

FORMAX[®]

AP3
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.

MISE EN GUARD

Fusible bipolaire / neutre. Pour protéger contre le risque d'incendie, remplacez avec le même type et la même classe de fusible.

- ✓ 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 $\text{Q} \{ \text{æ}$, 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 $\text{Q} \{ \text{æ}$ nor any of its agents or employees shall be responsible for any inaccuracies contained herein.

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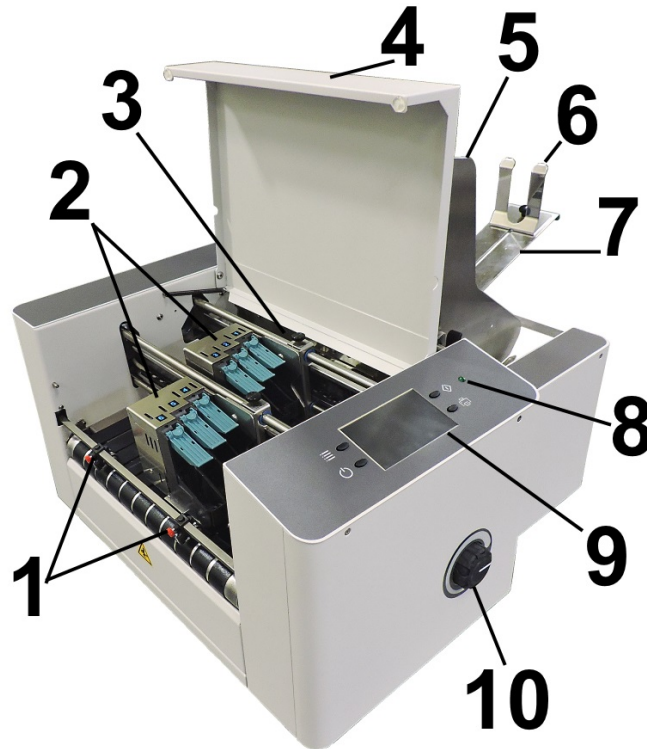
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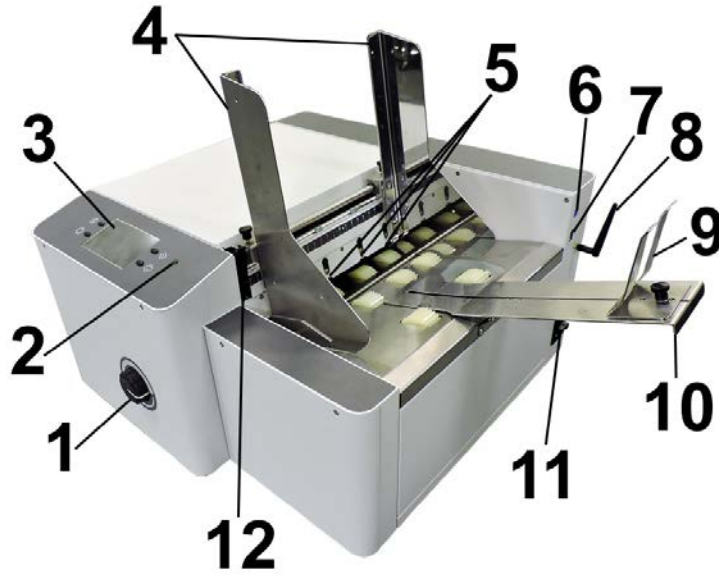
SECTION 1 - *Getting Acquainted*



Operator View

1.	EXIT ROLLERS – Help media to exit Printer. Assemblies are repositionable. Position so they provide media drive but are out of the print-area.
2.	PRINT UNITS – Contains two repositionable Print Units. Each Print Unit contains three Printheads (ink cartridges). Each Print Unit has the ability of printing a ~1.5" high image. A continuous image up to ~3" high can be printed when both Print Units are combined.
3.	MEDIA SENSOR – Senses media as it enters the Printhead area. Sensor is located between the first Print Unit (Heads 1,2,3) and Feed Rollers.
4.	TOP COVER – Encloses the Print Area.
5.	MEDIA SIDE GUIDES – Position media in Printer.
6.	MEDIA SUPPORT WEDGE – Holds media against Front Plate.
7.	REAR MEDIA SUPPORT – Supports media while it is being fed.
8.	POWER INDICATOR LIGHT – Shows that main power is ON.
9.	CONTROL PANEL TOUCHSCREEN – Touchscreen allows access to Printer menus and controls to set up and operate the Printer. Four Control Keys to access or operate Quick Menu , Shutdown/Reset , Transport ON/OFF , Feeder ON/OFF .
10.	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.

**SECTION 1
INSTALLATION**



Rear View

1.	MEDIA THICKNESS ADJUSTMENT KNOB – Adjusts height of Printheads to compensate for different media thicknesses.
2.	POWER INDICATOR LIGHT – Shows that main power is ON.
3.	CONTROL PANEL TOUCHSCREEN – Touchscreen allows access to Printer menus and controls to set up and operate the Printer. Four Control Keys to access or operate Quick Menu, Shutdown/Reset, Online/Offline, Pause/Print .
4.	MEDIA SIDE GUIDES – Used to position and guide media into the Printer.
5.	SHEET SEPARATORS – Used to separate a single piece of media from the stack. There are four sheet separators on this printer.
6.	USB 3.1 PORT – Connects Printer to your computer. (Also supports USB 2.0)
7.	ETHERNET PORT – Connects Printer to a network.
8.	WI-FI PORT – Connect Wi-Fi antenna (included) to monitor or operate Printer wirelessly through your network.
9.	MEDIA SUPPORT WEDGE – Allows for adjustments in stack angle, based on media type and length. Helps to force the media against the separation area.
10.	REAR MEDIA SUPPORT – Provides the proper angle to enhance paper feeding and separation.
11.	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.
12.	SEPARATOR LOCKING LEVER – Unlocks/locks Sheet Separators to adjust Separators for different media thicknesses.



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.</p> <p>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.</p> <p>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.</p> <p>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 (Operators 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, causes and recommended solutions.

Power Problems

CONDITION	PROBLEM	SOLUTION
Power is ON, nothing happens	No power to Printer.	Check that power cord is plugged in. Check that power outlet is live. Check fuse in Main Power Switch. Replace with a fuse of same rating. Bad Controller PC Board. Bad Power Supply.

Interface Communication Problems

CONDITION	PROBLEM	SOLUTION
Printer does not respond to software	Connection problems. Poor connection between Printer and computer.	Press Port Reset on the Power Touchscreen. Check that port is communicating with Printer by using another USB cable. Replace cable. If port cannot communicate using another USB cable, check Printer. If port cannot communicate using another USB cable and Printer is OK, check the USB port. Check cable for breaks/damage. If damaged, replace cable. Press Port Reset on the Power Touchscreen. Turn Printer OFF and ON again. Check connections.

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 display 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 and then ON.
Touchscreen freezes or goes blank or dark	A Printer function 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 Power button on Control Panel. Replace processor PC Board.

Feeding Problems

CONDITION	PROBLEM	SOLUTION
Intermittent feeding	<p>Feed Ramp not used.</p> <p>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>Feed Ramp adds a slope to media stack and helps feeding.</p> <p>Loosen Side Guides slightly.</p> <p>Clean 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>Separator gap not set properly.</p> <p>Worn Separator Tip</p> <p>Sensor bad or dirty.</p> <p>Media stuck together.</p> <p>Side Guides too close to media.</p> <p>Brake misadjusted.</p>	<p>Adjust Sheet Separators to media thickness.</p> <p>Replace Separator Tip.</p> <p>Clean Sensor with compressed air or replace it.</p> <p>Fan media before feeding.</p> <p>Push Side Guides away from media.</p> <p>Adjust Brake (see <i>Section 4-Adjustments</i>)</p>
Failure to feed	<p>Side Guides too close to media.</p> <p>Material is out of specification.</p> <p>Clutch not engaging.</p>	<p>Readjust Side Guides.</p> <p>Instruct user on proper operation.</p> <p>Adjust Separators to media thickness.</p> <p>Maximum thickness: 0.375" (9 mm)</p> <p>Adjust Printhead height to accommodate media thickness.</p> <p>Check for broken Drive Belt and replace, check for loose set screws on Drive Pulley or Belt Drive Roller Pulley.</p> <p>Replace Clutch.</p>
Jams	<p>Media path obstruction.</p> <p>Media not loaded properly.</p> <p>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 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 Feed Ramp.</p> <p>Adjust Separators to thickness of media.</p> <p>Uncurl media.</p> <p>Clean or replace Sensor.</p> <p>Replace Separator Tip.</p> <p>Raise Printhead.</p> <p>Replace Conveyor Tapes (<i>Transport Belts</i>).</p>

Feeding Problems (continued)

CONDITION	PROBLEM	SOLUTION
Failure to feed	<p>Side Guides too close to media.</p> <p>Material is out of specification.</p> <p>Clutch not engaging.</p>	<p>Readjust Side Guides.</p> <p>Instruct user on proper operation.</p> <p>Adjust Separators to media thickness.</p> <p>Maximum thickness: 0.375" (9 mm)</p> <p>Adjust Printhead height to accommodate media thickness.</p> <p>Check for broken Drive Belt and replace, check for loose set screws on Drive Pulley or Belt Drive Roller Pulley.</p> <p>Replace Clutch.</p>
Jams	<p>Media path obstruction.</p> <p>Media not loaded properly.</p> <p>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 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 Feed Ramp.</p> <p>Adjust Separators to thickness of media.</p> <p>Uncurl media.</p> <p>Clean or replace Sensor.</p> <p>Replace Separator Tip.</p> <p>Raise Printhead.</p> <p>Replace Conveyor Tapes (<i>Transport Belts</i>).</p>

**SECTION 2
TROUBLESHOOTING**

Printing Problems

CONDITION	PROBLEM	SOLUTION
No printing: Media is blank after going under Printheads	Sensor did not see piece or send signal to print to PC Board. Clogged Cartridges. Cartridge dried out. Tape on Printhead. Cartridge not properly inserted. 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. 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 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 Power Supply. Poor Printhead connections.	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)	Tap water was used to clean Cartridge and mineral deposits have blocked the Ink Chamber. Wiping wrong way or too hard drove particles into Nozzles. Cartridge low on ink. Tape covering Print Nozzle or Vent Holes. Printhead connections not set. Bad Printhead Drive Card.	Replace Cartridge. Replace Cartridge, instruct operator in proper cleaning method. (See “ Cleaning Printhead ”) Replace Cartridge. Remove tape. Check that the Flex Circuit connections are in place. Replace Printhead Drive Card.
Pattern of streaks in a line of print	Electrical issues at Printhead.	Check/replace Ink Cartridge, Cartridge Pin PC Board and/or Pen Driver Interface PC Board.
Smearred ink	Carriage too low. Coated media preventing ink absorption. High humidity slowing drying time.	Raise Carriage. Use fast-dry ink and/or allow more time to dry after printing. Use fast-dry ink and/or lower dpi resolution.

Print Placement Problems

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

Print Placement Problems (continued)

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

Print Content Incorrect


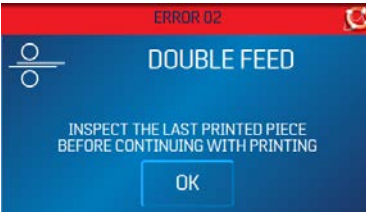

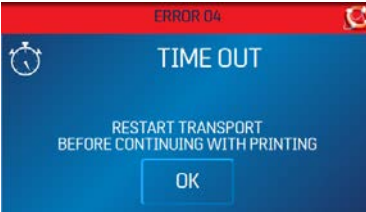


CONDITION	PROBLEM	SOLUTION
Information being printed is wrong, incomplete, or garbled	Poor cable connections. Interface problem. Corrupted database file.	Check USB cable: Securely fastened at both ends. Cable does not exceed 6 feet in length. Printer's internal USB cable is in good condition. Check Printer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

Software Problems

Refer to the manual for the application software being used.

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.</p> <p>Media is curled or bent.</p> <p>Media is too thin.</p> <p>Sheet Separators need adjustment.</p>	<p>Clear media from feeder and/or print transport area.</p> <p>Uncurl media.</p> <p>Minimum media thickness: at least 0.008" (0.2 mm) thick.</p> <p>Adjust Sheet Separators on the Feeder.</p> <p>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.</p> <p>Use Reprint (on <i>Quick Menu screen</i>) to retrieve/restore any missing or misprinted pages in the print job.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Wire Harness connection is loose or broken.</p> <p>Encoder Belt worn or broken.</p> <p>Encoder Sensor not working.</p>	<p>Check Printer Motor.</p> <p>Check J5 connector on I/O Board.</p> <p>Check Encoder Belt.</p> <p>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>

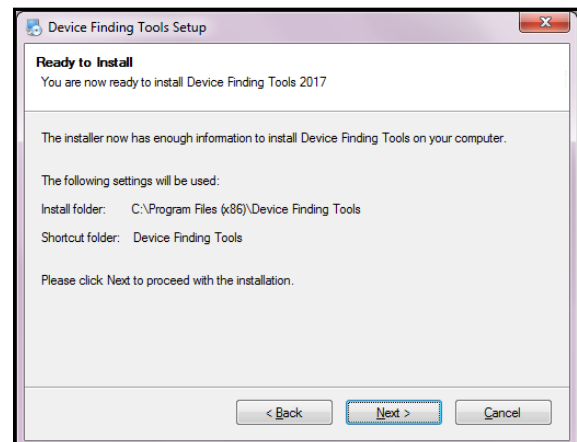
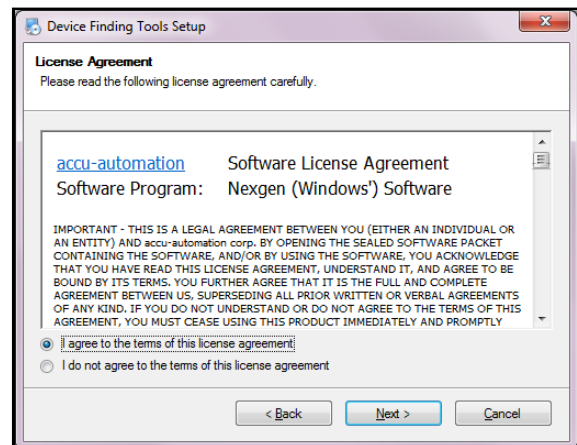
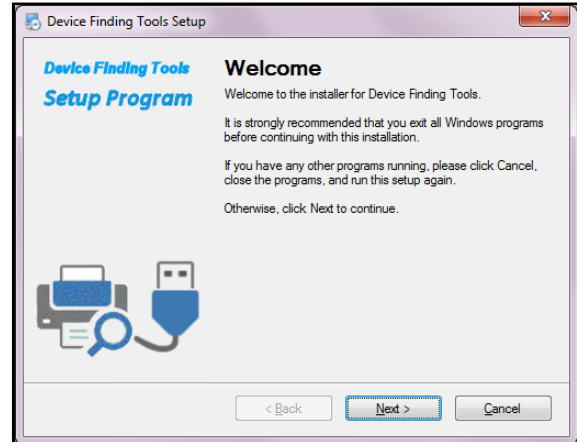
SECTION 3 – Service Features

Firmware Updates

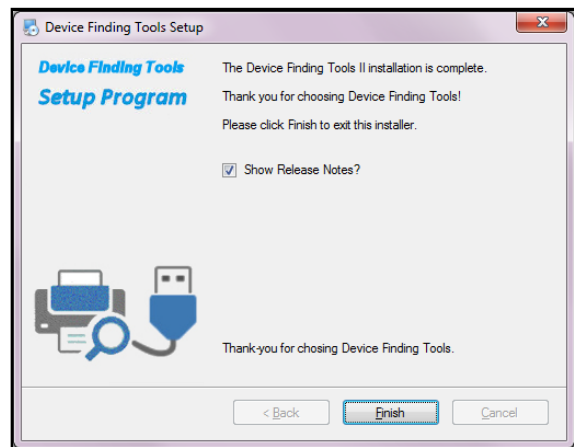
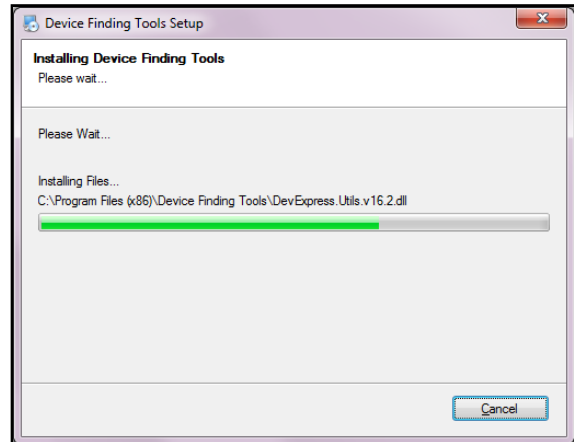
Install Device Finding Tool

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**”.



