

FORMAX[®]

AP4
Address Printer

MAINTENANCE MANUAL
First Edition

SAFETY PRECAUTIONS

THIS EQUIPMENT PRESENTS NO PROBLEM WHEN USED PROPERLY. OBSERVE SAFETY RULES WHEN OPERATING THE PRINTER. BEFORE USING PRINTER, READ THIS MANUAL CAREFULLY AND FOLLOW RECOMMENDED PROCEDURES, SAFETY WARNINGS, AND INSTRUCTIONS:

✓ **WARNING:**

Hazardous Moving Parts. Keep Fingers and Other Body Parts Away.

ATTENTION:

Pièces mobiles dangereuses. Veuillez que les doigts et les autres parties du corps sont à l'écart.

✓ **CAUTION**

Double pole/neutral fusing. For continued protection against risk of fire, replace only with same type and rating of fuse.

- ✓ Avoid touching moving parts or materials while machine is in use. Before clearing a jam, be sure machine mechanisms come to a stop.
- ✓ Always turn machine off before making adjustments, cleaning machine, or performing any maintenance covered in this manual.
- ✓ Power cord is supplied with machine. Plug it into a properly grounded wall, easily accessible outlet located near machine. Failure to properly ground machine can result in severe personal injury and/or fire.
- ✓ Power cord and wall plug are primary means of disconnecting machine from power supply.
- ✓ **DO NOT** use an adapter plug on line cord or wall outlet or remove ground pin from line cord. Avoid using wall outlets that are controlled by wall switches, or shared with other equipment.
- ✓ **DO NOT** route power cord over sharp edges or trap it between furniture. Make sure there is no strain on power cord caused by jamming it between equipment, walls or furniture.
- ✓ **DO NOT** remove covers. Covers enclose hazardous parts that should only be accessed by a qualified service representative. Report any cover damage to your service representative.
- ✓ This machine requires periodic maintenance. Contact your authorized service representative for required service schedules.
- ✓ To prevent overheating, do not cover vent openings.
- ✓ Use this equipment only for its intended purpose.

In addition, follow any specific occupational safety and health standards for your workplace or area.

This manual is intended solely for the use and information of Hqto cz, its designated agents, customers, and their employees. The information in this guide was obtained from several different sources that are deemed reliable by all industry standards. To the best of our knowledge, that information is accurate in all respects. However, neither Hqto cz nor any of its agents or employees shall be responsible for any inaccuracies contained herein.

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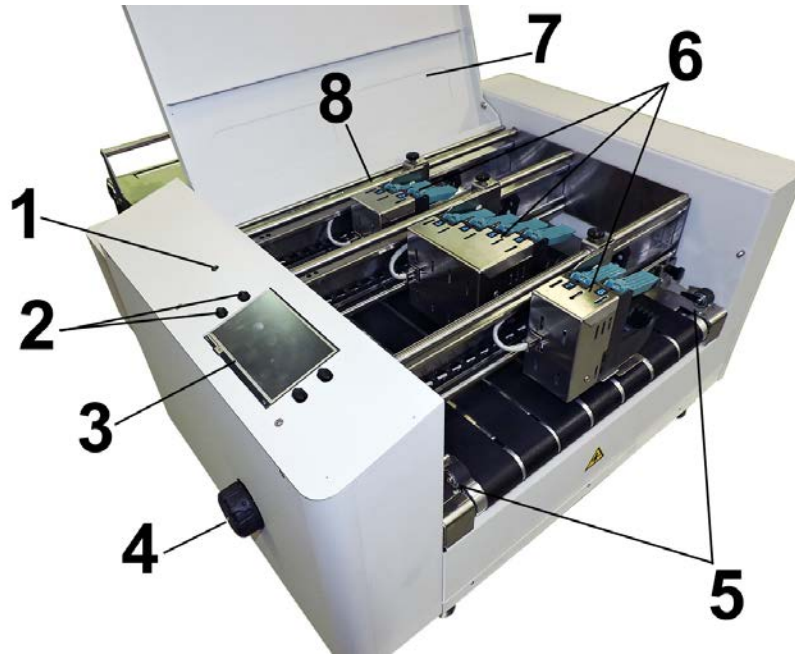
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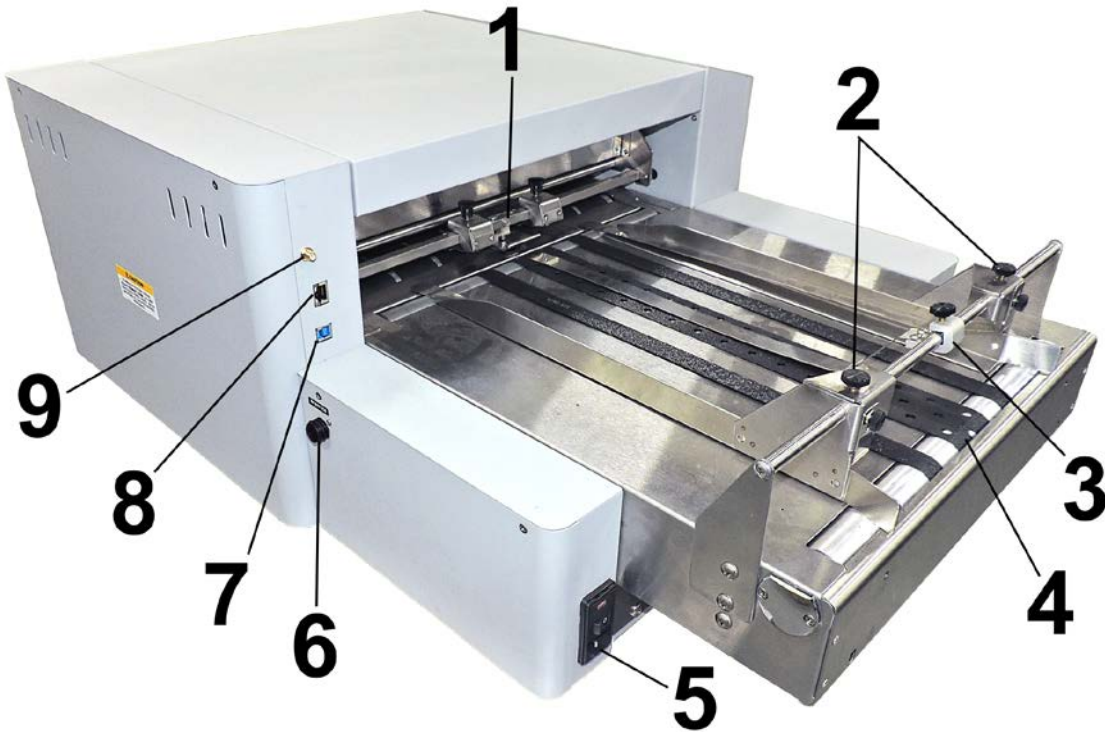
SECTION 1 – *Getting Acquainted*

Front View



1.	POWER INDICATOR LIGHT – ON (illuminated) when Main Power Switch is ON.
2.	CONTROL PANEL KEYS – Used to operate often used Printer functions: Quick Menu, Shutdown/Reset, Transport ON/OFF, Feeder ON/OFF.
3.	CONTROL PANEL TOUCHSCREEN – Displays Menu and information about Printer status. Controls Printer functions and setup.
4.	MEDIA THICKNESS ADJUSTMENT KNOB – Adjusts height of Printhead Carriage to compensate for different media thicknesses. NOTE: Always raise Printhead Carriage to uppermost position when storing Printer.
5.	EXIT PRESSURE ROLLERS – Help media to exit Printer. Assemblies are repositionable. Position so they provide media drive but are out of the print-area.
6.	PRINTH UNITS – Contains three repositionable Print Units. Two of the Print Units contain two Printheads (ink cartridges) and one contains four Printheads. A continuous image up to ~4” high can be printed when all Print Units are combined.
7.	TOP COVER – Encloses the Print Area.
8.	MEDIA SENSOR – Senses media as it enters the Printhead area. Sensor is located between the first Print Unit (Heads 1, 2) and the Feed Rollers.

Rear View



1.	ENTRY PRESSURE ROLLERS – Drives media to and under the Printheads.
2.	MEDIA SIDE GUIDES – Used to position and guide media into the Printer.
3.	MEDIA HOLD-DOWN STRAP – Holds media flat when feeding under Printheads.
4.	TRANSPORT BELTS – Three Transport Belts move media to the Printheads. The two, narrow Outer Transport Belts can be repositioned to accommodate different widths of media.
5.	MAIN POWER SWITCH, POWER RECEPTACLE AND FUSE – Power cord plugs in here. WARNING: Verify that the receptacle shows the correct voltage 115V or 220V selection. Switch turns Main Power ON/OFF. Fuse provides over-current protection. WARNING: Press the ON/OFF Button, located on the control panel, to properly shut-down the printers electronics before turning off the Main Power Switch. CAUTION: Double pole/neutral fusing. For continued protection against risk of fire, replace only with same type and rating of fuse.
6.	FEEDER INTERFACE CONNECTOR – Allows connection to an optional feeder, so the printer can stop/start the feeder appropriately.
7.	USB 3.1 PORT – Connects Printer to computer. <i>(Also supports USB 2.0)</i>
8.	ETHERNET PORT – Connects Printer to a network.
9.	WI-FI PORT – Connect Wi-Fi antenna <i>(included)</i> to monitor or operate Printer wirelessly through your network.

Control Panel



1.	<p>QUICK MENU KEY – Allows quick access to often-used Printer functions without having to scroll through a number of screens. Test Feed/Reprint, Horizontal and Vertical Alignment, Printer Preferences, Purge Print, and Ink Status. Press Quick Menu key again to return to previous screen.</p>
2.	<p>SHUTDOWN/RESET KEY – The Shutdown Printer screen opens with 6 button options: Reset, Shutdown, USB Disconnect, Sleep Now, Software Reload, Port Reset and Cartridge Initialize. Shutdown button safely powers-down printer electronics. It is very important that this is done before shutting off the Main Power Switch.</p>
3.	<p>TRANSPORT ON/OFF KEY – Turns the Transport Motor ON and OFF. Press to turn Transport OFF. Also used to temporarily run the Transport to clear media from under the Printheads.</p>
4.	<p>FEEDER ON/OFF KEY – Turns the Feeder ON and OFF. Provides a quick way to print and pause a job at the Printer without using the Touchscreen or computer. Press to start printing. Press to pause a running job. Press key again to resume printing. NOTE: After pausing a job, pressing this key starts both Feeder and Transport.</p>
5.	<p>CONTROL PANEL TOUCHSCREEN – Use the Control Panel Buttons to open certain screens and/or use the Touchscreen arrow and screen icons to operate the Printer and set and adjust Printer settings and functions. You can also check Printer status and error messages.</p>
6.	<p>POWER INDICATOR LIGHT – ON (illuminated) when Main Power Switch is ON.</p>

NOTE: A complete description of the functions and operation of the Touchscreen can be found in the User Guide (Operator Manual). See Section 3 – Operating the Printer.

SECTION 2 – *Troubleshooting*

This section is arranged first by the condition that might occur, and then by possible problems, their cause and recommended solutions.

Power Problems

CONDITION	PROBLEM	SOLUTION
Power is ON, nothing happens.	No power to Printer.	<p>Check that power cord is plugged in.</p> <p>Check that power outlet is live.</p> <p>Check fuse in Main Power Switch. Replace with a fuse of the same rating.</p> <p>Check fuses on Power Supply PC Board. <i>(Requires disassembly)</i></p> <p>Bad Controller PC Board.</p> <p>Bad Power Supply.</p>

Interface Communication Problems

CONDITION	PROBLEM	SOLUTION
Printer does not respond to software	Connection problems.	<p>Press Port Reset on the Power Touchscreen.</p> <p>Check that port is communicating with Printer by using another USB cable, replace cable.</p> <p>If port cannot communicate using another parallel or USB cable, check Printer.</p> <p>If port cannot communicate using another USB cable and Printer is OK, check the USB port.</p> <p>Check cable connection to see if any of pins are bent or missing. If damaged, replace the cable.</p>
Printer not responding to software	Poor connection between Printer and computer.	<p>Press Port Reset on the Power Touchscreen.</p> <p>Turn Printer OFF and ON again.</p> <p>Check connections.</p>

Touchscreen Display Problems

CONDITION	PROBLEM	SOLUTION
Touchscreen visible but too light or dark	Touchscreen maladjusted.	Adjust Touchscreen using Brightness control in Service Menu .
No Touchscreen display	Power not ON. Control Panel Cable loose, broken or disconnected. Touchscreen broken. Broken solder joint or connection on display PC Board.	Turn Power Switch ON. If still no display, see Power Problems . Check Control Panel Cable for breaks. Check connections on Control Panel PC Board and Main PC Board. Replace Touchscreen Display. Repair or replace Touchscreen PC Board.
Touchscreen shows solid line or garbled characters	Power Supply. Static electricity.	Check voltages and inspect power supply connections to Processor PC Board. Turn Printer OFF, then ON.
Touchscreen freezes, or goes blank or dark	A Printer function or software is stuck or looping. Bad Power Supply. No firmware (BIOS). Bad Processor PC Board.	Press Software Reload or Reset button on the Touchscreen after pressing the Power button on the Control Panel. Check all voltages. Install firmware. If firmware was already installed, press Software Reload button on the Touchscreen after pressing the Power button on the Control Panel. Replace Processor PC Board.

Feeding Problems

CONDITION	PROBLEM	SOLUTION
Intermittent feeding	<p>Feeder Feed Ramp not used.</p> <p>Feeder Side Guides set improperly.</p> <p>Dirty Feed Rollers.</p> <p>Media stuck together.</p> <p>Bad or dirty Sensor.</p> <p>Uneven mail piece.</p>	<p>Feeder Feed Ramp adds a slope to stack and helps feeding.</p> <p>Loosen Feeder Side Guides slightly.</p> <p>Clean Feeder Feed Roller with distilled water and a cloth. DO NOT use any solvents or detergents as they may damage the Feed Rollers.</p> <p>Fan media before placing it in Printer.</p> <p>Clean Sensor with compressed air or replace it.</p> <p>Tap inserts to front of envelopes and retry.</p>
Multiple feeds	<p>Feeder Separator gap not set properly.</p> <p>Sensor bad or dirty.</p> <p>Media stuck together.</p> <p>Feeder Side Guides too close to media.</p>	<p>Adjust Separators to thickness of media.</p> <p>Clean Sensor with compressed air or replace it.</p> <p>Fan media before feeding it in Printer.</p> <p>Push Side Guides away from media.</p>
Failure to feed	<p>Feeder Side Guides too close to media.</p> <p>Material is out of specification.</p>	<p>Readjust Feeder Side Guides.</p> <p>Instruct user on proper operation.</p> <p>Maximum thickness: 0.5" (12 mm)</p> <p>Check for broken Drive Belt and replace, check for loose set screws on Drive Pulley or Belt Drive Roller Pulley.</p>
Jams	<p>Media path obstruction.</p> <p>Media not loaded properly.</p> <p>Feeder Feed Ramp not used properly.</p> <p>Separators improperly adjusted.</p> <p>Media curled or bent.</p> <p>Bad or dirty Sensor.</p> <p>Worn Feeder Separator Tip.</p> <p>Printhead adjusted too low.</p> <p>Conveyor Tape(s) (<i>Transport Belts</i>) under Printhead broken.</p>	<p>Clear jam and remove pieces remaining under Printhead.</p> <p>Instruct operator in proper loading of media.</p> <p>Set Feeder Feed Ramp.</p> <p>Adjust Feeder Separators to thickness of media.</p> <p>Uncurl media.</p> <p>Clean or replace Sensor.</p> <p>Replace Feeder Separator Tip.</p> <p>Raise Printhead.</p> <p>Replace Conveyor Tapes (<i>Transport Belts</i>)</p>

Printing Problems

CONDITION	PROBLEM	SOLUTION
No printing: Media is blank after going under Printheads	Sensor did not see piece or send print signal to PC Board. Clogged Cartridges. Cartridge dried out. Tape on Printhead. Cartridge not properly inserted. Ink Cartridge empty. Power Supply voltage out of specification. Printhead Holder. Printhead not positioned correctly to print on media.	Clean or replace Sensor as required. Clean and purge Cartridges. Install new Cartridge. Remove tape Remove and reinsert Cartridge. Install new Ink Cartridge. Check voltages. Check the Flex Circuit for tears. Adjust Printhead to print on media.
Print slanted or skewed	Skew within specifications. Side Guides not set properly. Printheads adjusted too high.	$\pm 2.5^\circ$ from bottom edge of material. Readjust Side Guides. Reset or lower Printheads.
Line spacing not uniform	Printheads not aligned properly.	Realign Printheads.
Gray print	Ink Cartridge almost dry.	Replace Ink Cartridge.
Blurry print	Envelope thickness adjustment incorrect. Dirty Printheads. Media too porous or absorbent. Printheads scratched when cleaned.	Adjust Media Thickness Knob to lower the Printhead. Clean Printheads. Use other media. Replace Printhead.
Printing light	Printhead clogged or dirty. Resolution of output set too low. Running low on ink.	Purge and clean Printheads. Reset to a higher resolution. Replace Cartridge.
Print streaking	Envelope thickness set too low. Exit Roller dirty. Printhead dirty.	Adjust media thickness. Clean Exit Roller with water. Clean Printhead.
Non-uniform print quality	Check voltage from the Power Supply. Poor Printhead connection.	Adjust to 12 VDC. Check that the Flex Circuit connections are in place.
Random white lines/ streaks in a line of print	Ink Cartridge Nozzle dirty. Cartridge not properly inserted. Cartridge was hit, shaken, or dropped.	Clean Cartridge. Remove and reinsert Cartridge. Replace Cartridge.

Printing Problems (continued)

CONDITION	PROBLEM	SOLUTION
Random white lines/ streaks in a line of print (continued)	<p>Tap water was used to clean Ink Cartridge and mineral deposits have blocked Ink Chamber.</p> <p>Wrongly directed or forceful wiping have driven particles into the Nozzles.</p> <p>Cartridge low on ink.</p> <p>Tape covering Print Nozzle or Vent Holes.</p> <p>Printhead connections not set.</p> <p>Bad Printhead Drive Card.</p>	<p>Replace Cartridge.</p> <p>Replace Cartridge, instruct operator in proper cleaning method.</p> <p>Replace Cartridge.</p> <p>Remove tape.</p> <p>Check that the Flex Circuit connections are in place.</p> <p>Replace Printhead Drive Card.</p>
Smearred ink	<p>Carriage too low.</p> <p>Coated paper preventing ink absorption.</p> <p>High humidity is slowing drying time.</p>	<p>Raise Carriage.</p> <p>Use fast-dry ink and/or allow more time to dry after printing.</p> <p>Use fast-dry ink and/or lower DPI resolution.</p>

Print Placement Problems

CONDITION	PROBLEM	SOLUTION
Print too close to leading or trailing edge of media	<p>Size of media not set correctly in Layout.</p> <p>Bad or dirty Sensor.</p> <p>Feed Ramp not used properly.</p> <p>Printheads set incorrectly.</p>	<p>Check layout in Layout for proper size.</p> <p>Clean or replace Sensor.</p> <p>Set Feed Ramp.</p> <p>Adjust location and margins in layout software.</p>
Print too high or low on the media	<p>Physical location of Printhead does not match layout template.</p>	<p>Adjust Media Guides or Printheads. Use the “0” reference point in the center of the scale to help you align print on media.</p>
Address prints upside down on media	<p>Layout and/or stock direction incorrect.</p>	<p>Change direction from Normal to Inverted or Inverted to Normal in Properties in Printer Driver.</p>
Address too close to center of media	<p>Chosen media size in layout is too small.</p> <p>Physical location of Printheads do not match layout.</p> <p>Feed Ramp not set properly.</p>	<p>Set correct media width size in layout.</p> <p>Check image on layout screen, Adjust Media Guide or Printhead.</p> <p>Adjust Feed Ramp.</p>

Print Placement Problems (continued)

CONDITION	PROBLEM	SOLUTION
Address printing partially off media	<p>Chosen media size in layout is too large.</p> <p>Physical location of Printheads do not match layout.</p> <p>Feed Ramp not set properly.</p>	<p>Set correct size from in layout.</p> <p>Check image on layout screen.</p> <p>Adjust Media Guide or Printhead.</p> <p>Adjust Feed Ramp.</p>

Print Content Incorrect

CONDITION	PROBLEM	SOLUTION
Information being printed is wrong, incomplete, or garbled	<p>Poor cable connections.</p> <p>Interface problem.</p> <p>Corrupted database file.</p>	<p>Check USB cable:</p> <p>Securely fastened at both ends.</p> <p>Cable does not exceed 6 feet in length.</p> <p>Printer's internal USB cable in good condition.</p> <p>Check Printer setup at computer.</p> <p>Use another database file.</p>
Barcode does not print	<p>Wrong font selected.</p> <p>No zip code in database.</p> <p>Barcode not enabled.</p>	<p>If using a combined field barcode, choose USPS barcode font.</p> <p>Put zip code field in database or use another database.</p> <p>Enable barcode.</p>
Unwanted BOLD, <i>Italic</i>, or <u>Underlined</u> type	<p>Turned ON in layout.</p>	<p>Open layout and change type style.</p>
Not all addresses in database print	<p>Only some addresses in the database were selected to print.</p>	<p>Start new job and select entire database.</p>
Data is being lost	<p>Database problem.</p> <p>USB cable connection loose.</p>	<p>Check database program.</p> <p>Reconnect.</p>
Graphics or text have a white line through them	<p>Graphic or text is set between junction of two Printheads.</p>	<p>Move copy or adjust Printhead.</p>



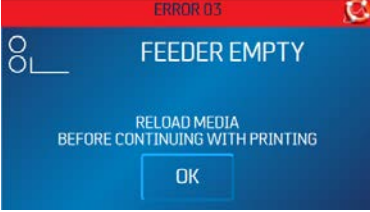
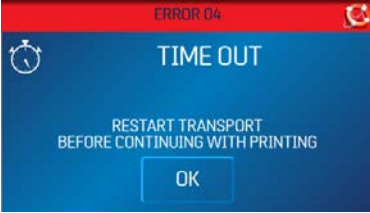

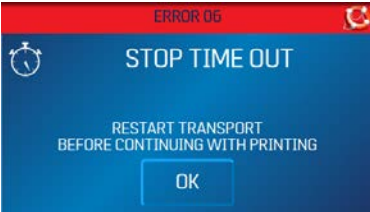
Software Problems

Refer to the manual for the application software being used.

