FORMAX®

ColorMax8
Digital Color Printer

MAINTENANCE MANUAL
Rev. 3

5/2022

SAFETY PRECAUTIONS

THIS EQUIPMENT PRESENTS NO PROBLEM WHEN USED PROPERLY. OBSERVE SAFETY RULES WHEN OPERATING COLORMAX 8 PRINTER.

BEFORE USING PRINTER, READ THIS MANUAL CAREFULLY AND FOLLOW RECOMMENDED PROCEDURES, SAFETY WARNINGS, AND INSTRUCTIONS:

- ✓ Keep hands, hair, and clothing clear of rollers and other moving parts.
- ✓ Avoid touching moving parts or materials while machine is in use. Before clearing a jam, be sure machine mechanisms come to a stop.
- ✓ Always power-down and turn off machine before making adjustments, cleaning the machine, or performing any maintenance covered in this manual.
- ✓ Power cord supplied with machine. Plug it into a properly grounded, easily accessible wall outlet 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.
- ✓ **DO NOT** remove ground pin from line cord.
- ✓ **DO NOT** route power cord over sharp edges or trap it between furniture.
- ✓ Avoid using wall outlets that are controlled by wall switches or shared with other equipment.
- ✓ 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 Formax, 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 Formax nor any of its agents or employees shall be responsible for any inaccuracies contained herein.

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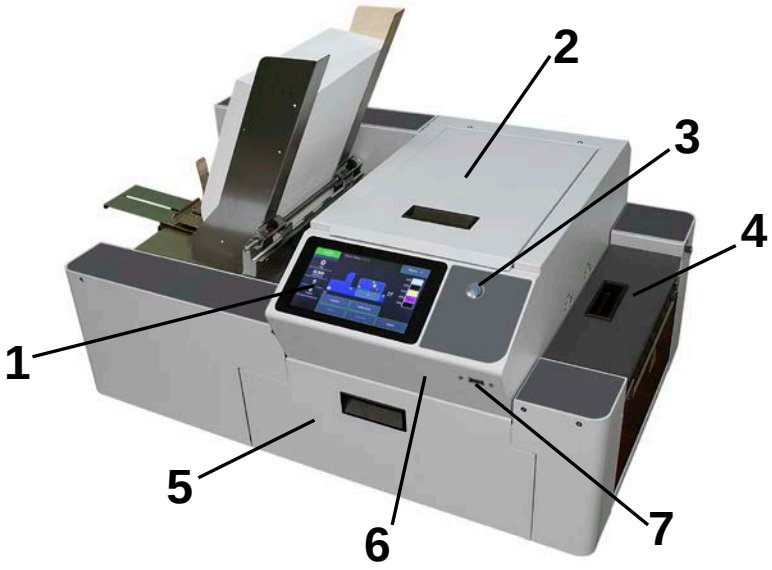
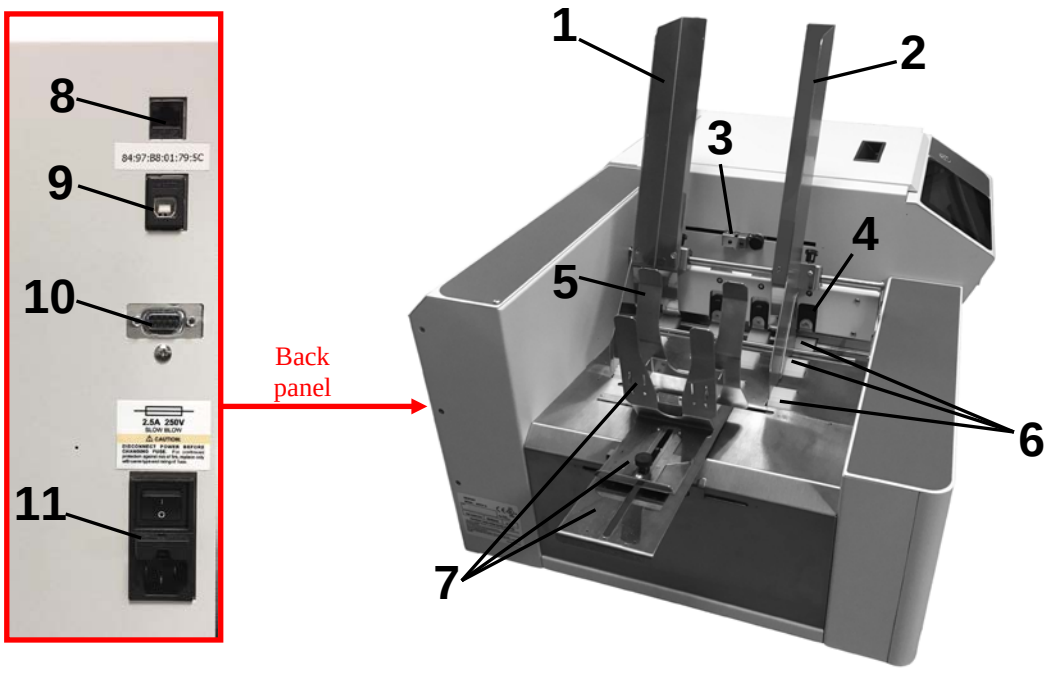
SECTION 1 – Getting Acquainted