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



Firmware Update Process

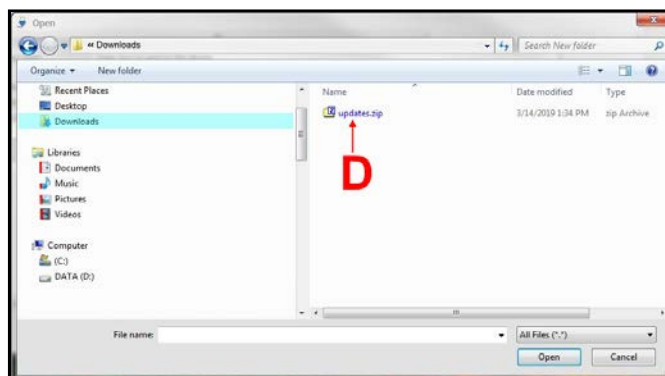
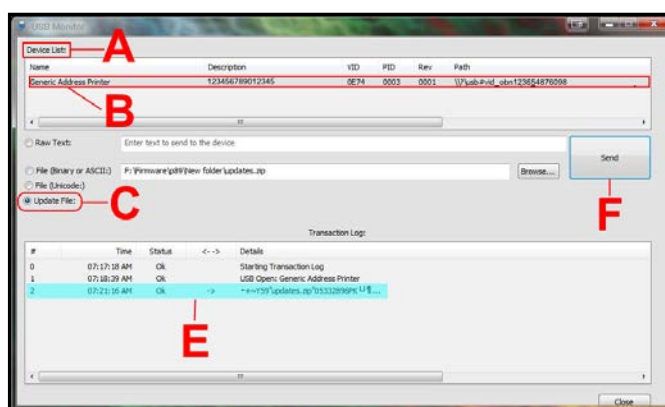
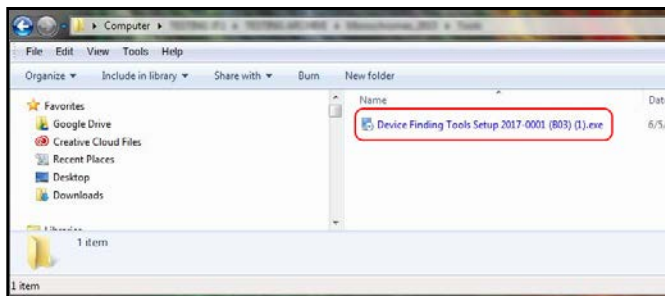
NOTE: Updates can only be loaded through a direct USB connection to the Printer.

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.

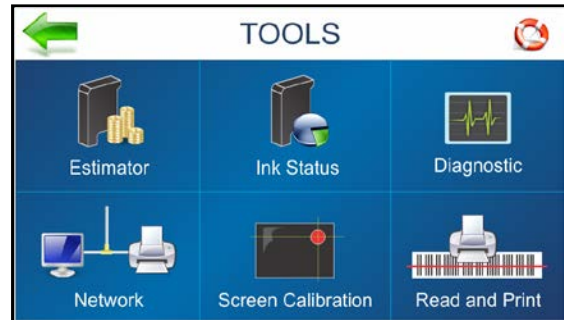
Ink Status: Select to view the percentage of ink left in the ink cartridges and the estimated number of prints remaining for each cartridge at a selected resolution, based on last page printed.

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.



SECTION 3 SERVICE FEATURES

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.

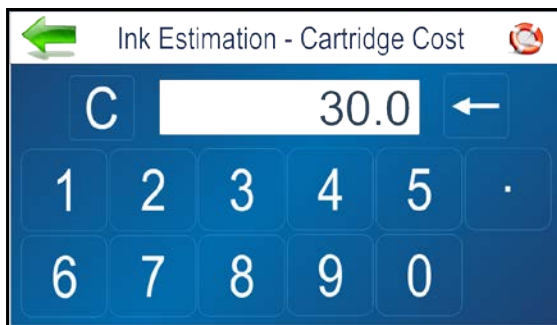
NOTE: It is recommended that **Purge First Piece** be turned off. This will use much less ink and increase the accuracy of the estimate.

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	

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.

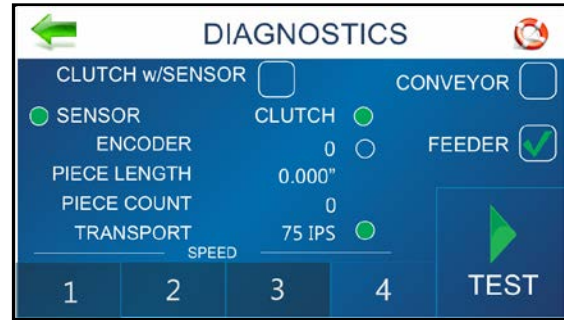
If the piece measured longer than the actual piece length; the piece is probably slipping or hesitating as it feeds. In this case, check or adjust the Sheet Separators and check and adjust the Media Thickness setting.

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.*)

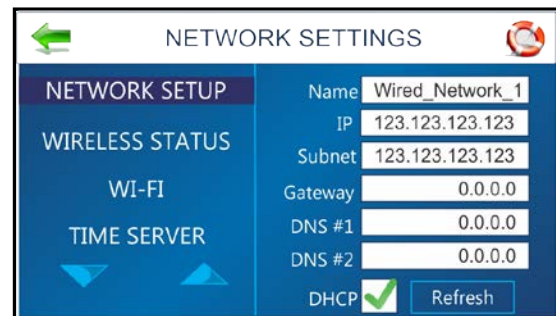
Feeder: Checking/unchecking the box turns the “external feeder” relay on and off. (*Listen for relay clicking.*) If an external feeder is connected the feeder should start/stop.



NETWORK SET-UP

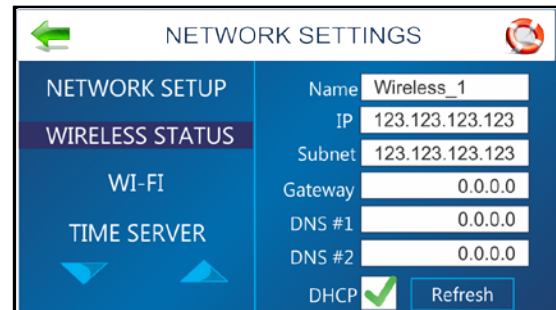
Press the **Network** icon on the **Tools** screen to open the **Network Settings** screen. Select **Network Setup** to enter the settings for connecting the Printer to your network. Enter the Printer Name, IP address, Subnet address, Gateway address, DNS #1 and DNS #2 and select or deselect DHCP as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

Refresh refreshes/updates the network connection.



WIRELESS STATUS

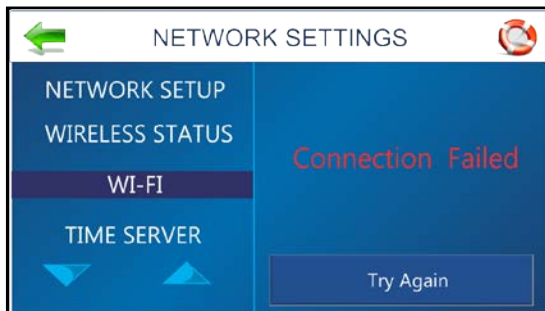
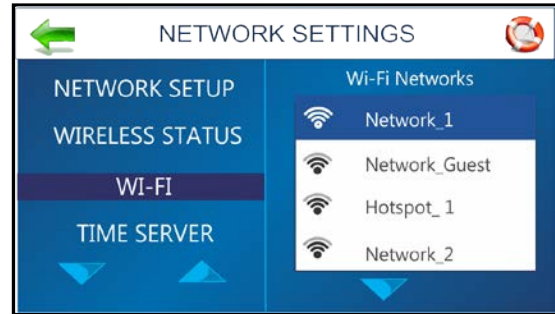
Once the **Network** and **Wi-Fi** are set up, this screen displays information about the wireless network connection.



WI-FI SET-UP

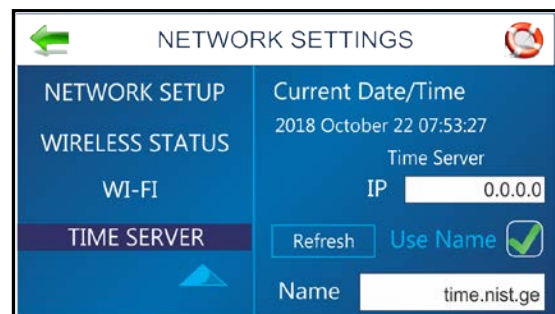
Press the **Network** icon on the **Tools** screen to open the **Network Settings** screen. Make sure the Wi-Fi antenna (*included*) is connected to the Printer's Wi-Fi port.

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.



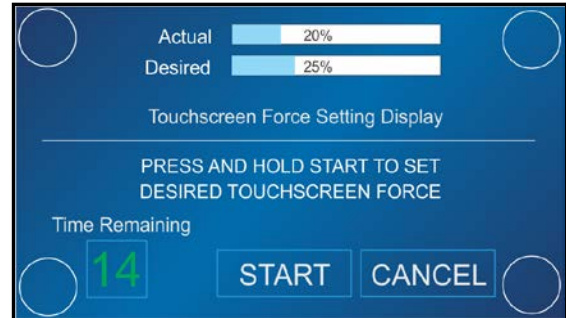
TIME SERVER (DATE AND TIME)

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



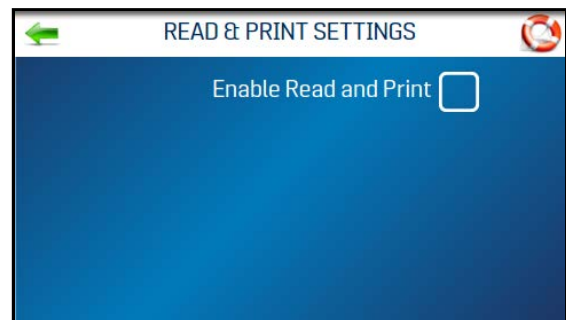
TOUCHSCREEN CALIBRATION

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.



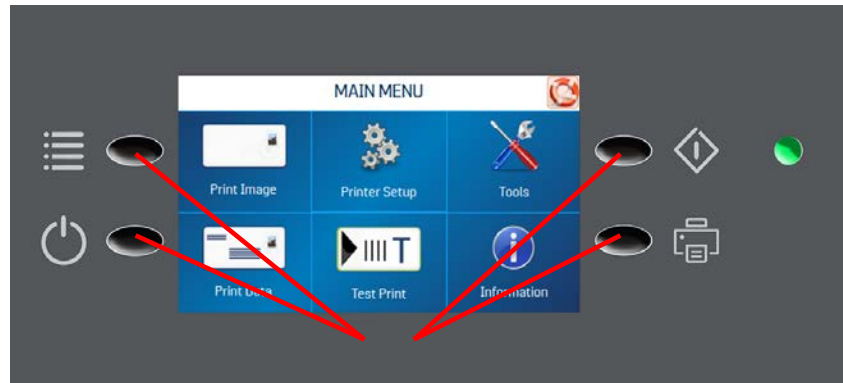
SECTION 3 SERVICE FEATURES

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.

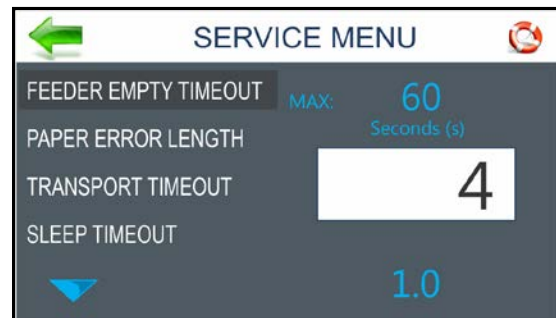
Exit Service Menu by pressing the green arrow to return to the regular touchscreens.



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*).

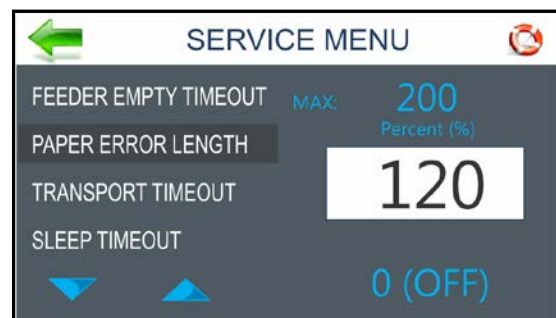
1. Select **Feeder Empty Time-Out**.
2. Press the white entry box to open the numerical keyboard. Enter desired number of seconds. Press the **Enter** key (*lower right Arrow on numeric keyboard*) to save the new setting.



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.

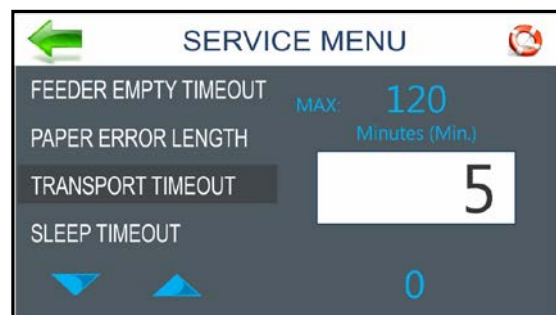
1. Select **Paper Error Length**.
2. Press the white entry box to open the numerical keyboard. Enter desired percentage. Press the **Enter** key (*lower right Arrow on keyboard*) to save the new setting.



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*).

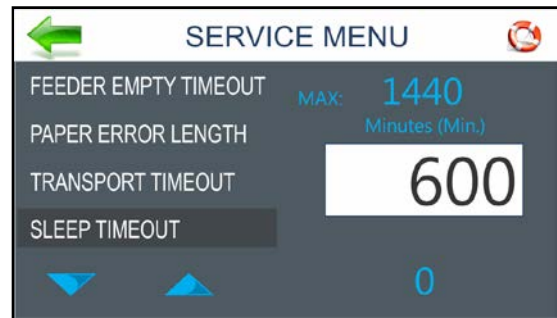
1. Select **Transport Time-Out**.
2. Press the white entry box to open the numerical keyboard. Enter desired number of minutes. Press the **Enter** key (*lower right Arrow on keyboard*) to save the new setting.



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.

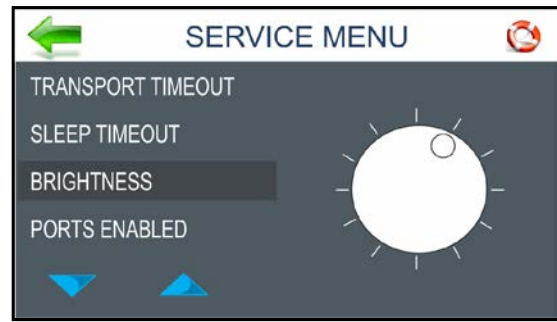
1. Select **Sleep Timeout**.
2. Press the white entry box to open the numerical keyboard. Enter desired number of minutes. Press the **Enter** key (*lower right Arrow on keyboard*) to save the new setting.



BRIGHTNESS

Brighten or darken the Touchscreen display.

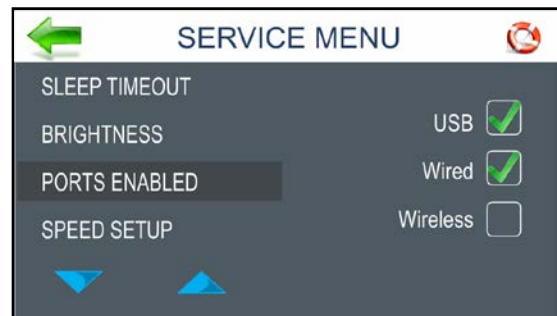
1. Select **Brightness**.
2. Move the small inner circle around the edge of the large outer circle to brighten or darken the **Touchscreen** display.



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.

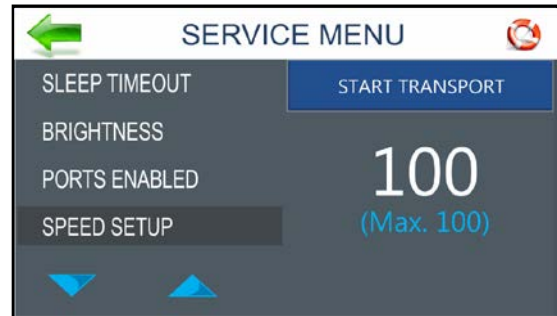


SECTION 3 SERVICE FEATURES

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.

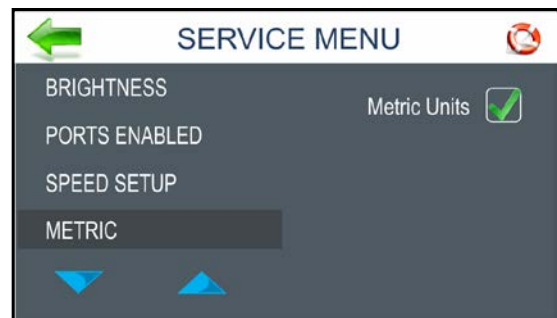
See Section 4, “Print Speed Adjustment” for details.



METRIC

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

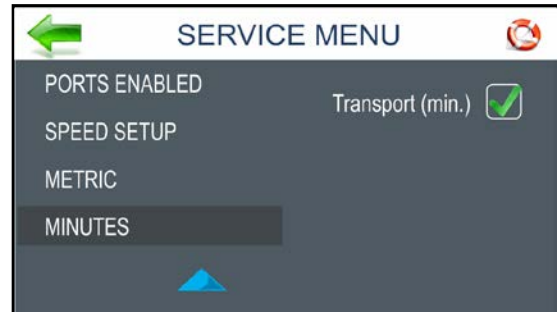
1. Select **Metric**.
2. Check the box next to Metric Units to show measurements as meters. Uncheck the box to show measurements in inches/feet.



MINUTES

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

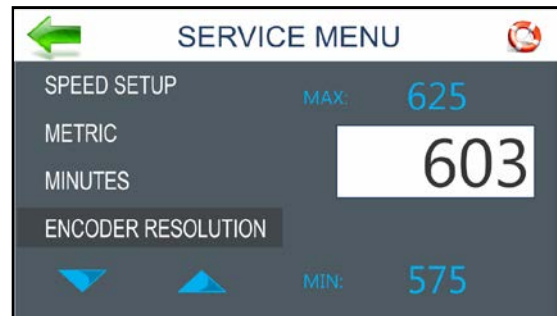
1. Select **Minutes**.
2. Check the **Transport (min.)** box to activate to show speed as per minute. Uncheck box to show speed as per second.



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.