**SECTION 2
TROUBLESHOOTING**

Touchscreen Messages

The Touchscreen will display messages to alert you to problems or to indicate a process is finished.

SCREEN MESSAGE	PROBLEM	SOLUTION
 <p>ERROR 01 PAPER FEED CLEAR THE PRINTZONE BEFORE CONTINUING WITH PRINTING OK</p>	<p>Paper jam. Media is curled or bent. Media is too thin. Sheet Separators need adjustment.</p>	<p>Clear media from feeder and/or print transport area. Uncurl media. Minimum media thickness: at least 0.008" (0.2 mm) thick. Adjust Sheet Separators on the Feeder. Press OK to continue.</p>
 <p>ERROR 02 DOUBLE FEED INSPECT THE LAST PRINTED PIECE BEFORE CONTINUING WITH PRINTING OK</p>	<p>Media sticking together.</p>	<p>Clear media from feeder and/or print transport area. Use Reprint (on <i>Quick Menu screen</i>) to retrieve/restore any missing or misprinted pages in the print job. Press OK to continue.</p>
 <p>ERROR 03 FEEDER EMPTY RELOAD MEDIA BEFORE CONTINUING WITH PRINTING OK</p>	<p>No media in Feeder/Hopper.</p>	<p>Reload media. Press OK to continue.</p>
 <p>ERROR 04 TIME OUT RESTART TRANSPORT BEFORE CONTINUING WITH PRINTING OK</p>	<p>Printer operation has timed out or Printer was paused too long.</p>	<p>Check Printer. Press OK to continue.</p>
 <p>ERROR 05 NO ENCODER SIGNAL PAPER TRANSPORT NOT DETECTED. CHECK FOR JAMMED/STALLED TRANSPORT. CALL SERVICE. OK</p>	<p>Printer Motor has stopped. Wire Harness connection is loose or broken. Encoder Belt worn or broken. Encoder Sensor not working.</p>	<p>Check Printer Motor. Check J5 connector on I/O Board. Check Encoder Belt. Check Encoder Sensor.</p>
 <p>ERROR 06 STOP TIME OUT RESTART TRANSPORT BEFORE CONTINUING WITH PRINTING OK</p>	<p>Printer Transport was left running and automatic 5 minute timeout has started.</p>	<p>Press OK to restart transport before continuing to print.</p>

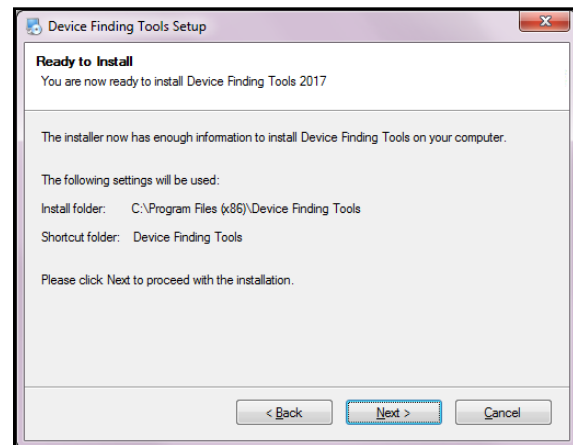
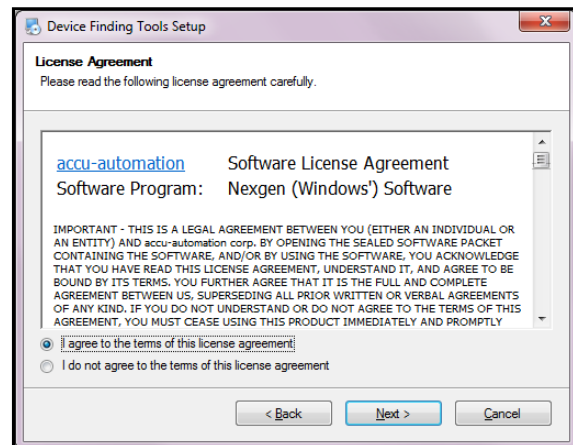
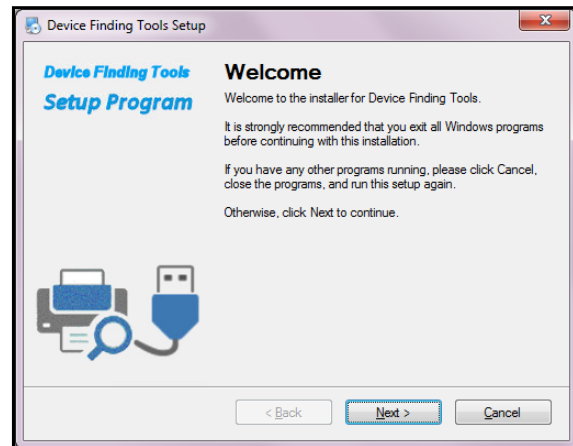
SECTION 3 – Service Features

Firmware Updates

Install Device Finding Tool

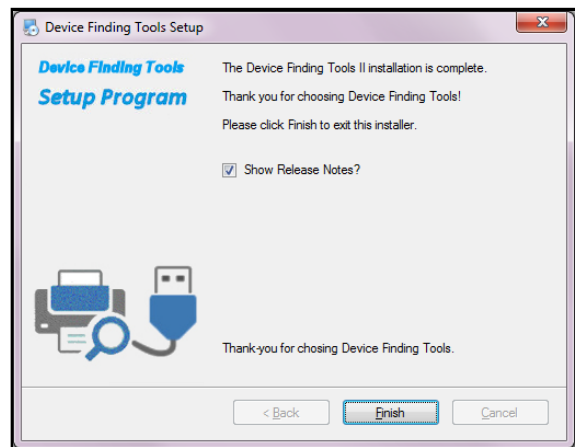
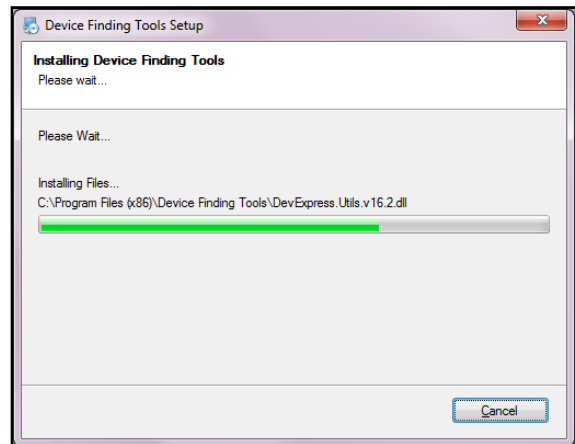
To implement Printer Firmware updates, you will need to install the **Device Finding Tool** software included with your Printer. Make sure the USB or Network cables are connected to the Printer and your computer and that the Printer is turned on.

1. **Open Printer Driver Folder:** Move the “*Device Finding Tool Setup.exe*” file to your desktop. Double-click the icon.
2. A “*User Account*” window opens. Click **Yes**.
3. The “**Device Finding Tools Setup**” window opens. Click “**Next**”.
4. The “**License Agreement**” window opens. Select “**I agree...**”. Click “**Next**”.
5. The “**Ready to Install**” window opens. Click “**Next**”.



SECTION 3 FUNCTIONAL OPERATION

6. The software is installed.
7. The “**Finish**” window opens. Click “**Finish**”.

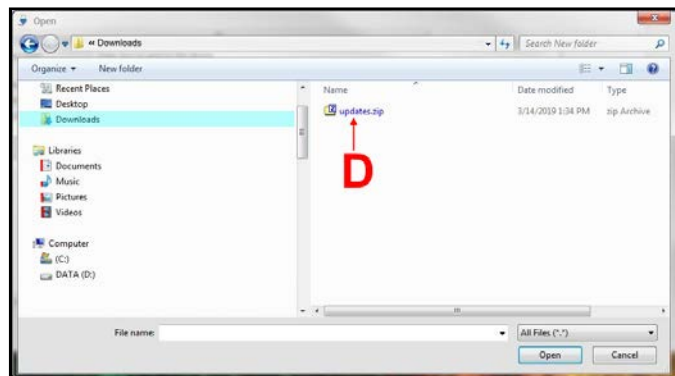
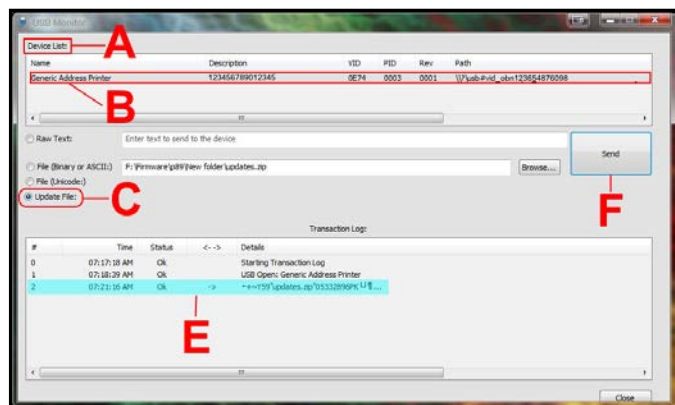
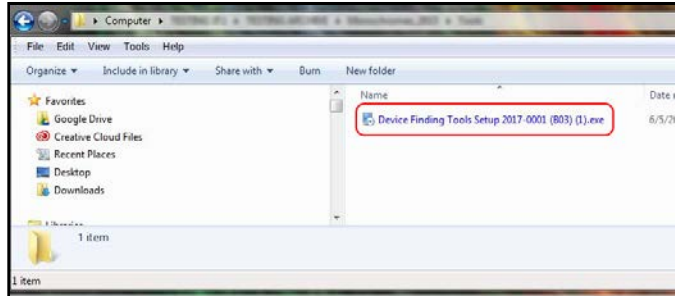


Firmware Update Process

NOTE: Updates can only be loaded through a direct USB connection to the Printer.

To download a firmware update:

1. Download the update package, (*usually from the manufacturer's website*).
2. If not already installed, load the **Device Finding Tool** included in the software bundle that came with the Printer. You will notice that two shortcut icons appear on your computer screen: **USB Monitor** and **ANPD Monitor**.
NOTE: If the **Device Finding Tool** was already loaded on your computer and you don't see the shortcut icons, you can locate them in **All Programs** in the **Device Finding Tools** folder. Open the folder.
3. Click on the **USB Monitor** shortcut. The **USB Monitor** screen opens. Devices connected to your computer via USB will appear in the **Device List [A]**. Select the desired Printer **[B]** from the list.
4. Select **Update File [C]**. Use the **Browse** button to locate the update package files in the **Downloads** folder **[D]**. Select the file and click **Open**.
5. Note that the **Updates** file appears in the **Transaction Log** list **[E]**. Select the file from the list, then press the **Send [F]** button. This will load the file in the Printer.

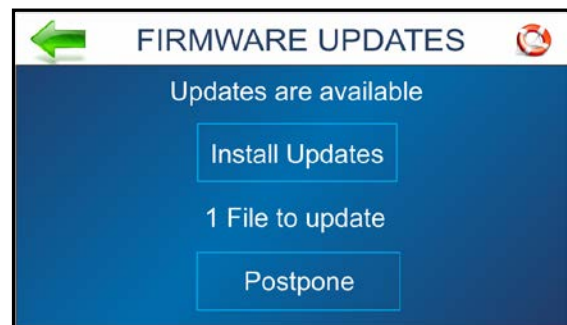


To install a firmware update:

Once a firmware update is sent to the Printer, the **“Firmware Updates”** screen appears when the **Power** button on the Control Panel is pressed. The screen indicates how many update files are available.

NOTE: If no firmware updates were sent to the Printer, the normal **Shutdown Printer** screen appears.

- Press **“Install Updates”** to load the new firmware.
- Press **“Postpone”** to install the firmware at a later time. **NOTE:** The **Firmware Updates** screen will appear each time the Control Panel **Power** button is pressed until the firmware update is installed.



Tools Menu

Press **Tools** icon on **Main Menu** to open the **Tools** screen.

Estimator: Select to set up an **Ink Cost Estimate** for a particular print job. The Printer runs, but does not print a preset sample number of pages (*up to 50 pages*) of the job to be printed. (*Set the number of pages in the Print Driver.*) The **Estimator** then determines the estimated ink cost for the entire print job.

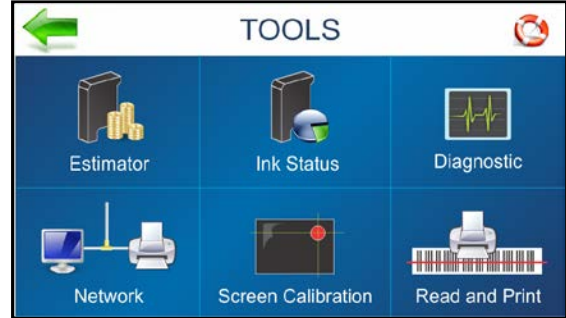
Ink Status: Select to view the percentage of ink left in the ink cartridges and the estimated number of prints remaining for each cartridge at a selected resolution, based on last page printed.

Diagnostic: Select to run diagnostic tests on key Printer systems and components.

Network: Set up access to a network. Also set up **Wi-Fi** capability for wireless access to a network. **Wireless Status** displays network information about the Wi-Fi connection. The **Time Server** displays information about the source used for date and time when the Printer is connected to an Internet-connected network.

Screen Calibration: Set the touch pressure (*sensitivity*) desired to activate the Touchscreen.

Read and Print : When Printer is operated as part of a system, activating **Read and Print** allows the Printer Transport to run continuously while receiving and printing individual data from a barcode scanner (*like a name and address for an envelope for an addressed preprinted insert*). Switch the feature ON/OFF from the **Read & Print Settings** screen.



INK ESTIMATOR

This tool estimates the cost of ink for a particular print job. The Printer runs and simulates printing a preset number of pages. Set the job to print 1-49 pages (*in the Print Driver*) for the printer to make the estimate. Generally, the higher the number of pages sent, the more accurate the estimate.

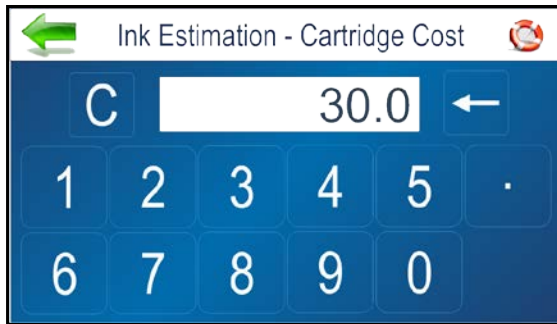
NOTE: It is recommended that **Purge First Piece** be turned off. This will use much less ink and increase the accuracy of the estimate.

Ink Cartridge Cost: Tap/press the entry box to enter the cost of the ink cartridges.

Number of Pages: Tap the entry box to enter the total number of pages for a given job.

Start Estimation Mode: Tap or press to start the Ink Estimator.

Estimated Ink Cost: Displays the estimated ink cost for the entire print job.



INK STATUS

Shows the percentage of ink remaining in each Ink Cartridge and the estimated number of prints remaining at a selected resolution. (*Resolution is selectable.*)

NOTE: Estimation is based on the last page printed.

“-----” Indicates no Ink Cartridge present or an unrecognized, unprogrammed Ink Cartridge.

“???????” Indicates an Ink Cartridge not programmed for this Printer.

Ink Status is also accessible by pressing the **Quick Menu** key on the Control Panel.

HEAD#		%	LIFE	
				150
[1]	AMC-Versatile	100	10 000	200
[2]	-----			
[3]	AMC-2580	100	10 000	300
[4]	???????????			
[5]	AMC-Standard	100	10 000	600
[6]	AMC-Standard	100	10 000	
[7]	AMC-Versatile	100	10 000	
[8]	AMC-Standard	100	10 000	

SECTION 3 FUNCTIONAL OPERATION

DIAGNOSTICS

Runs tests on Printer components and systems listed on the screen at variable speed.

To run Test: Remove media from the Printer. Press **Start Test** to start the diagnostic cycle. Press again to stop. While **Test** is activated, run one piece of media through the Printer to test the Sensor function. The **Test** cycles through each component automatically. Green lights indicate component is functioning properly.

NOTE: After running one piece, verify that the piece length was measured accurately. If the piece fed through, but no piece length was displayed and the Sensor condition still shows red; stop this test, Shutdown and Power OFF the Printer and clean the Media Sensor.

If the piece measured longer than the actual piece length; the piece is probably slipping or hesitating as it feeds. In this case, check or adjust the Sheet Separators and check and adjust the Media Thickness setting.

Clutch w/Sensor: Unchecked box: Tests clutch function (on/off) using an automated routine.

Checked box: With media loaded, tests Clutch and Media Sensor function.

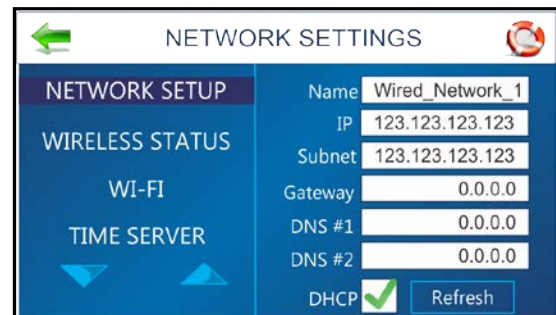
Conveyor: Checking/unchecking the box turns the “conveyor speed-up” relay on and off. (*Listen for relay clicking.*)

Feeder: Checking/unchecking the box turns the “external feeder” relay on and off. (*Listen for relay clicking.*) If an external feeder is connected the feeder should start/stop.



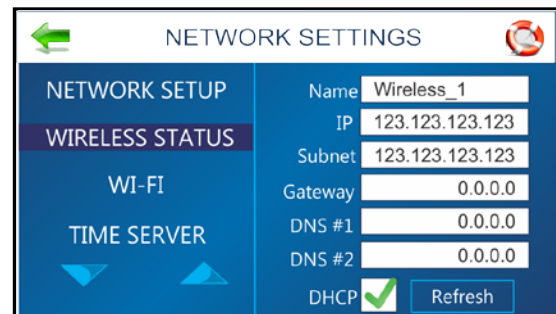
NETWORK SET-UP

Press the **Network** icon on the **Tools** screen to open the **Network Settings** screen. Select **Network Setup** to enter the settings for connecting the Printer to your network. Enter the Printer Name, IP address, Subnet address, Gateway address, DNS #1 and DNS #2 and select or deselect DHCP as needed. **Refresh** refreshes/updates the network connection.



WIRELESS STATUS

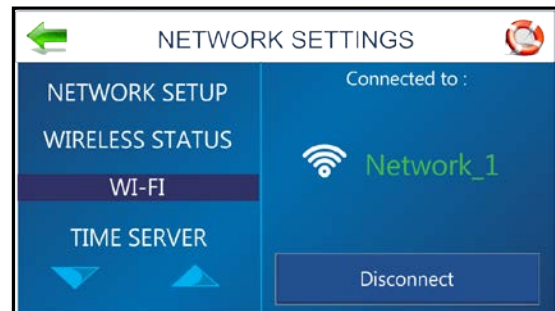
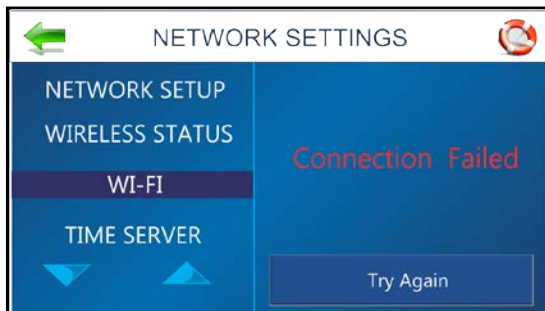
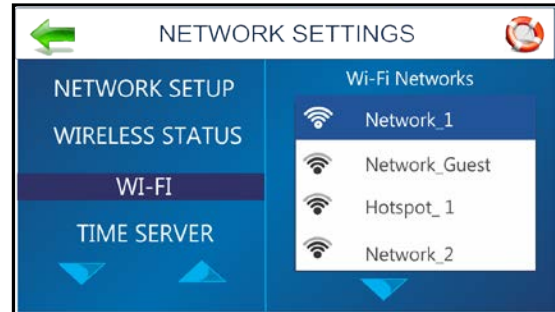
Once the **Network** and **Wi-Fi** are set up, this screen displays information about the wireless network connection.



