctly in the printer.

Clearing Paper Jams

The paper jam error state occurs if the printer detects paper at the platen after attempting to eject paper to the OUT tray. The Power and Resume lights alternately blink to indicate this condition.

Note: The Power and Resume lights alternately blink to indicate other error conditions, such as a carriage stall. Make sure this condition is caused by a paper jam.

Caution: Clear paper jams by feeding paper through the paper path; do NOT pull paper out by force. Doing so could damage the printer.
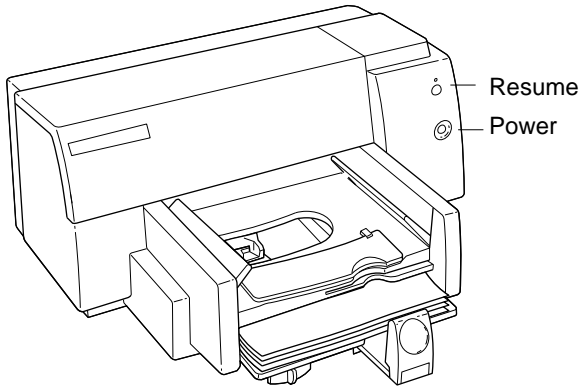
Follow these stpes to clear a paper jam:

1   With the printer on, open the access door and press the Resume button repeatedly. This causes the drive rollers to move the paper forward, one line at a time.

2   When you have removed the paper, close the access door to print.

Resume

Power

Fixing Carriage Stalls

The carriage stalls error state occurs if the printer detects a problem with the carriage movement. The Power and Resume lights alternately blink to indicate this condition.

Note: The Power and Resume lights alternately blink to indicate other error conditions, such as a paper jam. Make sure this condition is not caused by a paper jam or another data communications error.

Try these steps to fix a carriage stall:

1   With the printer off, open the access door and inspect the carriage path for any obstructions that might interfere with carriage movement. If the carriage is not locked in the home position, try sliding it across the carriage rod.