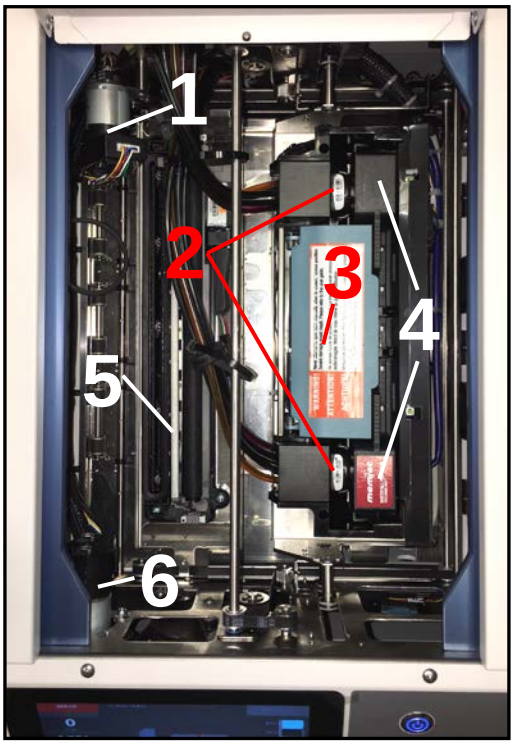
Front View

1.	**Touchscreen Display (Control Panel)** – Displays **Menu** and information about Printer status. You can set Printer features and control Printer functions from this display.
2.	**Printhead Door (Top Cover)** – Provides access to Print Engine, Printhead and Service Station. NOTE: All doors must remain shut when printer is busy (printing, performing maintenance).
3.	**Soft-Power Button** – Used to power-up and power-down the Print Engine. NOTE: Button illuminates with blue light when Print Engine is powered-up (ON).
4.	**Exit Transport Cover** – Opens to provide access to media path and Media Transport Belts.
5.	**Ink Tank Door** – Provides access to Ink Tanks, Waste Ink Tray and Clamshell Latch. Opening Ink Tank Door disconnects Printer communication to Ink Tanks, allowing for safe Ink Tank installation/replacement. NOTE: All doors must remain shut when printer is busy (printing, performing maintenance).
6.	**Clamshell (Top Assembly)** – Upper section of Print Engine containing Printhead and Service Station. Raises up/down based on Media Thickness setting. To open Clamshell (hinged at rear) and gain access to media path/print area; open Ink Tank Door **[5]** and release (pull out on) Clamshell Latch **[A]**.
7.	**Backup/Transfer Port** – Used to backup system/debug log files and stored jobs to a USB Flash Drive. See "***Appendix C – Backup/Transfer Port***", in User Guide, for more details. **CAUTION**: Do NOT connect devices, other than USB Flash Drives, to this port. NOTE: This port may NOT be present on all printers.