WI-FI SET-UP

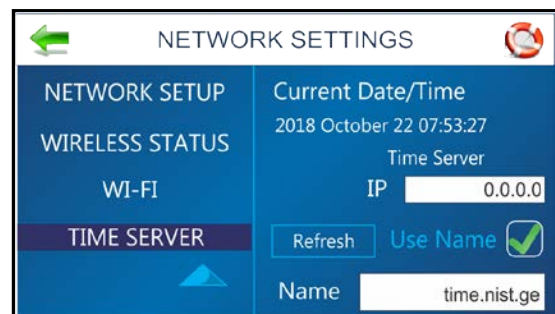
Press the **Network** icon on the **Tools** screen to open the **Network Settings** screen. Make sure the Wi-Fi antenna (*included*) is connected to the Printer's Wi-Fi port.

1. Select **WI-FI**.
2. Select the desired Network from the list of **Wi-Fi Networks**.
3. Enter **User ID** and **Password**. Click **OK**.
4. Screen will show if you are connected to the Network. If connection fails, try again. Check that you are connecting to the correct Network. Check User ID and Password.
5. Click **Disconnect** to end connection.



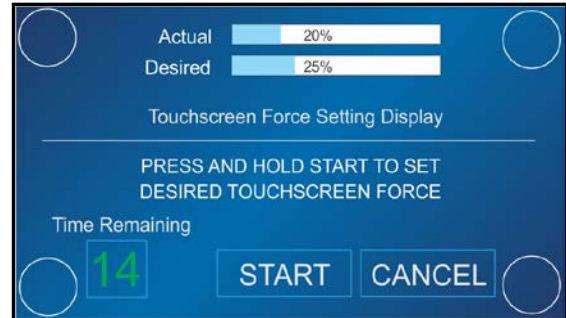
TIME SERVER (DATE AND TIME)

Displays the IP address of the Time Server being used and/or the Time Server's network name.



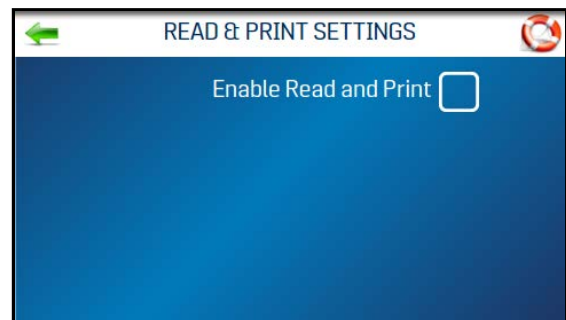
TOUCHSCREEN CALIBRATION

Adjust the touch pressure (*sensitivity*) needed to activate functions on the Touchscreen. (*Lower percentage = less pressure, more sensitive. Higher percentage = more pressure, less sensitive.*) Follow instructions on the screen to perform the calibration. **Time Remaining** counts down the 15 seconds given to complete each step. A screen message informs you if the calibration succeeded or failed.



READ AND PRINT

When the Printer is integrated as part of an in-line system, **Read and Print** allows the Printer Transport to run continuously while receiving and printing individual data from a barcode scanner (*like a name and address for an envelope for an addressed preprinted insert*). Switch the feature ON/OFF by checking/unchecking the box on the **Read & Print Settings** screen.

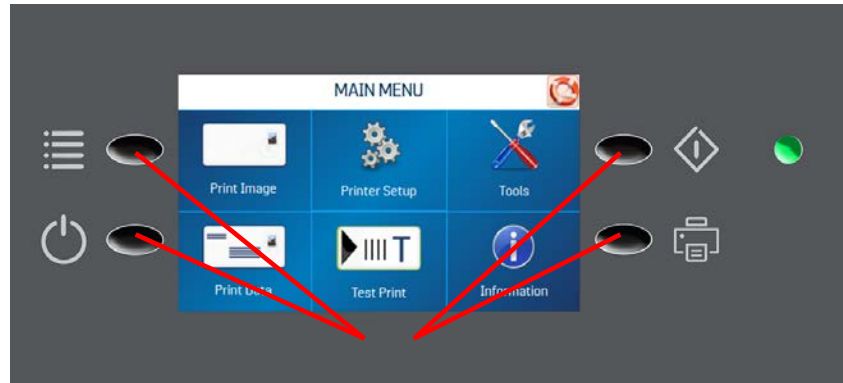


Service Menu

Service Menu allows you to adjust Printer operation by adjusting the settings, timing, percentage or speed of various Printer functions.

Open Service Menu by simultaneously holding down all four Control Panel buttons [A]. Use the **Up** or **Down** arrows to scroll through the menu.

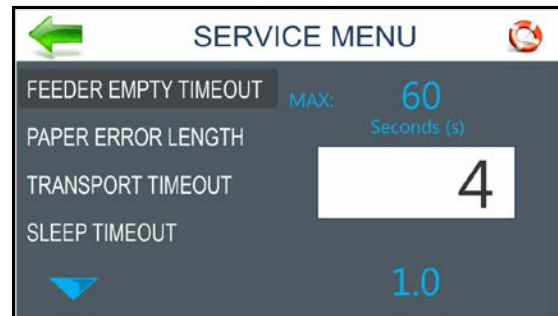
Exit Service Menu by pressing the green arrow to return to the regular touchscreens.



FEEDER EMPTY TIMEOUT

Set the amount of time the Printer will wait after running out of media before it cancels the current job (1 to 60 seconds).

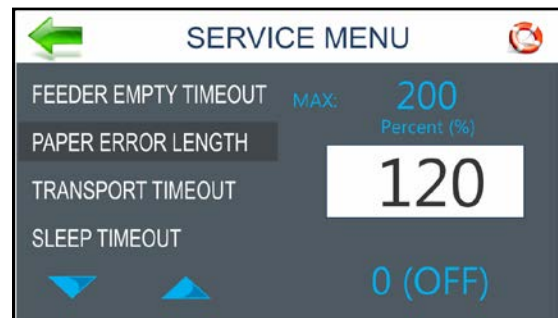
1. Select **Feeder Empty Time-Out**.
2. Press the white entry box to open the numerical keyboard. Enter desired number of seconds. Press the **Enter** key (lower right Arrow on numeric keyboard) to save the new setting.



PAPER ERROR LENGTH

Set Media Sensor sensitivity to double-feeding media. Set the percentage of media overlap allowed (0 (OFF) to 200% maximum) before a double-feed error stops the Printer.

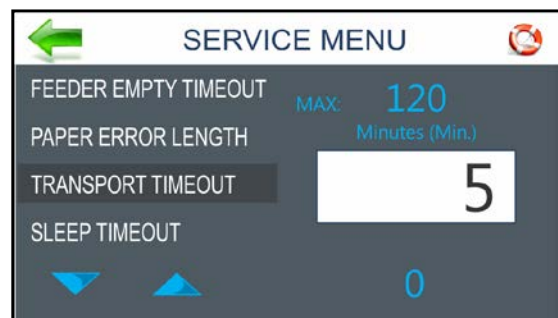
1. Select **Paper Error Length**.
2. Press the white entry box to open the numerical keyboard. Enter desired percentage. Press the **Enter** key (lower right Arrow on keyboard) to save the new setting.



TRANSPORT TIMEOUT

Set the amount of time the Printer will wait before canceling the current print job after pressing **Pause** or due to a media jam, or performing maintenance or service. (1 to 120 minutes).

1. Select **Transport Time-Out**.
2. Press the white entry box to open the numerical keyboard. Enter desired number of minutes. Press the **Enter** key (lower right Arrow on keyboard) to save the new setting.

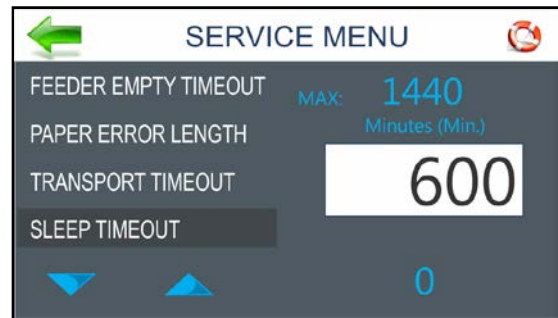


SECTION 3 FUNCTIONAL OPERATION

SLEEP TIMEOUT

Set the amount of time the Printer remains idle before enters **Sleep Mode** to reduce power consumption and to prolong Printer component life. (0 to 1440 minutes.) Tap screen to wake the Printer.

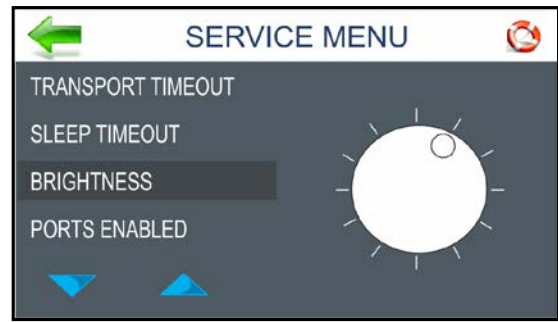
1. Select **Sleep Timeout**.
2. Press the white entry box to open the numerical keyboard. Enter desired number of minutes. Press the **Enter** key (*lower right Arrow on keyboard*) to save the new setting.



BRIGHTNESS

Brighten or darken the Touchscreen display.

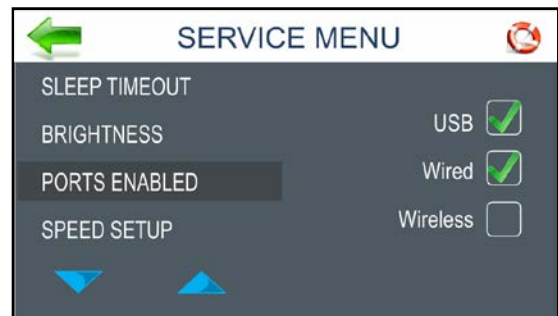
1. Select **Brightness**.
2. Move the small inner circle around the edge of the large outer circle to brighten or darken the **Touchscreen** display.



PORTS ENABLED

Displays active Printer ports on the **Touchscreen** display.

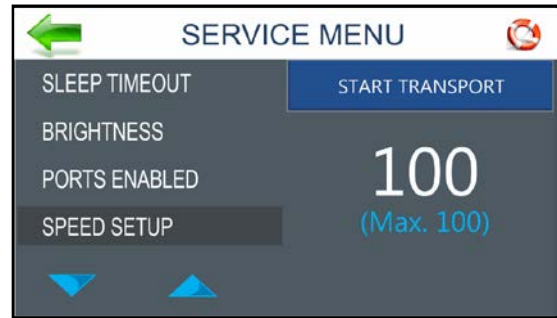
1. Select **Ports Enabled**.
2. Check or uncheck the boxes next to the Printer Ports to activate/deactivate the ports.



SPEED SET-UP

Use **Speed Set-up** to calibrate or reset Printer speeds after replacing the Main PCB Board, and/or replacing the Speed Control board.

See Section 4, “Print Speed Adjustment” for details.



METRIC

Switch the Touchscreen display to show either inches/foot or metric (meters) measurements.

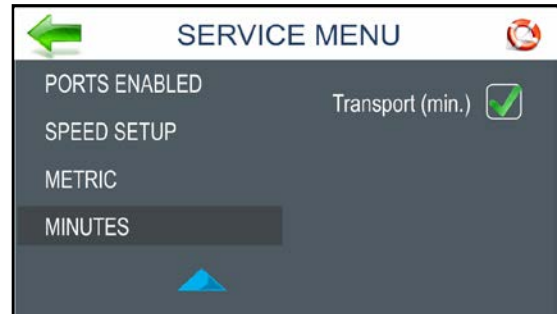
1. Select **Metric**.
2. Check the box next to Metric Units to show measurements as meters. Uncheck the box to show measurements in inches/feet.



MINUTES

Switch the Touchscreen display to show Printer speed in inches/second (meters/second) or feet/minute (meters/minute).

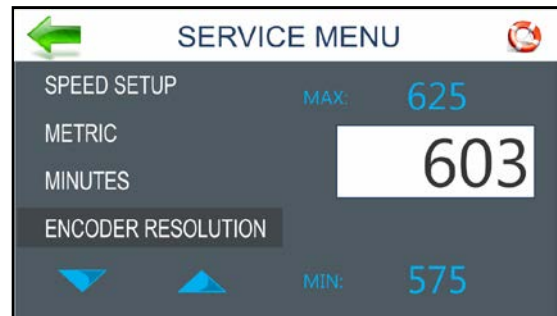
1. Select **Minutes**.
2. Check the **Transport (min.)** box to activate to show speed as per minute. Uncheck box to show speed as per second.



ENCODER RESOLUTION

Allows you to fine tune the Encoder Resolution to maintain print alignment. **Example:** To adjust for minute thickness variations that might occur when replacing the Transport Roller belt.

1. Select **Encoder Resolution**.
2. Make very small incremental changes in the setting (pulses/inch, 600 being the standard default). Check print alignment and adjust as needed.
NOTE: Generally, a change of more than 5 either way could indicate a larger issue.

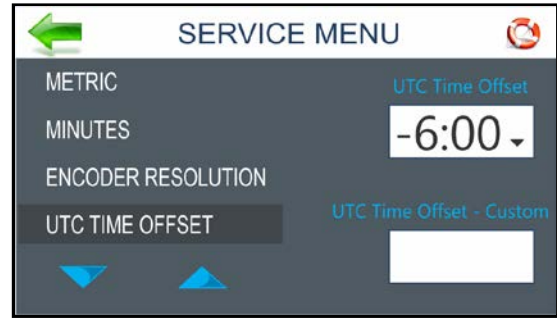


SECTION 3 FUNCTIONAL OPERATION

UTC TIME OFFSET (DATE AND TIME)

Enables an internal date/time clock for the Printer when connected to a Network.

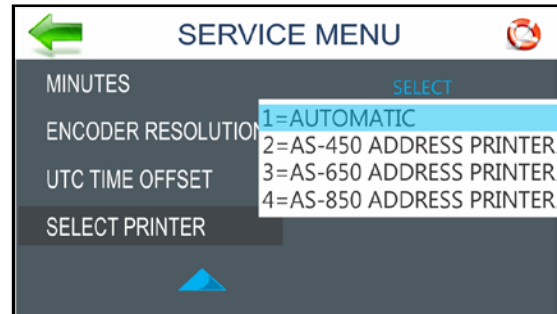
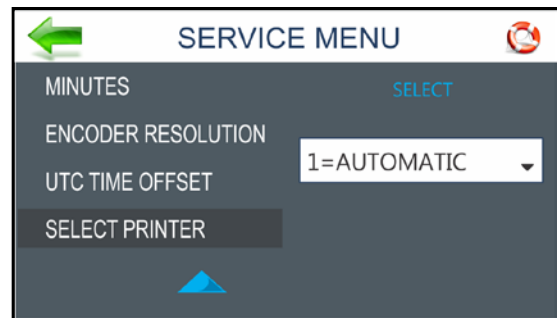
1. Press the **Network** icon on the **Tools** screen to open the **Network Settings** screen.
2. Select **Time Server** to connect to an online Time Server. Select the time difference for your location relative to Greenwich Mean Time.



SELECT PRINTER

After replacing the SD card, you can set the Printer to automatically determine (**AUTOMATIC** – default setting) which Printer Model is being used. You can also manually select the Printer Model.

1. Select **Select Printer**.
2. Tap the **Select** box to display the Printer Model list. Select **Automatic** or the appropriate Printer Model.
3. If selecting a Printer Model, click the **Power** button on the Control Panel and tap **Reset** to restart the Printer and enter the selection.



SECTION 4 – *Adjustments*

WARNING!

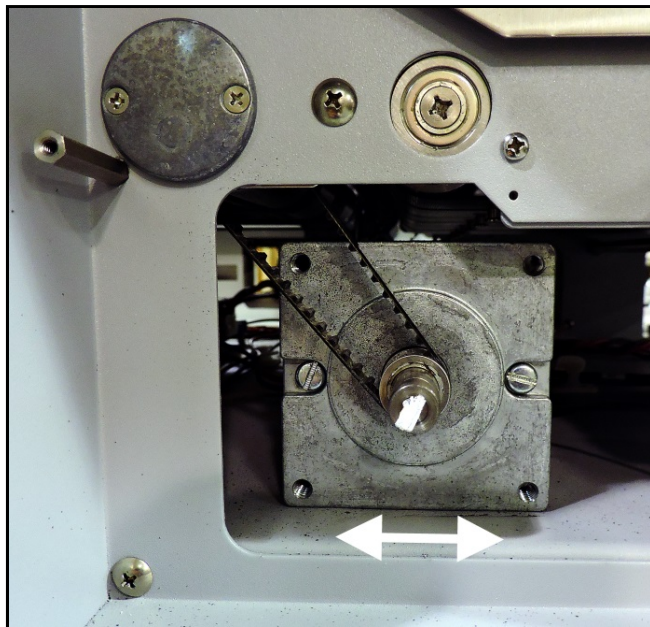
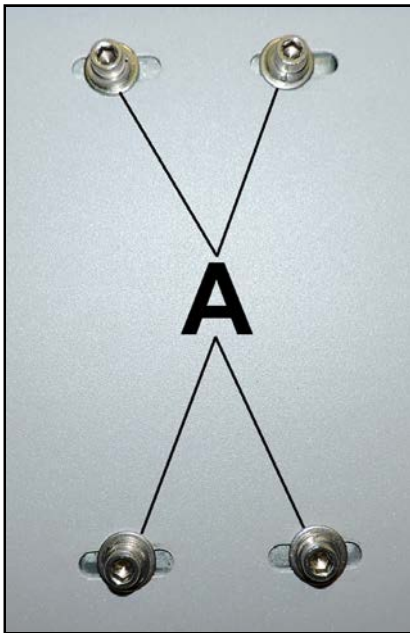
ELECTRICAL ADJUSTMENTS ARE MADE WITH PRINTER UNDER POWER. BE SURE TO USE NON-METALLIC TOOLS WHEN ADJUSTING POTENTIOMETERS ON PC BOARDS.

Printer Drive Belt Tension Adjustment

REQUIREMENT: To ensure proper tension on Drive Belt.

ADJUSTMENT:

1. Unplug Printer and remove the large Operator Side Cover (5 screws).
2. Loosen 4 screws [A] that secure the Motor to the Base.
3. Move Motor in slots to adjust belt tension. When properly tensioned, there should be about 1/8" of deflection in the Belt. Tighten the four Motor mounting screws.
4. Reinstall Side Cover.

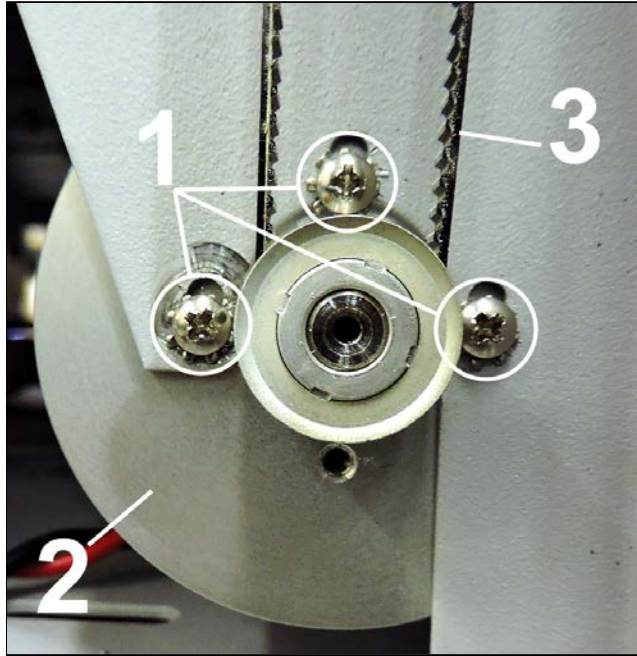


Encoder Belt Tension Adjustment

REQUIREMENT: To ensure Encoder Belt is properly tensioned.

ADJUSTMENT:

1. Unplug Printer and remove large Non-operator Side Cover (5 screws).
2. Loosen three screws [1] that mount Encoder to Side Frame.
3. Move Encoder [2] up or down in slots until you obtain about 1/8" deflection in the Belt [3].
4. Tighten three screws [1].
5. Reinstall Side Cover.