Carriage
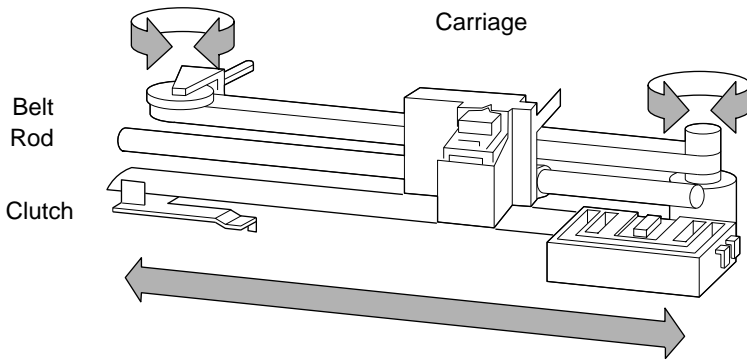
Belt
Rod

Clutch

2   Check that the white
    plastic clutch actuator is
    not interfering with
    carriage movement.

3   Inspect the carriage belt.
    If damaged, replace it.

4   Inspect the carriage
    assembly, service
    station, and carriage rod.
    If any of these
    mechanism components
    appears damaged,
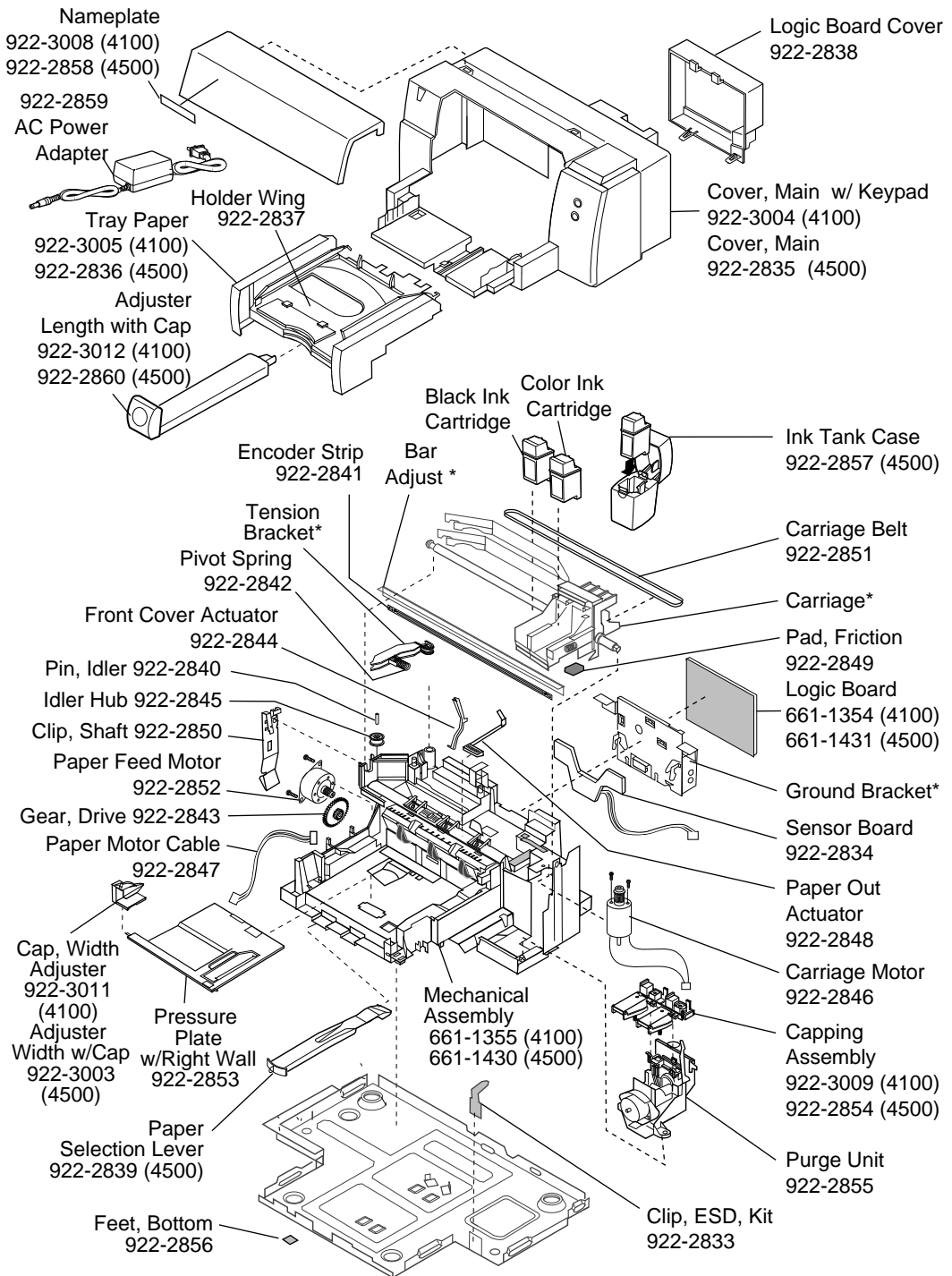   replace it.

Exploded View

Color StyleWriter 4000 Series

Nameplate
922-3008 (4100)
922-2858 (4500)

922-2859
AC Power
Adapter

Logic Board Cover
922-2838

Holder Wing
922-2837

Tray Paper
922-3005 (4100)
922-2836 (4500)

Cover, Main w/ Keypad
922-3004 (4100)
Cover, Main
922-2835 (4500)

Adjuster
Length with Cap
922-3012 (4100)
922-2860 (4500)

Black Ink
Cartridge

Color Ink
Cartridge

Encoder Strip
922-2841

Bar
Adjust *

Ink Tank Case
922-2857 (4500)

Tension
Bracket*

Pivot Spring
922-2842

Carriage Belt
922-2851

Front Cover Actuator
922-2844

Carriage*

Pin, Idler 922-2840

Pad, Friction
922-2849

Idler Hub 922-2845

Logic Board
661-1354 (4100)
661-1431 (4500)

Clip, Shaft 922-2850

Paper Feed Motor
922-2852

Ground Bracket*

Gear, Drive 922-2843

Sensor Board
922-2834

Paper Motor Cable
922-2847

Paper Out
Actuator
922-2848

Cap, Width
Adjuster
922-3011
(4100)
Adjuster
Width w/Cap
922-3003
(4100)

Carriage Motor
922-2846

Pressure
Plate
w/Right Wall
922-2853

Mechanical
Assembly
661-1355 (4100)
661-1430 (4500)

Capping
Assembly
922-3009 (4100)
922-2854 (4500)

Paper
Selection Lever
922-2839 (4500)

Purge Unit
922-2855

Feet, Bottom
922-2856

Clip, ESD, Kit
922-2833

* Part of Mechanical Assembly