



Field Repair Guide

Stylus Pro 10000

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Field Repair Guide

Sensors, Motors, Fans, Solenoids

Sensors	Corresponding Device Name:
Home Position Sensors:	<ol style="list-style-type: none"> 1. Sub Tank Valve HP Sensor 2. Cap HP Sensor 3. Shutter Box HP Sensor 4. Carriage HP Sensor 5. Gap HP Sensor
Ink Sensors:	<ol style="list-style-type: none"> 1. Ink Cartridge Sensors (CSIC x6) 2. Sub Tank Sensors (3 position sensors – Near Empty, Full, Over Full) 3. Air Pressure Sensor 4. Ink Detection Sensor (Laser Detection for Nozzles)
Encoders:	<ol style="list-style-type: none"> 1. Carriage Encoder 2. Paper Feed Encoder
Paper Sensors:	<ol style="list-style-type: none"> 1. Paper Release Sensor 2. Rear Sensor 3. Front Sensor 4. Edge Sensor 5. Paper Thickness Sensor
Cover Sensors:	<ol style="list-style-type: none"> 1. Front Cover Sensor (x2) 2. Ink Cartridge Cover Sensor
Temperature Sensors:	<ol style="list-style-type: none"> 1. Head Temperature Sensor 2. Head Drive Temperature Sensor (3, one on each heat sink)

Motors, Fans, or Solenoids	
Motors	<ol style="list-style-type: none"> 1. Shutter Motor 2. Head Gap (Slide) Motor 3. Air Pump Motor (also closes sub tank valve) 4. Pump Motor 5. Cap Motor (retracts cap, moves wipers, and unlocks head) 6. Paper Feed Motor 7. Carriage Motor
Solenoids	<ol style="list-style-type: none"> 1. Ink Cartridge Solenoid (6, one for each color) 2. Paper Release Lever Locking Solenoid 3. Air Pressure Release Solenoid 4. Cutter Blade Solenoid
Fans	<ol style="list-style-type: none"> 1. Power Supply Fans (2 fans) 2. Driver Heat Sink Fans (3, one on each head sink) 3. Right Flushing Box / Nozzle Check Fan 4. Paper Suction Fans (3 fans)

Field Repair Guide

Stylus Pro 10000 Operational Sequences

Technician Tech Tips:

- 1) The following operational sequences described here represent one Firmware version. Subsequent Firmware revisions may alter the sequences.
- 2) Compare the printers operation to the following sequences.

Technician Action	What You Should See	
1. Turn on power with no paper loaded with the Paper Release Lever in the "Secured" position.	<p>(Note: the following sequence and the sequence to the right, occur simultaneously. Any failure of one sequence is reported after completion of both sequences)</p> <ol style="list-style-type: none"> 1. Air valve solenoid closes. 2. Air compressor motors and compressor pressurizes ink cartridges. 3. Air pressure sensor detects 1.1 atmospheres of pressure. 4. Compressor motor turns off. 	<ol style="list-style-type: none"> 1. Cap assembly drops to release print head. 2. Shutter box initializes and finds home position. 3. Paper release solenoid locks in place. 4. Head goes to home position. 5. Platen gap homes. 6. Head moves out from home position. 7. Wiper performs cleaning 2 times. 8. Head moves back to home position. 9. Platen gap homes. 10. Cap assembly moves back to print head. 11. Pump engages and cleans head. 12. Exhaust fan in flushing box turns on. 13. Auto nozzle check is performed. 14. Platen gap is performed once again. 15. Paper release solenoid unlocks 16. Printer goes to paper out condition.



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Technician Action	What You Should See	
Turn on power with paper loaded with the Paper Release Lever in the “Secured” position.	<p>(Note: the following sequence and the sequence to the right, occur simultaneously. Any failure of one sequence is reported after completion of both sequences)</p> <ol style="list-style-type: none"> 1. Air valve solenoid closes. 2. Air compressor motors and compressor pressurizes ink cartridges. 3. Air pressure sensor detects 1.1 atmospheres of pressure. 4. Compressor motor turns off. 	<ol style="list-style-type: none"> 1. Cap assembly drops to release print head. 2. Shutter box initializes and finds home position. 3. Paper release solenoid locks in place. 4. Head goes to home position. 5. Platen gap homes. 6. Head moves out from home position. 7. Wiper performs cleaning 2 times. 8. Head moves back to home position. 9. Platen gap homes. 10. Cap assembly moves back to print head. 11. Pump engages and cleans head. 12. Exhaust fan in flushing box turns on. 13. Auto nozzle check is performed. 14. Platen gap is performed once again. 15. Paper release solenoid unlocks 16. Printer goes to “press pause” (P-Rear sensor working). 17. Paper loads to p-front sensor. 18. Platen gap is performed. 19. Print head comes out to check media width (P-Edge sensor). 20. Print head then checks leading edge (right and left) of media. 21. Platen gap is performed once more. 22. Paper moves to top of form. 23. Printer goes to ready state.

Stylus Pro 10000 Missing Nozzle Diagnosis

Some Missing Nozzles, One or More Colors

Check **Cap Assembly** for mechanical problems

Clean the three individual **Caps**

Puddle the **Cap** and park the **Print Head** for one half an hour

Re-test nozzles

If nozzles are still missing, replace **Print Head**

All Nozzles Missing, One or More Non-Paired Colors (B,DC) (LC,LM) (DM,Y)

Determine the **Waste Ink Tube** that corresponds to the missing color.

Perform a cleaning cycle.

Compare the **Waste Ink Tube** that relates to the missing color against the other two tubes. There should be equal volume on all three tubes.

Determine whether the **Ink Cartridge Solenoid** that corresponds to the missing color activates to refill the sub tank on the **Print Head**. (It may take up to 4 cleaning cycles to activate a solenoid.)

- If the ink flow is lower than the other tubes, and the related solenoid does not activate.
- Replace the **Print Head**
- If the ink flow is equal on all three tubes, and the related solenoid does activate.
- Replace the **Driver Board**

All Nozzles of One or More Color Pair(s) Missing (B,DC) (LC,LM) (DM,Y)

Determine the **Waste Ink Tube** that corresponds to the missing colors.

Perform a cleaning cycle.

Compare the **Waste Ink Tubes** that relate to the missing colors against the other two tubes. There should be equal volume on all three tubes.

Determine whether the **Ink Cartridge Solenoids** that correspond to the missing colors activates to refill the sub tanks on the **Print Head**. (It may take up to 4 cleaning cycles to activate a solenoid.)

- If the ink flow is substantially lower than the other tubes, and the related solenoids do not activate
 1. Replace **Cap Assembly** and check for proper operation
 2. Replace **Print Head** if the **Cap Assembly** does not repair the printer
- If the ink flow is equal on all three tubes, and the related solenoids activate
- Replace the **Driver Board**



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All Nozzle Pairs Missing

Perform a cleaning cycle.

Determine whether the **Waste Ink Tubes** are passing ink. There should be and substantial volume on all three tubes.

Determine whether all six **Ink Cartridge Solenoids** are activating to refill the sub tanks on the **Print Head**. (It may take up to 4 cleaning cycles to activate a solenoid.)

- **If the ink flow is substantially lower than the other tubes, and the related solenoids do not activate**
 1. **Replace Cap Assembly and check for proper operation**
 2. **Replace Print Head if the Cap Assembly does not repair the printer**
- **If there is substantial ink flow on all three tubes, and the related solenoids activate**
- **Replace the Driver Board**



1.2 Preparation

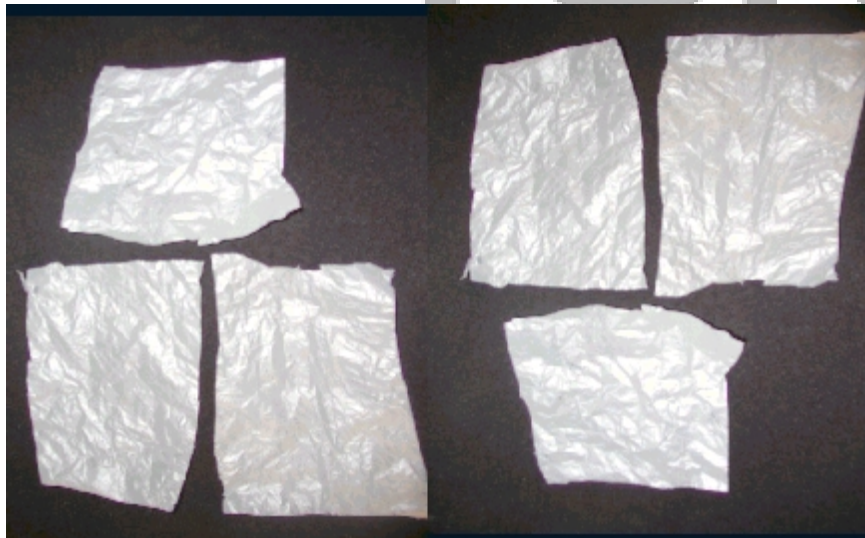


Before starting, turn off the printer and disconnect the power cord.

To access the printhead, remove the following parts in the order as listed:

1. Remove the control panel.
2. Remove the top cover.
3. Remove the right side cover.
4. Remove the left side cover.

You'll also need to cut a plastic grocery bag into into 6 small sections, approximately 3 × 3 inches, as shown below. These will be used to cover the ink tubes.

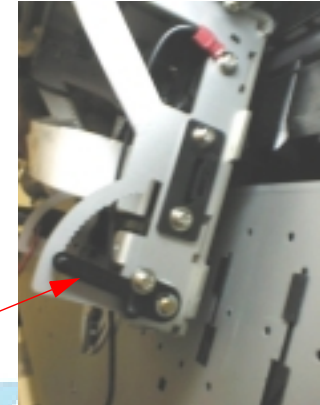


1.3 Removing the Printhead

Follow the steps in this section to remove the printhead.



Never move the lever shown below. It is factory-adjusted.

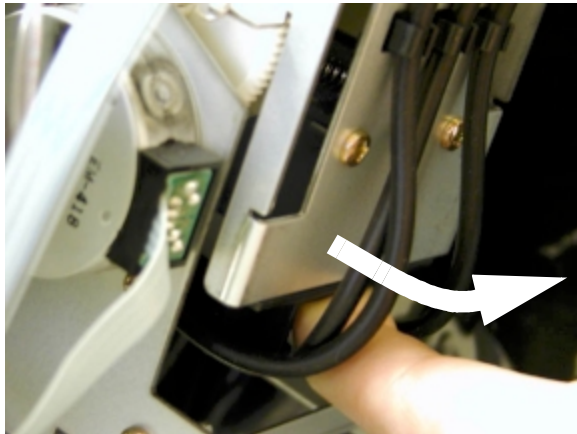


Do not adjust!

1. Pull the printhead cleaning unit straight back, as shown, to release the carriage lock. Then slide the carriage away from home position.

CAUTION

Move the carriage *fully* out of home position before letting go of the lock, or the locking pins will scrape the printhead.



Pull back to release carriage

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2. Remove the carriage cover by removing two (2) screws, as shown.

screw



LEFT SIDE

screw



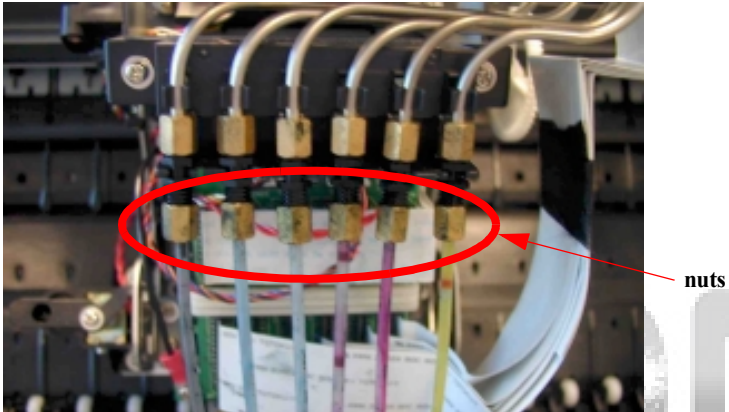
RIGHT SIDE

3. Place a plastic tarp or mat on the floor, under the printer. Also lay paper towels directly under the printhead, and have a plastic-lined trash can ready to catch any spilled ink.