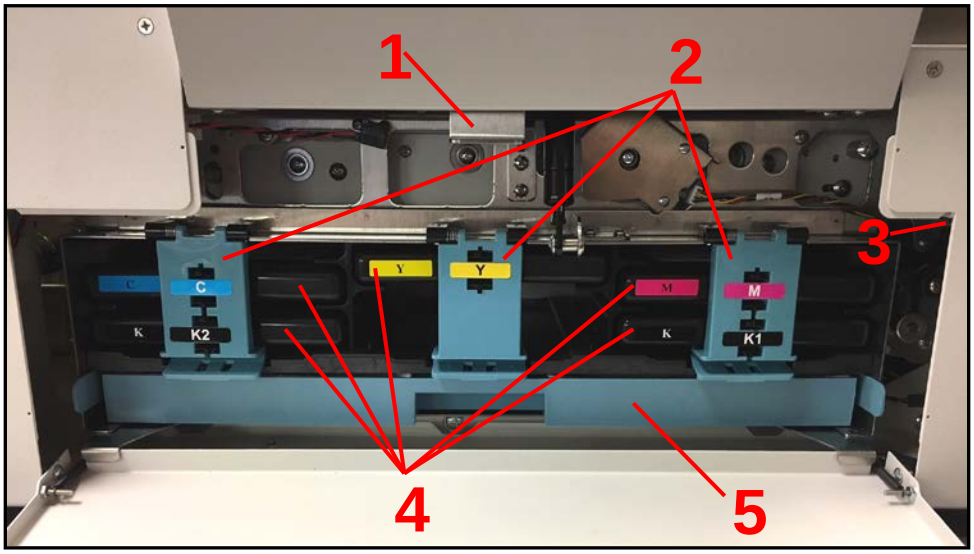
Entry End & Connections View

1.	**Media Side Guide - Inner** – Used to guide inner edge of Media.
2.	**Media Side Guide - Outer** – Used to guide outer edge of media.
3.	**Feeder/Entry Sensor Assembly** (adjustable) – Contains two sensors. Feeder Sensor is used to control when next piece feeds. Entry Sensor detects leading edge of media as it enters Print Engine area, and it is used to measure/monitor media length. Adjustable position accommodates varying media widths/positions and to avoid problem areas on media surface. **IMPORTANT**: Be sure to position sensor assembly over media's path.
4.	**Sheet Separators** (four) – Separates each piece of media as it is fed.
5.	**Media Support Wedge Extensions** – Narrow and Wide Media Support Wedge Extensions are provided to accommodate a wider variety of different media widths and lengths. They attach to the Rear Media Support Guide [7].
6.	**Feed Rollers** (twelve) – Delivers media from Feeder section into Print Engine area.
7.	**Rear Media Support Guide/Sled** – Helps to force media against sheet separation area. Narrow and Wide Media Support Wedge Extensions attach to this device.
8.	**Network Port** – Ethernet cable attaches to Printer here
9.	**USB Port** – USB cable attaches to Printer here.
10.	**Interface Port** – DB-9 Interface to connect Printer with other equipment (future use)
11.	**Main Power Switch, Receptacle and Fuse**. – Plug in power cord here. Switch turns main power ON/OFF. Fuse protects Printer's electronic circuits. ***IMPORTANT!*** *Press Soft-Power Button to power-down Print Engine.* Wait until Soft-Power Button light turns off before you turn off main power switch. For best system performance, it is recommended to keep Print Engine powered-up at all times.



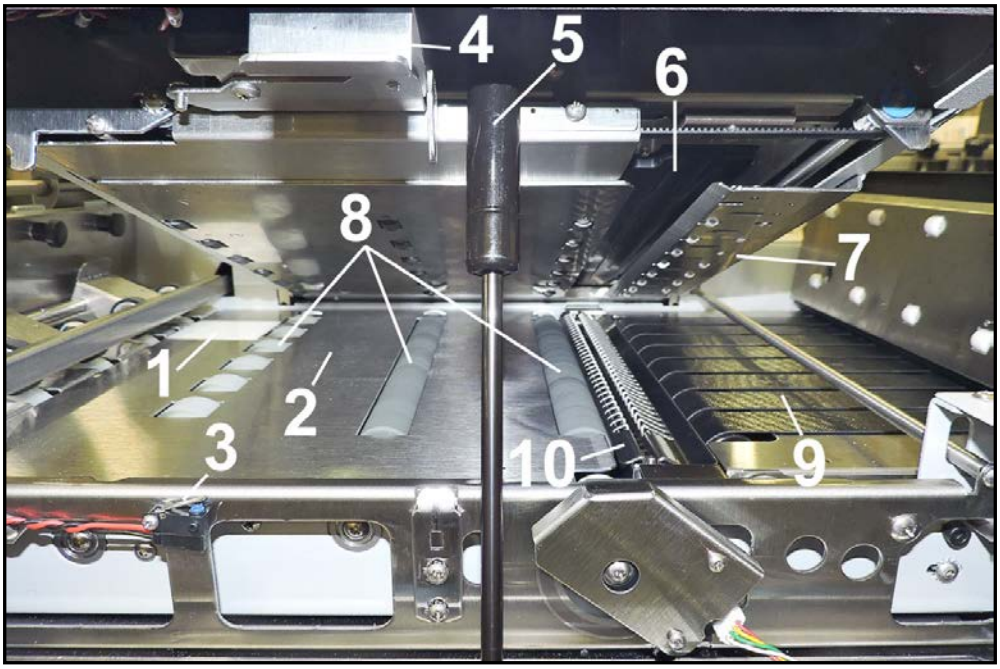
Print Engine View (Under Printhead Door)