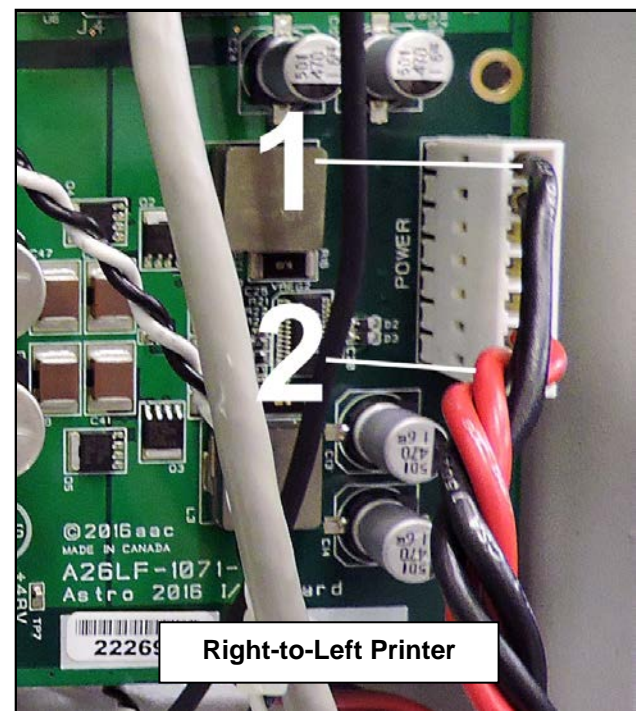
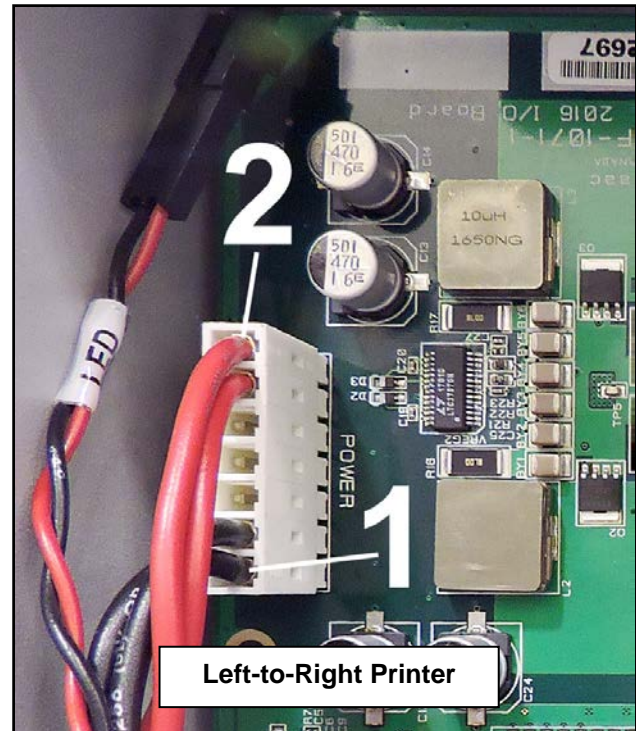
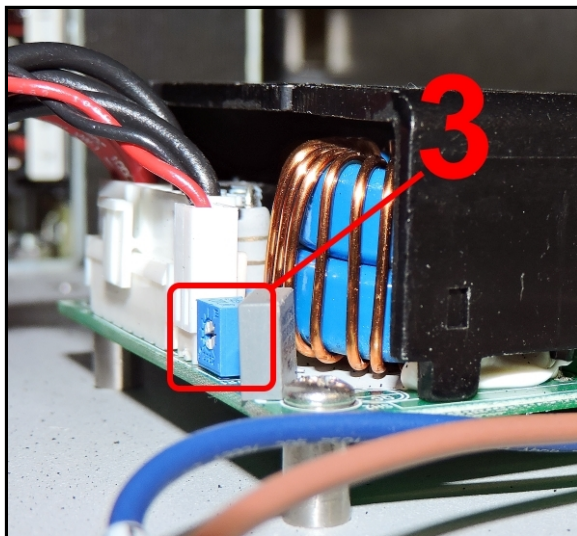


Output Voltage Adjustment

REQUIREMENT: To provide proper output from Power Supply to Printer.

ADJUSTMENT:

1. Remove both Non-Operator Side Covers.
2. Insert voltmeter probes into GND (Black) [1] and Positive (Red) [2] on the Power terminal plug on the I/O PC Board. Turn Printer **ON**.
3. Adjust the Potentiometer [3] on the Power Supply module to obtain $12\text{ VDC} \pm 0.1\text{ V}$.
4. Turn Printer **OFF**; apply lacquer (such as nail polish) to Potentiometer.
5. Replace Covers.



Printer Media Sensor Adjustment

REQUIREMENT: To assure that the Media Sensor senses media or to adjust a new Sensor when it is installed.

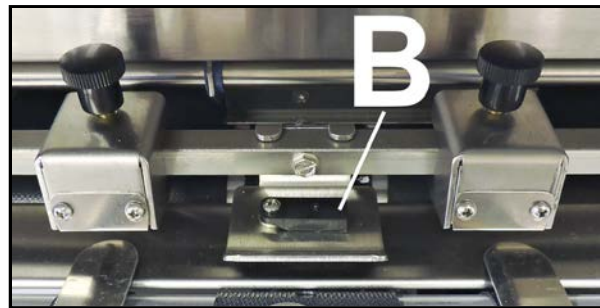
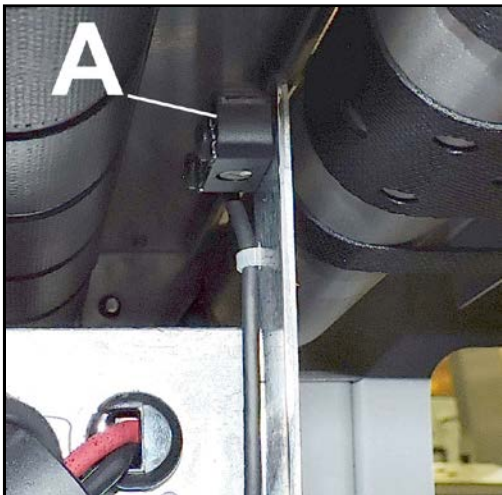
ADJUSTMENT:

1. Remove Non-Operator Side Cover.
Make sure that no media is covering Feeder Sensor [A] and that reflective plate [B] is installed. Turn Printer ON and watch lights on top of Feed Sensor.

If lights are GREEN, OFF or ORANGE, perform Steps 2-4:

If lights are ORANGE/GREEN, perform Steps 3 & 4:

2. Use a small plastic flat screwdriver to slowly turn potentiometer at bottom of Sensor clockwise until lights turn ORANGE/GREEN. Continue turning potentiometer just a few more degrees, then stop.
3. Place a piece of media you regularly use on top of Sensor and cover hole in Center Plate. Lights must turn GREEN.
4. Repeat same test with printed media (*use black media if possible*).
5. You can also check Sensor function by running the **Diagnostic Test**.



Print Speed Adjustment

REQUIREMENT: To provide proper Printer speed at each Print Quality setting.

ADJUSTMENT:

Use **Speed Set-up** to calibrate or reset Printer speeds after replacing the Main PCB Board, and/or replacing the Speed Control board. Speed Setup also allows you to set the maximum speed for your Printer.

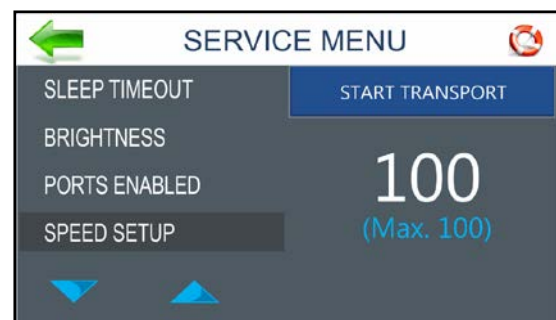
NOTE: Maximum setting is 100, but 95 inches per second is recommended, to avoid exceeding max nozzle-firing frequency, which can cause print quality issues (ghosting).

Setup will then calibrate the four print speeds in relation to the set maximum speed.

For example: If **Maximum Speed** is set at 95, the Printer will set the speeds as follows: **1** (23-24 ips), **2** (47-48 ips), **3** (71-72 ips), **4** (94-95 ips). **NOTE:** Speeds may vary slightly (± 1 or 2 ips).

To check or set new Printer speeds:

1. **Printer power is ON.**
2. Remove the Operator Side Cover.
3. Open **Service Menus**. Select **Speed Setup**.
4. Select **Speed Set-up**.
To set the Printer to other than the default Printer speeds, go to **Step 5**.
To calibrate the Printer using the default speeds, skip to **Step 6**.



5. **To set a different Maximum Speed** (**NOTE:** Use a plastic screwdriver to make adjustments):

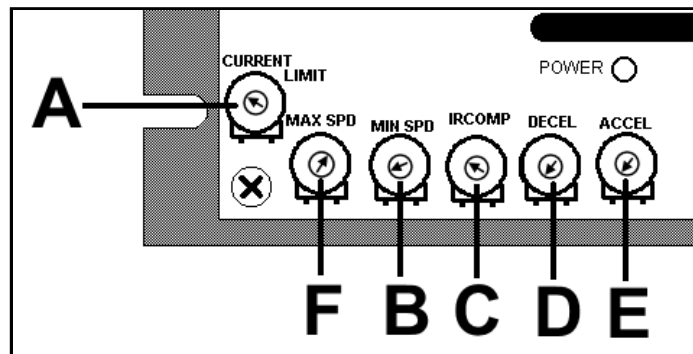
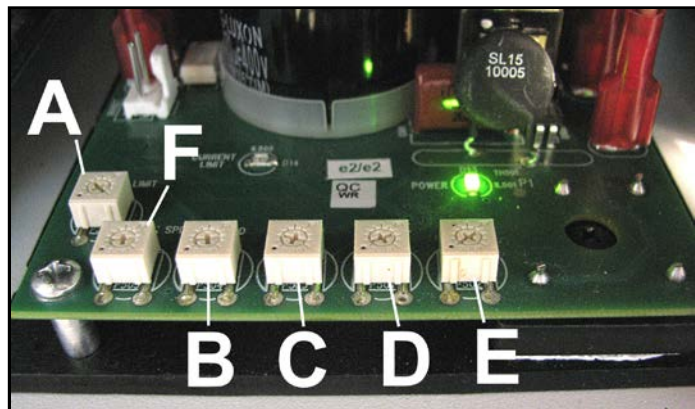
[A] Check/Adjust Current Limit: Check that the **Current Limit Potentiometer** points to the 10-o'clock position.

[B] Check Minimum Speed: With the potentiometer in the **Minimum** position (*full CCW*), start turning it CW until the Rollers start turning. Then gradually turn the potentiometer CCW until the Rollers stop. Turn CCW a few more degrees after that. Mark the position with nail polish.

[C] IR Compensation: Check that the **IR Compensation potentiometer** points to the 10-o'clock position.

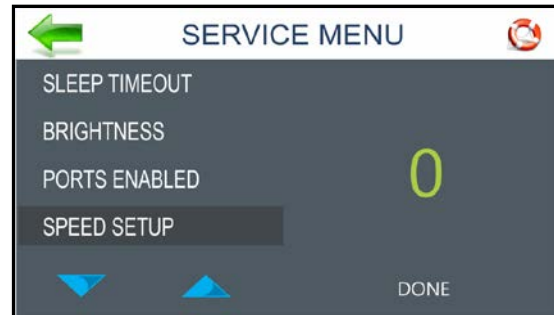
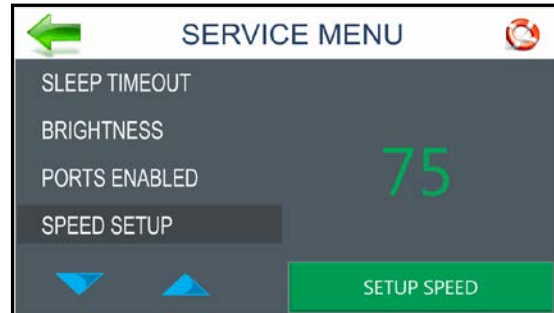
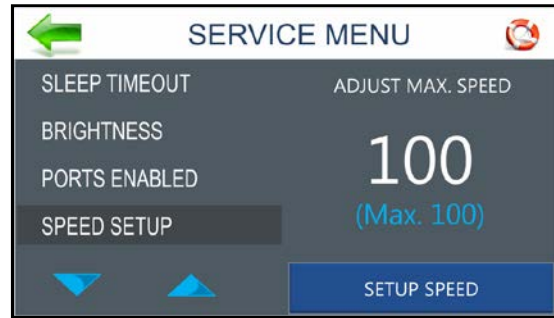
[D], [E] Potentiometers: Check that potentiometers are at the **Minimum** position (CCW).

[F] Set desired Maximum Speed: Use a small plastic screwdriver to set a desired **Maximum Speed** (95 or less) by adjusting the **Max Speed Potentiometer** on the Speed Control. Watch the Touchscreen display until you get the desired speed. **Go to Step 6.**



SECTION 4 ADJUSTMENTS

6. **To Calibrate the Speeds:** Press **Set-up Speed**.
Printer will start calibrating the four Printer speeds in the following order:
4 (*maximum speed*), **3**, **2**, **1** (*minimum speed*).
When calibration is done, transport will stop and screen displays “**0 DONE**”.



7. Check the new speed settings by exiting the **Service Menu** screen and opening the **Diagnostic** screen in the **Tools Main Menu** screen. Press **Start Test**. Press Printer speeds **1-4** to see the Printer speeds displayed in the **Transport** line of the display. If speed adjustment is necessary return to Step 3.



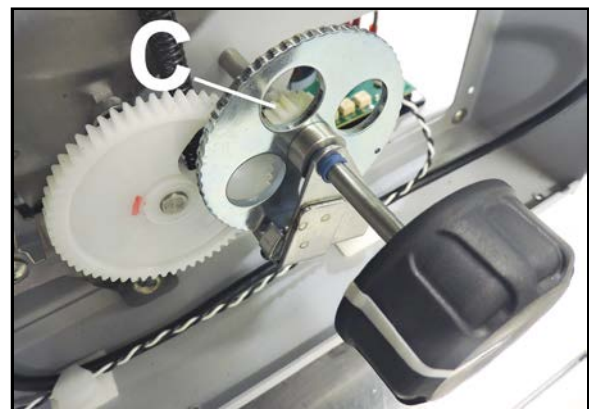
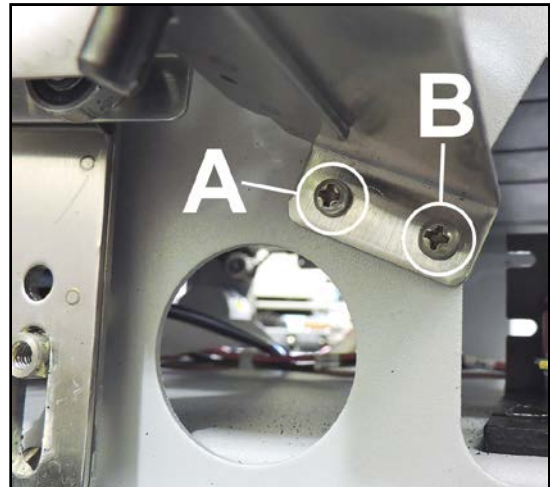
Printhead Carriage Assembly Adjustment

REQUIREMENT: To ensure that the Printhead Carriage Assembly is properly positioned when the Media Thickness Knob is set to the “0” position.

ADJUSTMENT:

1. Turn Media Thickness Knob to its “0” (*lowest*) position.
2. Unplug the Printer and remove the Operator Side Cover (4 screws).
3. Remove (1) Media Thickness Knob Bracket screw [A] and loosen the second screw [B]. This will allow the Knob Assembly to pivot slightly. Pivot the Knob Assembly just enough to disengage the small white gear [C] on the Assembly from the large white gear.
4. Place a piece of media under the Printheads [D]. Turn the large white gear to lower the Printhead Carriage Assembly until the Carriage contacts the media. This is the “0” point.
5. Pivot the Knob Assembly so the small gear meshes with the large gear. Hold the Assembly in place while reinstalling and tightening the (3) mounting screws.

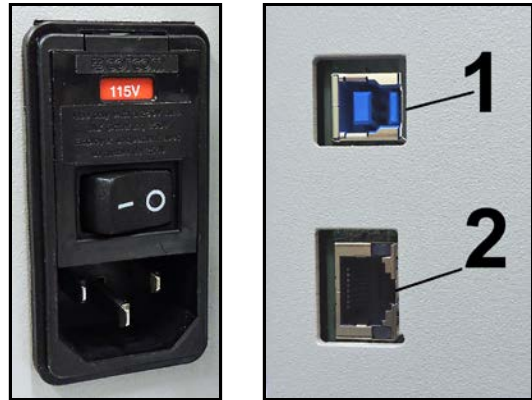
NOTE: Ideally, with media removed and Carriage Assembly in its lowest position, the Carriage will allow the Transport belts to turn freely.



SECTION 5 – *Disassembly/Assembly*

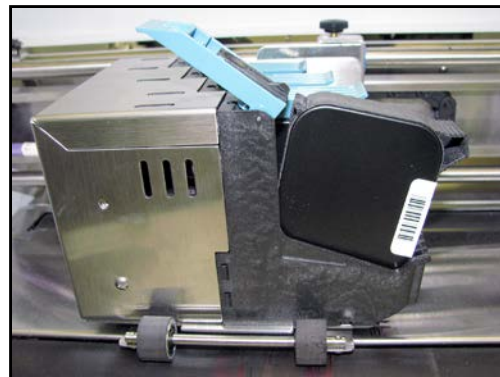
Basic Disassembly

- Turn off power.
- Disconnect Power Cord.
- Disconnect USB [1] and Network [2] Cables.



Remove Print Cartridges

1. Lift *Blue* Lever.
2. Remove Cartridge.
3. Close Lever.



Service Disassembly Procedures

NOTE: The following disassembly should only be performed by a qualified, trained service representative. Printer represented in these instructions is a Left-to-Right operating machine. In a Right-to-Left operating Printer, the Interface PCB and Main PCB are both mounted on the Non-Operator Side and several other components are moved.

WARNING!

THE FOLLOWING DISASSEMBLY SHOULD ONLY BE DONE BY A QUALIFIED, TRAINED SERVICE REPRESENTATIVE.

WARNING!

ALWAYS POWER DOWN PRINTER BEFORE CONNECTING OR DISCONNECTING ANY WIRING HARNESSSES OR CABLE CONNECTIONS TO AVOID SERIOUS SHOCK OR INJURY.

CAUTION

- ALWAYS USE APPROPRIATE PERSONAL PROTECTION EQUIPMENT (PPE).
- DISPOSE OF ALL MAINTENANCE WASTE IN ACCORDANCE WITH LOCAL REGULATIONS.

CAUTION

USE ELECTROSTATIC DISCHARGE (ESD) PROTECTION WHEN WORKING AROUND ELECTRONIC DEVICES:

- USE STATIC-FREE WORKSTATIONS WHEN UNIT COVERS ARE REMOVED.
- WEAR GROUNDED WRIST STRAPS WHEN WORKING ON UNIT.
- TRANSPORT ELECTRONIC SUBASSEMBLIES IN SEALED STATIC-SHIELDING PACKAGING.

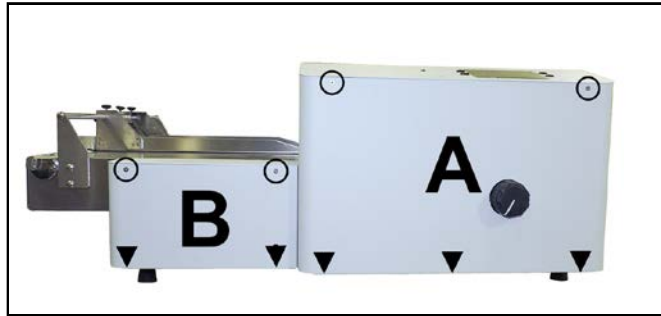
CAUTION

Double pole/neutral fusing. For continued protection against risk of fire, replace only with same type and rating of fuse.