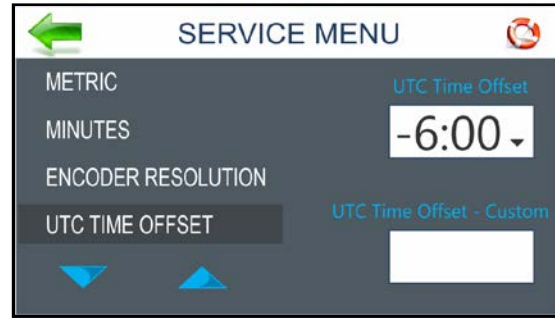
1. Select **Encoder Resolution**.
2. Make very small incremental changes in the setting (pulses/inch, 600 being the standard default). Check print alignment and adjust as needed.
NOTE: Generally, a change of more than 5 either way could indicate a larger issue.



UTC TIME OFFSET (DATE AND TIME)

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

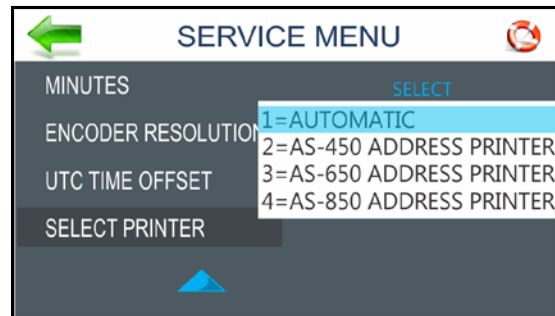
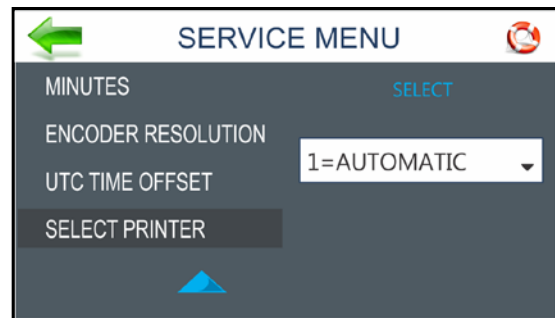
1. Press the **Network** icon on the **Tools** screen to open the **Network Settings** screen.
2. Select **Time Server** to connect to an online Time Server. Select the time difference for your location relative to Greenwich Mean Time.



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!

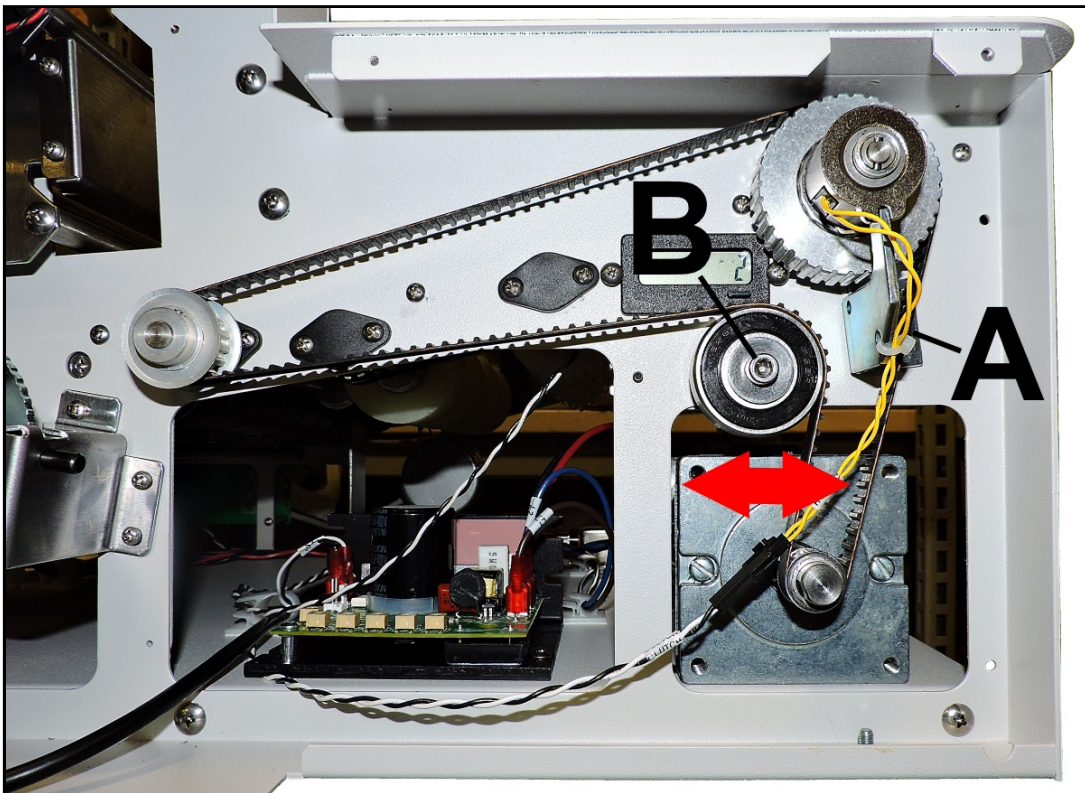
ELECTRICAL ADJUSTMENTS ARE MADE WITH PRINTER UNDER POWER. BE SURE TO USE NON-METALLIC TOOLS WHEN ADJUSTING POTENTIOMETERS ON PC BOARDS.

Drive Belt Tension Adjustment

REQUIREMENT: To ensure Drive Belt has proper tension.

ADJUSTMENT:

1. Unplug Printer and remove Operator Side Covers. (4 screws)
2. Loosen screw [A] that secures Clutch Bracket to Side Frame.
3. Loosen screw in Idler Pulley [B]. Slide Idler right or left to tension Belt. When properly tensioned, there should be about 1/8" of deflection in the Belt. Tighten Idler Pulley screw.
4. Reinstall Side Cover.

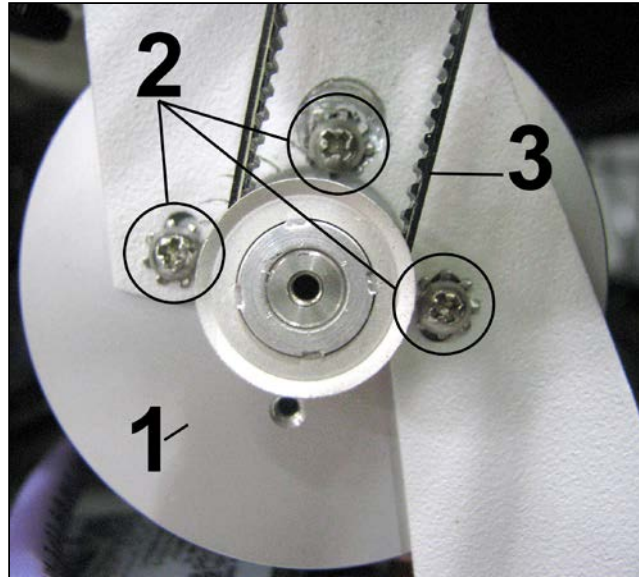


Encoder Belt Tension Adjustment

REQUIREMENT: To ensure Encoder Belt is properly tensioned.

ADJUSTMENT:

1. Unplug Printer and remove Non-operator Side Cover (6 screws).
2. Loosen three screws [2] that mount Encoder to Side Frame.
3. Move Encoder [1] up or down in slots until you obtain about 1/8" deflection in the Belt [3].
4. Tighten three screws [2].
5. Reinstall Side Cover.



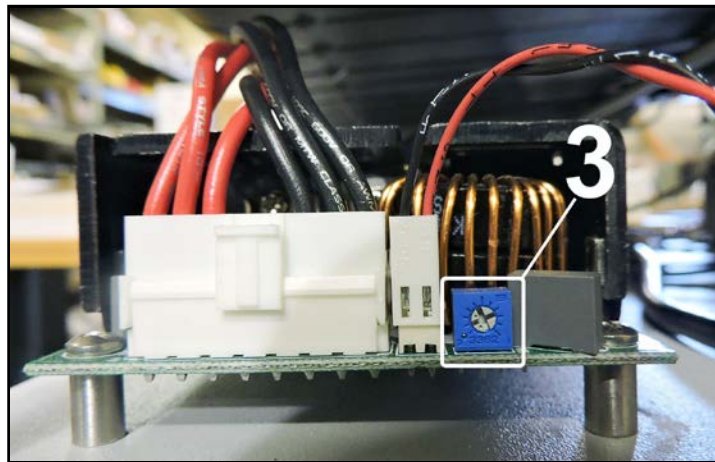
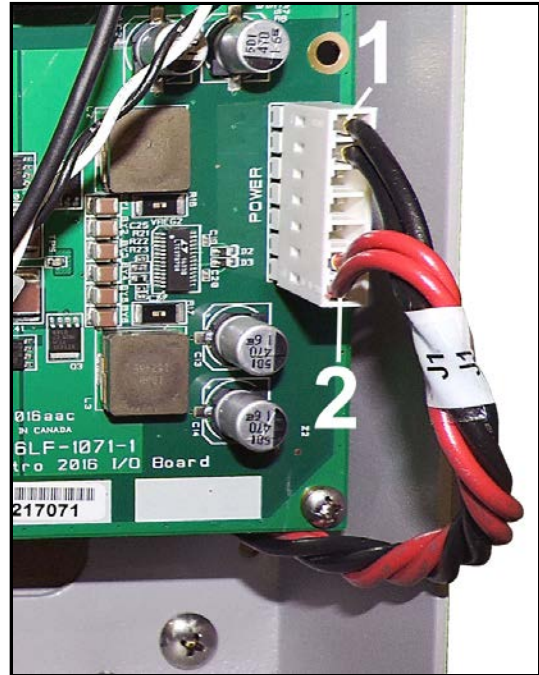
SECTION 4 ADJUSTMENTS

Output Voltage Adjustment

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

ADJUSTMENT:

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



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.

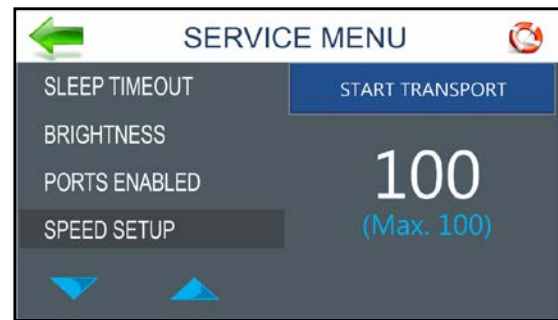
For example: If **Maximum Speed** is set at 95, the Printer will set the speeds as follows: **1** (23-24 ips), **2** (47-48 ips), **3** (71-72 ips), **4** (94-95 ips). **NOTE:** Speeds may vary slightly (± 1 or 2 ips).

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):**

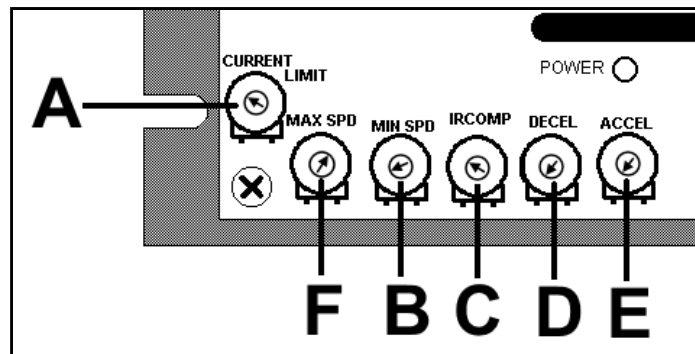
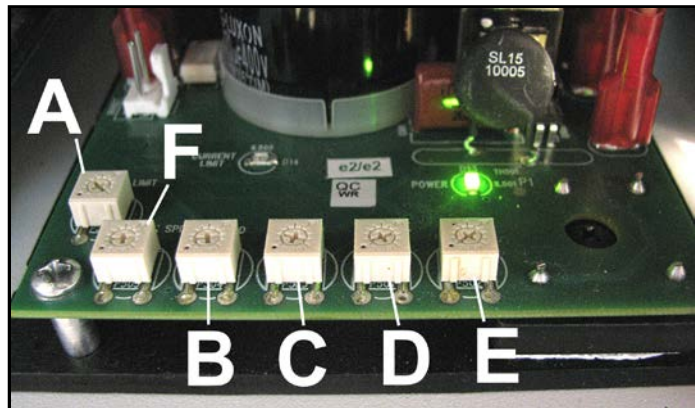
[A] Check/Adjust Current Limit: Check that the **Current Limit Potentiometer** points to the 10-o'clock position.

[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.

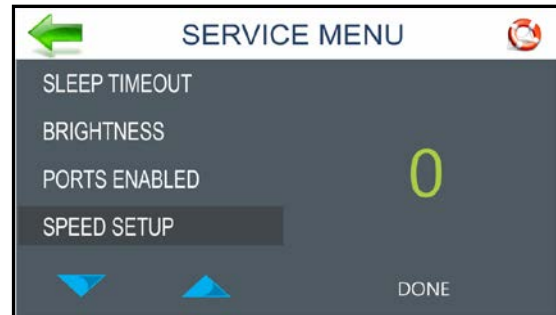
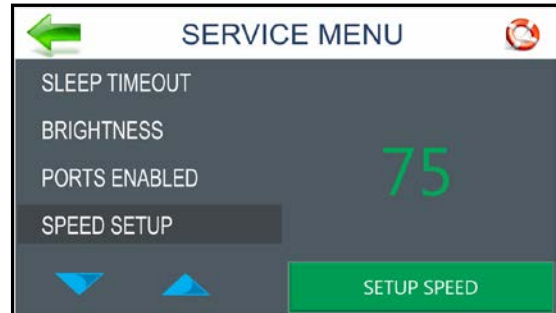
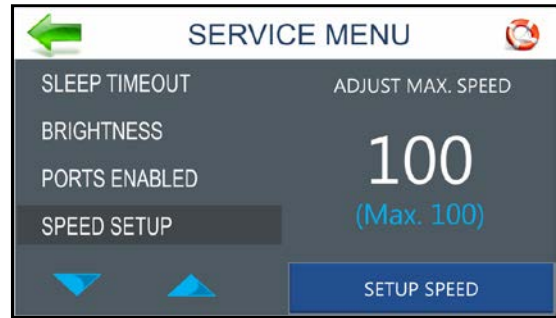
[D], [E] Potentiometers: Check that potentiometers are at the **Minimum** position (*CCW*).

[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.



Media Sensor Adjustment

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

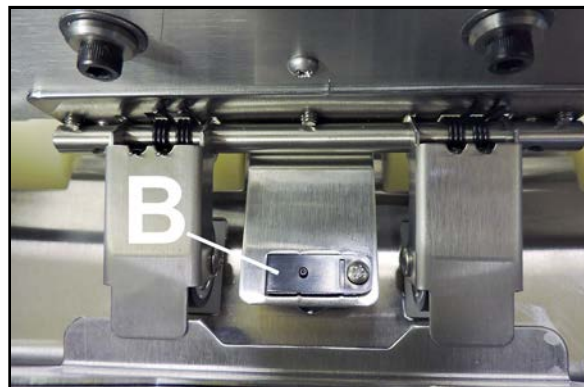
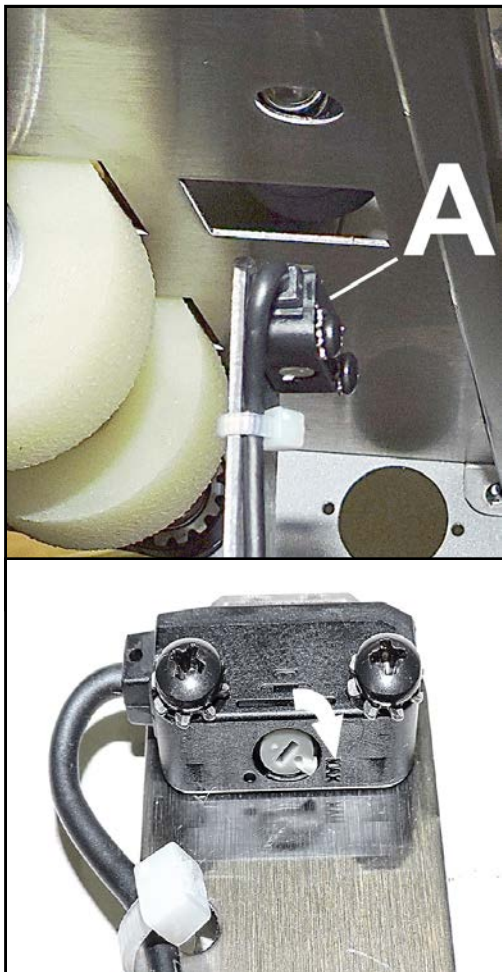
ADJUSTMENT:

1. Remove Non-Operator Side Cover.
Make sure that no media is covering the Media Sensor [A] and the Reflector [B] installed above the media path. Turn Printer ON and watch lights on top of Media 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 under the 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**.