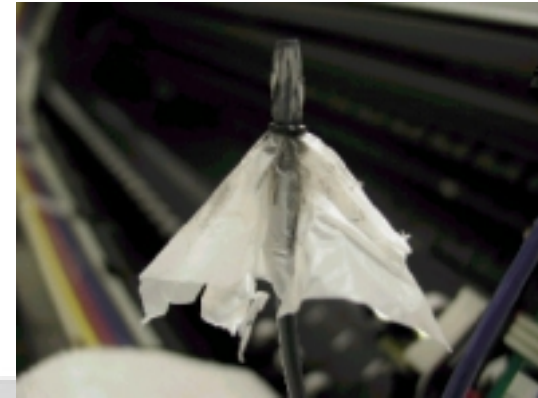


NOTE: Separate each plastic ink tube from its fitting, as described below, and then cover it as described in step 6, before moving on to the next one.

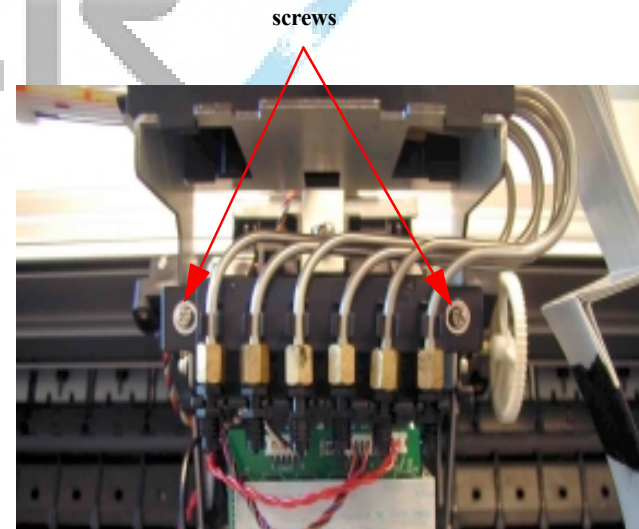
4. Loosen the six nuts shown below, then separate the plastic ink tubes from the metal pipes.



6. Place one of the cut sections of the plastic grocery bag over the end of each ink tube, then slide the O-ring over the end of the tube to secure the plastic in place.



7. Remove two (2) screws, as shown.



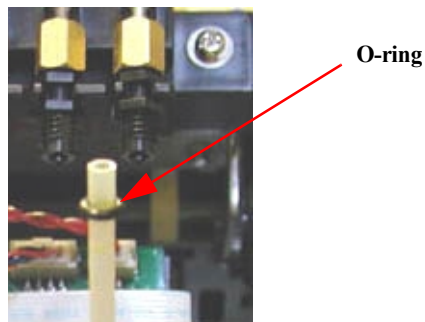
CAUTION



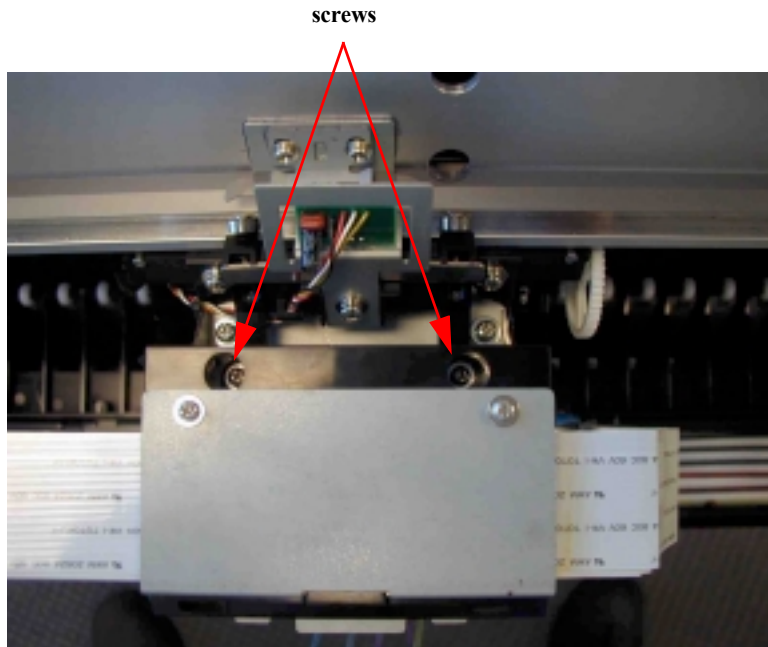
Do not loosen the nuts on the metal pipes.

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5. Slide each of the six O-rings off the plastic ink tubes.



8. Remove two (2) screws securing the plastic bracket, as shown.

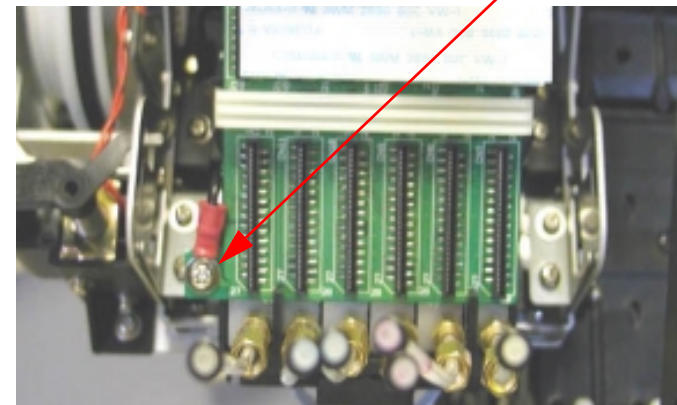


9. Separate the bundle of ink tubes, ribbon cables, and metal pipes from the carriage, and set them aside.

10. Disconnect all six (6) printhead cables shown below.



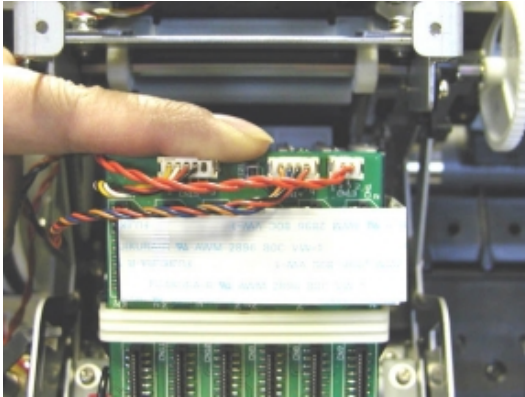
11. Disconnect the grounding strap shown below. Note that the screw is fastened with a nut in back.



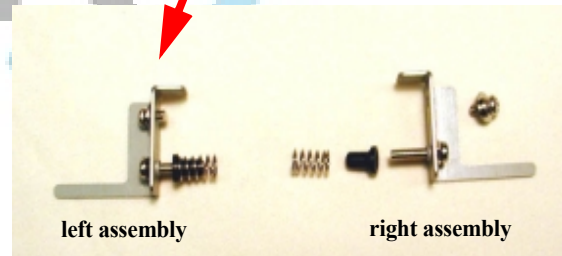
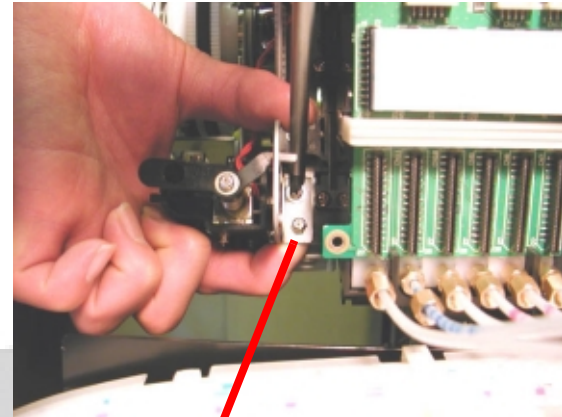
12. Disconnect all three cables from the top of the circuit board.

CAUTION

Hold down the top of the circuit board, or it may crack.

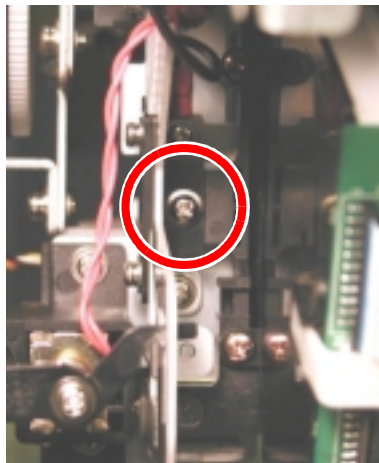
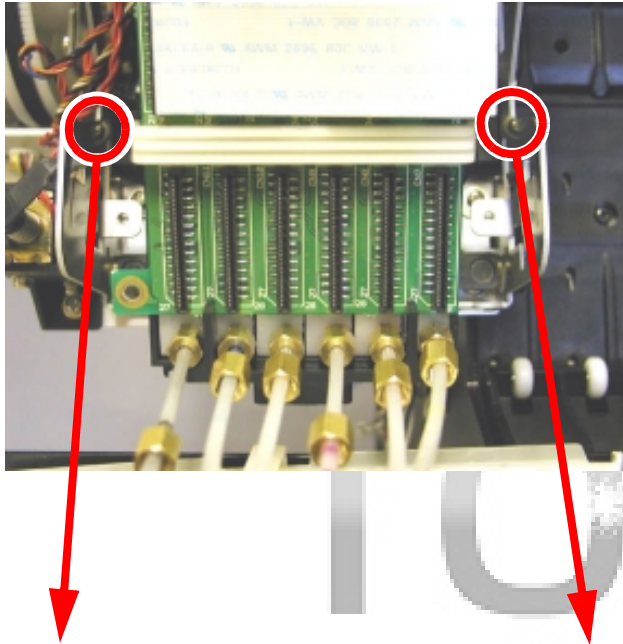


13. Remove the left and right printhead compression springs (left spring assembly shown below). Hold the assembly in place, as shown, to prevent parts from flying out when you remove the screw.

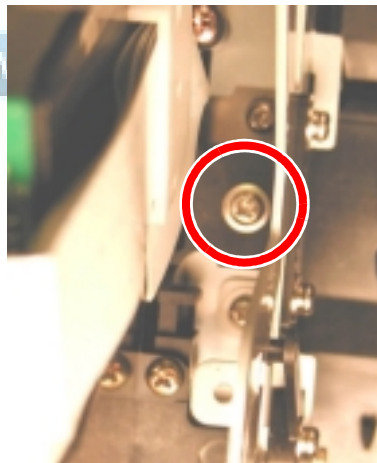


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14. Remove two (2) screws, as shown.

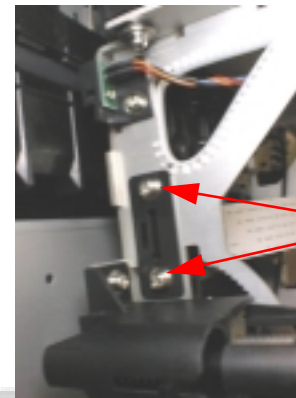


LEFT

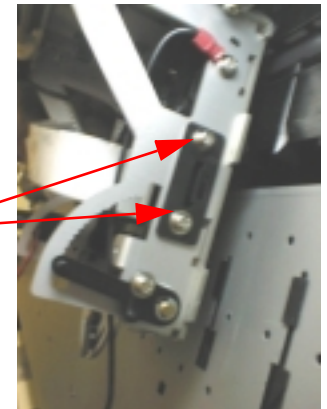


RIGHT

15. Remove two (2) screws from the left and right printhead mounts, as shown, then slide out the mounts.



LEFT SIDE

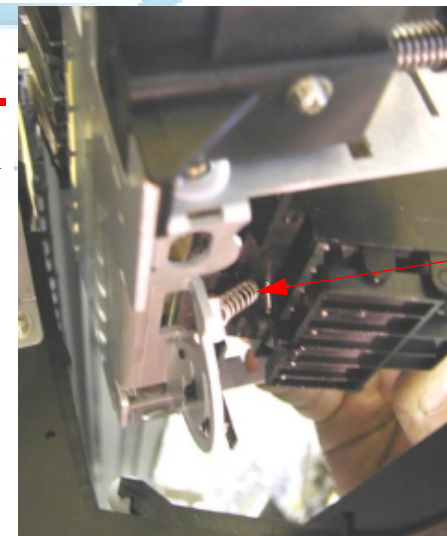


RIGHT SIDE

screws

16. Slide the carriage all the way to the left. Viewing the carriage from behind, remove the spring shown below.

FACING
PLATEN



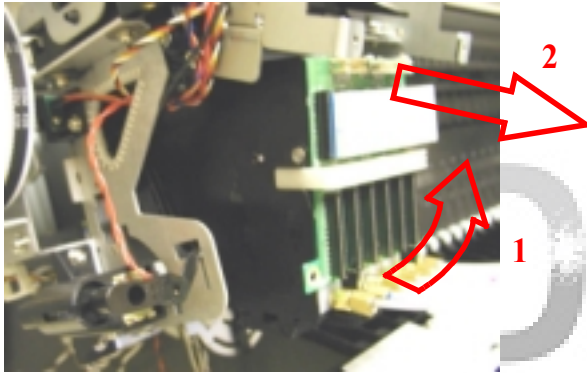
spring

BOTTOM OF
CARRIAGE,
LOOKING UP

CAUTION

Before performing the next step, make sure the printhead is centered over the tarp you placed on the floor. Make sure protective towels are directly under the printhead.