SECTION 5 DISASSEMBLY – ASSEMBLY

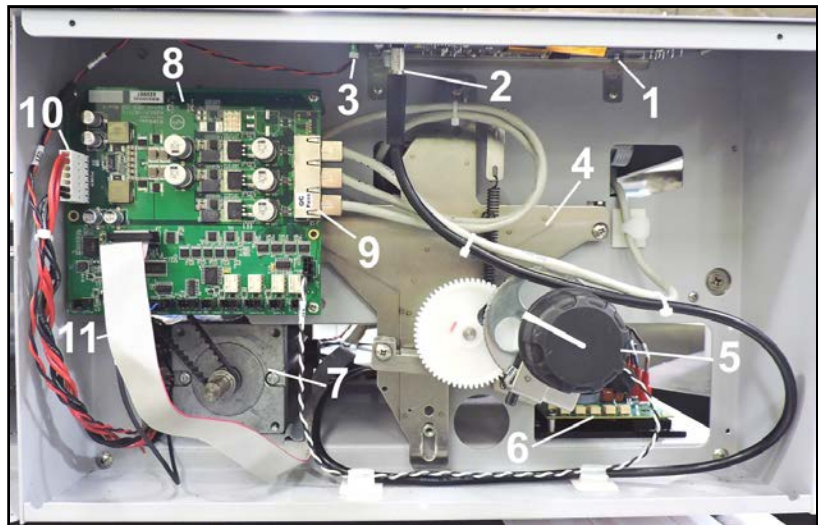
Remove Operator Side Covers

1. **[A] Remove large Operator Side Cover:**
First remove two screws from top of Covers.
Then remove three screws from bottom of Cover. Carefully remove Cover.
2. **[B] Remove small Operator Side Cover:**
First remove two screws from top of Cover.
Then remove two screws from bottom of Cover. Carefully remove Cover.
3. **Reassemble in reverse order.**



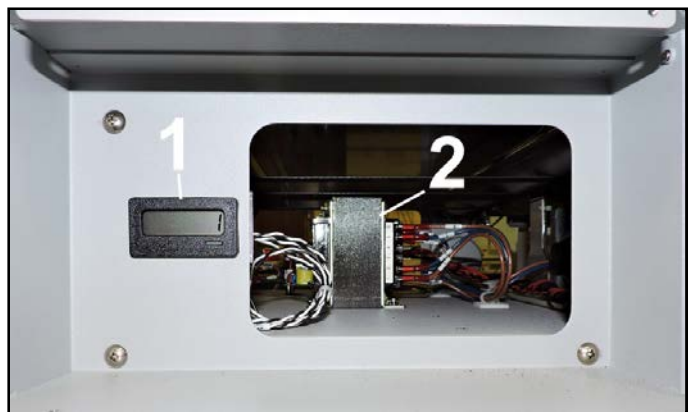
Under Large Operator Side Cover (Left-to-Right Printer)

1. Control Panel Assembly
2. Control Panel Cable Terminal
3. Power Indicator LED
4. Printhead Lift Assembly
5. Printhead Lift Control Knob
6. Speed Control
7. Motor & Motor Drive Belt
8. I/O PC Board
9. Printhead Carriage Terminals (x3)
10. Power Connection Terminal
11. I/O PC Board to Main PC Board Terminal (J4)



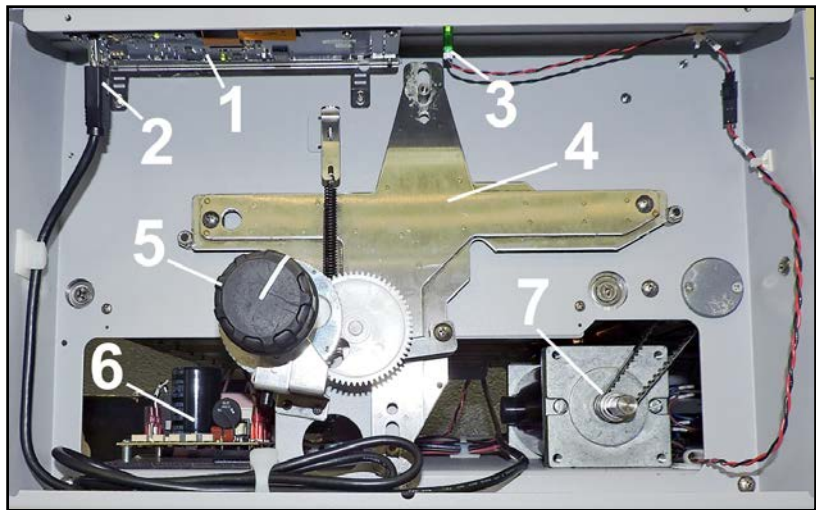
Under Small Operator Side Cover (Left-to-Right Printer)

1. Non-Resettable Digital Lifetime Piece Counter
2. 220V Transformer



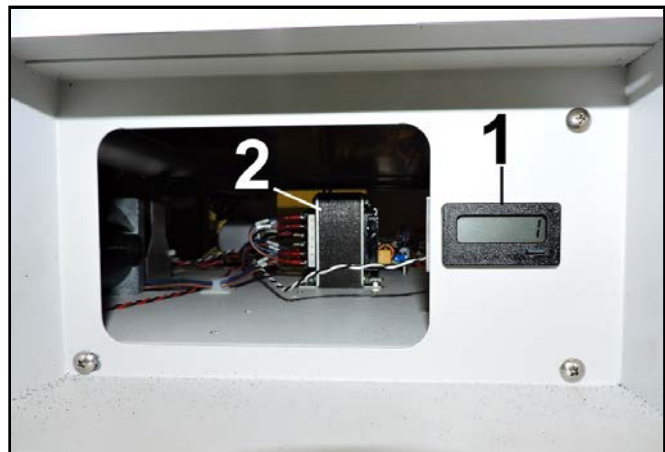
Under Large Operator Side Cover (Right-to-Left Printer)

1. Control Panel Assembly
2. Control Panel Cable Terminal
3. Power Indicator LED
4. Printhead Lift Assembly
5. Printhead Lift Control Knob
6. Speed Control
7. Motor & Motor Drive Belt



Under Small Operator Side Cover (Right-to-Left Printer)

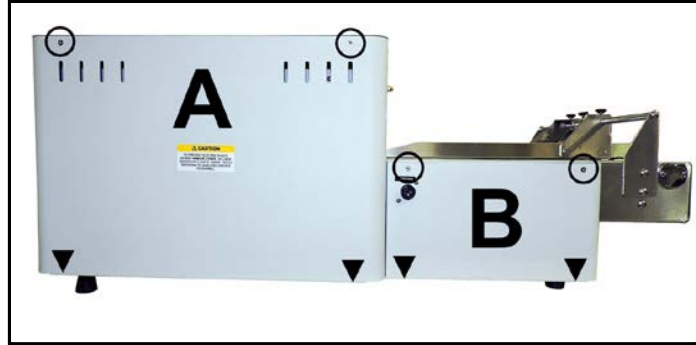
1. Non-Resetable Digital Lifetime Piece Counter
2. 220V Transformer



SECTION 5 DISASSEMBLY – ASSEMBLY

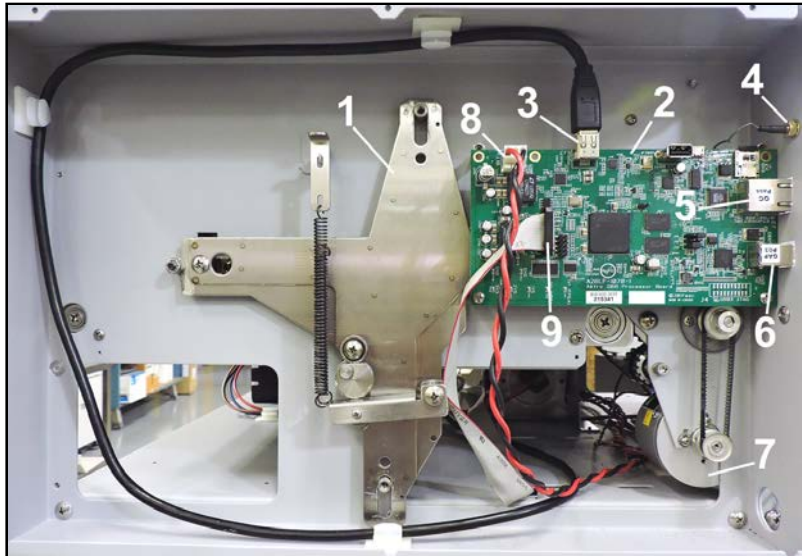
Remove Non-Operator Side Covers

1. **[A] Remove large Non-Operator Side Cover:** First remove two screws from top of Cover. Then remove two screws from bottom of Cover. Carefully remove the Cover.
2. **[B] Remove small Non-Operator Side Cover:** First remove two screws from top of Cover. Then remove two screws from bottom of Cover. Carefully remove the Cover.
3. **Reassemble in reverse order.**



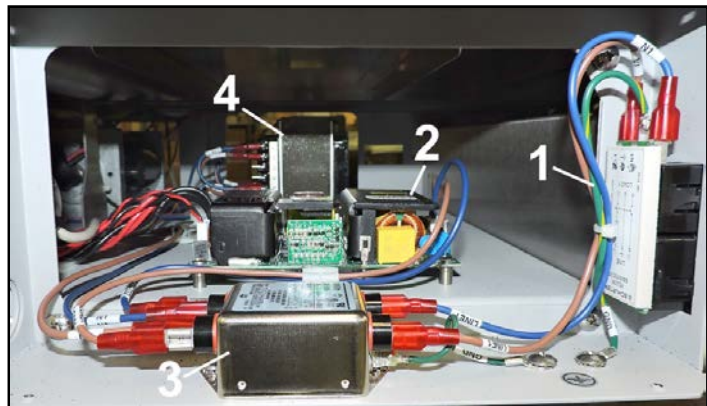
Under Large Non-operator Side Cover (Left-to-Right Printer)

1. Printhead Lift Assembly
2. Main PC Board
3. Control Panel Cable Terminal
4. Wi-Fi Port
5. Ethernet Port
6. USB 3.1 Port
7. Encoder Assembly
8. Main PC Board Power Supply
9. Main PC Board to I/O PC Board Terminal (J9)



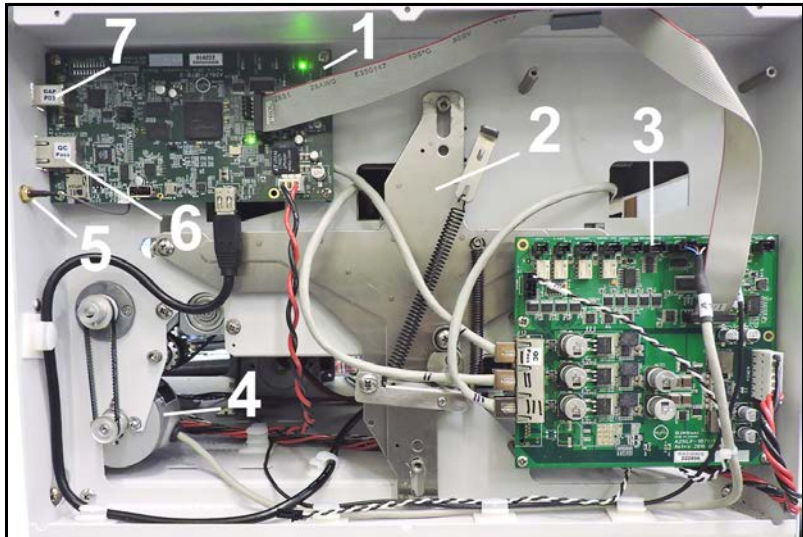
Under Small Non-Operator Side Cover (Left-to-Right Printer)

1. Power Receptacle, Main Fuse and ON/OFF Switch
2. Power Supply
3. Power Supply In-Line Filter
4. 220V Transformer



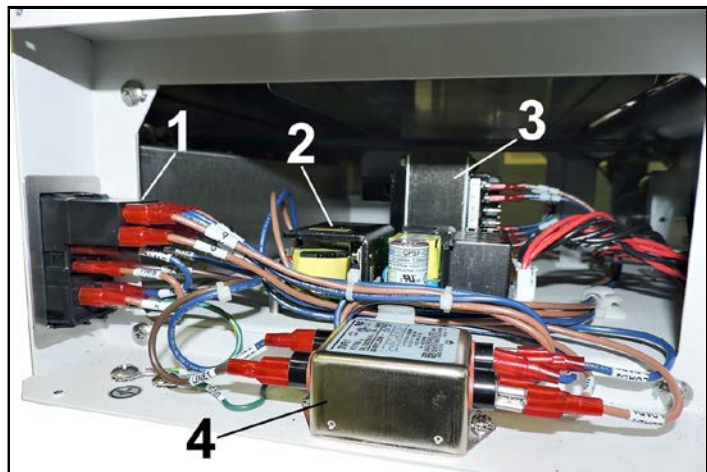
Under Large Non-operator Side Cover (Right-to-Left Printer)

1. Main PC Board
2. Printhead Lift Assembly
3. I/O PC Board
4. Encoder Assembly
5. Wi-Fi Port
6. Ethernet Port
7. USB 3.1 Port



Under Small Non-Operator Side Cover (Right-to-Left Printer)

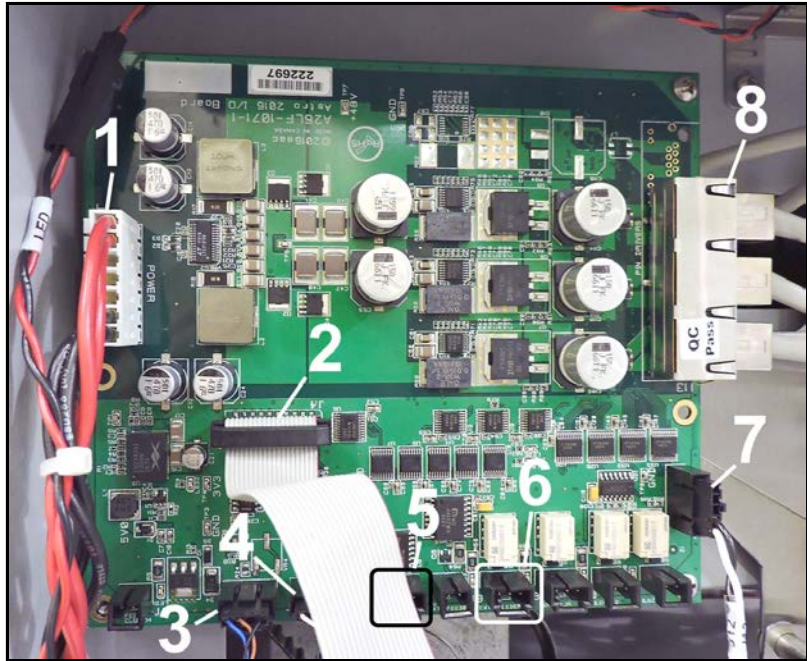
1. Power Receptacle, Main Fuse and ON/OFF Switch
2. Power Supply
3. 220V Transformer
4. Power Supply In-Line Filter



SECTION 5 DISASSEMBLY – ASSEMBLY

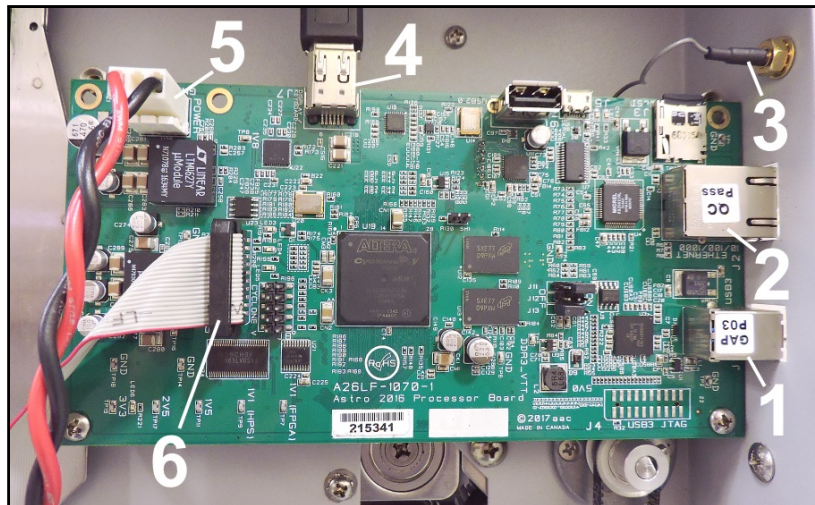
I/O PC Board (Left-to-Right Printer)

1. Power Supply Terminal (J1-POWER)
2. I/O PC Board to Main PC Board Terminal (J4)
3. Media Sensor Terminal (J3)
4. Encoder Terminal (J5)
5. Digital Counter (J6)
6. Feeder Interface Port, 3-pin (J8)
7. Speed Control Terminal (J12)
8. Printhead Carriage Terminals (J13) x3



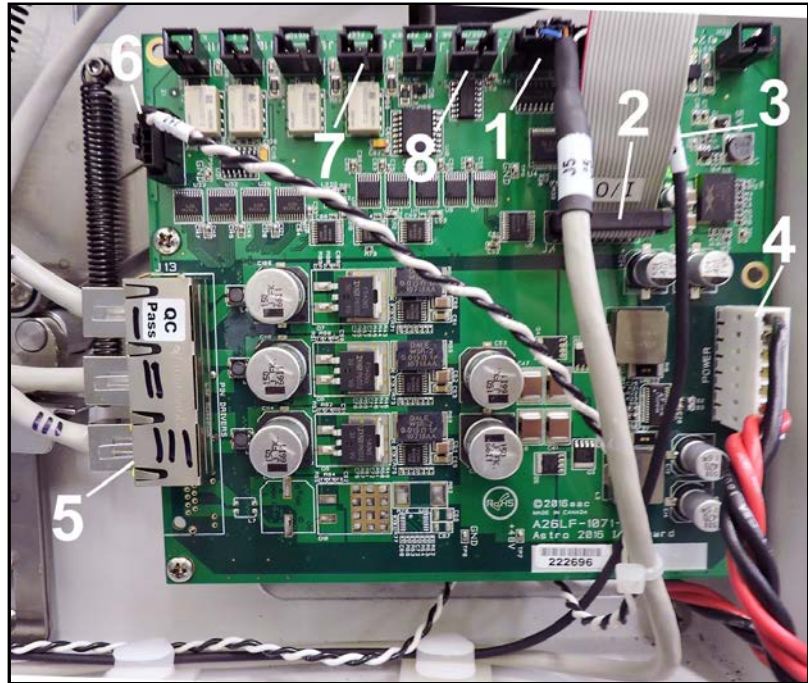
Main PC Board (Left-to-Right Printer)

1. USB 3.1 Port (J1)
2. Ethernet Port (J2)
3. Wi-Fi Connector (*Snaps on backside of PC Board*).
4. Control Panel Cable Terminal (J7)
5. Main PC Board Power Terminal (J10)
6. Main PC Board to I/O PC Board Terminal (J9)



I/O PC Board (Right-to-Left Printer)

1. Encoder Terminal (J5)
2. I/O PC Board to Main PC Board Terminal (J4)
3. Media Sensor Terminal (J3)
4. Power Supply Terminal (J1-POWER)
5. Printhead Carriage Terminals (J13) x3
6. Speed Control Terminal (J12)
7. Feeder Interface Port, 3-pin (J8)
8. Digital Counter (J6)



Main Processor PC Board (Right-to-Left Printer)

1. USB 3.1 Port (J1)
2. Ethernet Port (J2)
3. Wi-Fi Connector (*Snaps on backside of PC Board*).
4. Control Panel Cable Terminal (J7)
5. Main PC Board Power Terminal (J10)
6. Main PC Board to I/O PC Board Terminal (J9)

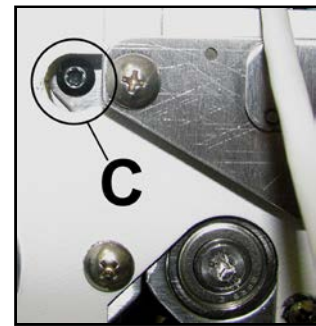
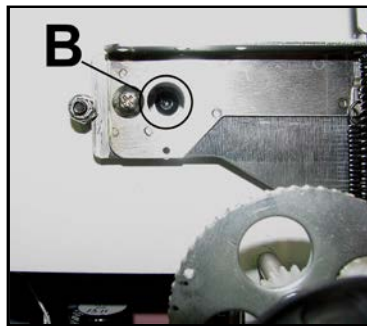
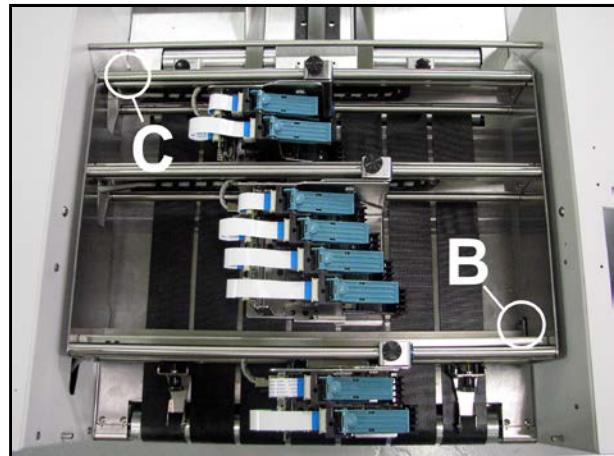
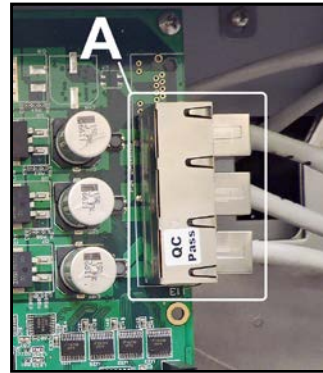


SECTION 5 DISASSEMBLY – ASSEMBLY

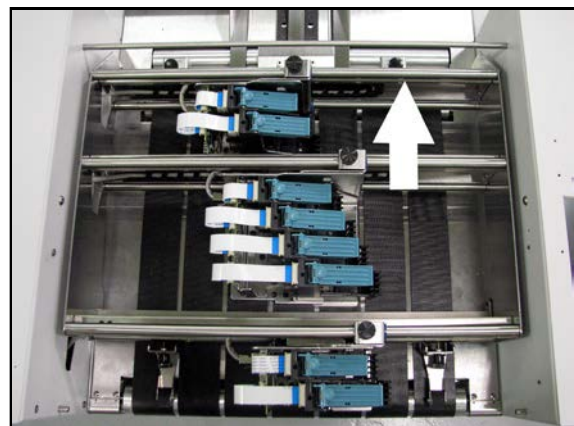
Remove Printhead Frame Assembly

The Printhead Frame Assembly can be quickly removed to provide easier access when working on individual components of the Assembly.

1. Turn OFF and unplug Printer.
2. Remove the large Operator and Non-Operator Side Covers.
3. Disconnect Printhead Carriage wire harnesses from the I/O PC Board [A] (J13). Carefully pull the wire harness ends through the Side Frame and into the Printhead area.
4. Remove two screws securing Printhead Frame Assembly to the Printhead Assembly Supports. Screws are located diagonally from each other [B & C]. Screws are accessible through predrilled holes in the Printer Side Frames.

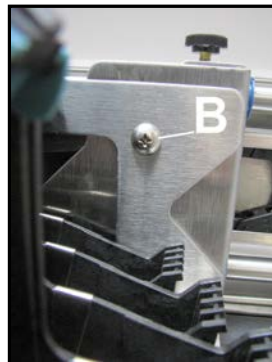
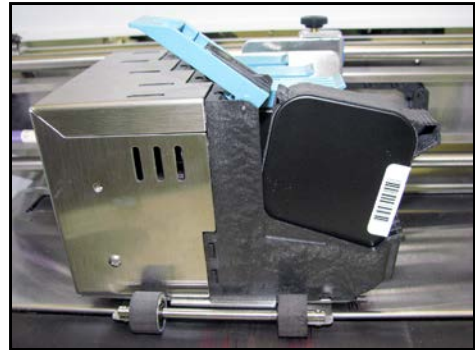


5. Push Printhead Assembly straight toward the feed end of the Printer to disengage Assembly from the Printhead Supports. Lift Printhead Assembly out of the Printer. **NOTE: Be careful not to snag the wire harnesses as you lift it out.**
6. Reinstall in reverse order.