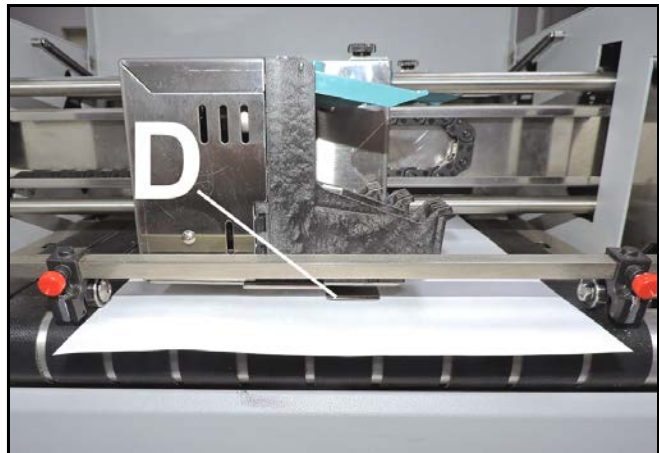
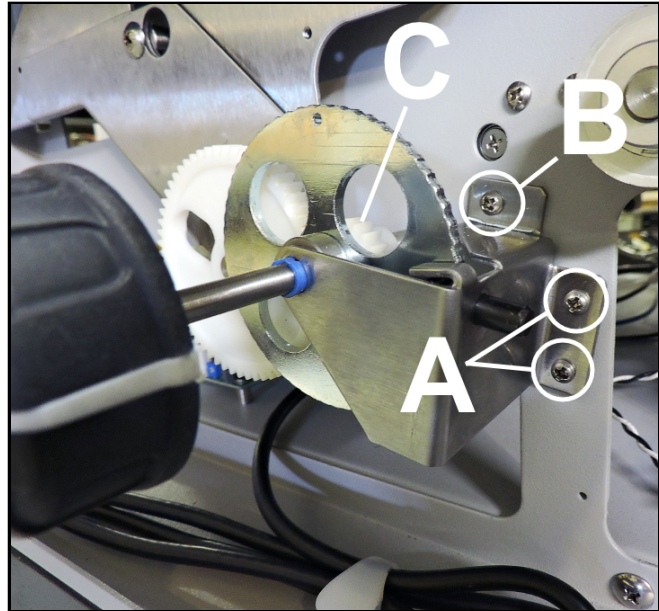


Printhead Carriage Assembly Adjustment

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

ADJUSTMENT:

1. Turn the Media Thickness Knob to its “0” (lowest) position.
2. Unplug the Printer and remove the Operator Side Cover (4 screws).
3. Remove the (2) side Media Thickness Knob Bracket screws [A] and loosen the third (top) 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.**

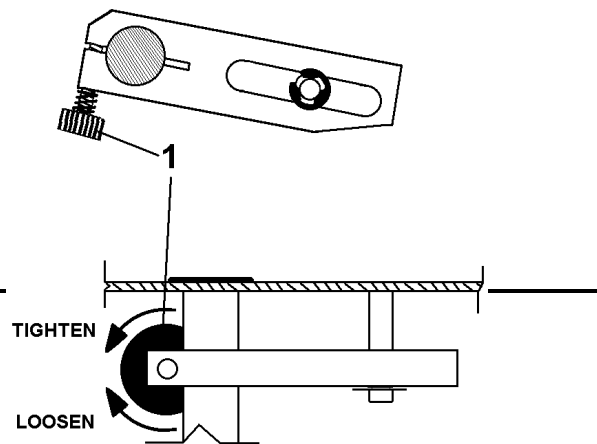
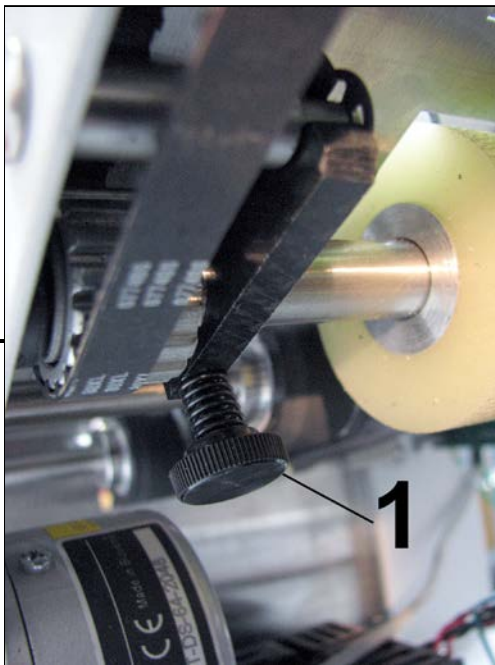


Brake Adjustment

REQUIREMENT: To provide proper tension on Feed Shaft Brake Assembly for proper feeding of media.

ADJUSTMENT:

1. Disconnect Printer from power source.
2. Remove Non-Operator Side Cover.
3. Reconnect Printer to power source and turn it **ON**.
4. Turn brake tension adjusting screw [1] clockwise until Brake exerts a drag on Rear Feed Roller.
5. Load media and turn Printer **ON**. Press **Test Feed** on the **Quick Menu** Touchscreen. Observe that only one piece of media feeds at a time.
NOTE: If more than one piece feeds at a time, increase tension by turning screw clockwise. If Printer slows down, decrease tension by turning screw counterclockwise.
6. Turn Printer **OFF**, disconnect from power source. Reinstall Covers.



SECTION 5 – *Disassembly/Assembly*

Basic Disassembly

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



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:

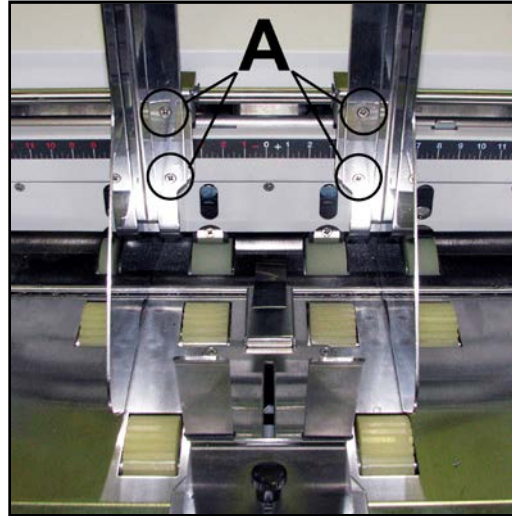
- USE STATIC-FREE WORKSTATIONS WHEN UNIT COVERS ARE REMOVED.
- WEAR GROUNDED WRIST STRAPS WHEN WORKING ON UNIT.
- TRANSPORT ELECTRONIC SUBASSEMBLIES IN SEALED STATIC-SHIELDING PACKAGING.

CAUTION

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

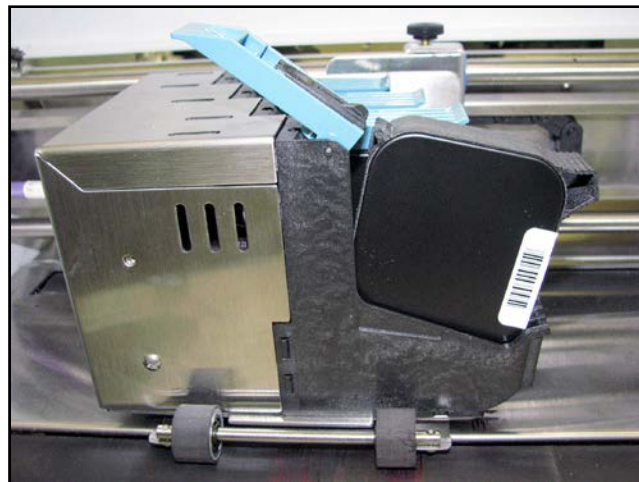
Remove Side Guides

Remove four screws [A] (as shown at right).



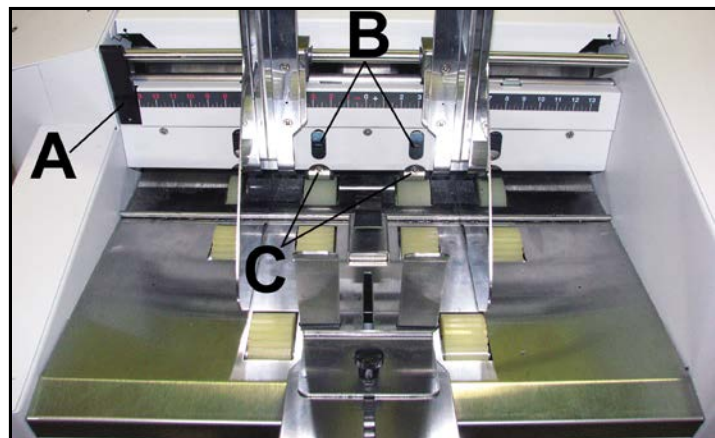
Remove Print Cartridges

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



Remove Separator Tips

1. Unplug Printer.
2. Release Sheet Separator Locking Lever [A] on left side of Feeder.
3. Push down black tab [B] on Separator to expose screw.
4. Use a Phillips screwdriver and remove screw holding metal cover [C] over Separator. Use screwdriver tip to pry Separator Tip out of its holder.
5. Replace Separator Tip, reinstall metal cover and screw. Do not overtighten.



Service Disassembly Procedures

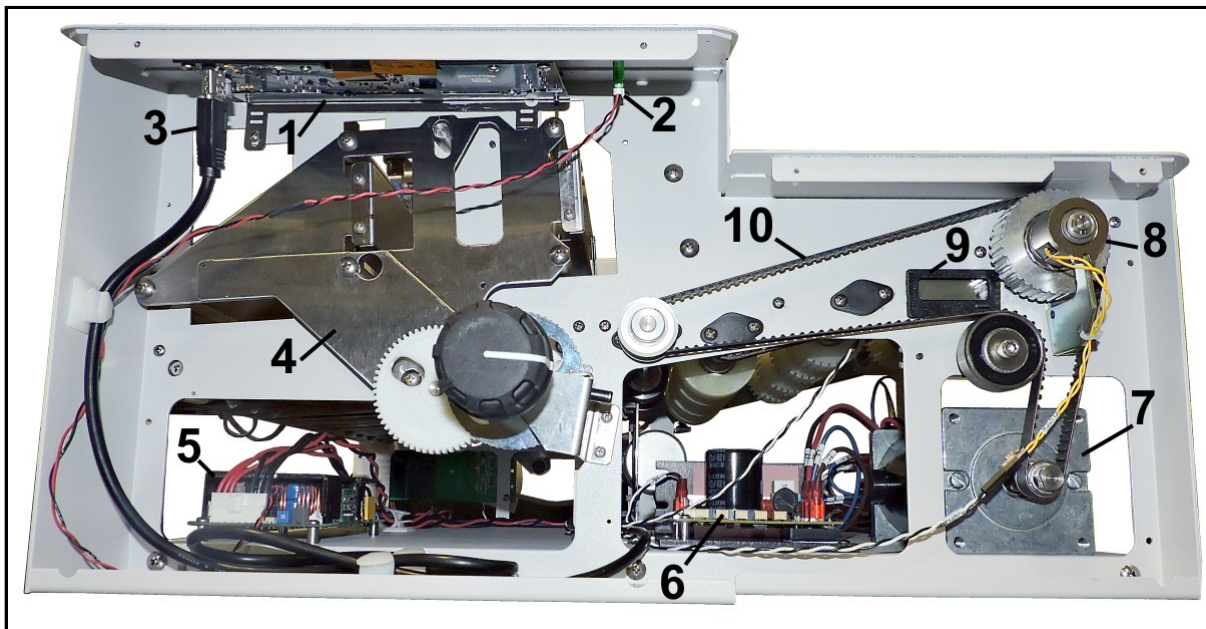
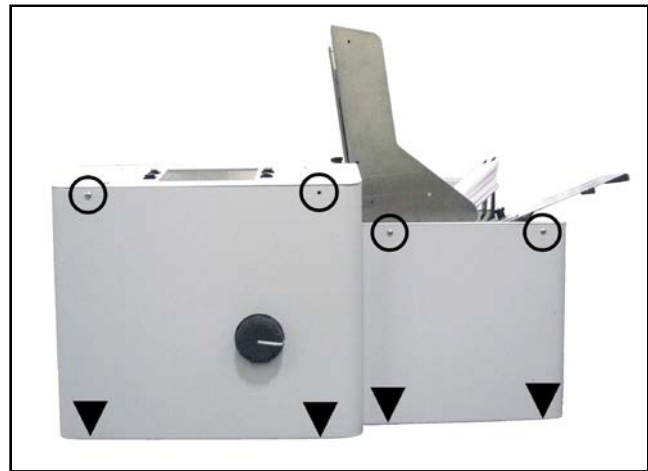
NOTE: The following disassembly should only be done by a qualified, trained service representative.

CAUTION

ALWAYS WEAR A GROUNDED WRIST STRAP WHEN WORKING WITH ELECTRONIC BOARDS.

Operator Side Covers

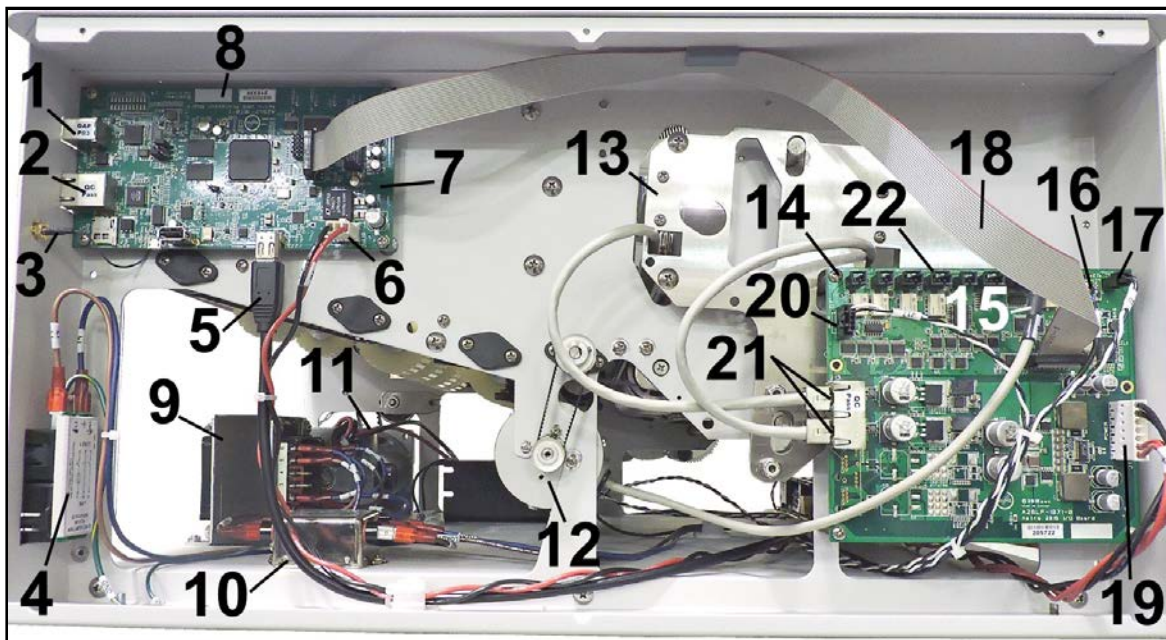
1. **Left-hand Operator Side Cover.** Remove two screws at top Cover. Remove two screws from bottom of Cover. Remove Cover.
2. **Right-hand Operator Side Cover.** Remove two screws at top of Cover. Remove two screws from bottom of Cover. Remove Cover.
3. **Reassemble in reverse order.**



- | | |
|---|--|
| 1. Touchscreen Display PC Board | 6. Speed Control |
| 2. LED Indicator | 7. Drive Motor |
| 3. Control Panel Power Cord | 8. Feed Clutch |
| 4. Printhead Transport Lift Mechanism.
See Carriage Assembly Adjustment in
<i>Section 4 – Adjustments.</i> | 9. Nonresettable Digital Lifetime Piece Counter |
| 5. Power Supply | 10. Motor Drive Belt. See Motor Drive
Adjustment in <i>Section 4 – Adjustments.</i> |

Non-Operator Side Cover

1. Remove three screws at top of Non-operator Side Cover. Remove two screws from bottom of Cover. Remove Cover.
2. Two PC Boards under these Covers are attached to Printer by four screws each. Unplug connectors and then remove screws to remove PC Boards.

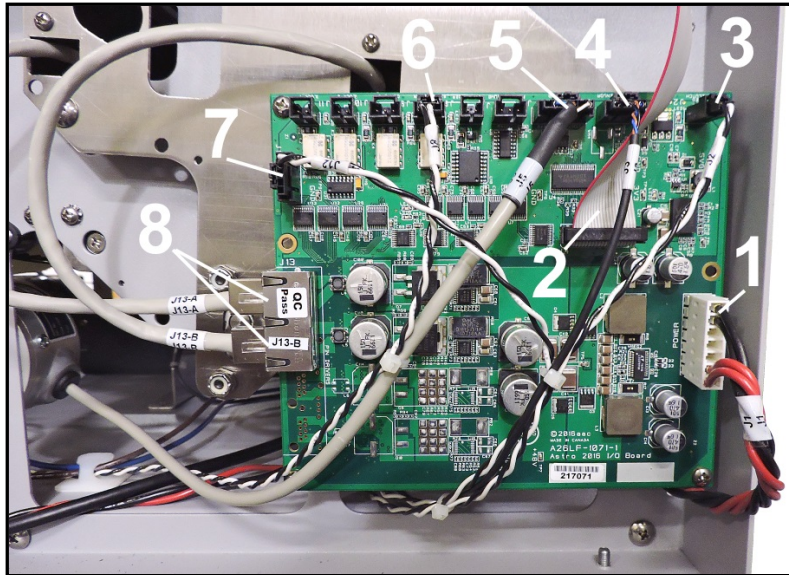


- | | |
|--|---|
| 1. USB-3.1 Port (J1) | 12. Encoder Assembly |
| 2. Ethernet Port (J2) | 13. Printhead Transport Lift Assembly |
| 3. WiFi Port | 14. I/O PC Board |
| 4. Power Switch/Power Receptacle/Fuse Module | 15. Encoder Assembly Terminal (J5) |
| 5. Control Panel PC Board Terminal (J7) | 16. Media Sensor Terminal (J3) |
| 6. Main PC Board Power (J10) | 17. Clutch Terminal (J2) |
| 7. Main PC Board to I/O PC Board Terminal (J9) | 18. I/O PC Board to Main PC Board Terminal (J4) |
| 8. Main PC Board | 19. I/O PC Board Power Terminal (J1) |
| 9. 220V Transformer (<i>Only on 220V models</i>) | 20. Speed Control Terminal (J12) |
| 10. Power Supply In-Line Filter | 21. Printhead Carriage Terminals (J13) |
| 11. Printer Motor | 22. Nonresettable Digital Counter Terminal (J8) |