17. Slightly raise the lower part of the printhead assembly, as shown. Then remove the printhead assembly, keeping it upright as much as possible.



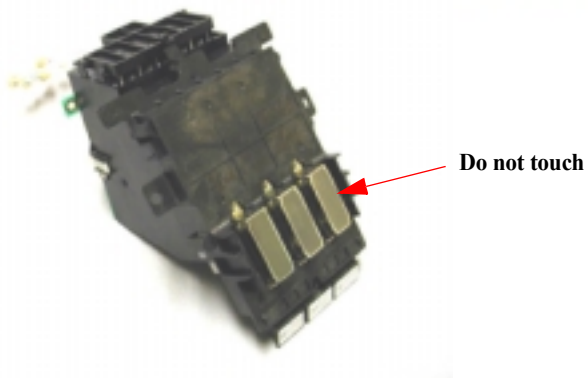
18. While keeping the printhead upright, set it temporarily in the plastic-lined trash can.



19. Place the printhead in a plastic bag. Seal the bag so that ink cannot leak out while it's being returned to Epson.

CAUTION

Do not touch the surface of the printhead.



1.4 Installing the Printhead

To install a new printhead, follow the disassembly steps in reverse.



Before starting, read all the notes below for important tips and instructions.



After replacing the printhead, perform the required adjustments, described on page 12.

Photocopying the printhead ID

Before installing the printhead, you may wish to place it directly on a photocopier and make an enlarged copy of the printhead ID labels. Since the labels are hard to see after the printhead is installed, this will help you when entering the printhead ID (or head rank) number. See “Head Rank Input” on page 12.

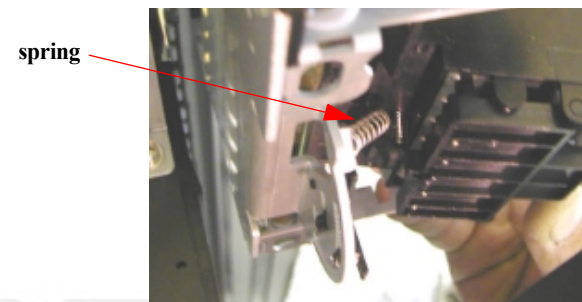
If a photocopier is unavailable, write down the printhead ID before installing the printhead.



printhead ID labels

Installing the spring

When installing the spring shown below, move the carriage all the way to the left. Work from behind the carriage and use a flashlight to see what you're doing. If the spring gets bent, replace it with a new one.



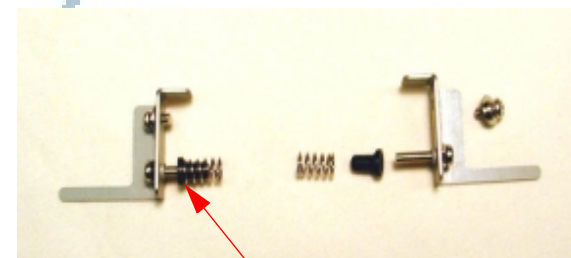
spring



The plastic pin that holds the spring on the printhead is brittle and can break. Do not use excessive force.

Installing the printhead compression springs

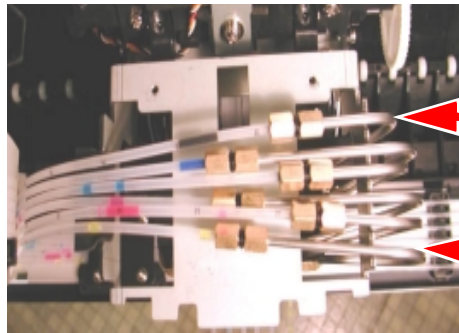
You may wish to use contact cement to hold the assembly together when installing it.



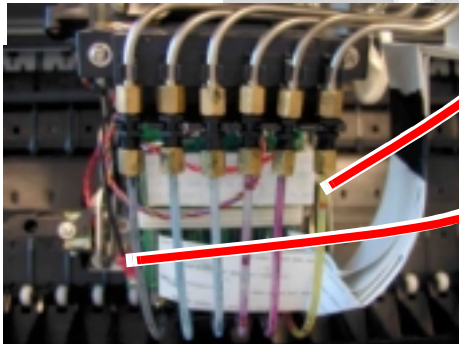
glue pieces together when installing

Connecting the ink tubes

If you have to remove the metal pipes, reconnect them as shown:



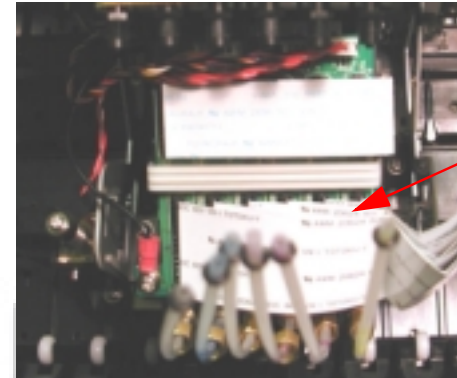
TOP VIEW



FRONT

Connecting the printhead cables

Make sure the ribbon cables shown below are inserted straight and firmly connected, or you may notice dots missing in printouts. Be very careful to avoid damaging the cables during insertion.

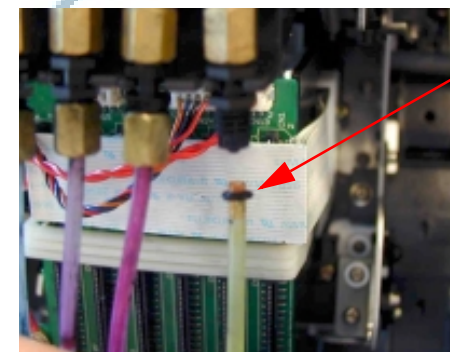


**printhead
cables**

Connecting the ink tubes

Before connecting each ink tube, roll the O-ring to the tip of the tube; this ensures that the O-ring seats properly when the tube is pushed into the brass fitting.

Avoid over-tightening the nuts.



O-ring

1.5 Required Adjustments

Perform the required adjustments in the following order after replacing the printhead:

- ☐ Head Rank Input
- ☐ Nozzle Check
- ☐ Head Slant Adjustment (A13, A123, B123)
- ☐ Bi-D Adjustment (Bi-D, Bi-D2)
- ☐ Head Gap Timing (Head LR Adj.)
- ☐ Test Print
- ☐ Print Head Life Counter Clear



- Make sure you have ample ink and paper. The adjustment procedures use up to 30 feet of paper and over 90ml of ink from each cartridge (about one-fifth of each cartridge).
- Perform the adjustments in the order as listed above. Failure to do so may cause the printer to malfunction.
- For accuracy, use an eye loupe (10× or better) to check the printed adjustment patterns.

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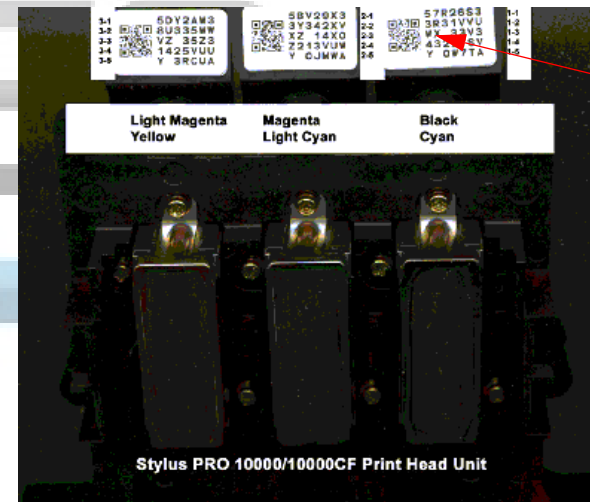
1.5.1 Entering Self-Diagnostic Mode

After replacing the printhead and reassembling the printer, plug in the AC power cord. To enter the Self-Diagnostic Mode:

1. Make sure the front cover is closed. Then press the following buttons while powering on the printer:
[PAPER FEED +] + [PAPER FEED -] + [CUT/EJECT]
2. Release the buttons when "Check: Test" is displayed.
3. Press the [SELECTYPE] button to navigate to the "Adjustment" menu and then press [ENTER].

1.5.2 Head Rank Input

1. Press the [SELECTYPE] button to navigate to "Input Rank" menu and then press [ENTER]. The display reads "Rank Input: QR Code".
2. Press [SELECTYPE] to switch to "Rank Input: Panel" and press [ENTER]. "Wait" is displayed and the printhead moves to the left.
3. When "Rank Input: All" is displayed, press [ENTER].
4. The display reads "Input Head1 Code". Press [ENTER].
5. The Display reads "Input Line: Head 1-1". Press [ENTER].
6. The Display reads "(Head 1-1) XXXXXX" (where X is the print head value). The printhead values are located on the printhead unit as shown below:



printhead values
Head #1



If you photocopied the printhead before installing it (see page 10), it will be easier for you to enter the printhead values.

7. Input the value and press the [SELECTYPE] button to move to the next value, or press [ITEM] to move back a value.
8. Once all the values are input, press [ENTER] to move to "Input Line: Head 1-2" and repeat step 7. This will continue up to "Input Line: Head 3-5".
9. Once Head 3-5 values have been entered, press [ENTER]. The display reads "Pause Key Input End". Press [PAUSE].
10. The display reads "Wait" and then displays "Exc. Enter Key Fill".
11. Ensure that ink cartridges are installed and press the [ENTER] key to start the initial fill sequence. This takes a few minutes to complete; do not turn off the printer during this sequence.

CAUTION

The initial fill uses approximately 90ml or 1/5th of each ink cartridge. Ensure that you have enough ink available to perform this task.

12. Once the initial fill is complete, press [PAUSE] to go back to the "Adjustment" menu.

1.5.3 Nozzle Check

1. Make sure that coated Epson paper is loaded.
1. Press the [SELECTYPE] button to go to the "Check Nozzle" menu.
2. Press [ENTER] to print the pattern.
3. After the pattern is printed, the display reads "Authen. Head Rank?". Press [PAUSE]. The display then reads "Nozzle Check End".
4. Press the [ENTER] button to exit the Nozzle Check mode.

1.5.4 Head Slant Adjustment

1. Press the [SELECTYPE] button to "A13 Slant Adj." menu and press [ENTER] to print the pattern.
2. The display reads "Adj. Head Slant?". Check the printed pattern and do one of the following:
 - If no adjustment is needed, press the [PAUSE] button. The display reads "A13 Slant Check End". Press [ENTER] to move to the next slant adjustment.
 - If adjustment is needed, press [ENTER]. The display reads "Wait" then "Enter Key Adj. End". Make the necessary mechanical adjustment and then press [ENTER] to reprint pattern. Once the pattern is printed, the display goes back to "Adj. Head Slant?". Repeat the adjustment as needed. Once the pattern is correct, press the [PAUSE] button. The display reads "A13 Slant Check End". Press [ENTER] to exit and move to the next slant adjustment.
3. The display reads "A123 Slant Adjustment". Press [ENTER] to print the pattern. Then perform the adjustment, following the procedure described in step 2, above.
4. Repeat for the "B123 Slant Adj." adjustment. When done, press [ENTER] to exit the slant adjustment mode.