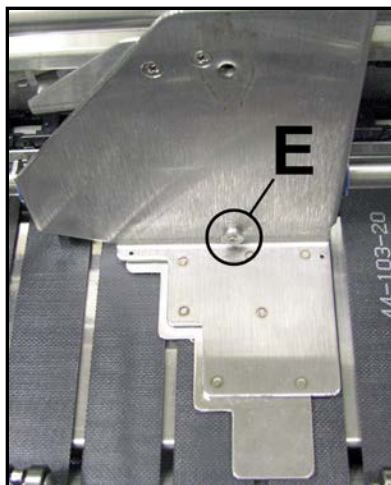
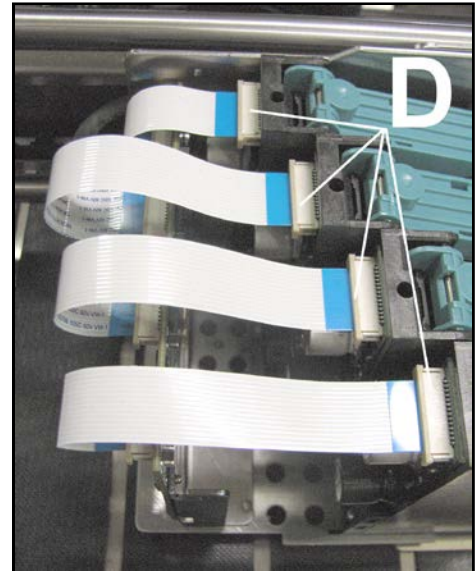


Remove Printhead Assemblies

1. Remove Inkjet Cartridges. Disconnect Printhead Carriage Cable from Port [A].
2. Remove (1) screw securing Printhead Assembly to the Carriage Frame [B]. Lift Printhead Assembly out of Printer.
3. Remove the Printhead Carriage Assembly Cover [C] (2 screws, 1 per side).



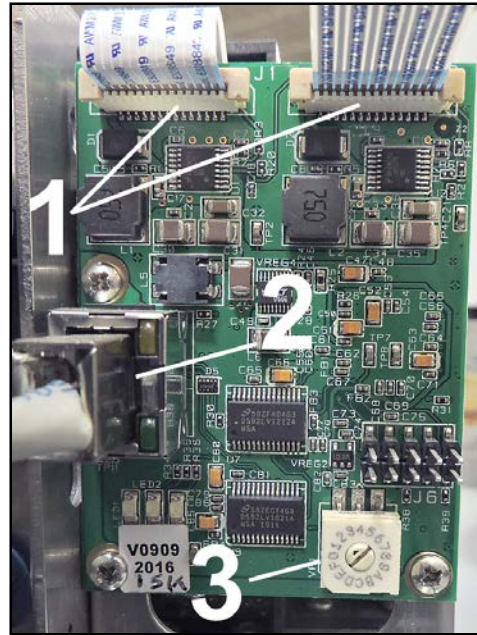
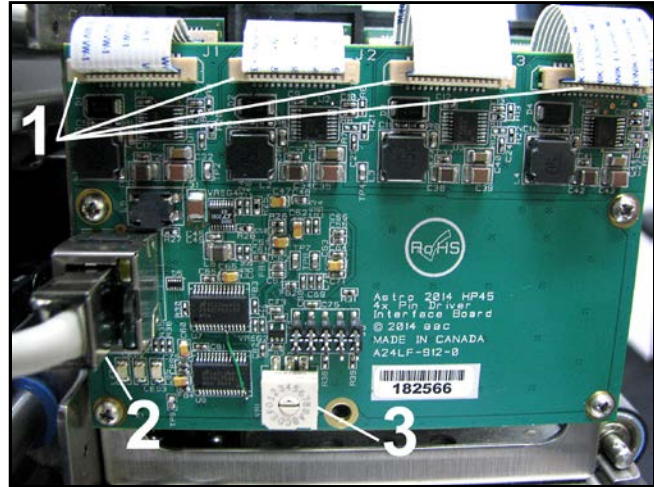
4. Carefully disconnect the ribbon cables [D] connected to the Printhead PC Boards.
DO NOT damage the cables or connectors!
5. Repeat steps above for remaining Printhead Assemblies.
6. Reinstall in reverse order.
NOTE: Assembly must be fitted over the alignment peg [E] on the Carriage Frame when reinstalling.



SECTION 5 DISASSEMBLY – ASSEMBLY

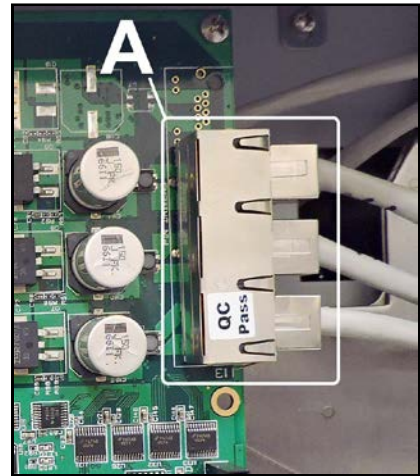
Printhead Carriage PC Board

1. Connectors to Printhead Cartridge PC Boards (J1, J2, J3, J4)
 2. Printhead Carriage Cable Port (to I/O PC Board)
 3. Potentiometer (VR1).
- NOTE:** Check that the potentiometer is set for the number of heads for that assembly. For example, 4-head Printhead Assembly set at 4; 3-head assembly set at 3; 2-head assembly set at 2.

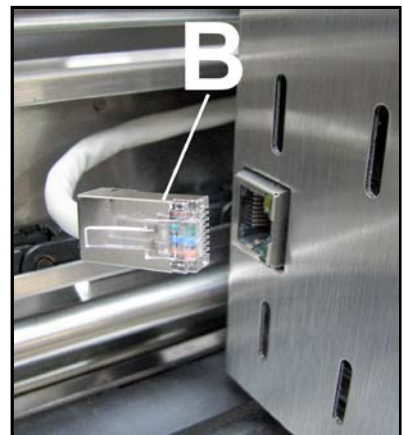


Remove Printhead Wire Harnesses and/or Wire Harness Conduit Chain

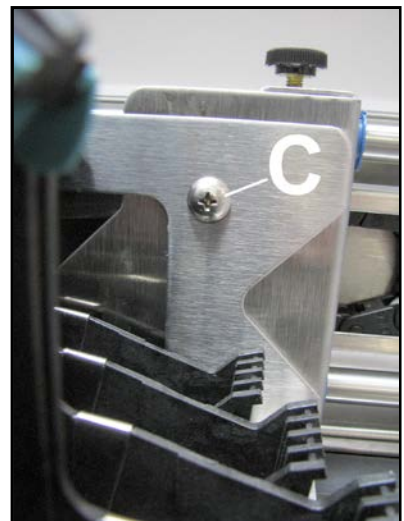
1. Remove large Operator Side Cover (or Non-Operator Cover on Right-to-Left Printer).
2. Disconnect Printhead Carriage wire harnesses [A] from the I/O PC Board (J13).



3. Disconnect Printhead wire harnesses [B] from the Printhead Carriage Assemblies.
4. Remove the Printhead Cartridges.



5. Remove (1) screw securing Printhead Carriage Assembly to frame [C]. Move Printhead Carriage Assembly out of the way.



SECTION 5 DISASSEMBLY – ASSEMBLY

6. Remove (2) screws securing the Wire Harness Conduit Chain Channel Assembly [D] to the Printhead Carriage Assembly.

[E] Carefully pull the other end of the Printhead Wire Harness through the Side Frame into the Transport area.

[F] Carefully bend the Printhead Wire Harness up until it clears the screws securing the Conduit Chain to the Wire Harness Channel. Remove 2 screws.

7. Remove the Wire Harness Conduit Chain Assembly from the Wire Harness Channel. **NOTE: Slide the Printhead Carriages out of the way if necessary.**
8. Reinstall in reverse order.

IMPORTANT!

[A] **Left-to-Right Printer:** Plug the cable from the Printheads closest to the Media Sensor [1] into the bottom connector port on the I/O PC Board.

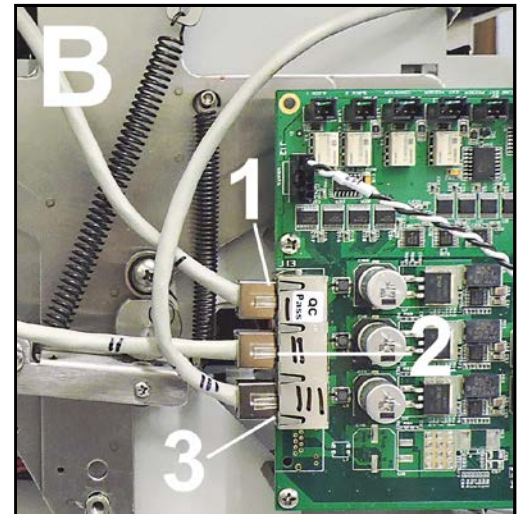
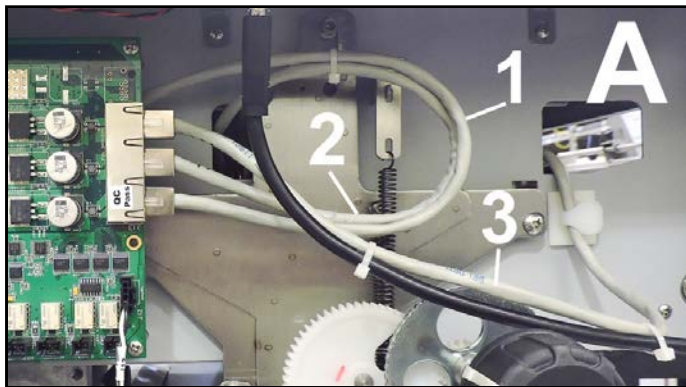
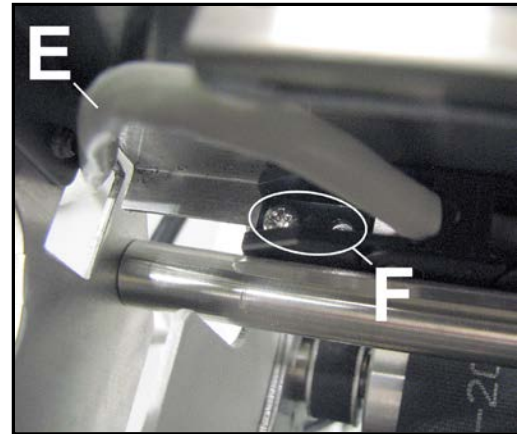
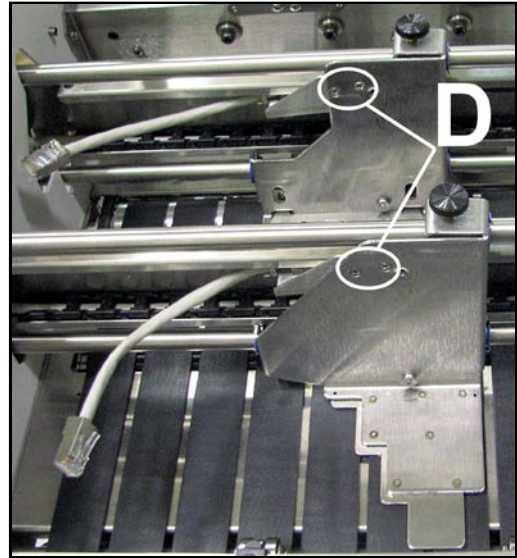
Plug the cable from the middle set of Printheads [2] into the middle connector port on the I/O PC Board.

Plug the cable from the exit end Printheads [3] into the top connector port on the I/O PC Board.

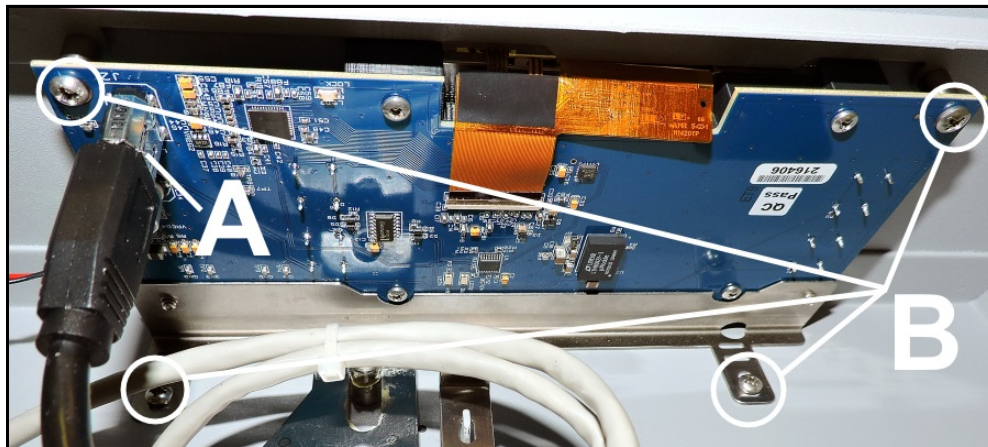
[B] **Right-to-Left Printer:** Plug the cable from the Printheads closest to the Media Sensor [1] into the top connector port on the I/O PC Board.

Plug the cable from the middle set of Printheads [2] into the middle connector port on the I/O PC Board.

Plug the cable from the exit end Printheads [3] into the bottom connector port on the I/O PC Board.



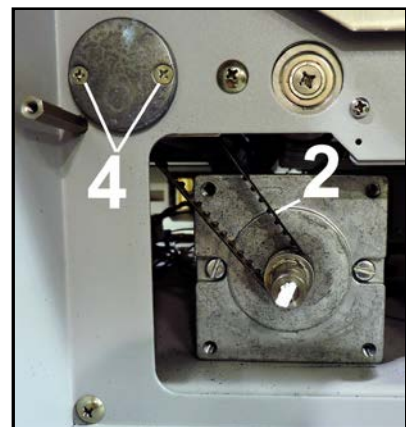
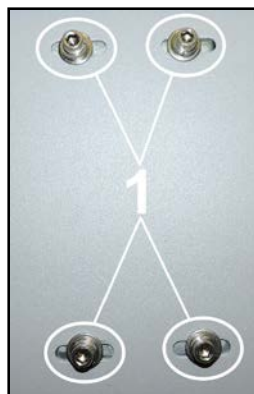
Remove Control Panel Assembly



1. Remove large Operator Side Cover.
2. Disconnect Control Panel Cable [A].
3. Remove 4 screws [B] securing Control Panel Assembly to the Printer Frame.
4. **Reassemble in reverse order.**

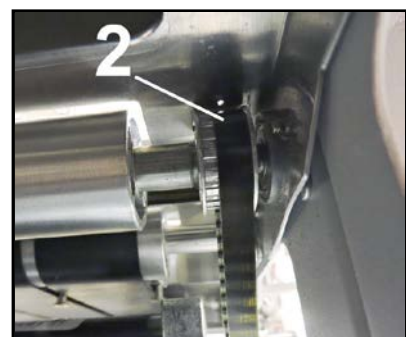
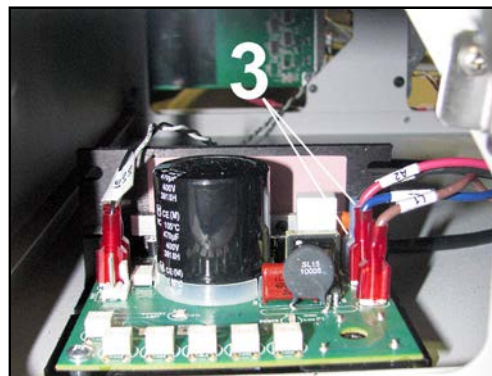
Remove Drive Belts and Drive Motor

1. Unplug Printer. Remove large Operator Side Cover.
2. **To Remove Belt:** Loosen 4 screws [1] securing Motor (*located under Base*) and release tension on the Drive Belt.
Remove 2 screws securing Feed Roller Bearing Housing [4]. Remove Bearing Housing.
Remove Drive Belt [2] from the Motor and Roller Pulleys.
3. **To Remove Motor:** Disconnect Motor wire harness (A1, A2) from Motor Speed Control [3].



Remove four Allen screws [1] that attach Motor to the Base. Remove Belt from the Pulley. Remove Motor from the Printer.

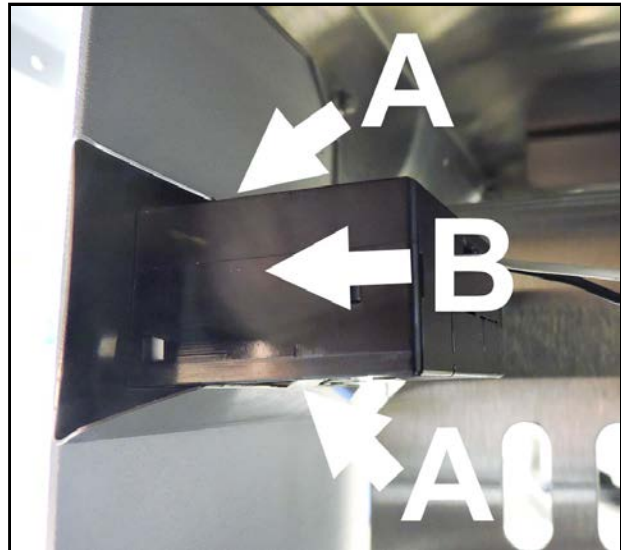
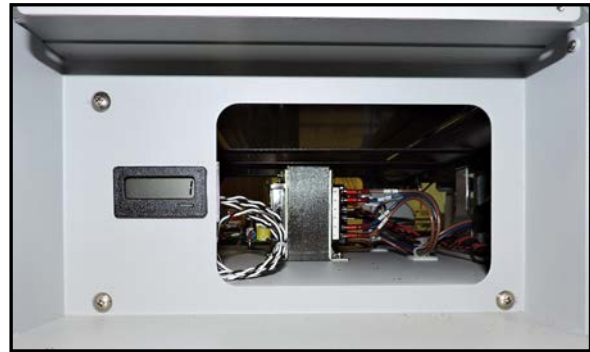
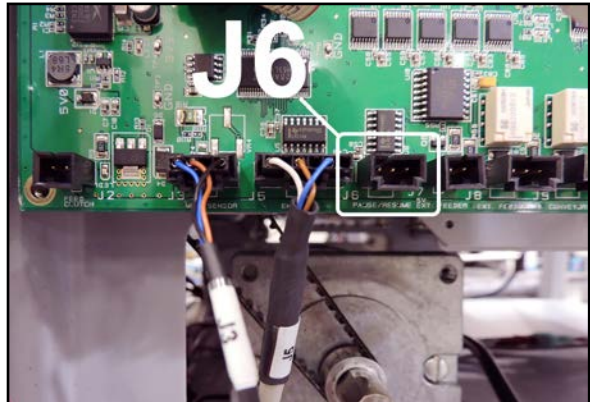
4. **Install in reverse order.** (See SECTION 4 – Drive Belt Tension Adjustment.)



Remove Digital Counter

1. Remove large Operator Side Cover on left-to-right Printers.
(Remove *Large Non-Operator Side Cover* on right-to-left Printers).
2. Disconnect the **J6** wire harness from I/O PC Board. **NOTE: Also open any Wire Clamps the wire harness is routed through to prevent snagging or damaging the wiring.**
3. Remove Small Operator Side Cover.
(4 screws).
4. Use a flat-blade screwdriver to carefully release the upper and lower locking tabs on the Digital Counter Frame **[A]** and push the Counter out through the Printer Side Frame **[B]**.
5. **Reinstall Counter:**
Align the Counter Frame with the cutout in the Side Frame. Slide the Counter through the Side Frame cutout and into the Counter Frame until the tabs lock.

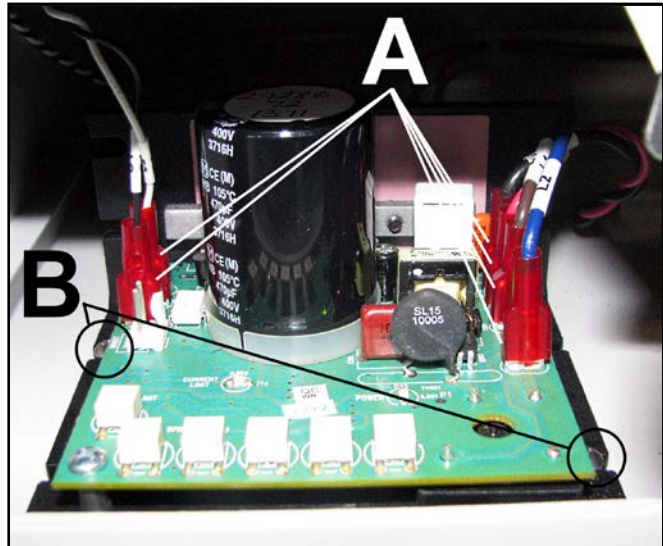
Route the Counter's wire harness (**J6**) through the Wire Clamp(s) and connect the wire harness to the **J6** connector on the I/O PC Board.