1.	**Service Station Sled Motor** – Moves Service Station in and out from under Printhead Assembly for inspection, cleaning or service.
2.	**Ink Revolver Couplings** – Connect ink hoses to Printhead Cartridge. Printhead Latch extends and retracts couplings from Printhead.
3.	**Printhead Latch** – When closed connects Ink Revolver Couplings with Printhead Cartridge. When opened, retracts Ink Revolver Couplings from Printhead Cartridge and provides access to Printhead Cartridge for removal/replacement. **WARNING!** Never attempt to open Printhead Latch manually, severe damage will result. Use "**Release Printhead**" or "**System Deprime**" feature from Touchscreen.
4.	**Printhead Cartridge** – Memjet® Printhead produces an 8.77" (222.8 mm) wide full color print area.
5.	**Service Station** – Maintains the Printhead. The Printhead Assembly lifts and Service Station slides under Printhead to perform Printhead maintenance and or to cap Printhead. The Service Station slides out from under Printhead and Printhead Assembly lowers for printing and or "sled inspection". Contains 3 major components. - Wiper Roller – Cleans excess ink and debris from Printhead. - Cap – Keeps inkjet nozzles hydrated and protected when not in use. - Tray – Holds above components and initially captures waste ink, which is then pumped into Waste Ink Tray.
6.	**Printhead Assembly Lifter Motor** – Lifts and lowers Printhead Assembly. During printing, Printhead Assembly is lowered. During Printhead maintenance/cleaning or capping, Printhead Assembly lifts to allow Service Station to slide under Printhead.



Ink Tank View (Behind Ink Tank Door)

1.	**Clamshell Latch** (Top Assembly Latch) – Used to release and open Clamshell to clear media jams, install/exchange Print Platen & Drip Tray and cleaning. Pull Latch out to release Clamshell.
2.	**Ink Tank Securing Latches** – Used to hold Ink Tanks securely into slots. *NOTE*: Make sure both sides, at bottom part of latch, are engaged.
3.	**Ink Door Switch** – When Ink Tank Door is opened, Switch shuts down communication between Printer and Ink Tanks for safe removal and replacement.
4.	**Ink Tanks** – Printer has 5 Ink Tanks: Cyan (C), Yellow (Y), Magenta (M), Black (K1), Black (K2). Each Ink Tank is inserted into its appropriate color slot.
5.	**Waste Ink Tray** – Catches and absorbs waste ink produced by the system. This tray is filled with absorbent material. This tray must be replaced when it becomes saturated. Please inspect routinely. The tabs located at left and right sides of the tray secure tray to frame. Please be sure tabs “click” into frame, to secure the tray's position.



Print Area View (Under Clamshell)

1.	**Entry Sensor Reflector** – Reflects sensor beam back to Media Entry Sensor. The leading edge of the media is detected as media passes between Entry Sensor and Reflector.
2.	**Paperpath Surface** – Flat metal surface supports media for smooth transport through Print Area.
3.	**Clamshell "Open" Switch** – Signals Printer when Clamshell Latch is released, and Clamshell is opened.
4.	**Clamshell Latch** (Top Assembly Latch) – Used to release and open Clamshell to clear media jams, install/exchange Print Platen & Drip Tray and cleaning. Pull Latch out to release.
5.	**Clamshell Support** (Pneumatic Lifter) – Holds up Clamshell during maintenance and service.
6.	**Printhead Opening** – Printhead will be presented in this opening during printing and during “Inspect Sled” event.
7.	**Exit Starwheel Assembly** – Starwheels allow for media, with freshly printed image, to be transported smoothly from print area with minimal image transfer.
8.	**Media Transport Rollers** – Keep media moving through Print Area.
9.	**Media Transport Belts** – Moves printed media out of the Printer.
10.	**Print Platen & Drip Tray** – Located under Printhead. Print Platen supports media during printing process. Two different Print Platens (High and Low) are provided with printer. Drip Tray catches any excess ink during printing and purging process. **CAUTION!** Make sure this assembly has been properly installed before you power-up and start using the printer. Be careful not to spill ink when removing assembly.