1.5.5 Bi-Directional Adjustment (part 1: Bi-D)

1. Press the [SELECTYPE] button to move to "Adj: Bi-D" and press [ENTER].
2. The display reads "[Enter] Adjust Print". Press [ENTER] to print the adjustment pattern. During this time, the display reads "Printing Pattern".
3. Once the pattern is complete, the display moves to the first adjustment item, "Bi-D 240, V1, K xx" (where xx is the current value).
4. If no adjustment is necessary, press the [ENTER] button to move to the next item. If adjustment is necessary, do so by pressing the [PAPER FEED +] or [PAPER FEED -] buttons and pressing [ENTER] to reprint the pattern. The adjustment is complete when the vertical lines are as straight as possible.
5. Continue with each adjustment pattern until you get to "Bi-D End: 0" and press [ENTER] to move to the next adjustment.

1.5.6 Bi-Directional Adjustment (part 2: Bi-D2)

1. Press the [SELECTYPE] button to move to "Adj: Bi-D2" and press [ENTER].
2. The display reads "[Enter] Adjust Print". Press [ENTER] to print the adjustment pattern.
3. Once the pattern is complete, the display moves to the first adjustment item, "Bi-D2 240, V1, K xx" (where xx is the current value).
4. If no adjustment is necessary, press the [ENTER] button to move to the next item. If adjustment is necessary, do so by pressing the [PAPER FEED +] or [PAPER FEED -] buttons and pressing [ENTER] to reprint the pattern. The adjustment is complete when the vertical lines are as straight as possible.
5. Continue with each adjustment pattern until you get to "Bi-D2 End: 0" and press [ENTER] to move to the next adjustment.

1.5.7 Head Gap Timing (Head LR) Adjustment

1. Press the [SELECTYPE] button to move to "Adj: Head LR Adj." and press [ENTER].
2. The display reads "[Enter] Adjust Print". Press [ENTER] to print the adjustment pattern.
3. Once the pattern is complete, the display moves to the first adjustment item, "Gap 240, V1, C xx" (where xx is the current value).
4. If no adjustment is necessary, press the [ENTER] button to move to the next item. If adjustment is necessary, do so by pressing the [PAPER FEED +] or [PAPER FEED -] buttons and pressing [ENTER] to reprint the pattern. The adjustment is complete when the vertical lines are as straight as possible.
5. Continue with each adjustment pattern until you get to "Gap End: 0" and press [ENTER] to move to the next adjustment.

1.5.8 Test Print

1. Press the [SELECTYPE] button to move to "Adj: Test Print" and press [ENTER].
2. The display reads "Print: Check Ptn.". Press [ENTER] to print the pattern.
3. Once the printing is complete, the display reads "No. 1 PEG00000000". Press the [PAUSE] button to exit the Test Print mode.
4. Power the printer off.

1.5.9 Printhead Life Counter Reset

To clear the Print Head Life Counter, you must enter Maintenance Mode 2. To get to this mode, turn the printer off, then power it back on while holding down the following buttons.

[PAPER SOURCE] + [PAPER FEED -] + [CUT/EJECT]

Follow these steps to reset the counter:

1. The display reads "View Counters Menu". Press the [SELECTYPE] button to go to "Clear Counters Menu", then press [PAPER SOURCE].
2. The display reads "RTCINIT=xx/xx/xx/xx" (where "xx" is a value). Press [PAPER SOURCE] to get to "Init. Head = Exec."
3. Press [ENTER] to clear the life counter for the printhead. The display reads "Wait" and then moves to the next menu item. At this point you can turn the printer off to exit maintenance mode 2.

Field Repair Guide

Pro 10000 Driver Board Replacement

- Caution:** Do not remove any cable, card, or component without first unplugging the printer from the AC power source.
- Caution:** Failure to up load and down load parameters requires that all electronic adjustments be performed, the Head Rank for both print heads be entered, and the Waste Ink Pads be replaced
- Caution:** Failure to insert foil cables correctly (fully and straight) will result in component damage
1. Up load parameters to the Pro 10000 flash card
 - 1.1. Unplug printer
 - 1.2. Insert ram card
 - 1.3. Plug in printer
 - 1.4. Turn on the printer and do not press any key. The up load will be performed.
 2. Remove the old board
 3. Install the new board
 4. **Caution:** be careful not to damage any components on the bottom of the board. The “mounting areas ” that the board attaches too can scrape off small components
 5. Down load latest firmware
 - 5.1. Connect the printer to your PC with a parallel cable
 - 5.2. Prepare the correct firmware file to be copied to the printer
 - 5.3. Use the DOS copy command or WinPRN.exe
 - 5.4. If WinPRN .exe fails to open port, Copy the firmware file to your hard drive "C:>"
 - 5.5. For example. "COPY /a "filename".ipl LPT1:
 - 5.6. Turn on printer while depressing the (Paper Source) + (Cut Eject) + (Cleaning) buttons
 - 5.7. Send the Firmware to the printer

Field Repair Guide

6. Initialize RTC (Real Time Clock)

- 6.1. Enter Maintenance Mode 2
- 6.2. Turn on printer while depressing (Paper source)+ (Cut/ Eject) + (Paper Feed)
- 6.3. Press (SelecType) 2 times to display Clear Counters Menu
- 6.4. Press (Paper Source) one time to display RTCINIT = YY / MM / DD/ HH
- 6.5. The (Cleaning) button shifts between year, month, day and hour
- 6.6. The (Paper feed +) or (Paper feed -) buttons change the values
- 6.7. Enter the current Year, Month, Day, and Hour

7. Download previously up loaded parameters

- 7.1. Unplug printer
- 7.2. Insert ram card
- 7.3. Plug in printer
- 7.4. Turn on the printer and press any key. The down load will be performed.

8. Adjust the paper sensor trim potentiometers

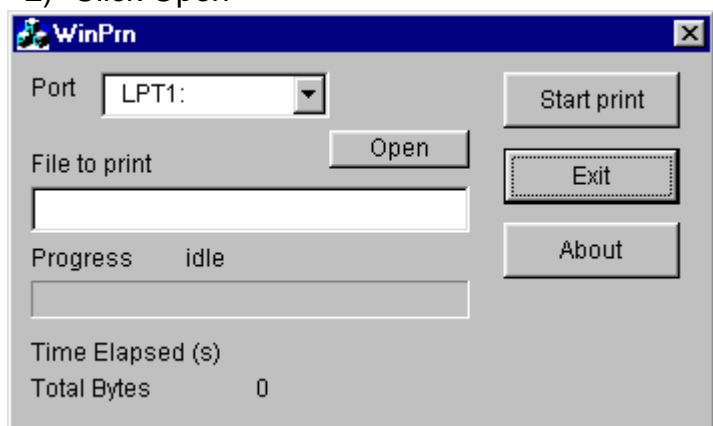
- 8.1. P Edge
- 8.2. P Front
- 8.3. P Rear
- 8.4. See Page 201 in the Pro 10000 Service Manual

9. Test Print of Electronic Print Head Alignments

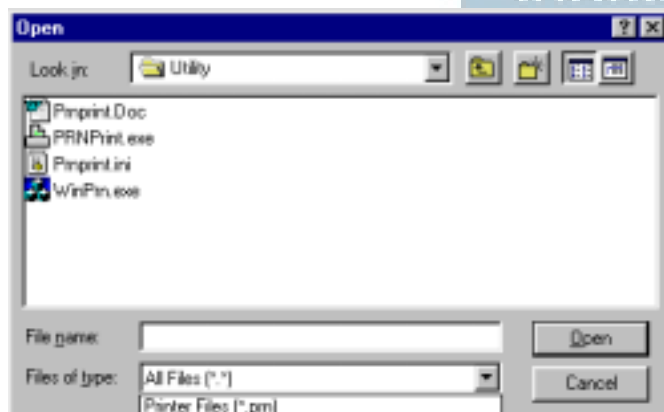
- 9.1. Enter Self Diagnostic Mode
- 9.2. Turn on printer while depressing (Paper Feed +) + (Paper Feed -) +(Enter)
- 9.3. Press (SelecType) 1 times to display Check: Adjustment
- 9.4. Press the (Enter) Button 1 time to display Adj: Check Skew
- 9.5. Press the (SelecType) Button 16 times to display Adj: Test Print
- 9.6. Press the (Enter) Button to execute
- 9.7. Verify that all alignment patterns are correct
- 9.8. If more than one alignment pattern is incorrect:
- 9.9. Perform all electronic alignments
- 9.10. Verify that the Head Rank Information is correct

Instructions for Using WINPRN (Utility to Copy Files to the Printer)

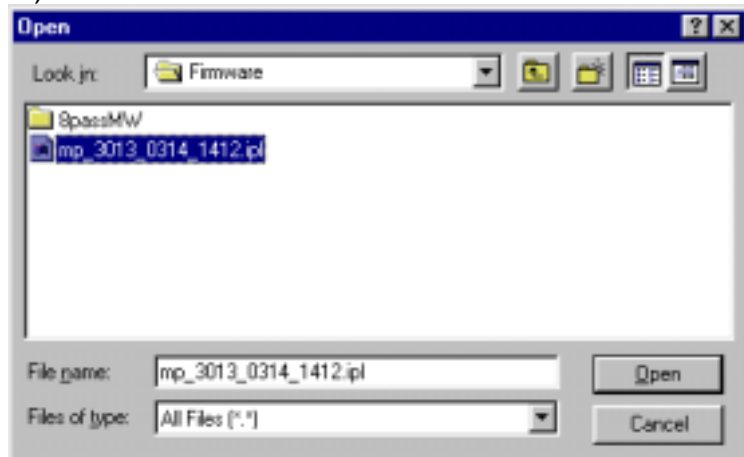
- 1) Execute WINPRN.EXE Windows Explorer (**\\Utilities**) or Click on Link within the **Drivers and Utilities** section.
- 2) Click Open



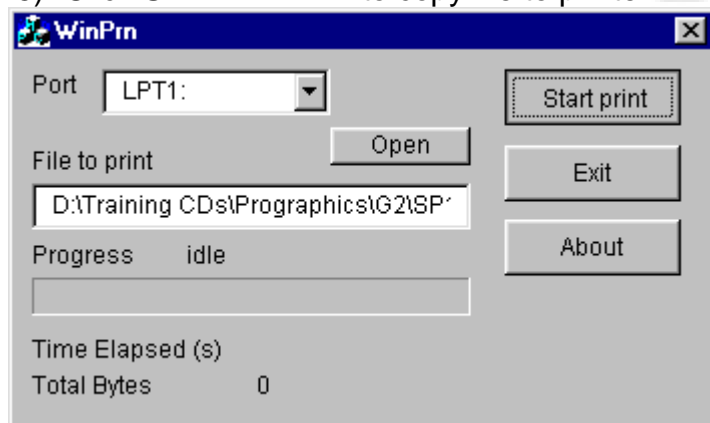
- 3) Change File Type - All Files



4) Locate firmware file under "Printer Name" \Firmware Folder

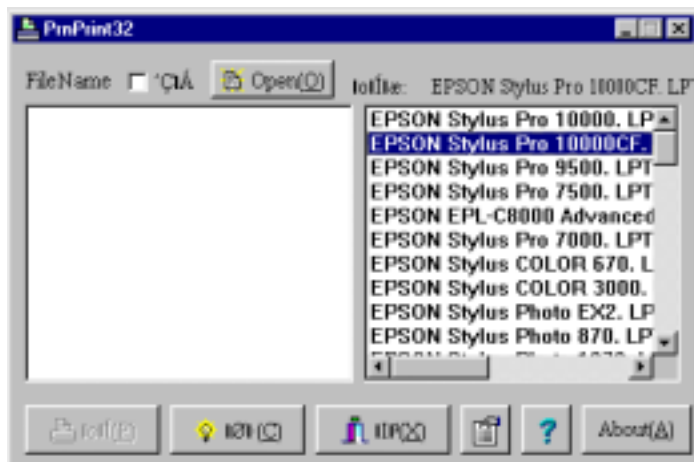


5) Click START PRINT to copy file to printer.

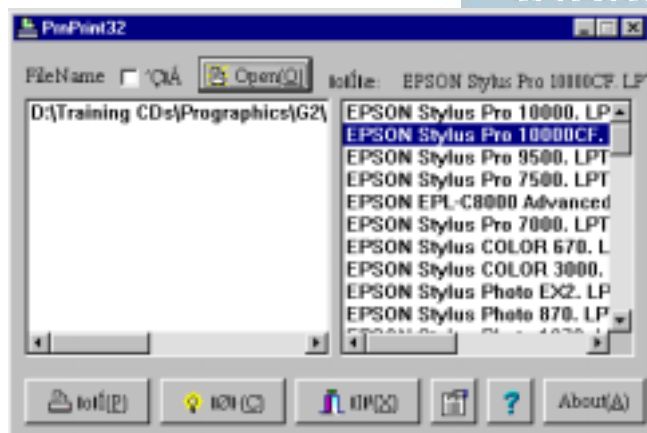


Instructions for using PRNPRINT

- 1) Execute PRNPRINT.EXE via Windows Explorer (**\\Utilities**) or Click on Link within the **Drivers and Utilities** section.
- 2) Highlight Printer in use.