SECTION 5 DISASSEMBLY – ASSEMBLY

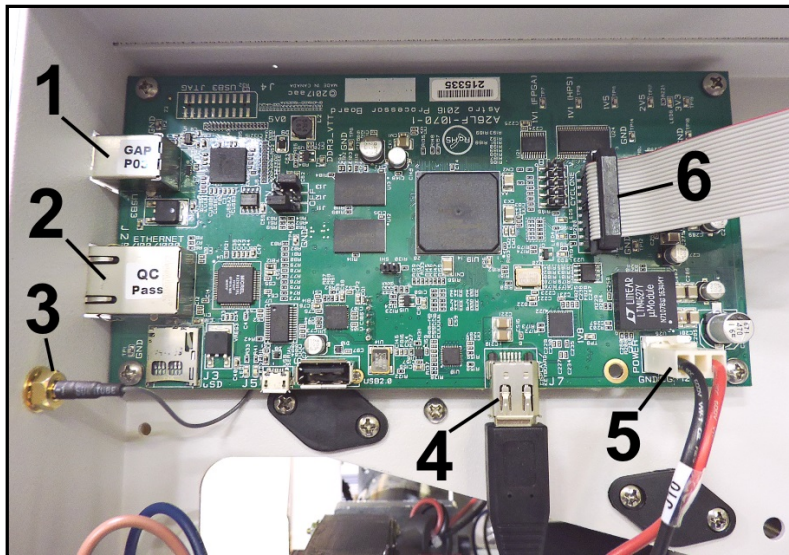
I/O Processor Board

1. Power Supply (J1-POWER)
2. I/O PC Board to Main PC Board Terminal (J4)
3. Clutch (J2)
4. Media Sensor (J3)
5. Encoder (J5)
6. Nonresettable Digital Counter (J8)
7. Speed Control (J12)
8. Printhead Carriages (J13-A, J13-B)



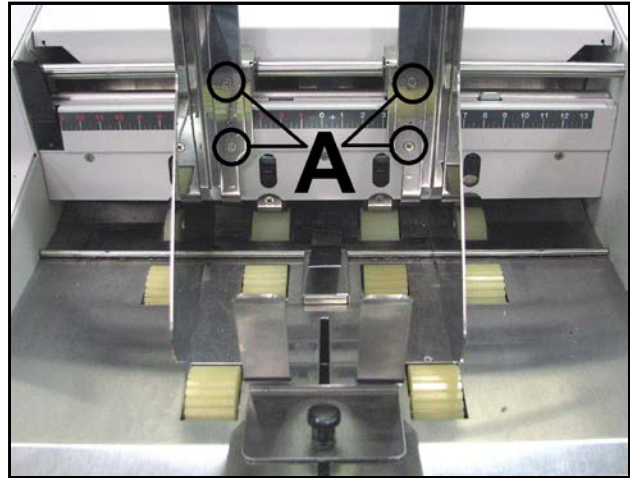
Main Processor Board

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

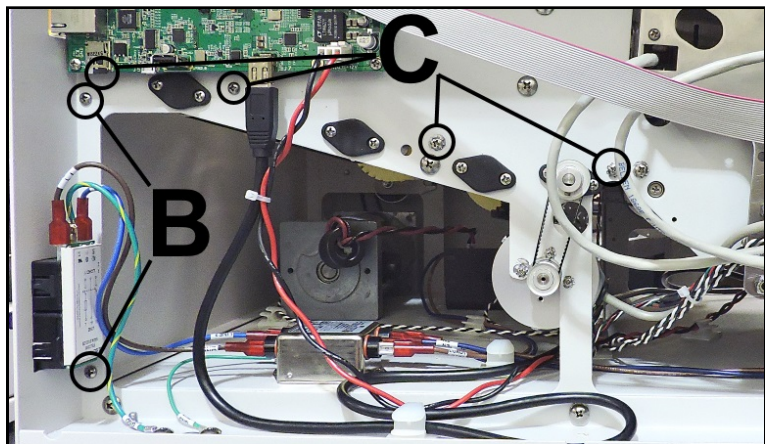
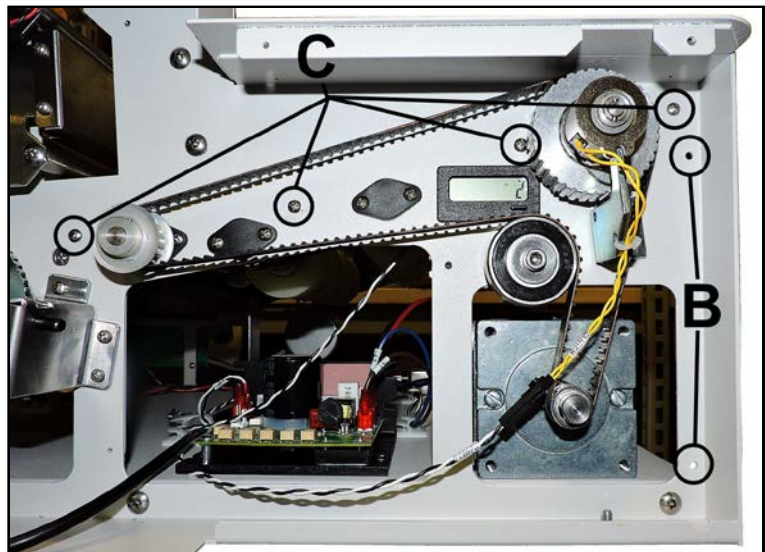


Remove Center Plate and Rear Cover

1. Remove Operator and Non-Operator Side Covers.
2. Remove Side Guides [A].
3. Remove Main PC Board on Non-Operator Side (*4 screws*).



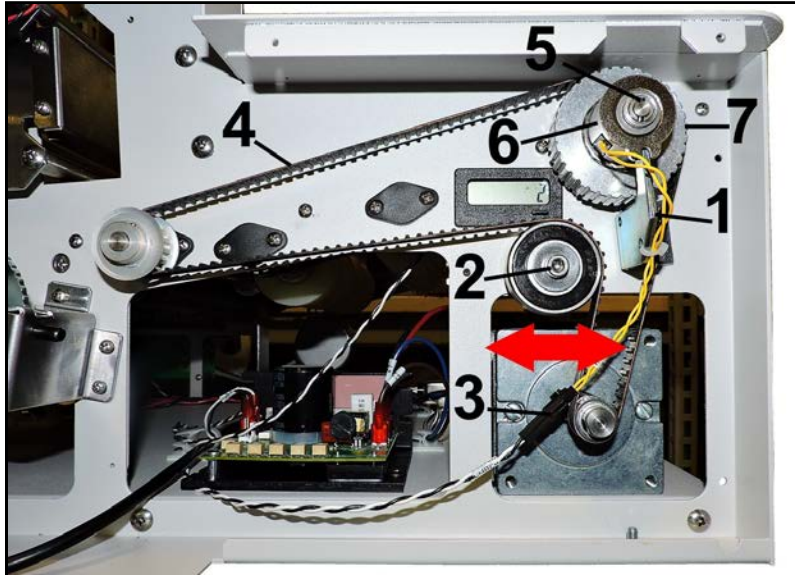
4. **Rear Cover.** Remove screws [B] securing Rear Cover to Side Frames (*2 screws/side*).
5. **Center Plate.** Remove screws [C] securing Center Plate to Side Frames (*4 screws/side*).
6. **Reinstall in reverse order.**



SECTION 5 DISASSEMBLY – ASSEMBLY

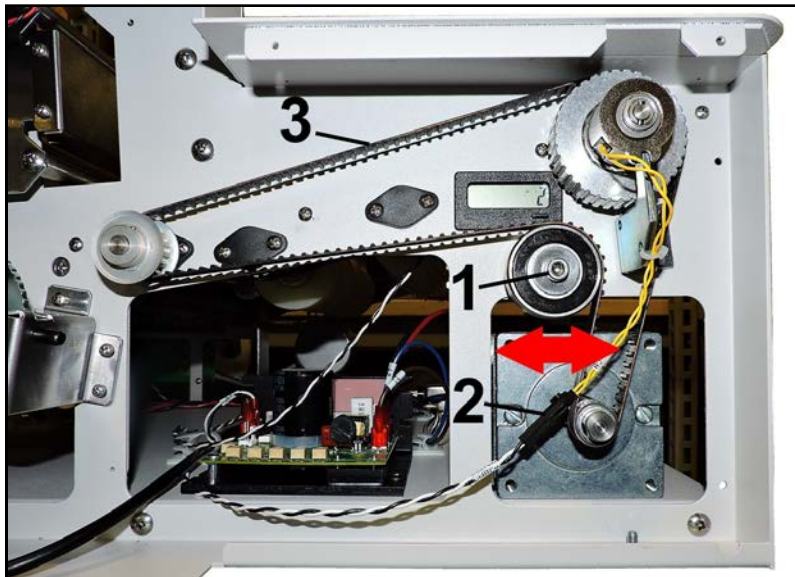
Remove Clutch

1. Remove Operator Side Cover.
2. Remove Clutch Bracket [1]. Loosen Idler Pulley mounting screw [2].
3. Disconnect Clutch wiring harness [3] from Connector (CLUTCH).
4. Move Idler Pulley to loosen and remove Motor Drive Belt [4].
5. Push Clutch in toward Frame and remove locking pin [5]. Remove Clutch [6] and Drive Pulley [7].
6. **Install in reverse order.**
(See SECTION 4 – Drive Belt Tension Adjustment.)



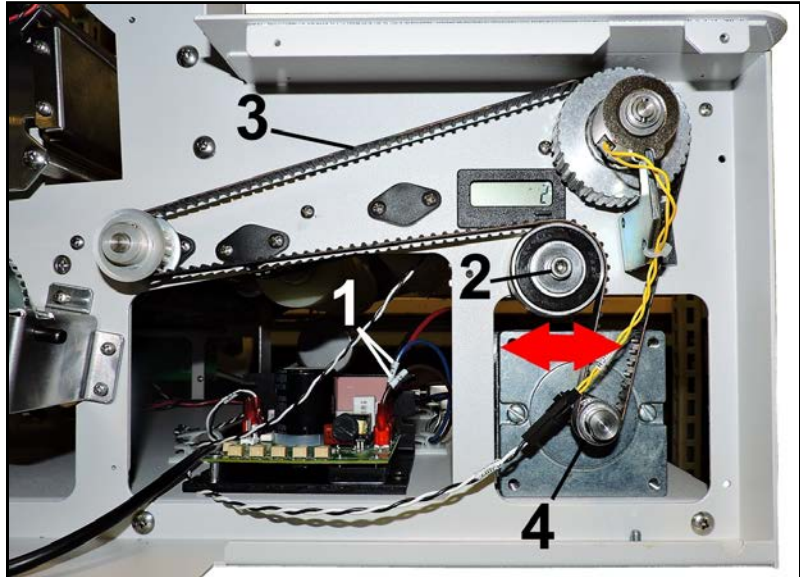
Remove Motor Drive Belt

1. Remove Operator Side Cover.
2. Loosen Idler Pulley mounting screw [1].
3. Disconnect Clutch wiring harness [2] from Connector (CLUTCH).
4. Move Idler Pulley [1] to loosen Motor Drive Belt [3].
5. Remove Drive Belt.
6. **Install in reverse order.**
(See SECTION 4 – Drive Belt Tension Adjustment.)



Remove Drive Motor

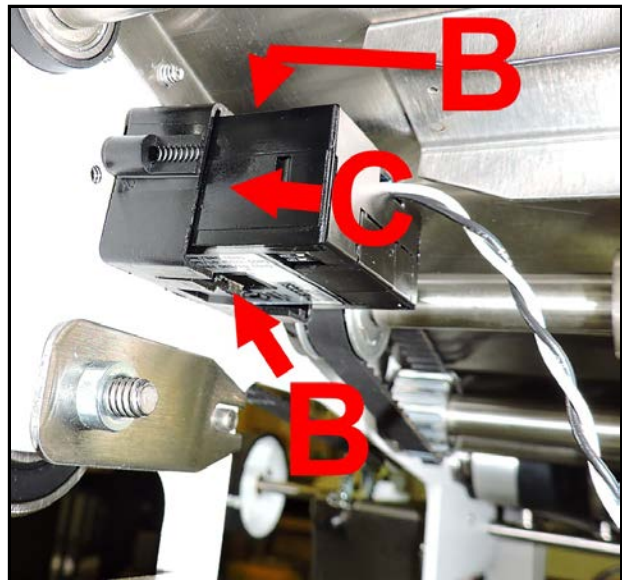
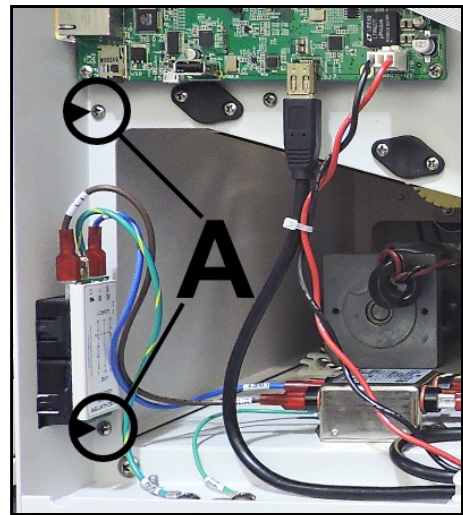
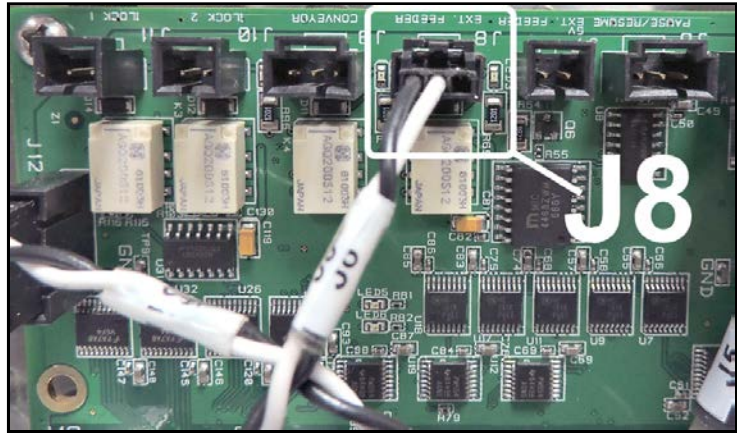
1. Remove Operator Side Cover.
2. Disconnect Motor Wire Harness connectors (A1, A2) from the Speed Control [1].
3. Loosen Idler Pulley mounting screw [2].
4. Move Idler Pulley [1] to loosen Motor Drive Belt [3].
5. Remove Drive Belt from Motor Pulley [4].
6. Carefully lift Printer. Remove 4 screws and washers [5] securing Drive Motor to Base.
7. **Install in reverse order.**
(See SECTION 4 – Drive Belt Tension Adjustment.)



Remove Digital Counter

1. **Remove Operator and Non-Operator Side Covers.** Disconnect the **J8** 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.**
2. **Remove Rear Cover.** Remove screws [A] securing Rear Cover to Side Frames (2 screws per side). Provides easier access to the Counter.
3. Use a flat-blade screwdriver to carefully release the upper and lower locking tabs on the Digital Counter Frame [B] and push the Counter out through the Printer Side Frame [C].
4. **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.

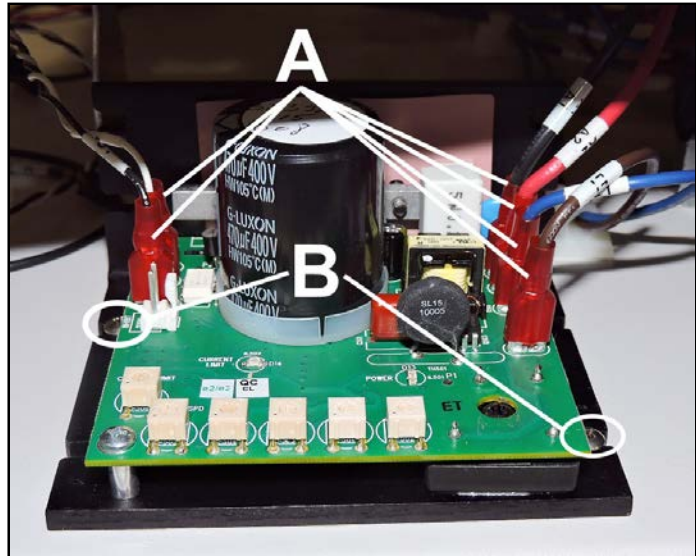
Route the Counter's wire harness (**J8**) through the Wire Clamp(s) and connect the wire harness to the **J8** connector on the I/O PC Board.



Remove Speed Control

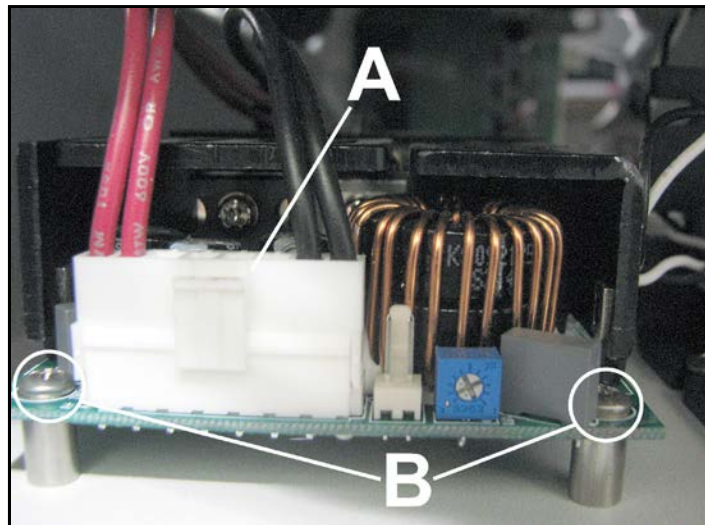
1. Remove Operator Side Covers.
2. Disconnect 6 wiring harnesses [A] from Speed Control. (*Wires are labelled*).
3. Remove two screws [B] securing the Speed Control Base to the Printer Base.
4. **Reassemble in reverse order.**

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**”.