Before You Begin

This document is provided to assist you in replacing parts and solving problems that might occur with the COLORMAX 8 Printer. We have tried to make it as complete as possible, but this document will always be evolving.

Recommended Troubleshooting Supplies

Items that a technician should have available when they visit a ColorMax 8 customer (in addition to standard tools)A box or ream of “inkjet suitable” media.

- Known good set of Ink Tanks (Cyan, Magenta, Yellow, Black, Black).
- Known good Printhead Cartridge
- Known good Service Station Components (Cap, Wiper Roller and Wiper Motor Assembly)
- Lint-free cloths
- Distilled or Deionized water
- Gloves – Powder-free, Nitrile
- Computer (Win 7, Win 8/8.1, Win 10; with USB 2.0/3.0 port) and USB cable. It would be best if the computer system has been previously interfaced and tested with ColorMax 8. That way they should have documents or jobs already setup to test with printer, drivers loaded, toolbox loaded.
- ColorMax 8 (S-Series) Printer Driver
- ColorMax 8 Users Guide
- ColorMax 8 Service Manual
- ColorMax 8 Parts Manual
- Access to internet.

Common Service Tools Needed:

This list is in addition to standard tools.

- Spring Hook
- Needle Nosed Pliers
- Side Cutters
- Voltage Meter
- SAE set of Alan wrenches
- #1 and #2 Philips Screwdriver
- Torx Driver Set
- Carpenters Level

Minimum Computer System Requirements

For Printer software to operate properly, check that computer system meets **minimum requirements.**

- **Operating System:** Windows 7, Windows 8/8.1, Windows 10*.
  Supports 32-bit and 64-bit systems
- **You must have administrative privileges** on the computer system.
- **Microprocessor:** Pentium II, 2 GHz *(Optimal: Pentium Dual Core, 2.5 GHz or better)*
- **System memory:** 2 GB minimum, or as recommended for your operating system.
- **Free hard-disk space:** At least 10 GB.
- **Web Browser:** Firefox recommended. Internet Explorer and Chrome also supported.
- **USB port (2.0/3.0):** (*Ports will be identified as "USB" or "Enhanced" in Device Manager*)
- **Microsoft .Net Framework** version 3.5 (*for 32-bit systems*) or Microsoft .Net Framework version 4 or higher (*for 64-bit systems*) must be installed.
  NOTE for 32-bit System Users: Even if you have a higher .NET Framework version installed, version 3.5 must also be installed, or the Toolbox will not open.

Known limitations when used on Windows 8/8.1/10

- The Toolbox is not compatible with the Microsoft Edge browser.
  Please use Internet Explorer, Firefox, or Chrome instead.
- Use in "Desktop Mode" only.
- Printing is not supported for "native" Windows 8/8.1/10 applications (apps that were developed strictly for Windows 8/8.1/10).
- Windows 10 users, to uninstall the driver: If the uninstall feature does not appear under All Apps, Memjet. go to "Settings", "System", "Apps & features". Then locate and uninstall the "M Series Driver".

IMPORTANT: Before installing Printer software (*Toolbox and Driver*), **temporarily disable all antivirus programs and firewalls**. In addition, you must be logged onto system with full administrative privileges (*admin rights*).

NOTE: If you plan to connect printer via USB, **do not plug in USB cable until prompted**.

Please refer to the ColorMax 8 User Guide for the following items:

- Installation/Setup Instructions
- Operation Instructions
- End User Maintenance Instructions
- End User Troubleshooting Guide
- Printer Specifications

SECTION 2 – *Troubleshooting*

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

Power Problems

CONDITION	PROBLEM	SOLUTION
Power is ON, nothing happens.	No power to Printer.	Check that power cord is plugged in. Check that power outlet is live. Replace AC Adapter.
Lost Time and Date after Printer is shut down.	Internal memory battery dead.	Replace CR 2032 lithium battery on MPCA.