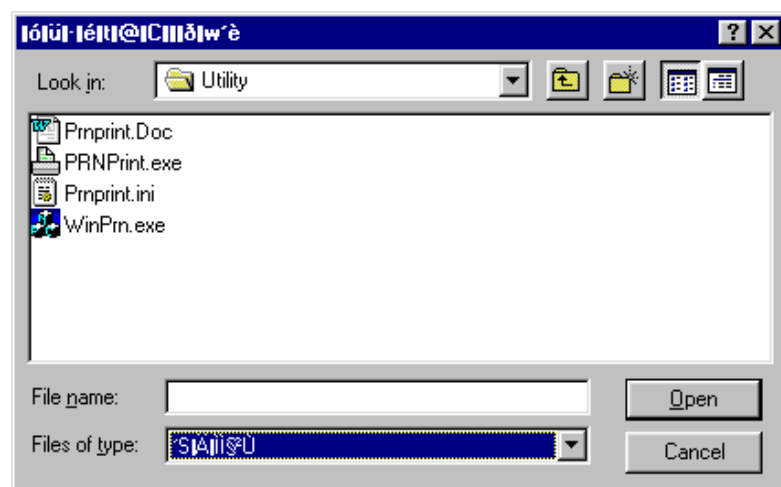


- 3) Click Open

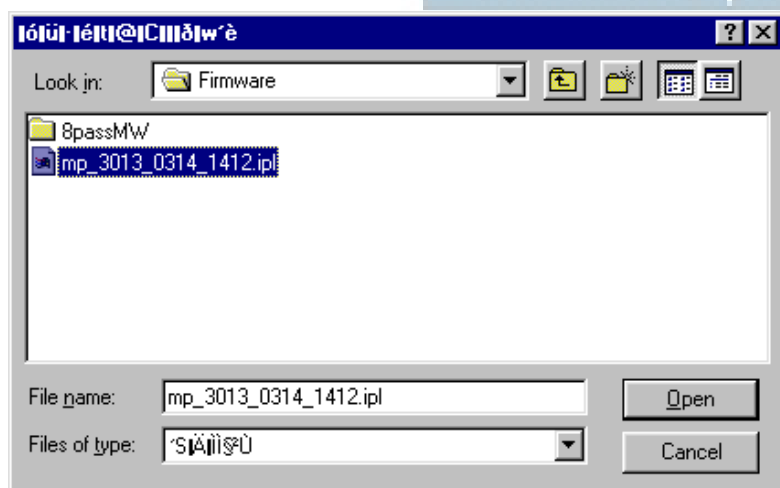


Field Repair Guide

- 4) Change File type: to bottom selection (file type section in Japanese) symbols reflected below in Files of type box.

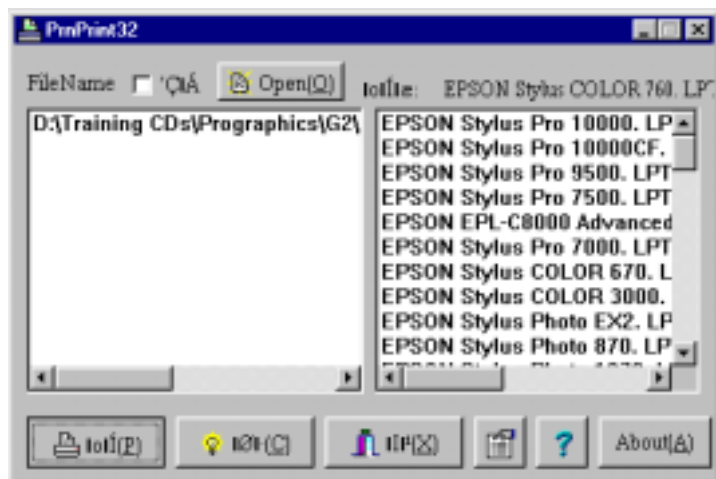


- 5) Choose Firmware file to copy (Located within "Printer Name" \ Firmware Folder)



Field Repair Guide

- 6) Open File
- 7) Click on Printer to copy file to port (bottom left of window)



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Field Repair Guide

Copying a FIRMWARE File *Using the DOS Copy Command*

1. Using Windows Explorer Copy the firmware file to the ROOT directory of you hard drive. "C:\>"
 - 1.1. **EXAMPLE:** BASED on SP 7500, File located in the following folder.
\\SP7500\FIRMWARE\L0160B\L0160B.IPL
 - 1.2. Restart computer in MS-DOS mode.
2. Change to the ROOT Directory "CD\"
 - 2.1. Copy firmware file to your parallel port. "Copy /a L0160B.IPL LPT1:"

Copying a PRN File *Using the DOS Copy Command*

3. Using Windows Explorer Copy the PRN file to the ROOT directory of you hard drive. "C:\>"
 - 3.1. **EXAMPLE:** BASED on SP 7500, File located in the following folder. \\Print Samples\prn sample\SP7500ps13x19.prn
 - 3.2. Restart computer in MS-DOS mode.
4. Change to the ROOT Directory "CD\"
 - 4.1. Copy firmware file to your parallel port. "Copy /b SP7500ps13x19.prn LPT1:"



Field Repair Guide

SP 10000 8-Pass M/W and Super Clean Download Instructions

1. Save/Copy the MP_231A_181A_0517.IPL file to the root directory of the hard drive on your PC (C:\).
2. Shut printer off.
3. Connect the printer to the PC via a parallel printer cable.
4. While holding down the **[Cleaning] + [Paper Source] + [Cut/Eject]** buttons, power the unit on.
5. The display will read **"Initialize"**, then change to **'F/W Download...'**
6. At this point, go to Start, Programs, and MS DOS Prompt. When at the DOS prompt type "CD\" and press enter so that you are at the Root Directory of DOS (this should be where you copied the IPL file to).
7. Type the following command:
 - a. **COPY /A MP_231A_181A_0517.IPL LPT1:**
 - b. Press the **[Enter]** key on the PC keyboard to start the download process.
8. At this point the **Operate light** on the printer will blink.
9. Once the download is complete the display will show the following:
 - a. **"Updating C3 F/W"** (yellow ink out light will come on)
 - b. **"Updating C2 F/W"** (light cyan ink out light will come on)
 - c. **"Updating C1 F/W"** (light magenta ink out light will come on)
10. Once completed, the display will read **"F/W Update Complete"** and the Operate, Ink Outs, and Pause Lights will be flashing.
11. Shut the printer off to complete this process.



Field Repair Guide

Confirming The New Firmware Version.

1. Power ON the printer normally without paper loaded.
2. When "**Paper Out**" is displayed press the **[Select Type]** button three times until you see "**Printer Status Menu**" in the display.
3. Press the **[Item]** button the firmware version "**VER T0231A.181A.0517**" should be displayed.
4. Press the **[Select Type]** again to return to normal operation.

Enabling High Quality 8-Pass Micro Weave.

When using 8-Pass Micro Weave, productivity will be reduced.

The High Quality 8-Pass Micro Weave will only work in 1440 UNI or 1440 Bi-D and it must be enabled from the printers MENU. The steps to Enable the High Quality 8-Pass Micro Weave Mode are as follows:

1. Shut Printer off.
2. While holding down the **[Pause]** button, power the unit ON.
3. When the display reads "*Hex Dump = Print*" release the **[Pause]** button.
4. Press the **[Item]** button 3 times.
5. The display will read "*MW2 Select = 1*" (1 is the default for standard 4-Pass Micro Weave).

To turn on the 1440 High Quality 8-Pass Micro Weave you will need to change the MW2 Select value as follows:

MW2 Select=5 1440 Uni-directional Printing (Driver High Speed OFF)

MW2 Select=6 1440 Bi-directional Printing (Driver High Speed ON)

6. Press the **[Paper Feed +]** button to change the value to "**5**" or "**6**", then press the **[Enter]** button to set the value (noted by an asterisks in the display *).
7. Shut the printer **OFF** to save the setting and exit the maintenance menu.
8. Power the unit **ON**, and send jobs at 1440, High Speed Off or On (Bi-D printing) depending on how MW2 was set in the menu, High Quality 8-Pass Micro Weave will be used.



Field Repair Guide

Stylus Pro 10000 Image Issue Diagnosis

Horizontal Banding: typically caused by one or more of the following reasons.

Missing Nozzles

Deflected Nozzles

Sympathetic Nozzles

Incorrect **Feed Length Adjustment**

- Very small, regular spacing

Loose **Paper Feed Belt Tension Adjustment**

- Irregular spacing

Incorrect **Platen Gap** setting

- Very small regular spacing
- Can be caused by bent **Thickness Sensor Actuator**
- Can be caused by **Control Panel Gap Setting**, forcing “Wide” gap

Incorrect **A13 Head Slant** Adjustment

Non-Epson RIPS that do not support **Micro Weave**

Slow Computer

- Most common when using pigment ink
- Bands are located at the vertical location in the image where the printer pauses to wait for more data from the computer

Slow Interface

- Use Fire Wire when **not using the Photo Accelerator** option (Non-Epson Rips or Drivers)

Margin Shift

- A slight margin shift may appear as horizontal banding (**see Margin Shift**)

Incorrect Head ID (print head calibration value)

Perform **Banding Adjustment**



Field Repair Guide

Vertical Banding, Linear: typically caused by one or more of the following reasons.

Incorrect **Bi-Directional Adjustment**

Incorrect **Bi-Directional 2 Adjustment**

Incorrect **Head Gap Adjustment**

Screening Method

- Typically in the solid dark colors

Incorrect **Platen Gap** setting

- Very small regular spacing
- Can be caused by bent **Thickness Sensor Actuator**
- Can be caused by **Control Panel Gap Setting**, forcing “Wide” gap

Vertical Banding, Irregular: typically caused by one or more of the following reasons.

Rippling (caused by over saturation)

- Incorrect driver media settings
- 3rd party media that is incompatible with driver settings
- 3rd party RIPs that do not control ink saturation correctly
- Graphics application that forces over saturation of colors
- Very High humidity (wet paper)
- Use the **Epson Supplied Test Print** to bypass RIP, Application, and Driver settings
- Use **Epson Supplied Media** to eliminate customer media problems
- Reduce paper suction fan level (change to low)

Over Saturation: typically caused by one or more of the following reasons.

Incorrect driver media settings

3rd party media that is incompatible with driver settings

3rd party RIPs that do not control ink saturation correctly

Graphics application that forces over saturation of colors

Use the **Epson Supplied Test Print** to bypass RIP, Application, and Driver settings

Use **Epson Supplied Media** to eliminate customer media problems

Incorrect Head ID (print head calibration value)

Very high humidity (wet paper)



Field Repair Guide

Under Saturation: typically caused by one or more of the following reasons.

Incorrect driver media settings

3rd party media that is incompatible with driver settings

3rd party RIPs that do not control ink saturation correctly

Graphics application that forces under saturation of colors

Use the **Epson Supplied Test Print** to bypass RIP, Application, and Driver settings

Use **Epson Supplied Media** to eliminate customer media problems

Incorrect Head ID (print head calibration value)

Grainy: typically caused by one or more of the following reasons.

Incorrect **Head Angular Adjustment**

Incorrect **Platen Gap** setting

- Can be caused by bent **Thickness Sensor Actuator**
- Can be caused by **Control Panel Gap Setting**

Incorrect **Bi-directional Adjustment**

Incorrect **Head Gap Adjustment**

Un-sharp: Caused by too much dot gain

Incorrect media (try with **Epson Supplied Media**)

Very high humidity (wet paper)

Smear: typically caused by one or more of the following reasons.

Slow dry time caused by 3rd party media

Slow dry time caused by 3rd party ink

Slow dry time caused by over saturated media

Debris: typically caused by the following reason.

Lint from cotton or rag based media

1. Attracted to the head
2. Saturated with ink
3. Drops onto the media



Field Repair Guide

Smudge: typically caused by one or more of the following reasons.