Remove Speed Control

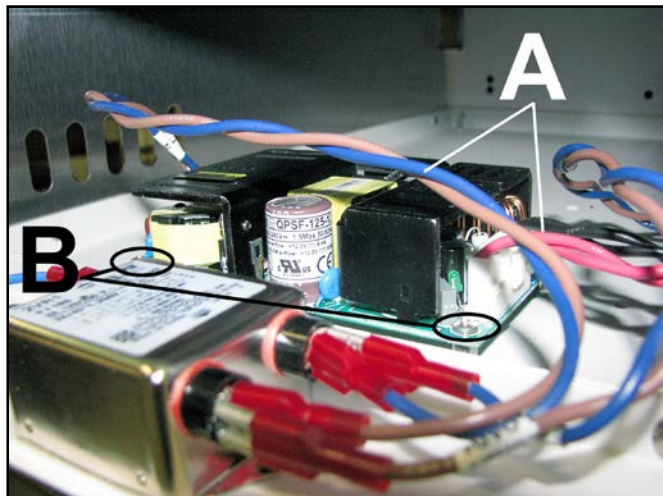
1. Remove large Operator Side Cover.
2. Disconnect 6 wiring harnesses [A] from Speed Control. (*Wires are labelled*).
3. Remove two screws [B] securing the Speed Control Base to the Printer Base.
4. **Reassemble in reverse order.**

NOTE: If replacing the **Speed Control**, you will have to verify and/or reset the Printer speeds. See “**Service Menu, Speed Setup**” in “**Section 3 – Functional Operation**”.



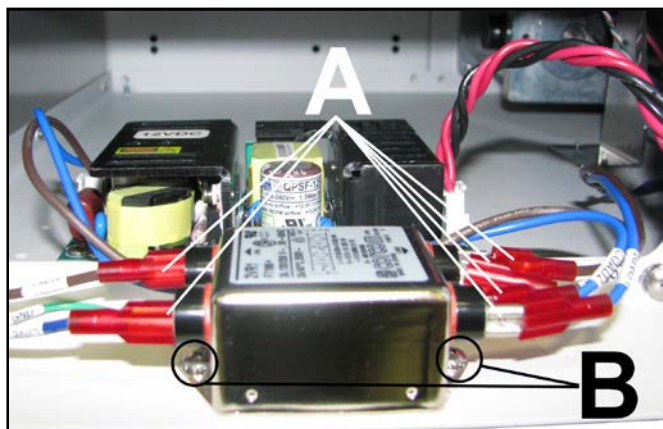
Remove Power Supply

1. Remove small Non-Operator Side Cover (*4 screws*).
2. [A] Disconnect wire harnesses and ground wire from Power Supply.
[B] Remove four screws that attach Power Supply to Printer Base (*1 at each corner*).
[C] Remove Power Supply.
3. **Reassemble in reverse order.**
NOTE: Reattach all wire harnesses, including ground wires.



Remove Power Supply In-Line Filter

1. Remove small Non-Operator Side Cover (*4 screws*).
2. [A] Disconnect wire harnesses and ground wire from Power Supply Filter.
[B] Remove two screws that attach Power Supply to Printer Base (*1 at each end*).
[C] Remove Power Supply Filter.
3. **Reassemble in reverse order.**
NOTE: Reattach all wire harnesses, including ground wires.



SECTION 5 DISASSEMBLY – ASSEMBLY

Remove Encoder or Encoder Belt

To Remove Encoder:

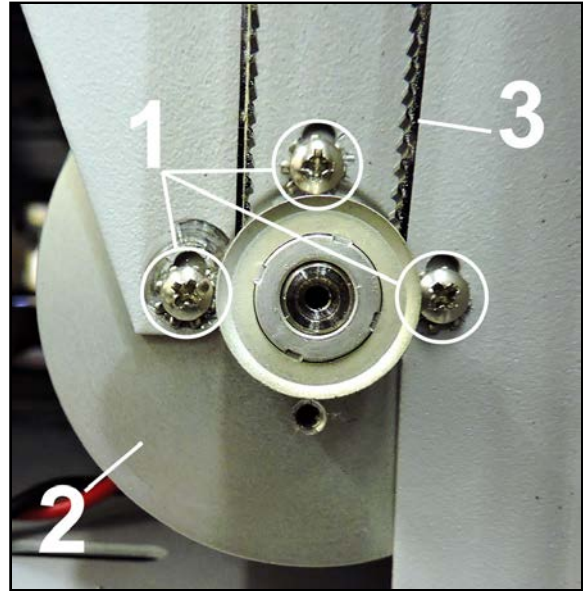
- Remove large Non-Operator Side Cover.
- Disconnect Encoder [2] wiring harness from I/O PC Board. (*J5 Encoder*)
- Remove three screws [1] mounting Encoder to Operator Side Frame.
- Remove Belt [3]; then remove Encoder.

To Remove Belt:

- Remove large Operator Side Cover.
- Remove three screws [1] mounting Encoder to Operator Side Frame.
- Disengage and remove Belt [3] as you remove Encoder.

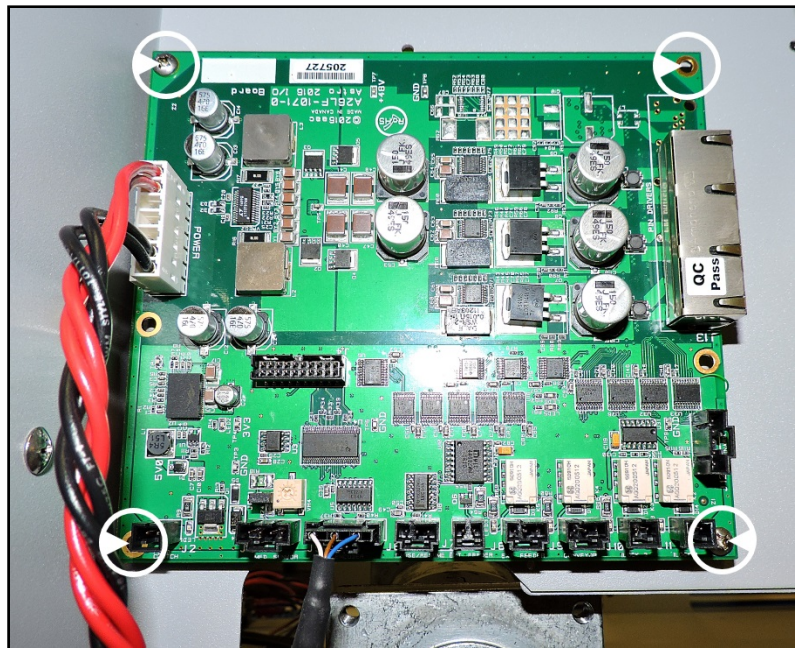
Reassemble in reverse order.

NOTE: Adjust proper tension on Belt.
(See “Encoder Belt Tension Adjustment” when reinstalling Encoder Belt).



Remove I/O PC Board

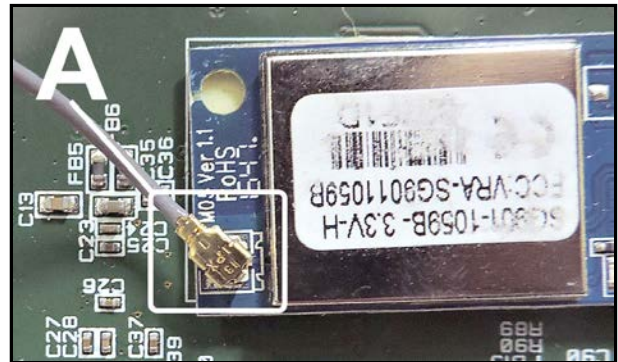
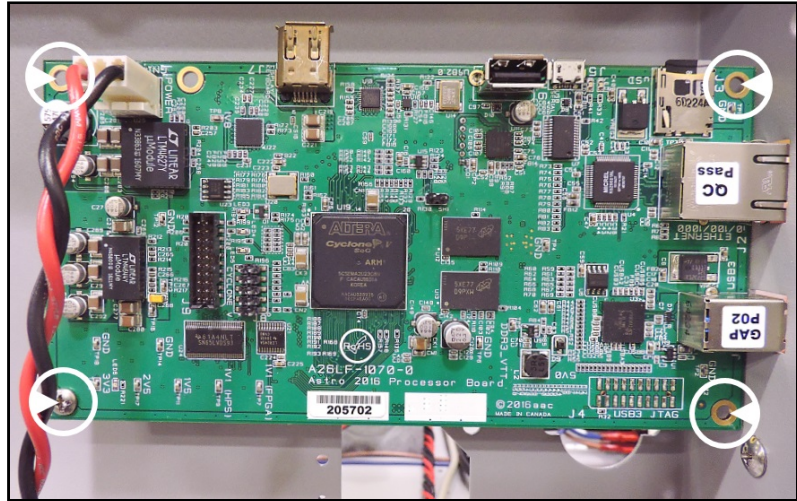
- 1. Left-to-Right Printer:** Remove large Operator Side Cover.
Right-to-Left Printer: Remove large Non-Operator Side Cover.
- Carefully disconnect wire harnesses from the I/O PC Board. (*J1-Power, J3-Media Sensor, J4-Main PCB-Interface PCB Terminal, J5-Encoder, J12-Speed Control, J13-Printhead Carriage (x3)*)
- Remove 4 mounting screws; then carefully remove the PC Board.
- 4. Reinstall in reverse order.** Be sure to plug the cable from the Printheads closest to the Media Sensor into the top connector J13 port on the I/O PC Board. Plug the cable from the middle set of Printheads into the middle connector port on the I/O PC Board. Plug the cable from the exit end Printheads into the bottom connector port on the I/O PC Board.



Remove Main PC Board

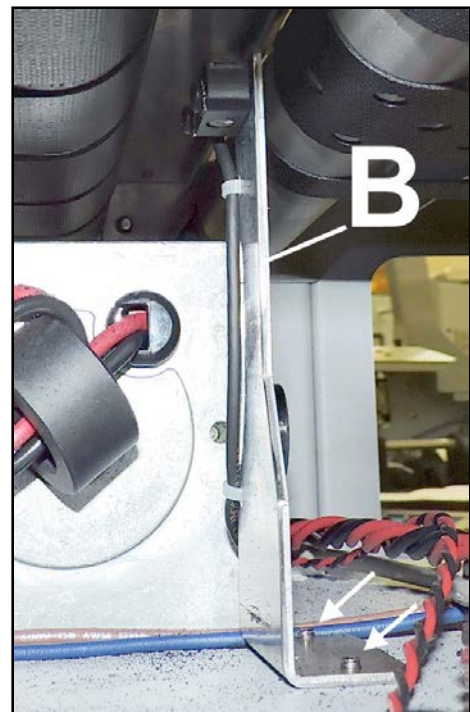
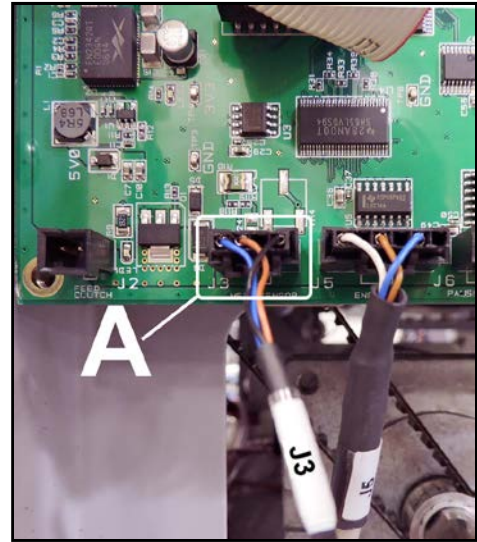
1. Remove large Non-Operator Cover.
2. Carefully disconnect wire harnesses from the Main PC Board if removing PC Board completely. (*J1-USB 3.0 Port, J2-Ethernet Port, J7-Control Panel PC Board Cable, J9-Interface PCB-Main PCB Connector, J10-Interface PCB Power Connector, J8-Feeder Interface Port*)
3. Remove 4 mounting screws; then carefully turn the Main PC Board over. **DO NOT strain or break the Wi-Fi Connector.** Carefully unsnap the Wi-Fi wire [A-B] from PC Board.
4. Remove the PC Board.
5. **Reinstall in reverse order.**

NOTE: If replacing the Main PC Board, you will have to verify and/or reset the Printer speeds. See “Service Menu, Speed Setup” in “Section 3 – Functional Operation”.



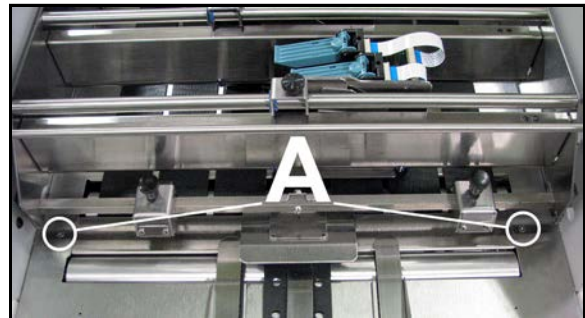
Remove Media Sensor

1. **To access the I/O PC Board.**
Left-to-Right Printer: Remove large Operator Side Cover.
Right-to-Left Printer: Remove large Non-Operator Side Cover.
2. [A] Disconnect Media Sensor wire harness from I/O PC Board (J3) and remove from any clamps.
3. Lift the Printer high enough to remove 2 screws securing the Media Sensor Bracket [B] to the Printer Base.
NOTE: DO NOT put full weight of Printer on Operator Side as this could damage the Printhead Lift mechanism. Remove Media Sensor Bracket Assembly.
4. Cut cable ties and remove 2 screws and washers that secure the Sensor to the Bracket.
5. **Reassemble in reverse order. NOTE: Reattach wire harness cable ties and cable clamps.**
6. **NOTE: The new Media Sensor may have to be adjusted. See “Media Sensor Adjustment” in “Section 4, Adjustments”.**

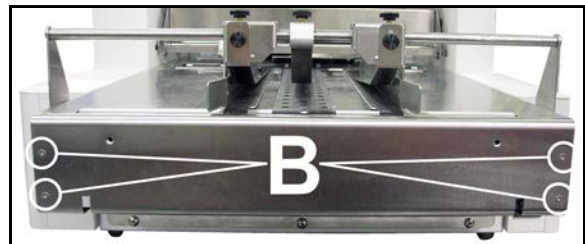


Remove Feed Conveyor Belts

1. Remove all four Printer Side Covers.
Remove Top Cover and Sensor Cover Plate [A].

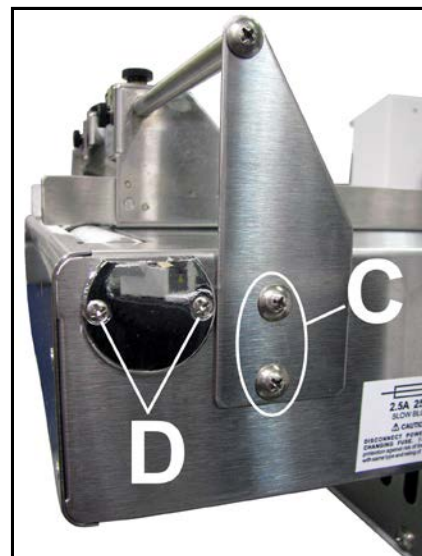


2. Remove four screws [B] and Rear Cover.

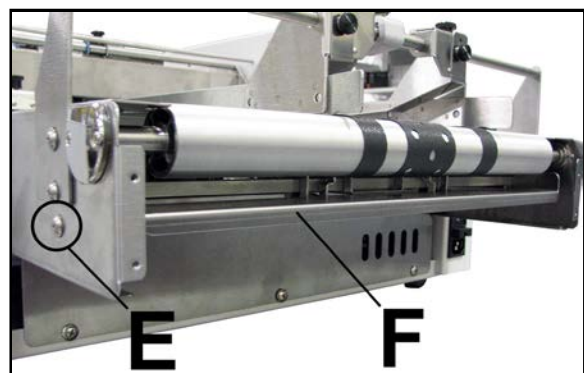


3. Remove Media Guides (*two screws each side*) [C]. Longer screw goes at bottom of Bracket and holds Belt Guide. Lift Guide Assembly from Printer.
Remove two screws in Bearing Housing on both sides of Conveyor Assembly [D]. **DO NOT** remove Bearings.
Remove Rear Conveyor Roller.

NOTE: It may be necessary to use a bearing puller to remove Bearings from Roller Shaft.
DO NOT try to pry off Bearings.

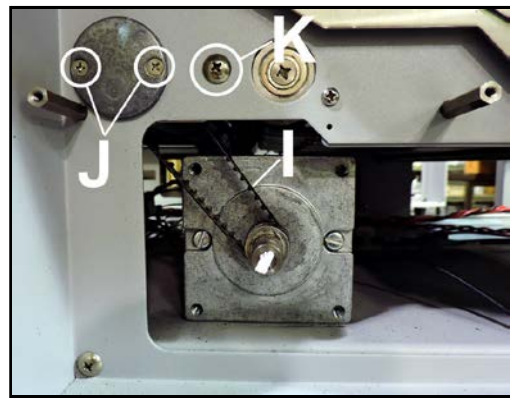
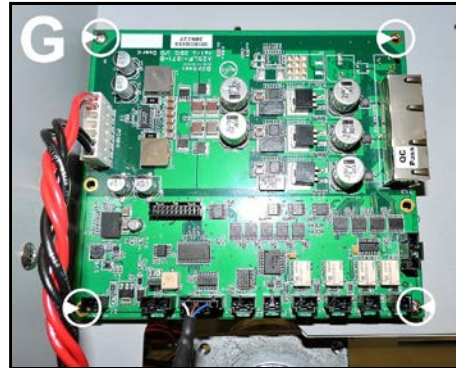


4. Remove screw [E] on Non-Operator Side that holds Belt Guide Support in place.
Remove Belt Guide Assembly [F].

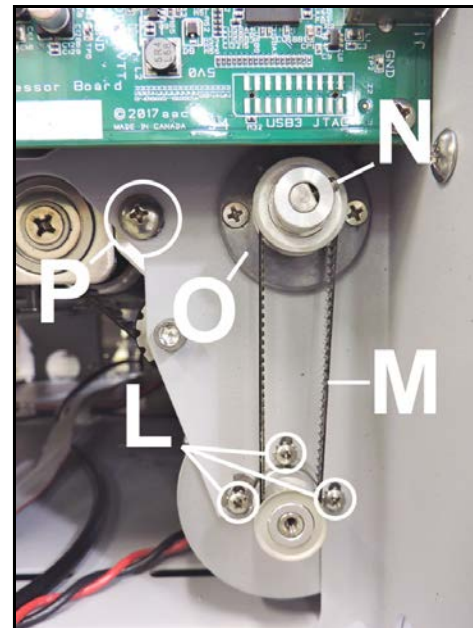


SECTION 5 DISASSEMBLY – ASSEMBLY

- 5. Operator Side (on left-to-right Printer),
(Non-Operator Side on right-to-left Printer):**
Remove the I/O PC Board [G] (4 screws).
Loosen Motor mounting screws (4 screws under Base) [H]
to release Drive Belt tension.
Remove Motor Drive Belt [I] from Motor Pulley.
Remove two screws [J] securing Conveyor Roller Bearing.
Remove Conveyor Roller Bearing.
Remove screw [K] that holds Conveyor Platform in place at
end of the Conveyor.



- 6. Non-Operator Side:**
Remove Encoder mounting screws [L].
Disengage Encoder Drive Belt from the Encoder [M].
Remove Encoder Pulley [N].
Remove 2 screws [O] securing Conveyor Roller Bearing
Housing. Remove Conveyor Roller Bearing Housing.
Remove screws [P] that holds Conveyor Platform in place
at Print Entry end of the Conveyor.



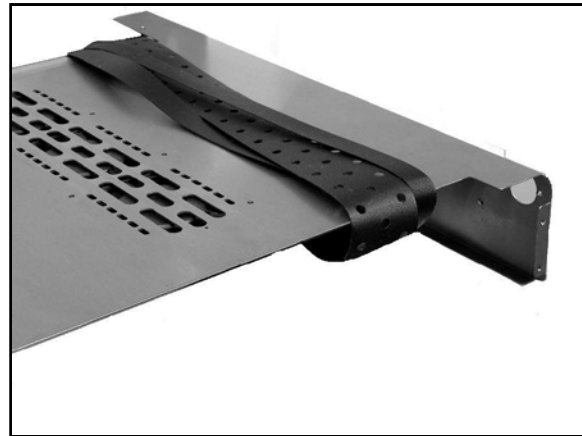
- 7. Remove Front Conveyor Roller through large Operator Side
Cover opening.**

NOTE: It may be necessary to use a bearing puller to
remove Bearing from Roller Shaft.

8. Remove screws [Q] (*one each side*) that hold Conveyor Platform in place at feed end of Conveyor Assembly.



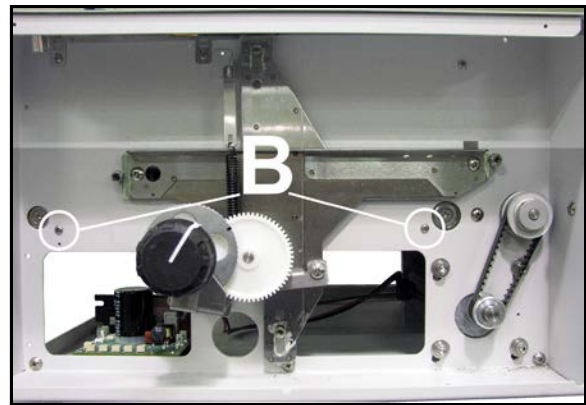
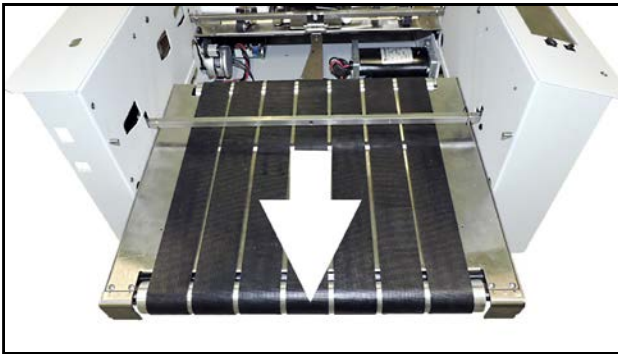
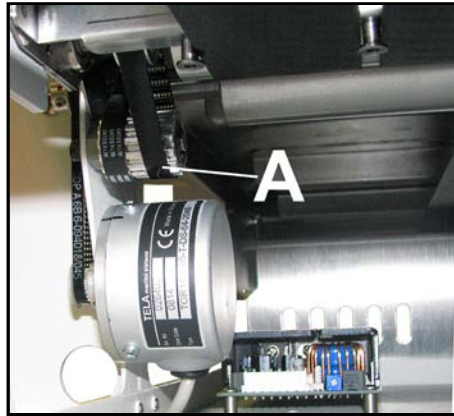
9. Lift out Conveyor Base Plate with Belts installed. Slide Belts to Operator Side of Printer. Remove Conveyor Belts.
10. **Reassemble in reverse order.**
NOTE: You must properly tension the Encoder and Motor Drive Belts.
See Section 4, Adjustments.