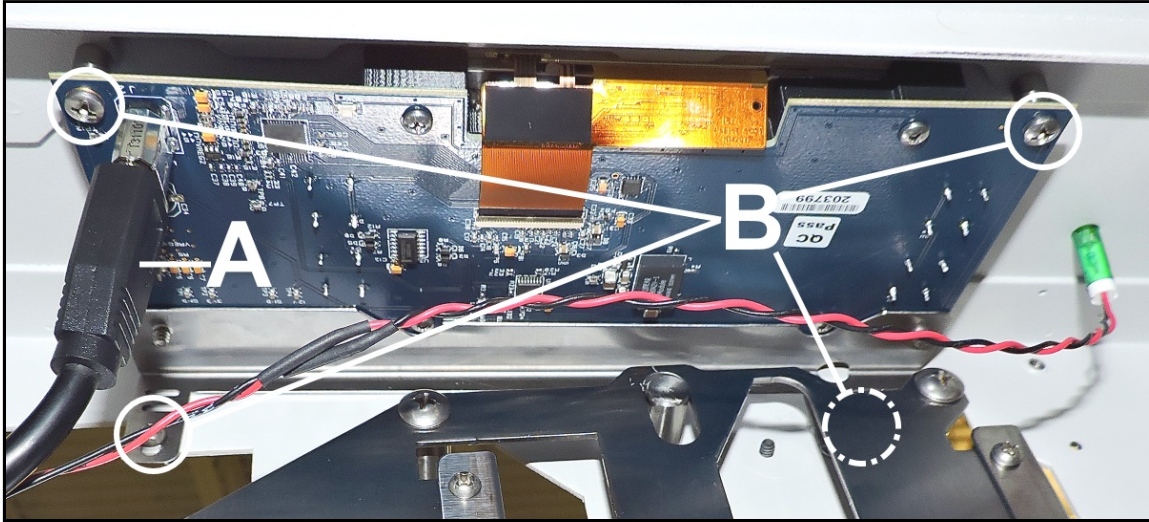


Remove Power Supply

1. Remove Left-hand Operator Side Cover.
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 Control Panel Assembly



1. Remove Left-hand 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 Encoder or Encoder Belt

To Remove Encoder:

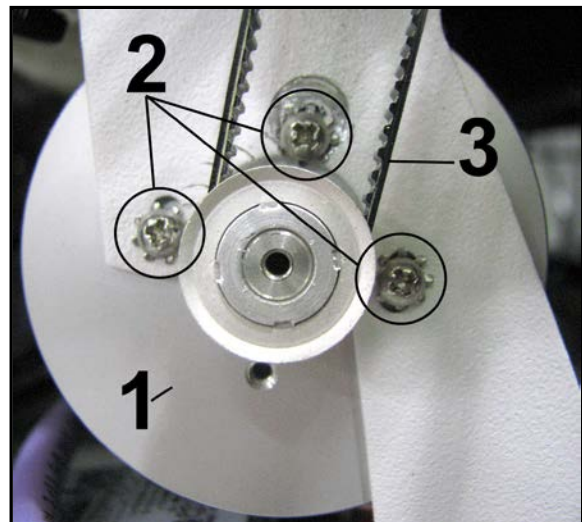
- Remove Non-Operator Side Cover.
- Disconnect Encoder [1] wiring harness from I/O PC Board. (*J5 Encoder*)
- Remove three screws [2] mounting Encoder to Operator Side Frame.
- Remove Belt [3]; then remove Encoder.

To Remove Belt:

- Remove Operator Side Cover.
- Remove three screws [2] mounting Encoder to Operator Side Frame.
- Disengage and remove Belt [3] as you remove Encoder.

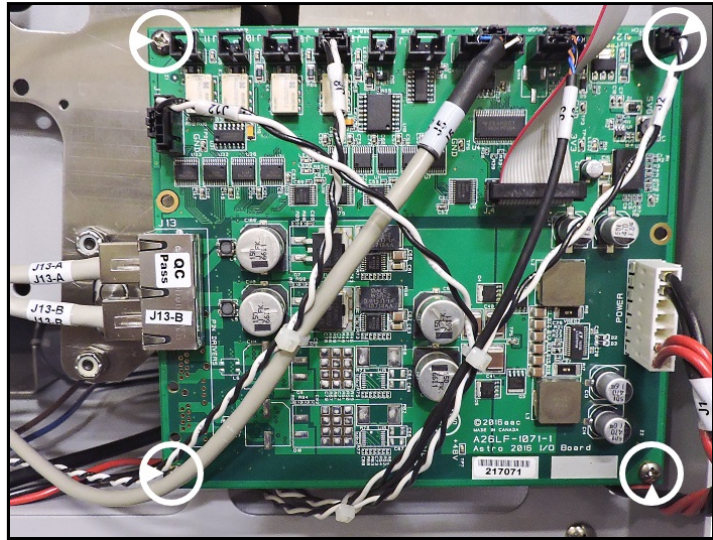
Reassemble in reverse order.

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



Remove I/O PC Board

1. Remove Non-Operator Cover.
2. Carefully disconnect wire harnesses from the I/O PC Board if removing the PC Board completely. (*J1-Power, J2-Clutch, J3-Media Sensor, J4-Main PCB-Interface PCB Connector, J5-Encoder, J8-Digital Counter, J12-Speed Control, J13A, J13B-Printhead Carriages*)
3. 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 (*closer to Sheet Separators*) into the top connector port on the I/O PC Board.
Plug the cable from the second set of Printheads into the bottom connector port on the I/O PC Board.

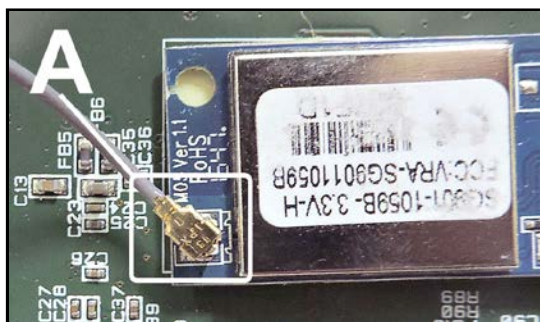


Remove Main PC Board

1. Remove 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*)
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 the PC Board.
4. Remove the PC Board.
5. **Reinstall in reverse order.**

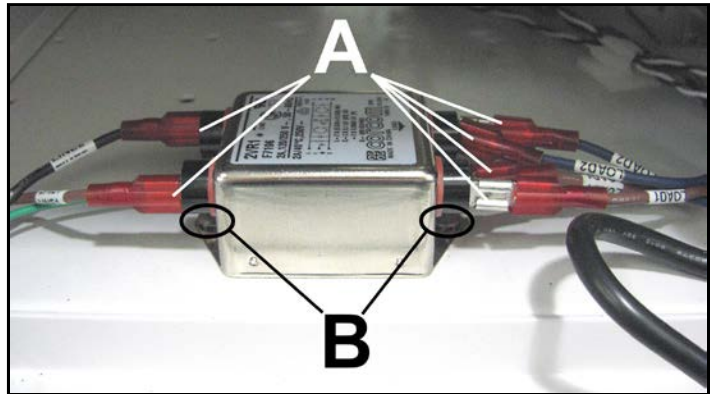


NOTE: If replacing the Main PC Board, you will have to verify and/or reset the Printer speeds. See “Service Menu, Speed Setup” in “Section 3 – Functional Operation”.



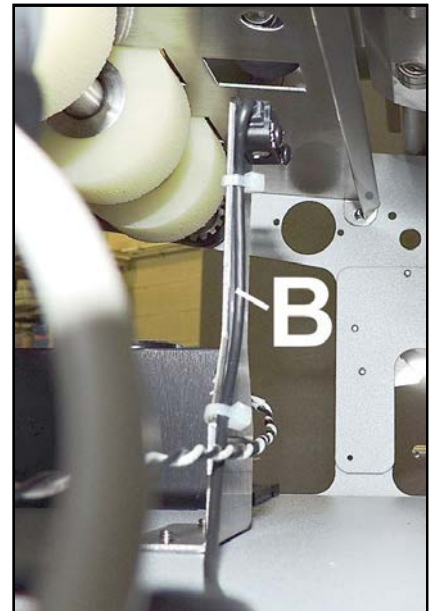
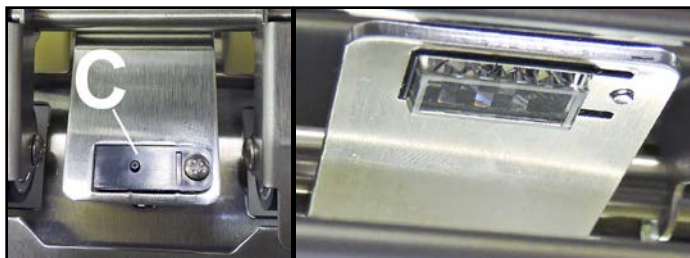
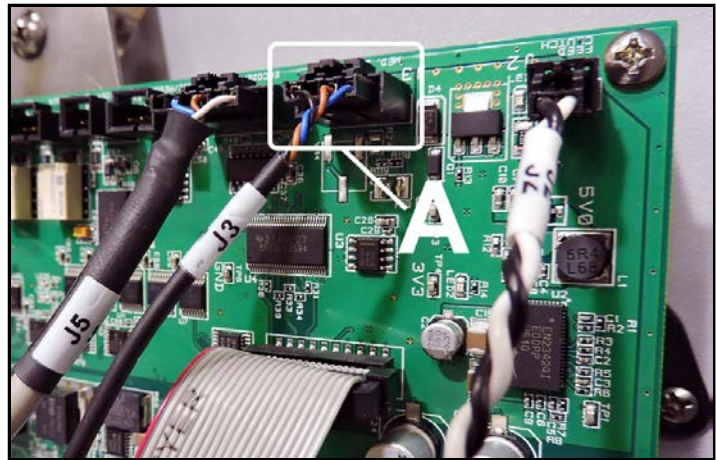
Remove Power Supply In-Line Filter

1. Remove Non-Operator Side Cover (5 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.



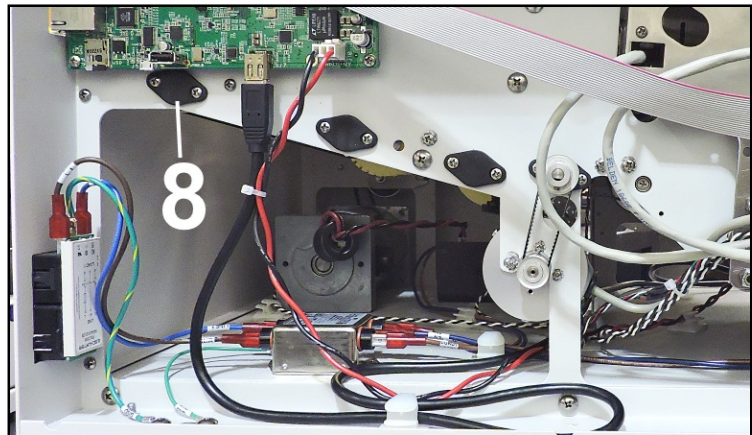
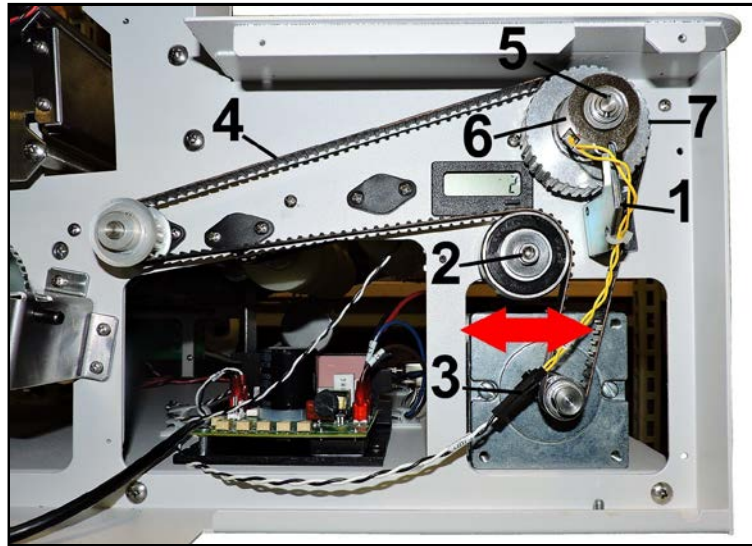
Remove Media Sensor

1. Remove Non-Operator Side Cover (5 screws).
2. [A] Disconnect Media Sensor wire harness from I/O PC Board (J3) and remove from any clamps.
3. Raise 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. Remove 2 screws and washers securing Sensor to 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”. Clean or wipe off Media Sensor Reflector [C] attached to a plate above the Media Sensor. Blow off any dust or debris or remove Reflector (1 screw) and wipe Reflector surface with clean, lint-free cloth.



Remove Long Media Feed Roller

1. Remove **Non-Operator** and **Operator Side Covers**.
2. **Remove Long Media Feed Roller. Operator Side:**
Remove Clutch Bracket [1]. Loosen Idler Pulley mounting screw [2]. Disconnect Clutch wiring harness at connector [3]. Move Idler Pulley [2] and remove Motor Drive Belt [4] from Clutch Pulley.
Push Clutch in toward Frame and remove locking pin [5]. Remove Clutch [6] and Clutch Pulley [7].
Remove two screws from Bearing Housing. Remove Bearing Housing and bearings.
3. **Non-Operator Side:**
Remove two screws from Bearing Housing [8]. Remove Bearing Housing and bearings.
4. Slide Feed Roller Shaft toward Operator side then remove Long Media Feed Roller Shaft through large opening on Non-Operator side. **NOTE: Shaft must be pulled clear of small drive belt.**
5. **Install in reverse order. Remember to install all belts during reassembly. Readjust tension on Motor Drive Belt (See “Drive Belt Tension Adjustment” when reinstalling.)**



Remove Rear Feed, Front Feed, and Pull-Out Roller Shafts

Rear Feed Roller [2], Front Feed [3], and Pull-Out Roller [4] may be removed as follows.
(Instructions for removing *Long Media Feed Roller* [1] are listed above.)

1. **Remove the Operator and Non-Operator Side Covers.**

2. **Rear and Front Feed Rollers [2 & 3]:**

Operator Side:

Remove bearing housings from ends of Roller [A & B].

Non Operator Side:

Remove e-clip [C] on Brake Mounting Stud.

Remove Bearing housings [D & E] from end of Rollers. Slide Brake Assembly toward Front Feed Roller. Remove Rollers through large opening on Non-Operator side.

3. **Pull-Out Roller [4]:**

Operator side:

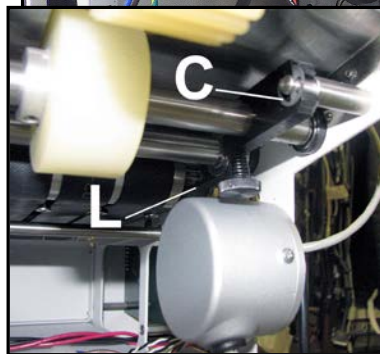
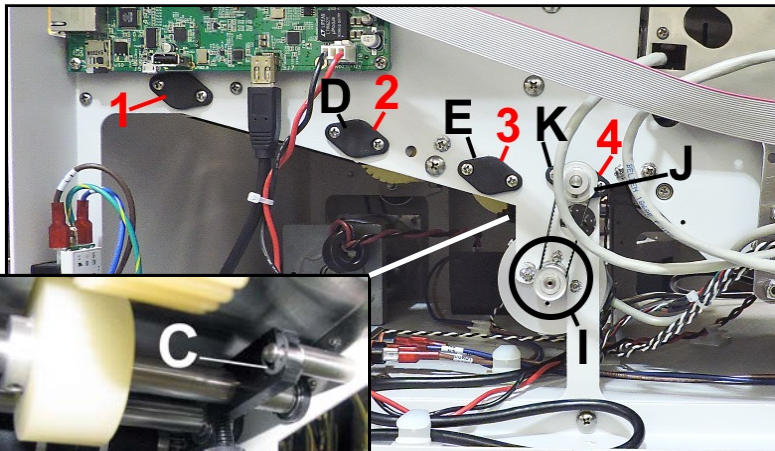
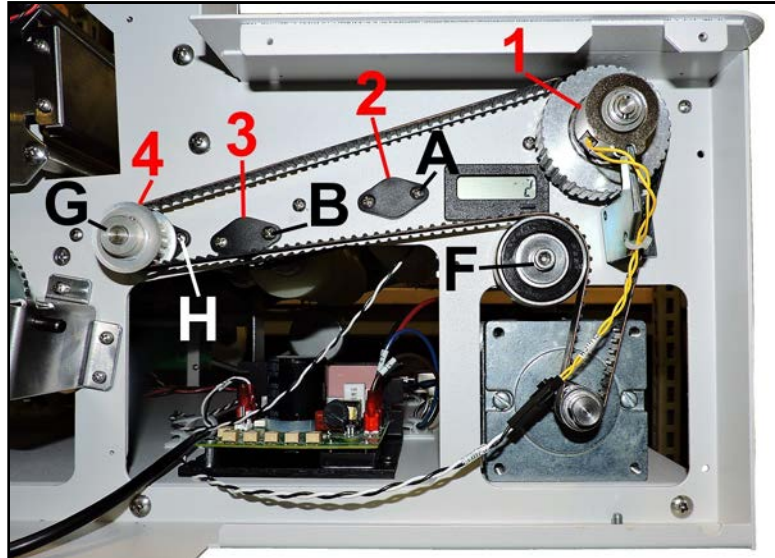
Loosen Idler Pulley mounting screw [F] to loosen Motor Drive Belt. Remove Belt from Pull-Out Roller Drive Pulley. Loosen set screw to remove Pulley [G] Remove bearing housing [H] from end of Roller.

Non-Operator side:

Loosen Encoder mounting screws [I] to loosen Belt. Remove external Encoder Belt from pulley on the end of the Pull-Out Roller Shaft. Remove set screw from Roller Pulley [J]. Remove Pulley. Remove bearing housing [K] from end of Roller Shaft. Remove Roller through large opening on Operator side.