Ink or dirt on a paper feed roller

Paper contact with the print head during loading

To much curl on the leading edge of the media for the suction fan to over come, resulting in contact between the media and the print head

Drop of Ink: typically leaks from one or more of the following areas.

Ink supply hose

Damper

Damaged O-ring inside Joint Screw (brass fitting that joins the ink supply tube to the damper)

Deformed O-ring caused by over tightening the Joint Screw

Paint Brush Effect: caused by ink saturated fibers on the print head being dragged across the media.

Horizontal Over-lap: typically caused by one or more of the following reasons.

3rd party RIPs that do not support Micro Weave

Incorrect **Feed Length Adjustment**

Incorrect Media / Driver settings

- To much dot gain caused by over saturation or non-coated media

Can be minimized with the **Banding Adjustment**

Horizontal Under-lap: typically caused by one or more of the following reasons.

Incorrect **Feed Length Adjustment**

Incorrect Media / Driver settings

- Not Enough dot gain caused by incorrect media setting

Can be minimized with the **Banding Adjustment**

Pixilated: typically caused by one or more of the following reasons.

Application

Low quality (resolution) image

Use **Epson Supplied Test Print** to eliminate the above



Field Repair Guide

Ink Impurities: poor quality control in the manufacture of 3rd party ink

Ghosting: typically caused by one or more of the following reasons.

- Incorrect **Head L/R Adjustment**

- Incorrect **A123 or B123 (replace head)**

- Incorrect **A13 Adjustment**

- Incorrect **Bi-Directional Adjustment**

- Incorrect **Bi-Directional 2 Adjustment**

White Specks: caused by particles that flaked off Epson **Premium Luster Paper** during cutting at the end of a print job. The particles attach themselves to the leading edge of the remaining paper, and absorb some of the ink from the next image. Later, the particles drop off, leaving white specks where there is no ink.

Margin Shift: Caused by incorrect horizontal positioning information from the carriage encoder devices.

- Dirty or damaged **Timing Fence** (most likely)

- Dirty or defective **Carriage Encoder**

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Field Repair Guide

The following instructions are for the purpose of performing the belt tension adjustment when the 4000g Tension Gauge is not available. Recommended tension is 3500g

1. Remove the Left Side cover. (7 Screws)
2. Loosen the 4 screws on the fixing bracket indicated in FIG. 1.1
3. Slide the fixing bracket in the direction indicated in FIG. 1.1
4. While holding the bracket in place tighten the bottom left and top right screws to secure bracket evenly.
5. Secure remaining two screws.
6. Inspect belt tension by pressing with your finger as shown in FIG.1.2
7. The belt will flex approximately a 1/8". Refer to Magenta Circles in FIG. 1.1 and 1.2.

FIG. 1.1

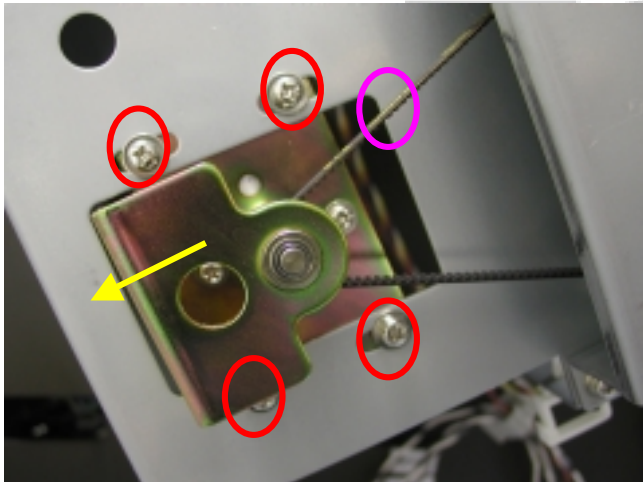
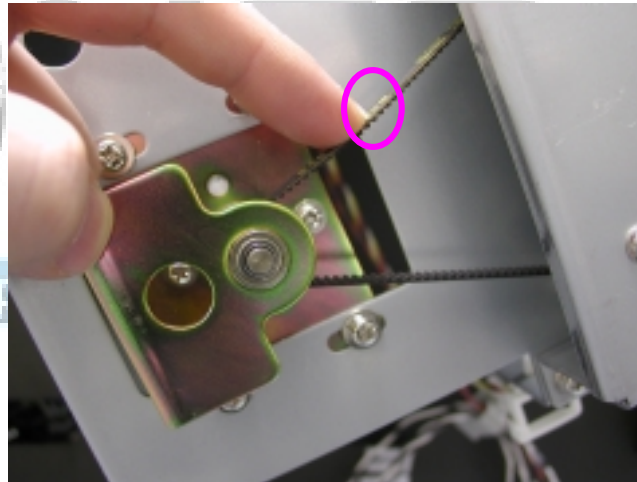


FIG. 1.2



NOTE: If the Paper Feed Timing belt tension is too loose, Horizontal Banding will appear. Refer to the Image Quality Diagnosis Document for more details on Horizontal Banding.



Field Repair Guide

1. BANDING QUICK REFERENCE GUIDE

1.1. Up-Date firmware to T0231A.181A.0517

1.2. Perform a nozzle check.

1.2.1. Use new SSCL cleanings to recover nozzles may require multiple cleanings. Always follow with a KK0 cleaning.

1.2.2. If nozzles recover try a print.

1.3. Check print head adjustments.

1.3.1. Check Head Rank values

1.3.2. Head Slant (A13, A123, B123)

1.3.3. Bi-D Adjustments (Bi-D, Bi-D2)

1.3.4. Head Gap Timing (Head LR Adj.)

1.4. Perform Feed Length Adjustment (1000.0mm) on Double Weight Matte paper ONLY.

1.5. Paper Feed Adjustment

1.5.1. Use customer's image that has Horizontal Banding.

1.5.2. Crop a section of a large customer image to save time and media.

1.5.3. Make three test prints with compensation values above and below the default for the media.

1.5.3.1. Use the Paper Feed adjustment chart for the printer (Dye/Archival) **Example Printer Archival.**

1.5.3.2. Locate the Table Mode **XXx** for the media being adjusted.

1.5.3.3. Enter Maintenance Mode: Press **[PAUSE] + [Power ON]**

1.5.3.4. Use the **[ITEM]** button to scroll to the **XXx** value for the media. Example Media: Premium Luster: **XX1=**

1.5.3.5. When **XX1=** is displayed press the **[PF+/PF-]** button to display the media's driver value:

Example: **XX1= 69:6D**

1.5.3.6. Next press the **[CLEANING]** button to switch to Right set of digits. The **[CLEANING]** button changes which set of digits are underscored.

Example: **XX1= 69:6D**

1.5.3.7. Next press the **[Paper Feed +]** or **[Paper Feed -]** to increase and/or decrease the Paper Feed Compensation value by 3 or 4 HEX. Produce 3 prints one at the Factory Default, then one above and one below the default.

Example: **XX1= 69:6A (Lower Compensation Value)**

Example: **XX1= 69:6D (Original Factory Default)**

Example: **XX1= 69:70 (Higher Compensation Value)**

1.5.3.8. After the compensation value is changed press the **[ENTER]** button to save the new value an * will be displayed.

1.5.3.9. Power the printer **OFF** and back **ON** to print the image at the new compensation setting.

1.5.3.10. Judge the initial 3 prints and choose the one with the least amount of banding.



Field Repair Guide

1.5.3.11. Repeat the process using the compensation value of the printed image with the least amount of banding as your new mid point. Print images with a compensation values above and below your new mid point.

1.5.3.12. Continue the process until you find the compensation value that produces little or no banding.

1.6. Enabling Enhanced Microweave (8-PASS)

1.6.1. Shut Printer **OFF**.

1.6.2. While holding down the **[Pause]** button, power the unit **ON**.

1.6.3. The display will read "**Hex Dump = Print**".

1.6.4. Press the **[Item]** button 3 times.

1.6.5. The display will read "**MW2 Select = 1**".

1.6.6. Press the **[Paper Feed +]** button to change the value to "**5**" or "**6**" and press the **[Enter]** button to set the value (noted by an asterisks **5***).

MW2 SELECT=5 to enable 1440, 8 Pass, **Uni-D (High Speed OFF)**

MW2 SELECT=6 to enable 1440, 8 Pass, **Bi-D (High Speed ON)**

1.6.7. Shut the printer **OFF** to save the setting and to exit the maintenance menu.

1.6.8. Power the unit **ON**. When sending jobs at 1440 make sure High Speed in the driver is set to match the **MW2 SELECT** menu mode setting in the printer.

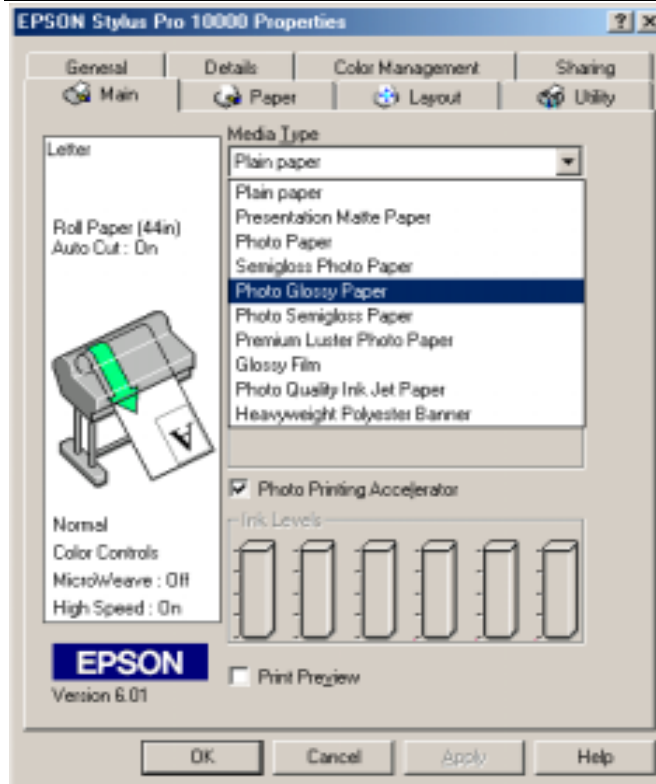
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EPSON STYLUS Pro 10000 (PhotoGraphic Dye) Paper Feed Adjustment Tables

Before adjusting these values: All nozzles must be firing cleanly, Paper Thickness (Platen Gap) accurate and set to Auto, 1 meter test on Doubleweight Matte accurate, and all printhead adjustments confirmed.

Maintenance Mode: Press [PAUSE] + [POWER ON]

[ITEM] to Display: XXn=nn:mm; [CLEANING] <>; [PF+/-]=adj; [ENTER]=Save

[illegible]

HORIZONTAL BANDING IDENTIFICATION

Thin Light Lines Approx. 1/8in spacing: Decrease mm Value
Thin Dark Lines Approx. 1/8in spacing: Increase mm Value

Each increment of the mm value +/- represents a 0.1mm length change over 1000mm.

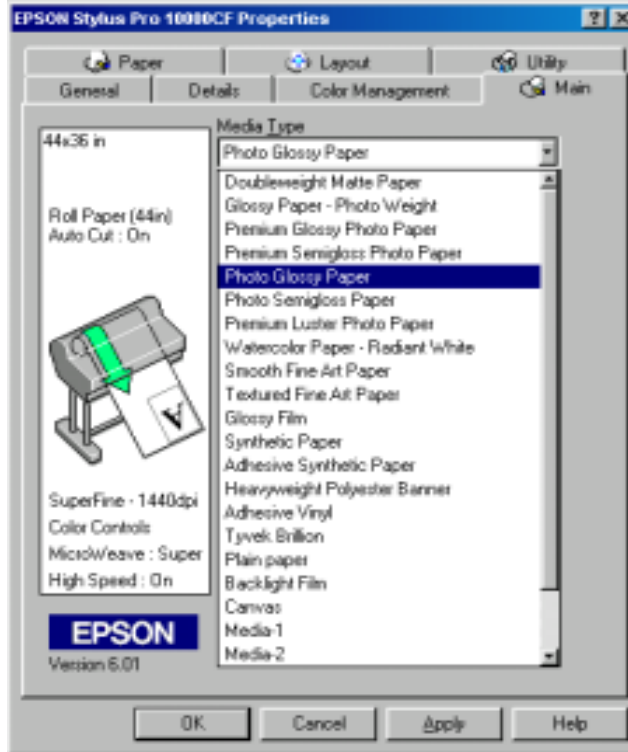
- 1) Each 1 unit setting change equates to a 0.1mm adjustment over 1 meter (this is FINE tuning)
- 2) PhotoGlossy and Semigloss papers are set at the factory and are unique for each printer.
* Two Media Types. Photo Semigloss changed to Premium Luster in July 01 mfr production.
- 3) Table mode settings are accessed through Maintenance Mode 1 (Pause + Power ON)
- 4) Photo Glossy is the most popular media (based on unit sales)
- 5) Customers using third party media, may select and use a setting for a Media not used by EAI that is close to EPSON supported media.
- 6) New Firmware with 8 pass support is specific to 1440 - not all media types support 1440 print modes.