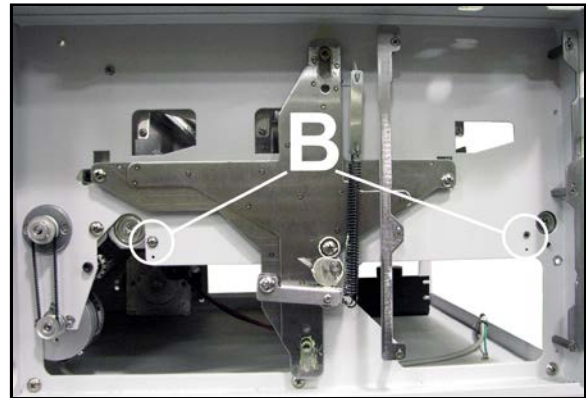
SECTION 5 DISASSEMBLY – ASSEMBLY

Remove Printer Transport Assembly and/or Belts

1. Unplug Printer from power receptacle before servicing.
2. Remove both large Operator and Non-operator Side Covers.
3. Open the Top Cover.
4. Raise the Printhead Assembly to its highest position.
5. Remove I/O PC Board.
6. Slide Motor/Encoder Drive Belt [A] (located inside the Printer on Non-Operator Side) off of the Encoder Roller Drive Pulley.
7. Remove screws securing the Transport Assembly to the Printer Side Frames (2 each side) [B].

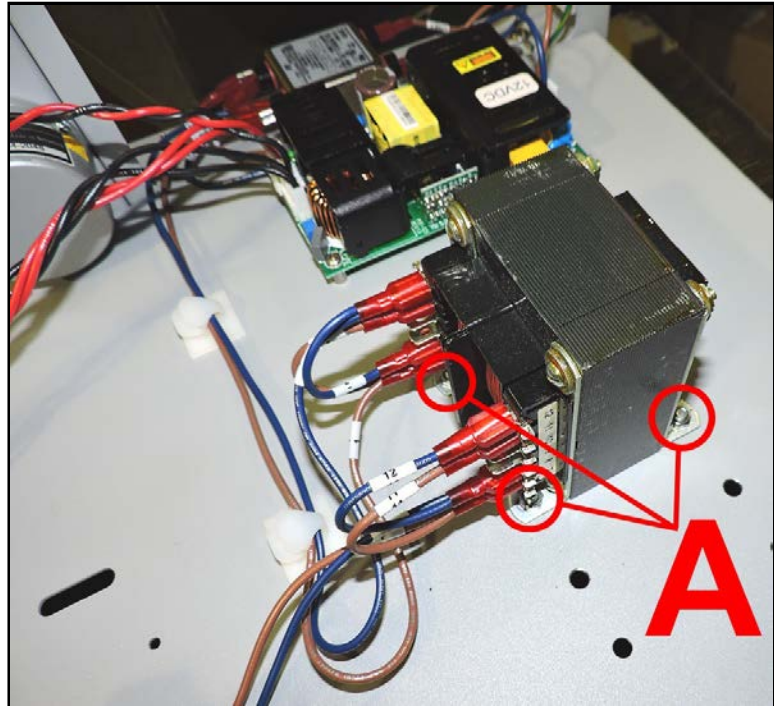


8. Slide Transport Assembly out through exit end of Printer to replace Belts or for other maintenance.
9. **Remove Transport Belts:** Turn Transport Assembly upside down. Remove one or both Transport Rollers (2 screws per Roller, one on each side). Remove Transport Belts. **NOTE: Be careful not to snag the Belts on the Belt Guides.**
10. Replace Belts. Make sure Belts are aligned inside Belt Guides. **Reassemble in reverse order.**



Remove 220V Transformer

1. Remove all Printer Side Covers. Remove the Feed Conveyor Platform Cover.
2. Disconnect wire harnesses connected to the Transformer (*numbered to match terminals on Transformer*).
3. Remove the 4 screws, nuts and washers [A] securing the Transformer to the Printer Base. Access screw heads from under the Printer Base. Remove the Transformer.
4. **Reinstall in reverse order. Be sure to connect wire harnesses to the correct numbered terminals.**



SECTION 6 - *Maintenance*

This section covers how to care for Ink Cartridges, clear paper jams, replace Sheet Separators, and perform routine maintenance on Printer.

Inkjet Cartridge

Inkjet Cartridges must be replaced when out of ink, when print quality is poor, or when purging and cleaning have not helped image quality. Approximate life of HP 45 Inkjet cartridges, (*based on three lines of 20 characters at 10-point size per address*), is:

600 x 600 DPI	50,000 addresses
600 x 300 DPI	100,000 addresses
600 x 200 DPI	150,000 addresses
600 x 150 DPI	200,000 addresses

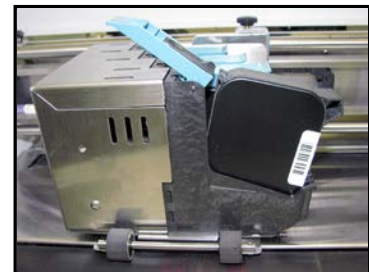
NOTE: These figures can vary depending on font selected.

CAUTION

For continued protection against possible fire, use only Ink Cartridges: Hewlett Packard, Model C8842A or with Ink Cartridges; each cartridge 40mL max. of ink; Flashpoint shall be > 93.3C per Material Safety Data Sheet.

Replace Inkjet Cartridge:

1. Open Latch Lever to remove used Cartridge from Cartridge Holder. Pull Cartridge up and out of Holder.
2. Remove new Inkjet Cartridge from packaging. Take care not to touch copper contacts, metal plate, or gold printhead. Remove protective tape from Printhead.
3. With Cartridge's Printhead pointing down, slide Cartridge into Holder. Push down and toward contacts in Holder.
4. Make sure Cartridge is seated in Holder. Close Latch Lever to secure Cartridge. **DO NOT** force Latch Lever into place.
5. Repeat **Steps 1-4** above for remaining Cartridges.



CAUTION

Never shake, drop or hit Cartridge against the palm of your hand or any other hard surface. Shaking the Print Cartridge does not "mix" ink and hitting Cartridge against a hard surface does not clear Nozzles.

These actions hurt print quality because they allow bubbles to form near the ink firing chambers. These bubbles prevent the nozzles from firing, causing white streaks in print image.

Storage

Short-term Storage: (*less than 2 days or less than 1 day in a hot and dry environment.*)

Leave Cartridge in Printer for short periods of time, 1 day or less.
Next time Printer is used, Printhead may have to be cleaned and **Purged**.

Long-term Storage: (*more than 2 days or more than 1 day in a hot and dry environment.*)

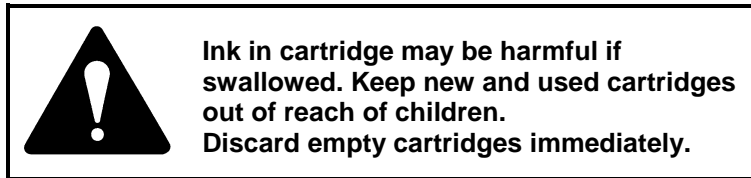
Place Cartridges in a sealable plastic container with a damp sponge or towel to maintain humidity and prevent Printhead from drying out.

When Cartridges are ready to be used again, Printhead will need to be cleaned.

Disposal

Cartridges may be disposed of in a normal manner.

If there should be an ink spill, use soap and water to clean up any problem areas.
Abrasive soap usually removes ink off of hands.



Cleaning Printhead

Maintain good print quality by keeping Printheads clean. During printing process ink spray, paper fibers, and dust build up on Printheads. This build-up eventually degrades print quality. If you notice problems with print quality, or to just prevent a build-up from occurring, wipe printhead with a wet fiberless cloth.

Cloth should be:	Cloth should not be:
<ul style="list-style-type: none"> ✓ Soft ✓ Fiberless ✓ Moistened with Water (<i>Distilled is best but tap water works</i>) 	<ul style="list-style-type: none"> ✗ Abrasive ✗ Made of small fibers ✗ Dry or contain chemical additives

Wipe slowly across the long-axis with Printhead facing down (*as shown*). **DO NOT** apply excessive force, as this could scratch Nozzle surface.

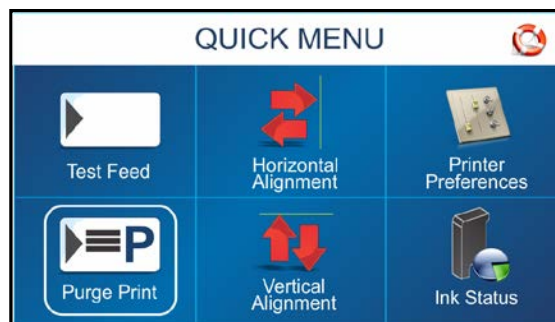


Purging Nozzles

If the Printhead sits inactive for a period of time, ink may dry in the nozzles. Printing may not remove these “ink plugs” from the nozzles. White streaks appear in printed text or graphic. To improve print quality, these ink plugs need to be forced out or purged. A **Purge Print** routine is built into Printer. Access this feature by using the **Quick Menu** key on the Control Panel.

1. Wipe Printhead with a wet cloth as described in “*Cleaning Printhead*” on previous page.
2. With media loaded in the Feeder, press the **Quick Menu** key, then “**Purge Print**” icon. Press “**Print**” to activate the purge. Purge prints an ink pattern at 600 dpi to clear all of the nozzles in all of the ink cartridges. **Repeat if necessary.**
3. Wipe Printhead again with a moist cloth.

NOTE: For more information, refer to **Troubleshooting Printheads in Section 2 – Troubleshooting.**



Cleaning

WARNING!

PRINTER IS A PRECISION MACHINE THAT SHOULD BE CLEANED REGULARLY TO INSURE MANY YEARS OF SERVICE. BEFORE PERFORMING ANY MAINTENANCE, DISCONNECT PRINTER FROM ITS POWER SOURCE!

Printer must be cleaned regularly of accumulated paper dust and ink. Depending on types of media run, paper dust may accumulate within Printer and on Transport. To properly clean Printer, unplug it from power receptacle and remove covers.

- **Internal Areas:** Best cleaned using a vacuum with a soft brush attachment to help loosen dust particles. Take care not to damage the PC Boards or electrical wiring.
- **Exterior:** May be cleaned with any standard household cleaner which is non-abrasive and does not contain plastic harming solvents.

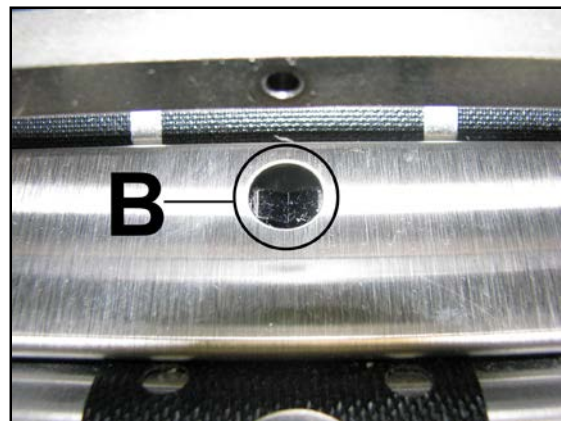
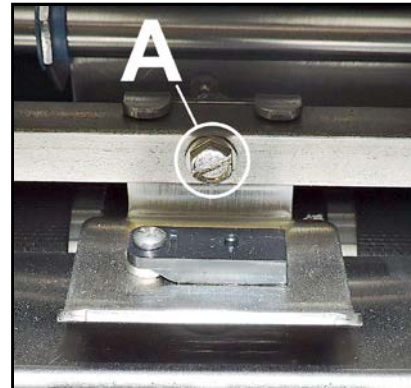
CAUTION

NEVER SPRAY OR POUR CLEANERS DIRECTLY ON OR INTO PRINTER. EXCESS LIQUID COULD HARM ELECTRONIC PARTS. ALWAYS DAMPEN A RAG WITH THE CLEANER AND APPLY IT TO PARTS TO BE CLEANED.

Cleaning Media Sensor

Periodically check Media Sensor for dust and debris, (*located under Media Sensor Reflector Plate*).

1. Use the Media Thickness Knob to raise the Printhead Carriage Assembly to its highest setting.
2. Remove the Media Sensor Reflector Plate [A].
(1 screw and nut)
3. Wipe off dust or use canned or compressed air aimed into the Media Sensor port [B] to remove dust and debris from the Sensor. **NOTE: If necessary, wipe the Reflector surface (under the mounting plate) with a clean, lint-free cloth.**



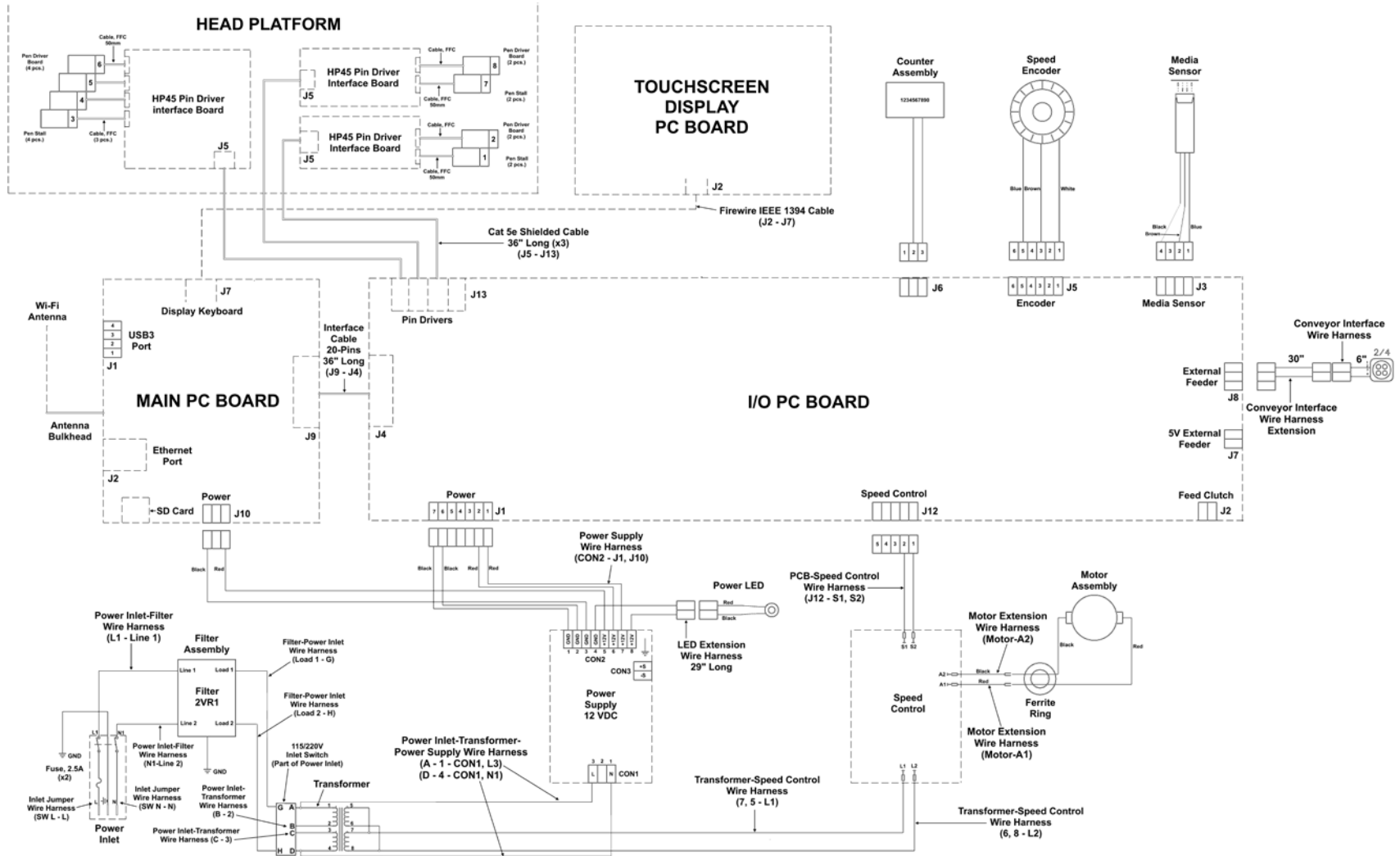
Cleaning Touchscreen

Carefully clean the Touchscreen by wiping with a lint-free cloth and a non-abrasive cleaner made for touchscreens on computers and cell phones. **DO NOT spray cleaner directly on screen, spray on cloth, then clean screen.**

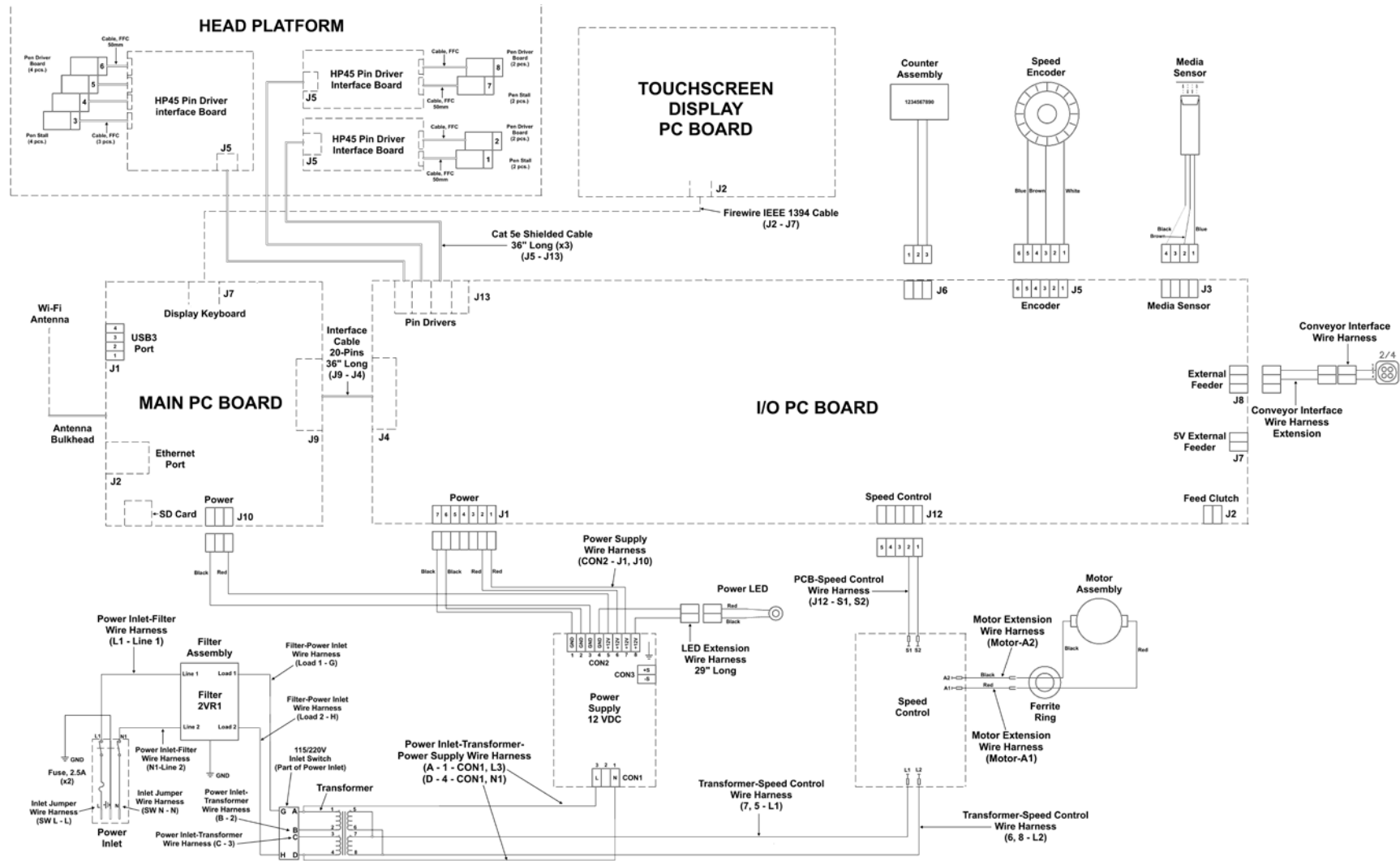


APPENDIX A – Printer Wiring Diagrams

Left-to-Right Printer



Right-to-Left Printer



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