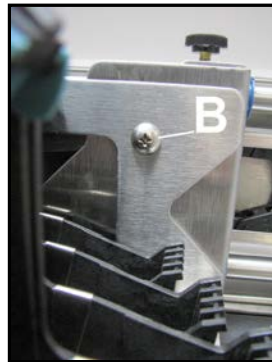
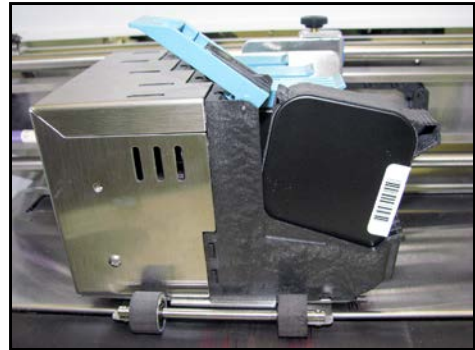
NOTE: Disengage the inner Encoder Drive Belt [L] running from the Pull-Out Roller Shaft pulley to the Transport Roller Assembly to pull out the Roller Shaft Assembly.

4. **Reinstall in reverse order. NOTE: Remember to reinstall the inner Encoder Drive Belt over the pulley as you install the Pull-Out Roller Shaft.**

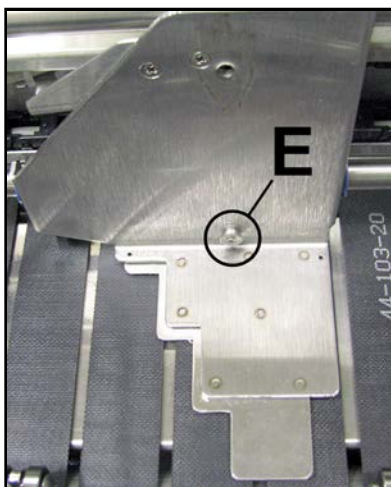
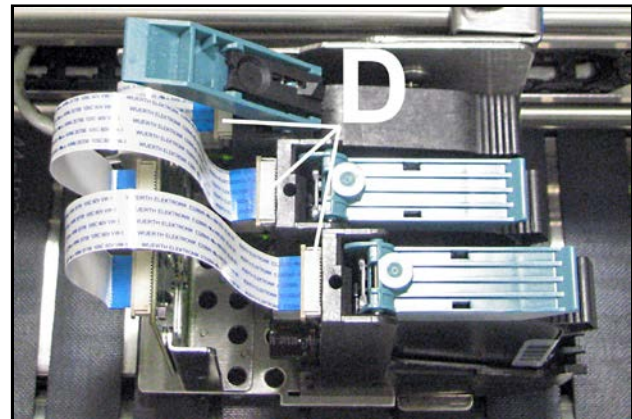


Remove Printhead Assemblies

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



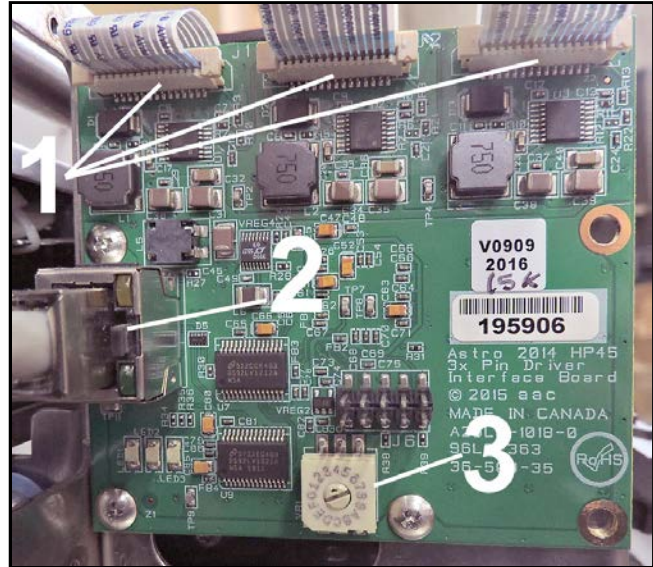
4. Carefully disconnect the ribbon cables [D] connected to the Printhead PC Boards. **DO NOT** damage the cables or connectors!
5. Repeat steps above for remaining Printhead Assemblies.
6. Reinstall in reverse order. **NOTE:** Assembly must be fitted over the alignment peg [E] on the Carriage Frame when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



SECTION 5
DISASSEMBLY – ASSEMBLY

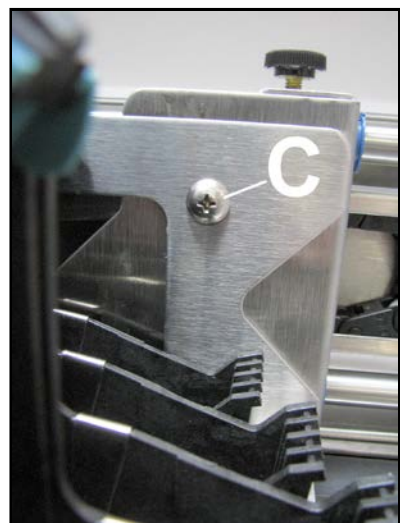
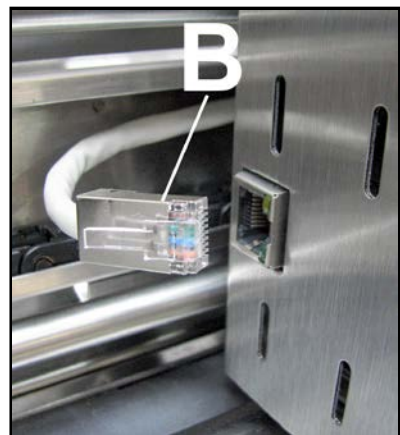
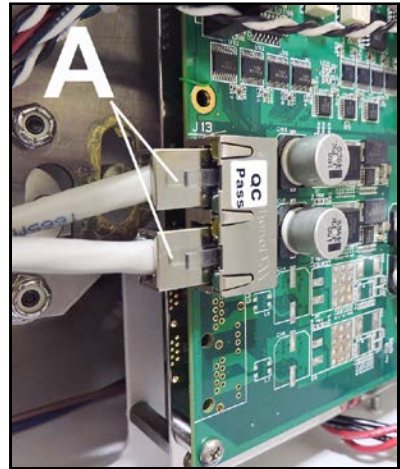
Printhead Carriage PC Board

1. Connectors to Printhead Cartridge PC Boards (J1, J2, J3)
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, 3-head Printhead Assembly set at 3; 4-head assembly set at 4; 2-head assembly set at 2.



Remove Printhead Wire Harnesses and/or Wire Harness Conduit Chain

1. Remove Non-Operator Side Cover.
2. Disconnect Printhead Carriage wire harnesses [A] from the I/O PC Board (J13-A, J13-B).
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 the frame [C]. Move Printhead Carriage Assembly out of the way.



SECTION 5 DISASSEMBLY – ASSEMBLY

- 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.

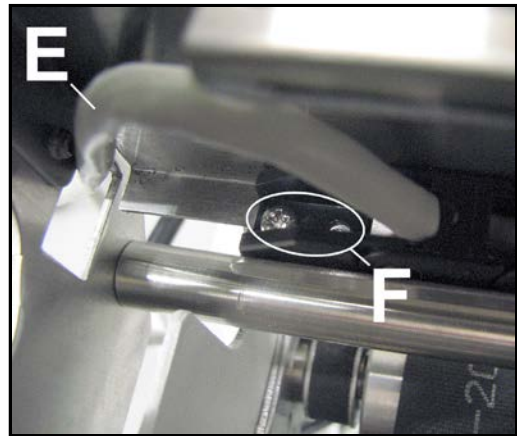
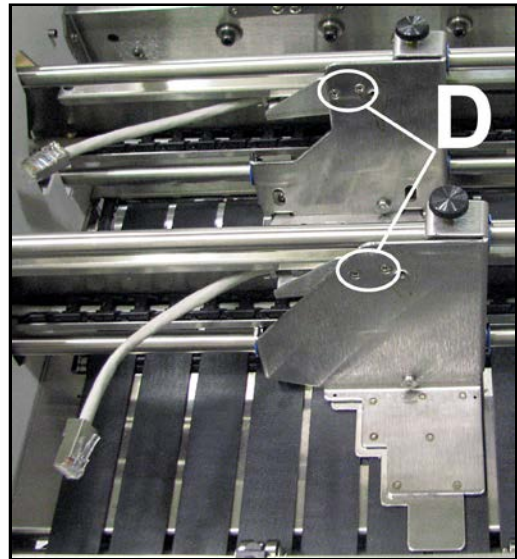
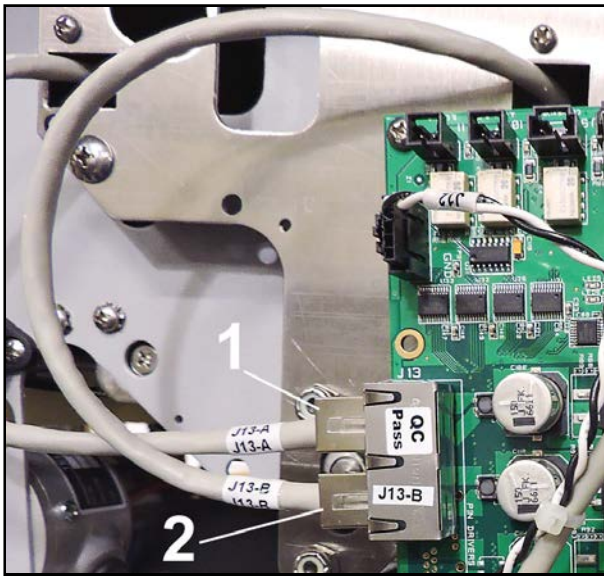
- Remove the Wire Harness Conduit Chain Assembly from the Wire Harness Channel. **NOTE: Slide the Printhead Carriages out of the way if necessary.**

- Reinstall in reverse order.

IMPORTANT!

Plug the J13-A Printhead cable [1] into the top connector port on the I/O PC Board.

Plug the J13-B Printhead cable [2] into the lower connector port on the I/O PC Board.

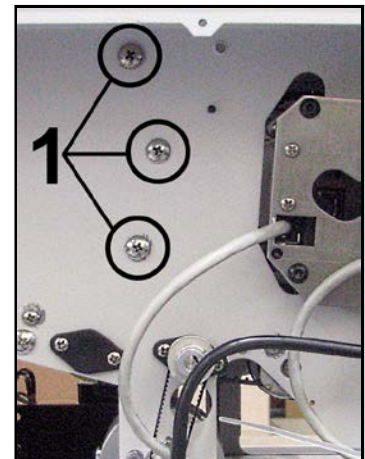
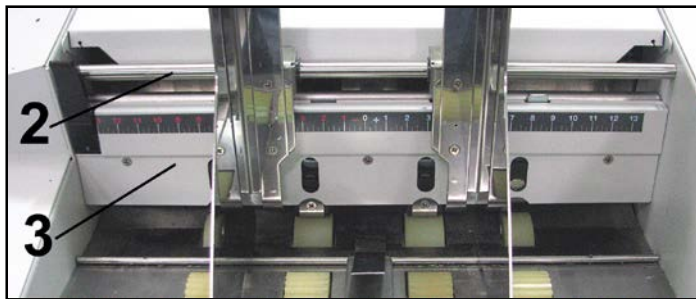


Remove Printhead Lift Assembly

1. **Remove Operator and Non-Operator Side Covers and I/O Processor PC Board.**
2. **Remove Top Cover.** Remove two screws and springs attaching Cover to Frame.



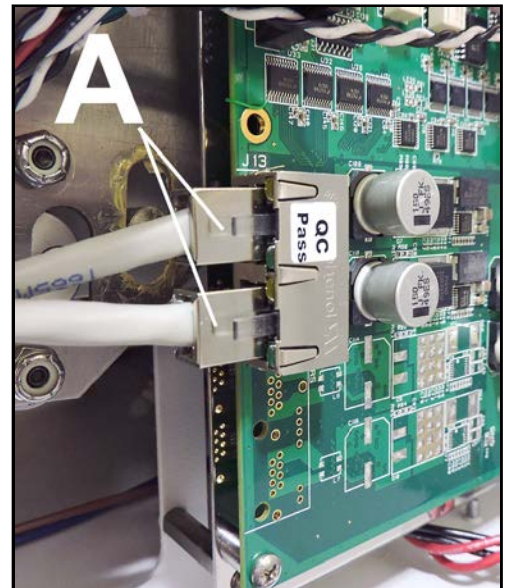
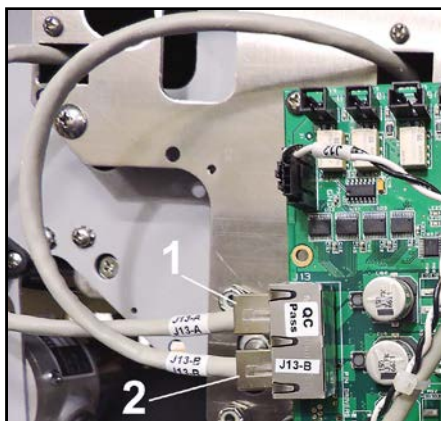
3. **Remove Side Guide Support and Separator Assembly.** Remove three screws [1] on each side that mount Side Guide Support [2] and Sheet Separator Assembly [3], then lift out Support and Assembly.



4. **Remove Printhead Carriage and Lift Assemblies.**

[A] Disconnect Printhead Assembly wire harnesses from the I/O PC Board. Carefully pull the Wire Harness ends back through the Printer Side Frame into the Printer Transport area.

NOTE: When reinstalling, be sure to plug the J13-A Printhead cable [1] into the top connector port on the I/O PC Board. Plug the J13-B Printhead cable [2] into the lower connector port on the I/O PC Board.



SECTION 5
DISASSEMBLY – ASSEMBLY

[B] Remove Printhead Carriage Support screws (4 per side).

[C] Remove Printhead Carriage Bracket screws (4 per side).

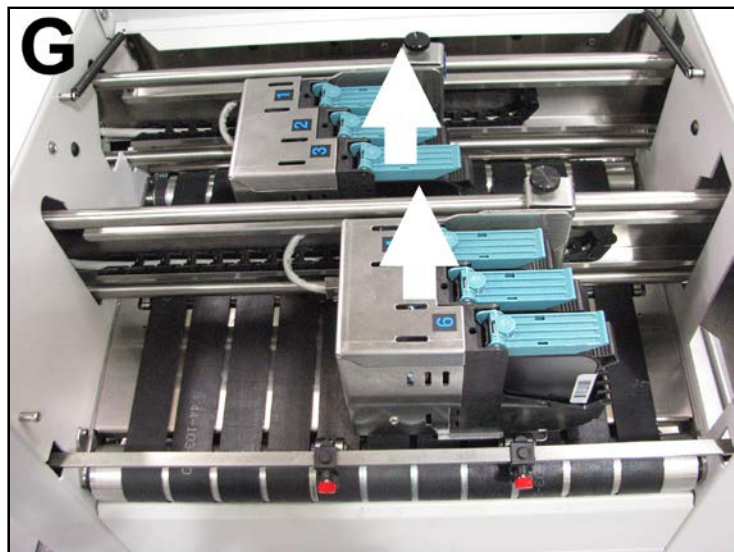
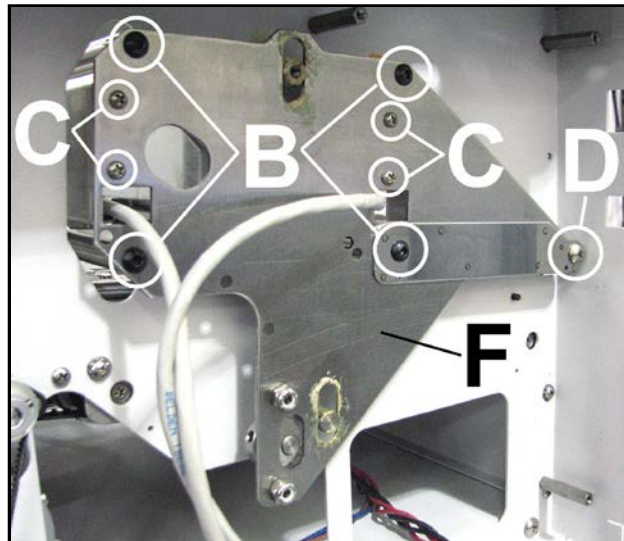
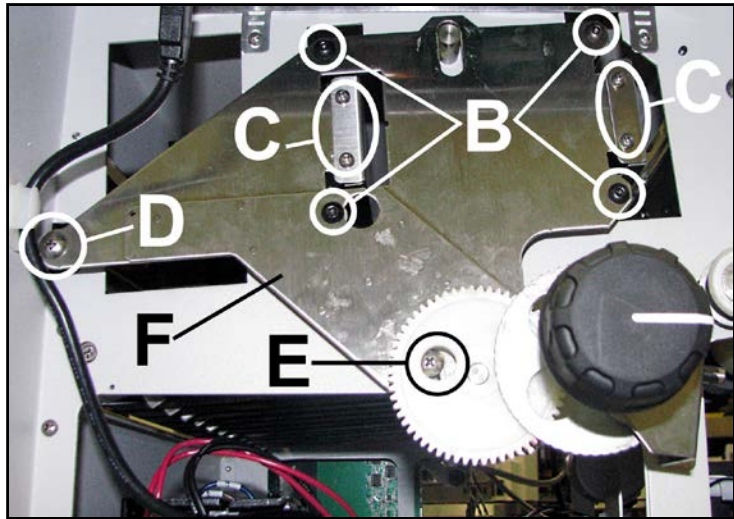
[D] Remove Exit Media Guide Support screws (1 per side). Remove Exit Media Guide Assembly.

[E] Remove lower Lift Assembly Bracket screw on Operator side (1 screw). Access the screw through the opening in the large gear.