EPSON STYLUS Pro 10000CF (Archival) Paper Feed Adjustment Tables

Before adjusting these values: All nozzles must be firing cleanly, Paper Thickness (Platen Gap) accurate and set to Auto, 1 meter test on Doubleweight Matte accurate, and all printhead adjustments confirmed.

Maintenance Mode: Press [PAUSE] + [POWER ON]

[ITEM] to Display: XXn=nn:mm; [CLEANING] <>; [PF+/-]=adj; [ENTER]=Save



EPSON Driver Setting	EPSON America media name	Thick-ness	XXn	nn	mm	Spindle	Max Res
			Table Mode	Driver Value	Factory Default		
Doubleweight Matte Paper	Doubleweight Matte Paper	0.2mm	XX1	00	65	Std 2"	720
Glossy Paper - Photo Weight	Glossy Paper - Photo Weight	0.2mm	XX1	6B	77	Std 2"	1440
Premium Glossy Photo Paper	Not distributed in the U.S.	0.2mm	XX1	5B	67	Std 2"	1440
Premium Semigloss Photo Paper	Not distributed in the U.S.	0.2mm	XX1	5C	66	Std 2"	1440
PhotoGlossy Paper	PhotoGlossy Paper	0.2mm	XX1	67	6A	Std 2"	1440
PhotoSemiglossy Paper	PhotoSemiglossy Paper	0.2mm	XX1	63	6A	Std 2"	1440
Premium Luster Photo Paper	Premium Luster Photo Paper	10 mil	XX1	69	6D	3"	1440
Water Color Paper - Radiant White	Not distributed in the U.S.	0.3mm	XX1	6C	6B	Std 2"	1440
Smooth Fine Art (roll)	Smooth Fine Art (roll)	0.4mm	XX1	71	78	3" H.T.	1440
Smooth Fine Art (sheet)	Smooth Fine Art (sheet)	0.7mm	XX1	7B	83	n/a	1440
Textured Fine Art (roll)	Textured Fine Art (roll)	0.4mm	XX1	74	7C	3" H.T.	1440
Textured Fine Art (sheet)	Textured Fine Art (sheet)	0.7mm	XX1	7C	89	n/a	1440
Glossy Film	Not distributed in the U.S.	0.1mm	XX2	66	78		720
Synthetic Paper	Synthetic Paper	0.1mm	XX2	87	8E	2" H.T.	720
Adhesive Synthetic Paper	Adhesive Synthetic Paper	0.2mm	XX1	81	89	2" H.T.	720
Heavyweight Polyester Banner	Not distributed in the U.S.	0.2mm	XX1	83	83	2" H.T.	720
Adhesive Vinyl	Adhesive Vinyl	0.3mm	XX1	5F	68	Std 2"	720
Tyvek Brillion	Tyvek Brillion	0.2mm	XX1	60	68	Std 2"	720
Plain Paper	Not distributed in the U.S.	0.1mm	XX1	6B	77	Std 2"	360
Backlight Film	Backlit Film 7mil	0.2mm	NA	70	NA	Std 2"	1440
Canvas	Canvas	0.3mm	NA	5D	NA	Std 2"	1440
Dupont Semi Prof Paper A		0.2mm	XX1	6B	77		1440

HORIZONTAL BANDING IDENTIFICATION

Thin Light Lines Approx. 1/8in spacing: Decrease mm Value
Thin Dark Lines Approx. 1/8in spacing: Increase mm Value

Each increment of the mm value +/- represents a 0.1mm length change over 1000mm.

- 1) Each 1 unit setting change equates to a 0.1mm adjustment over 1 meter (this is FINE tuning)
- 2) PhotoGlossy and Semigloss papers are set at the factory and are unique for each printer.
* Two Media Types. Photo Semigloss changed to Premium Luster in July 01 mfr production.
- 3) Table mode settings are accessed through Maintenance Mode 1 (Pause + Power ON)
- 4) PhotoGlossy is the most popular media (based on unit sales)
- 5) For EAI "Premium" designates 10mil thickness, several worldwide "premium" medias do not meet this spec.
- 6) Customers using third party media, may select and use a setting for a Media not used by EAI
EX: Somerset Velvet Enhanced users may select the Water Color - Radiant White Driver setting
- 7) New Firmware with 8 pass support is specific to 1440 - not all media types support 1440 print modes.

NOTE: Backlight Film and Canvas receive their paper feed compensation values directly from the Driver and do not have adjustable compensation values. Canvas should not require adjustment.

A driver selection of Photo Semi Gloss could be used for Backlight Film. This would allow adjustment of the paper feed compensation value XX1=63:6A if necessary.

Field Repair Guide

The following instructions are for the purpose of performing the belt tension adjustment when the 300g Tension Gauge is not available. Recommended tension is 100g

1. Remove the Left Side cover. (6 Screws)
2. If replacing or removing the belt, place a mark on the current position of the adjustment screws. Shown in FIG. 1.1
3. Tighten or loosen the screws evenly to increase or decrease the belt tension. Shown in FIG. 1.2
4. The belt should be in the center of the pulley and remain in the center when moving the CR assembly left to right the distance of the mechanism.
5. Check the belt tension by pressing on the belt at the side frame in the area indicated in FIG.1.3
6. The belt will flex approximately 1/8" before tension is felt.

FIG. 1.1

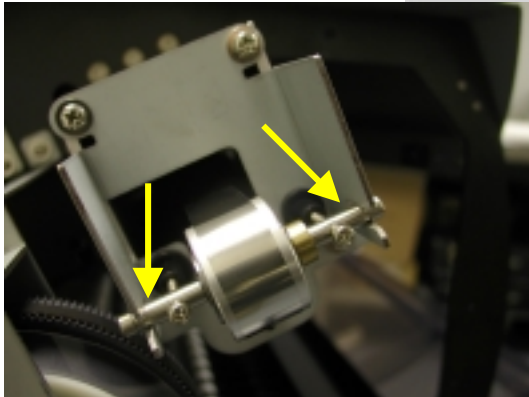


FIG. 1.2

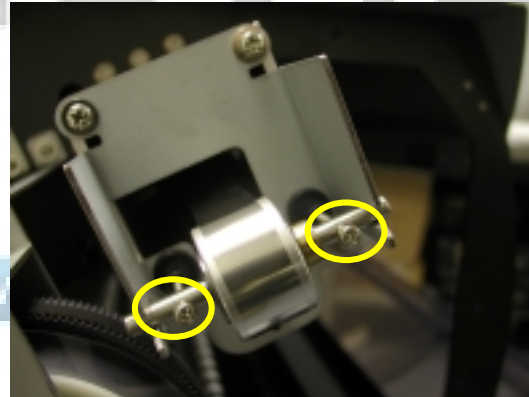
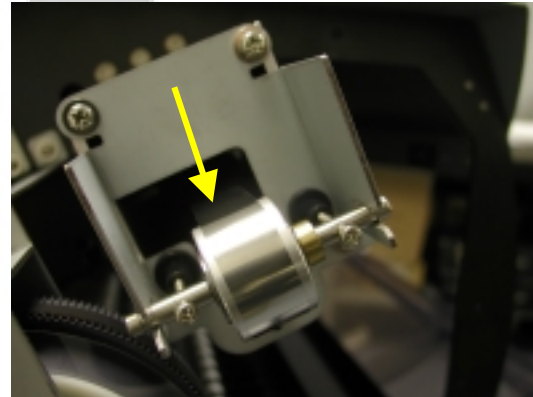


FIG. 1.3



NOTE: If the CR Timing belt tension is too loose, you may encounter carriage errors. A slight Vibration may occur on the far left side of the mechanism, tighten belt until vibration is eliminated.



Field Repair Guide

Stylus Pro 10000 Wrong Ink Cartridge Error

Reasons for a Wrong Ink Cartridge Error:

1. On a new installation if the ink starter set is inserted into the printer prior to powering the printer on for the first time the printer displays Wrong Ink Cartridge error with the Lt. Cyan Led ON.
2. During printer service if the driver board is replaced.
3. Dye inks are being installed in a Archival printer or Vice Versa.

Resolutions:

1. There are two ways to correct a Wrong ink cartridge error related to a first time installation they are: (Note: In both methods ink cartridges are installed)
 - Setting the **NPD** Value
 - A. Turn the printer **OFF**.
 - B. Press and hold the **[Paper Source] + [Cut/Eject] + [Paper Feed -]** buttons then turn the printer **ON** and release the buttons when the **VIEW COUNTERS MENU** is displayed.
 - C. Press the **[Select Type]** button until you see **SERVICE CONFIG MENU** in the display.
 - D. Press the **[Item]** button until you see **NPD=** in the display.

There are three values that can be set for the NPD value they are:

NPD=0	Null - Not Dye or Pigment
NPD=1	Pigment Inks
NPD=2	Dye Inks

In the instructions to follow “n” is replaced with 0,1 or 2 identified above.

- E. If the NPD value displayed does not match the ink type for the printer, use the **[Paper Feed -]** or the **[Paper Feed +]** button until you see the correct NPD value for your printer (**NPD=n**) in the display.
- F. When you see the correct **NPD=n** value for your printer press the **[Enter]** button an * will be displayed on the far right side of the display.



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Example: [**NPD=n** *]
G. After you see [**NPD=n** *] in the display turn the printer OFF.

- Enter Self Diagnostic mode, scroll the menu then turn the printer off.
- A. Turn the printer **OFF**.
- B. Press and hold the [**Cut/Eject**] + [**Paper Feed +**] + [**Paper Feed -**] buttons then turn the printer **ON** and release the buttons when the LCD screen displays "**Check Test**".
- C. Press the [**Select Type**] button three or four times to scroll through the menu.
- D. Turn the printer Off wait 15-20 seconds then back On normally.
- 2. The replacement driver board may have last been installed in a Dye unit if the current printer is a Pigment Ink printer or vica versa. To prevent a Wrong Ink Cartridge Error due to a service replacement of the driver board. Use a memory card to back up the original driver board parameters prior to replacing the driver board. After the driver board is replaced restore the original parameters to the replacement driver board.
- 3. After installation the printer will only accept the same ink and ink cartridge that were originally installed. It is not possible to interchange Dye and Pigment inks in the same printer. The CSIC chip on each ink cartridge automatically identifies the type of ink, Dye or Pigment to the printer. Visually the ink cartridges can easily be distinguished from each other. Dye ink cartridges are a light Grey plastic, and Archival cartridges are a dark Grey plastic.



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Stylus Pro 10000 Starter Cartridge / Ink Information

Q1 I am installing my Stylus Pro 10000 for the first time why is it important to use the “Ink Cartridge Starter Set” that came with the printer?

A1 The “Ink Cartridge Starter Set” is used to configure the printer for the model (Stylus Pro 10000 or Stylus Pro 10000CF) and ink type (DYE or Pigment) that was originally purchased.

Q2 If the “Ink Cartridge Starter Set” that came with the printer was used to start-up one printer can the same set of “Starter Ink Cartridges” be used to start up another printer?

A2 NO. The Lt. Cyan ink cartridge has a chip on it that is reset inhibiting its use as a starter cartridge ever again after it has been used once to configure a printer for the model (Stylus Pro 10000 or Stylus Pro 10000CF) and ink type (DYE or Pigment).

Q3 Can I continue to use the Lt. Cyan starter cartridge after it configures my printer?

A3 Yes, The Lt. Cyan ink cartridge becomes a standard ink cartridge.

Q4 Can the Lt. Cyan starter cartridge be ordered separately?

A4 NO. The Lt. Cyan starter ink cartridge only ships with new printers and is not orderable separately.

Q5 How do I tell the difference between a standard Lt. Cyan ink cartridge and the one that came in the “Ink Cartridge Starter Set”?

A5 You can use the label on the ink cartridge to easily identify them from each other:

Standard Cartridge		Starter Cartridge
Archival Ink	T516	T516- ST (ST= Starter)
Dye Ink	T504	T504- ST (ST= Starter)

Q6 How can you tell the difference between a Archival Ink cartridge and a Dye Ink cartridge other then the part number on the cartridge?

A6 The easiest way is to look at the color of the ink cartridge plastic covers:

Archival Ink cartridge plastic covers are very dark Grey

Dye Ink cartridge plastic covers are light Grey



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Q7 If I change my mind about the type of ink (Pigment or Dye) I want my printer to be after it is initially installed can I switch from Dye to Pigment, or Pigment to Dye inks afterward?

A7 NO. Once the printer is configured with the original "Ink Cartridge Starter Set" the printer from then on will only accept the ink type of the original starter set. No printer ink conversion is available.

Q8 Why can't I use the same printer and just swap back and forth between Dye and Pigment inks?

A8 The reasons are many, however the most noticeable problems if the two inks were mixed would be:

The inks would become gummed up and the ink flow would be greatly reduced or not flow at all, not to mention the head and ink nozzles would become restricted or be plugged completely.

Safeguards are built into the ink cartridges and the printer itself to automatically prevent any potential issues related to the use of incorrect inks.

Q9 I have recently installed my printer and now I have a Wrong Ink Cartridge error in the display with the Lt. Cyan ink LED on, what is the problem and how can it be resolved?

A9 The installation requires the printer to be powered up first then the display will indicate No Ink Cartridge, at that time the starter set of ink cartridges should be installed. The printer will then perform an initial charge of the ink system. The initial charge can take several minutes to complete. If for some reason this sequence did not complete successfully the printer displays the Wrong Ink Cartridge error with the Lt. Cyan Led lit.

Should you experience this issue (Q9) call Epson Support for assistance at 888-377-6611. Please refer to the White and Purple Epson Preferred Warranty Program booklet for additional warranty information and your



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Adjustment Paper Savings (Pause)

While performing electronic print head adjustments:

When the Control Panel LCD displays (Enter to Print)

If you press the **Enter** Button, all the existing alignment patterns will be printed.

No alignment is possible, just pattern accuracy verification. A lot of paper and time will be used.

If you press the **Pause** Button, the Control Panel will display the current value for pattern #1.

If you modify the value, and press **Enter**, pattern #1 will be printed using the new value.

If you do not modify the value, and press **Enter**, pattern #2 will be displayed.

Etc., etc.....

Current alignment pattern verification and alignment is possible at the same time.

A lot of paper and time can be saved.

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General Terms

Artifact:

A defect, that is within an image. It can mean something on the graphic that was not intended, or something missing that was intended. All image quality defects are artifacts.

Media:

The surface that is being printed on, usually paper.

Coating:

The top layer of graphics paper (media) that consists of a special substance designed to trap ink and keep it from being absorbed into the paper fibers. Non-paper based ink jet media uses coating to allow the ink to bond with the surface. A coatings purpose is to minimize dot gain, and control saturation.

Saturation:

The amount of ink applied to the printed surface.

Over Saturation:

Too much ink has been applied to the printable surface for the media to support.

Under Saturation:

Not enough ink has been applied to the printable surface to properly saturate the media.

Dot Gain:

A drop of ink tends to travel out from its point of impact, as the media absorbs it. The purpose of the coating (on the media) is to minimize dot gain.

Continuous Tone:

The qualities of a photograph that makes an image appear real. The smooth and life-like transition from one color shade to the next, like in a photograph. Epson Ink Jet printers are not continuous tone printers. But when working properly, their printed images fool the human eye into seeing continuous tone transitions.

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Gradient:

A smooth transition between one color shade, and the next. A continuous tone image requires a smooth gradient for all its tonal shifts.

Tone:

The specific shade of a color.

Gamut:

The range of colors that a printer can produce.

Dithering:

The dot pattern placed on the printed surface to create an image. Also known as screening.

Screening:

The dot pattern placed on the printed surface to create an image. Also known as dithering.

Error Diffusion:

The type of dithering (screening) proprietary to Epson, that employs a random dot pattern to ensure that the human eye can discern no pattern.

Illusion of Continuous Tone

A term that refers to “fooling” the human eye into perceiving a dot matrix image as a photograph (continuous tone image). Epson ink jet printers are not continuous tone printers. However, when working properly, their printed images fool the human eye into seeing continuous tone transitions.

Skew:

Crooked paper in the printer.

Metamerism:

The different appearance of colors caused by different light sources and viewing angles.

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Image Issue Terms

Horizontal Banding:

An image defect that extends from the left, to the right margin (parallel to the direction of print head movement). The defect could be a lighter or darker “band” than is intended. It usually repeats, with the same interval, from the top margin to the bottom. To fully describe this type of horizontal banding, it should be measured.

Example: horizontal banding, ¼ inch thick, repeating every ¼ inch.

Occasionally horizontal banding occurs non-repetitively. It might occur once on a page, or multiple times without a repetitive pattern. A horizontal artifact that does not repeat should be measured as well. The distance from the top and bottom margin, and the distance between occurrences should be described.

Example: horizontal banding, 2 bands (band 1, 1.5” from the top margin) (band 2, 4” from band 1).

Vertical Banding, Linear:

An image defect that extends from the top, to the bottom margin (perpendicular to the direction of print head movement). It usually repeats, with the same interval, from the left margin to the right. To fully describe this type of horizontal banding, it should be measured.

Example: vertical banding ¾ inch wide, repeating every ¾ inch.

Occasionally vertical banding occurs non-repetitively. It might occur once on a page, or multiple times without a repetitive pattern. A vertical artifact that does not repeat should be measured as well. The distance from the left and right margins, and the distance between occurrences should be described.

Example: 2 bands each ¼ inch across (band 1, 1.5” from the top margin) (band 2, 4” from band 1).

Vertical Banding, Irregular:

Vertical bands perpendicular to the direction of print head movement, that are not linear. Usually created by paper “rippling”, caused by over saturation.

Moiré Pattern:

A repetitive pattern, within an image, which is not intended. It can appear like a paisley or herringbone pattern.

Grainy:

A breakdown of the “illusion of continuous tone”. A printed image that does not have smooth tonal transition, and sharp detail.

UN-sharp:

“Fuzzy” qualities in an image usually caused by too much dot gain.

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Smear:

An image that has been rubbed by something, causing it to be deformed, or smeared. The direction or any repetition of the smear should be noted.

Smudge:

Something on the printed surface, that was not intended. Usually transferred to the page because of contact with a dirty roller or the print head. Any repetition should be noted and measured.

Drop of Ink:

Ink that appears to have dripped from the print head, or any other component of the ink supply.

Paint Brush Effect:

Something horizontally across the printed surface, that was not intended. Usually caused by an ink soaked fiber hanging off the print head.

Horizontal Over-lap:

A type of horizontal banding, where multiple print head passes overlap while printing. The banding looks darker than the intended image. Multiple passes of the print head should place ink on the paper next to, but not on top of earlier passes.

Horizontal Under-lap:

A type of horizontal banding, where multiple print head passes have a space between them. The banding looks lighter than the intended image. Multiple passes of the print head should place ink on the paper exactly next to earlier passes with no space in between.

Pixilated:

An image quality issue that is caused by a low-resolution image printed at high resolution.

Ink Color Contamination:

The intended color of the ink supply has been altered.

Ink Impurities:

Foreign objects in the ink supply.

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Ghosting:

A term that refers to components of an image that are intended to be on top of each other (or adjacent), but are offset.

Debris:

A term that refers to unintended ink on the page deposited by debris dropping from the print head.

Color Shift:

An unintended change of a gradient or tone.

White Specks:

A term that indicates that the intended image has small missing areas where no ink has been deposited.

Margin Shift:

A term that refers to an image with irregular right and left side margins.

Rippling:

A term that refers to a condition caused by over saturated paper warping.

Types of Ink

Pigment Ink:

Ink that deposits colored particles (pigment) on the printed surface to create an image. It is more durable than dye based ink, but does not have as wide a color range (gamut).

Dye Ink:

Ink that colors the printed surface with dye. It is less durable than pigment ink, but has a wider color range (gamut).

Sublimation Ink:

Ink that is first printed on thermal transfer media, and then transferred using heat to another surface.



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Printer Terms

Flight Time:

The time it takes a drop of ink to travel from the print head to the printable surface.

Mechanical Alignments:

Printer adjustments, that requires physically moving parts of the mechanism.

Electronic Alignments:

Printer adjustments, which are performed using software routines that, allow the printer to compensate for physical variations in its mechanism.

Capped Position:

The print head at it's stand by position, with the cap mechanism sealing the nozzles.

Home Position:

The print head's horizontal reference position, as determined by the Home Position Sensor

Some Missing Nozzles:

Some of the nozzles, but not all of the nozzles, of one or more colors are missing.

All Nozzles of One Color Missing:

All the nozzles of one color are missing, but not all the nozzles on the print head.

All Nozzles on One Head Missing:

All the nozzles on one head are missing, but not on any other heads (in the case of a two-head machine).

All Nozzles on All Heads Missing:

All the nozzles on the printer are missing.

Deflected Nozzle:

A nozzle is firing, but the ink drop is not landing where it is intended too. Irregular spacing on the nozzle check pattern indicates this condition.

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Sympathetic Nozzle:

A nozzle that is not intended to fire, firing in conjunction with an intended nozzle.

Head Linear Adjustment:

A mechanical print head alignment that ensures that on a two-head ink jet printer that all the nozzles are on the same horizontal plane. (Also known as Head Height and BC Head Slant.) The right head is moved in relation to the left head.



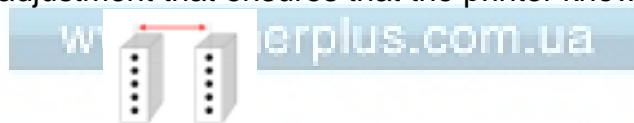
Head Angular Adjustment:

A term that refers to a mechanical print head alignment that ensures that an ink jet's print heads nozzles are on the same vertical plane. (Also known as the B head slant or the C head slant.) The head is rotated until it is vertically linear.



Head Gap Adjustment:

An electronic print head adjustment that ensures that the printer knows the exact distance between nozzle sets on separate heads.



Platen Gap:

The distance between the print head, and the printable surface.

Micro Weave:

The way an Epson Ink Jet printer interlaces (weaves) bands of an image during printing.

Bi-Directional Adjustment:

An electronic adjustment, that ensures that a printer can coordinate left to right, with right to left, printing.

Head ID:

The calibration value written on the print head that allows the printers electronics to compensate for the print heads "personality" (inaccuracies).



Field Repair Guide

Communication Error or Pause Light Error

Model: Stylus Pro 7000/7500/9000/9500/10000

Symptom:

Driver displays "Communication Error" when sent a print job.

Pause Light on but LCD displays "Ready"

Pause Light off but LCD displays "Pause"

Reason:

The printer driver does not recognize the printer name.

Solution:

Set the printer name to reflect the proper name as listed below.

1. Place the paper release lever in the release position
2. **(Power On)** With **(SelectType)** and **(Paper Feed +)** depressed
3. Verify name displayed on LCD is the correct name (the name will be only displayed for a short time)
4. Power off and repeat steps 2 and 3 until the proper name is displayed

Printer Model	Name Displayed on LCD
Stylus Pro 7000	Stylus Pro 7000
Stylus Pro 7500	Stylus Pro 7500
Stylus Pro 9000	Stylus Pro 9000
Stylus Pro 9000P	Stylus Pro 9500
Stylus Pro 9500	Stylus Pro 9500
Stylus Pro 10000 (Dye)	Stylus Pro 10000
Stylus Pro 10000 (Archival)	Stylus Pro 10000CF



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Vertical Yellow Lines

If a consistent yellow vertical line(s) is printing through all documents, the T-Fence will need to be cleaned or replaced.

These lines are NOT random. They will always appear in the same location with every print.

Have a technician/customer take a soft cloth, such as one that would be used to clean eye glasses or a camera lens (do NOT use a Paper Towel), and clean the T-Fence in the area that the yellow lines appear

If cleaning the T-Fence does not work, then it will need to be replaced.