NOTE: This screw is not fully tightened to allow the Assembly to move up and down.

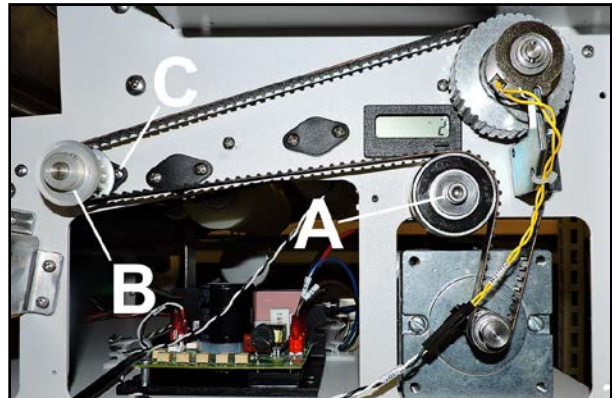
[F] Remove Lift Assembly Mounting Brackets (1 each side).

[G] Maneuver Printhead Carriage Assembly so it can be lifted out of the Printer.



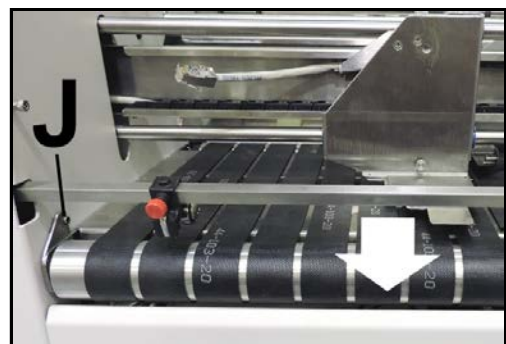
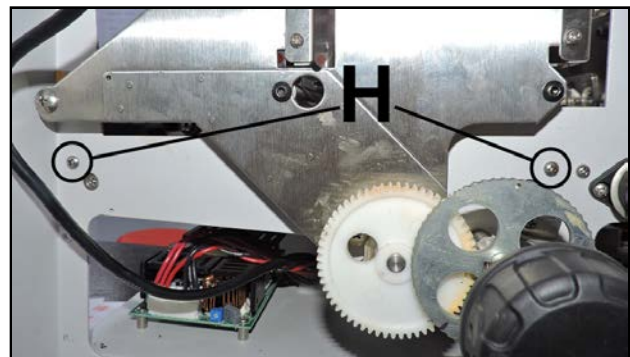
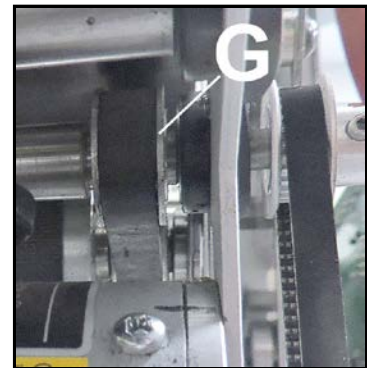
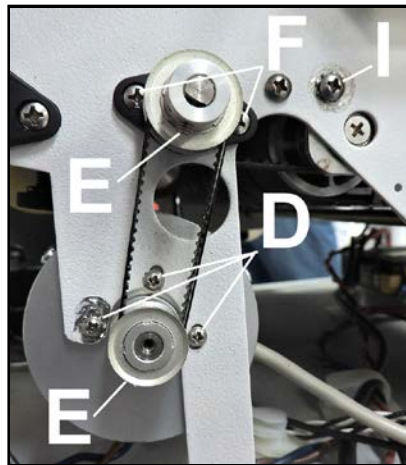
Remove Printer Transport Assembly

1. Raise Printheads to maximum height.
2. Remove Operator and Non-Operator Side Covers.
3. **Operator Side:** Loosen Idler Pulley [A] on the Motor Drive to release tension on the Drive Belt. Remove Belt from the Pull Out Shaft Pulley [B]. Remove (2) screws securing the Pull Out Shaft Bearing Housing [C] to the Side Frame.
4. **Non-Operator Side:** Loosen (3) screws securing the Encoder to the Frame [D]. Loosen both Encoder Pulley screws [E] and remove Pulleys along with the Encoder Belt.



Remove (2) screws securing the Pull Out Shaft Bearing Housing [F] to the Side Frame. Remove the Bearing Housing and Bearing.

5. Slide the Shaft toward the Operator Side to disengage the Printer Transport Belt from the Pull Out Shaft inner Pulley [G].
6. Remove Operator-side Transport Assembly screws [H] (2 screws).
7. Remove Transport Assembly screw on Non-Operator side [I] (1 screw).
8. Carefully slide Transport Assembly off of the mounting pin (on Non-Operator side) [J] and pull straight back out of the Printer's exit end.



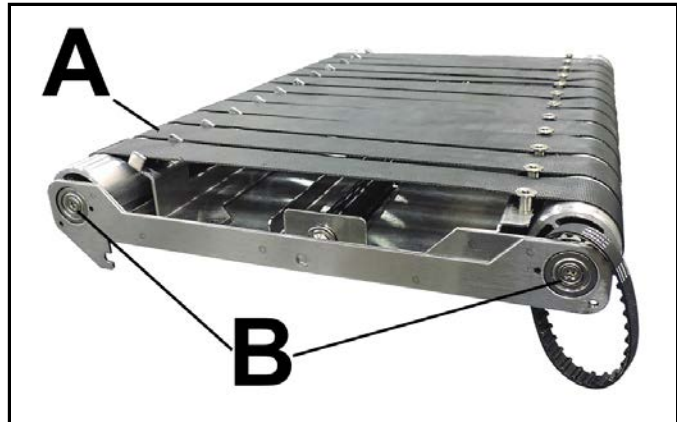
5. Remove Printhead Transport Belts

[A] Turn Transport Assembly upside down. Note that a Belt Guide Assembly keeps the belts properly separated.

[B] Remove one or both end Rollers. Carefully slide belts off of the Transport Assembly.

[C] Install new Transport Belts. Make sure they are positioned correctly between the Belt Guides.

[D] Reinstall Transport Assembly.
NOTE: Make sure Encoder Drive Belt and Transport Belts are positioned properly before reinstalling Transport Assembly. Reinstall the Transport Assembly before reinstalling the Pull-Out Shaft.



6. Remove Inner Encoder Drive Belt

NOTE: It is a good idea to replace the Encoder Drive Belt any time you remove the Transport Assembly.

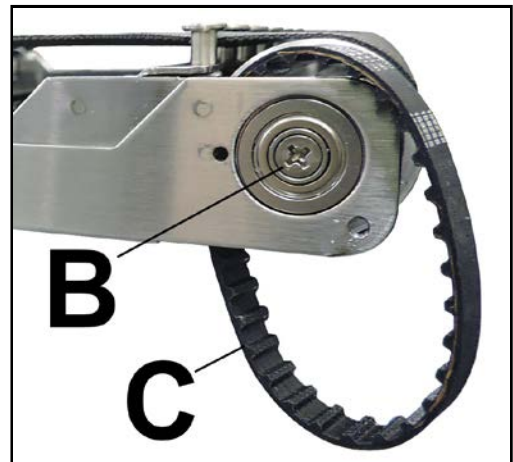
[A] Turn Transport Assembly upside down.

[B] Remove screws securing Entry Roller to Transport Side Frames (*1 on each side*).

[C] Move Roller to the side to remove the Belt from the Roller Pulley.

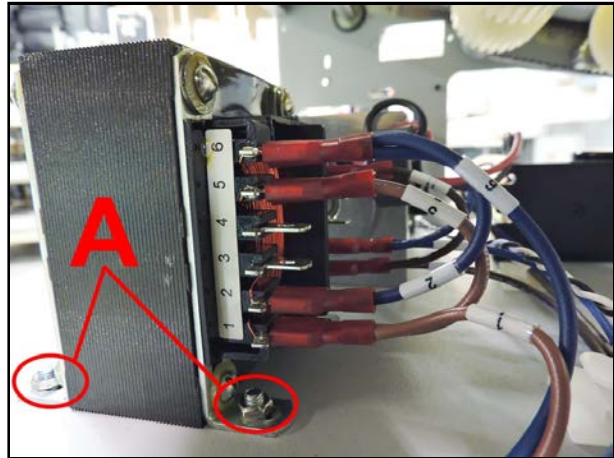
[D] Install new Encoder Drive Belt on Entry Roller Pulley in the Transport Assembly.

NOTE: Make sure Encoder Drive Belt and Transport Belts are positioned properly before reinstalling Transport Assembly. Reinstall the Transport Assembly before reinstalling the Pull-Out Shaft.



Remove 220V Transformer

1. Remove Operator and Non-operator Side Covers. Remove the Exit Cover (4 screws).
2. Disconnect wire harnesses connected to the Transformer (numbered to match terminals on the 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 the 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

Replace Inkjet Cartridges when out of ink, when print quality is poor, or when purging and cleaning have not helped the 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

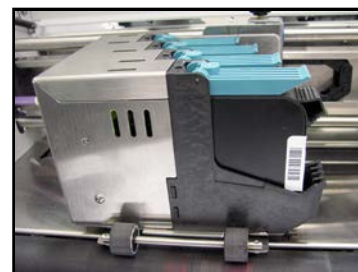
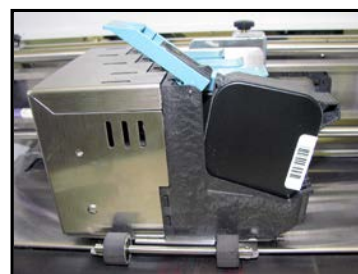
NOTE: These figures can vary depending on font selected.

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 that 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.*)

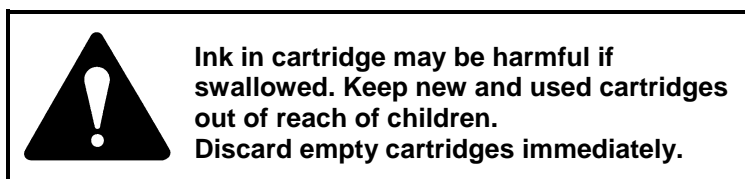
Place cartridges in a sealable plastic container with a damp sponge or towel to maintain humidity and prevent Printhead from drying out.

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

Disposal

Cartridges may be disposed of in a normal manner.

In case of 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.

<i>Cloth should be:</i>	<i>Cloth should not be:</i>
<ul style="list-style-type: none"> ✓ Soft ✓ Fiberless ✓ Moistened with Water (<i>Distilled is best but tap water will work</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.

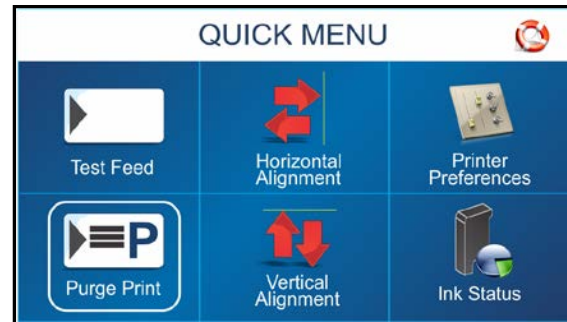


Purging Nozzles

If the Printhead sits inactive for a time, ink may dry in the nozzles. Printing may not remove these “ink plugs” from the nozzles. White streaks will show up in the printed text or graphic. In order to obtain better 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, see Troubleshooting Printheads in Section 2 – Troubleshooting.



Jams in Printer

If a jam occurs, **STOP the Printer**. Recover missed addresses using the **Quick Menu** key on the Control Panel, then pressing “**Reprint**”.

Some possible reasons for jamming are:

1. Feeding more than one piece of media.
2. Damaged media, such as dog-eared (*turned down corners*).
3. Media that is not stiff enough may not be usable. Media that meets Postal stiffness requirements for automated feeding is acceptable in the Printer.
4. Envelopes caught under the flap of another envelope or stuck to one another may cause jamming.

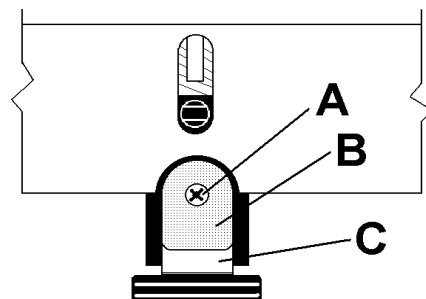
Remove Jammed Media

1. It may be necessary to move one or more Printheads to gain access to jammed media. Take care when removing jammed media to avoid damaging Printheads. All pieces of jammed media must be removed from the feed path.
2. Follow instructions, *Section 3 – Operating Printer, Quick Menu, “Reprint”*.

Replace Sheet Separators

Sheet Separators insure separation of pieces as they are being fed. They wear and must be replaced periodically. If you experience double sheet feeding and cannot adjust the Separators to prevent it, they should be replaced.

1. Turn OFF and unplug Printer.
2. Release Separator Locking Lever and move Media Side Guides to their maximum open position.
3. Lower Separators so they touch Feed Roller.
4. Remove screw [A] and Separator Support [B]. Then pry Separator [C] out of Holder.
5. Install a new Separator and reinstall Separator Support and screw.



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 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 PC Boards or electrical wiring.
- **Exterior:** May be cleaned with any standard non-abrasive household cleaner that 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 CLEANER AND APPLY IT TO PARTS TO BE CLEANED.

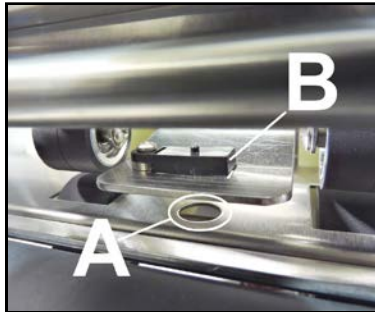
Feed Rollers and Forwarding Rollers

Feed and Forwarding Rollers can become glazed with paper lint and ink from media. Clean regularly with a mild abrasive household cleaner on a damp cloth. Avoid using solvents on Rubber Rollers.

Cleaning Media Sensor

Periodically check Media Sensor and Reflector for dust and debris, (located under Media Hold-down Wheel Assembly).

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

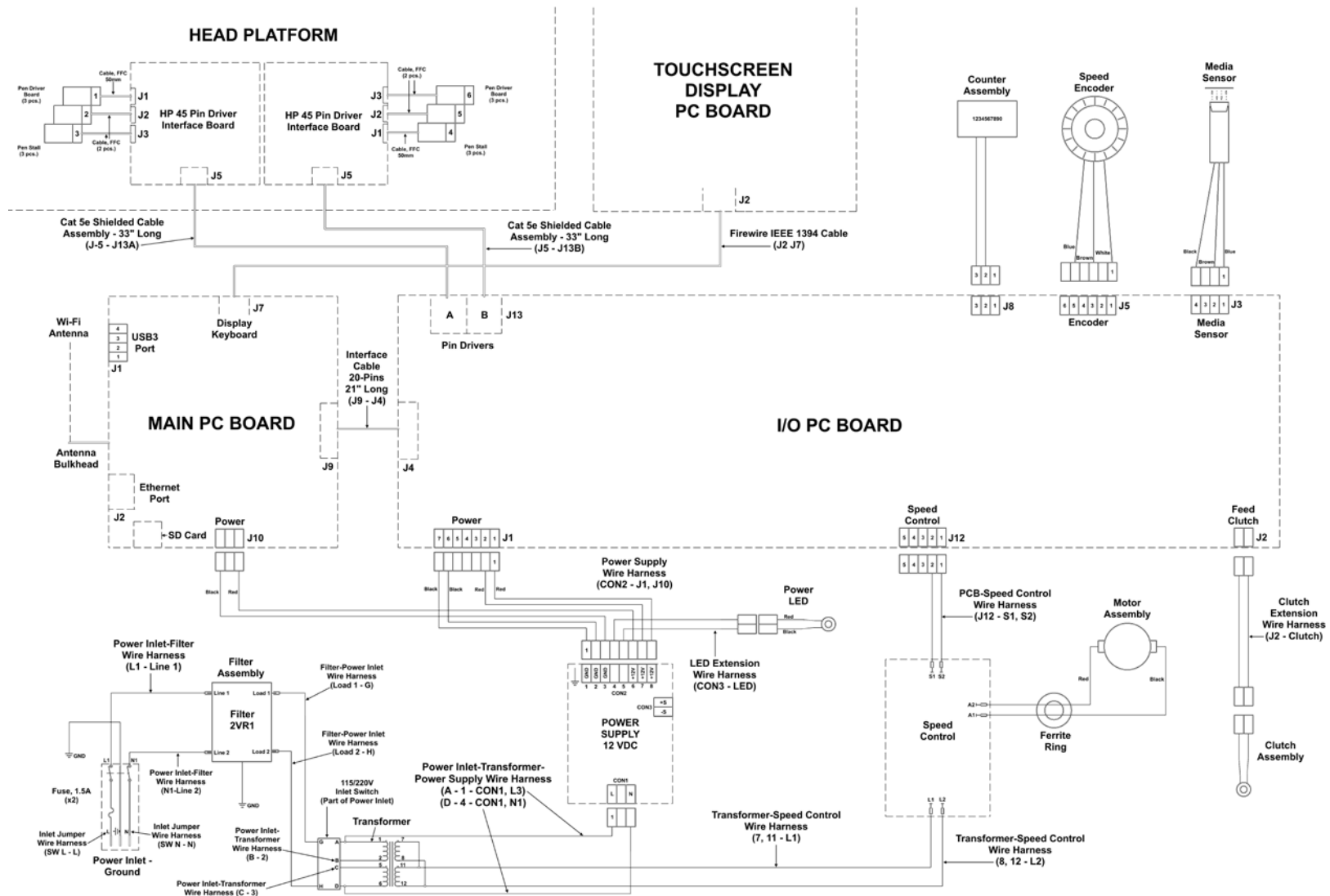


Cleaning Touchscreen

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 Diagram



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