Interface Communication Problems

CONDITION	PROBLEM	SOLUTION
Printer does not respond to software.	Printer in Error state. Connection problems. IP Address in driver not matching IP Address in printer.	Clear Error. Turn Printer OFF and ON again. Check connections, replace cable if necessary. Verify matching IP address in printer and driver. Test from known good computer.

Service Station (Sled)

CONDITION	PROBLEM	SOLUTION
Wiper Overtemp or **Wiper Error**	• Wiper roller/module too dry. Debris build-up on blade and rollers, increasing friction. • Squeegee blade damaged, wedged, not seated properly. • Jammed gear train. • Bad Wiper Motor, wiring harness or board (drive).	1. Run “Condition Wiper” to hydrate wiper roller/module and retest. 2. Check each possible cause and correct if possible: Reseat gears and/or squeegee, clean debris from blade and rollers. 3. Retest. 4. Swap Motor, wiring, DPCA-1.
Color mixing	• Wiper Roller is too dry. • Wiper Roller is saturated. • Squeegee blade is damaged, wedged, not seated properly or bowed. • Cap pressure too high. Wick hitting nozzles.	1. If too dry run “Condition Wiper”. 2. If saturated, run “Transfer Wiper” to reduce moisture. 3. Reseat squeegee. 4. If squeegee is bowed, *adjust squeegee blade or replace wiper motor module.* 5. *Check/adjust “cap_height” value.*
Maintenance Jam **Sled Error**	• Something hindering Sled movement. • Sled can’t move because Lifter is not home. • Belt(s) too loose or too tight.	1. Check for obstruction. Clean sled rails. 2. Make sure Lifter is not dropping out of home after motor drives it home. 3. Check/adjust belt tensions. 4. Lubricate (21030) Sled Motor belt.

	• Bad Motor.	5. Replace motor.
Ink Overflowing Tray (spills off back of tray when Clamshell is opened)	• Sump Pump not working • Sump Tube clogged/pinched/cut	1. Check/replace Sump Pump. 2. Check/clean/replace sump tubbing

Feeding Problems

CONDITION	PROBLEM	SOLUTION
Intermittent feeding	Feed Ramp not used.	Feed Ramp adds a slope to stack and helps feeding.
	Side Guides set improperly.	Loosen Side Guides slightly.
	Dirty Feed Rollers.	Clean Feed Roller with distilled water and a cloth. **DO NOT** use any solvents or detergents as they may damage Feed Rollers.
	Paper stuck together.	Fan media before placing it in Printer.
	Uneven mail piece.	Tap contents to front of envelopes and retry.
Multiple feeds	Separator gap not set properly.	Adjust Separators to thickness of media.
	Media stuck together.	Fan media before loading in Printer.
	Side Guides too close to media.	Push Side Guides away from media.
Failure to feed	Side Guides too close to media.	Readjust Side Guides.
	No power to Printer.	Check that power buttons are ON (*Control Panel and Main Power*) and that the power cord is plugged in.
	Feed gap too tight.	Adjust Separator to thickness of media.
	Feed gap too loose.	Adjust Separator to thickness of media.
	Material is out of specification.	Maximum thickness is 0.020".
	Motor on, Feed Rollers not turning.	Check for broken Drive Belt and replace. Check for loose setscrews on Drive Pulley or Belt Drive Roller Pulley.
	Clutch not engaging.	Replace Clutch.
	Motor failure.	Check that motor is receiving power from the Power Supply.
	No power.	See **Power Problems** in this Section.
Jams	Paper path obstruction.	**Clear jam:** Open **Touchscreen "Setup" screen**. Press **"Run Path"**; this clears media from the paperpath without feeding more media. Press **"Clear Error"**. Press **"Resume"** to continue printing.
	Paper not loaded properly.	Instruct operator in proper loading of media.
	Feed Ramp not used properly.	Set Feed Ramp.
	Separators improperly adjusted.	Adjust Separators to thickness of media.
	Media curled or bent.	Uncurl media.
	The Separators are worn.	Replace Separator Tip.

Memjet Printhead

CONDITION	PROBLEM	SOLUTION
Missing parts of letters or text.	Air and bubbles blocking nozzles. Printhead is dry.	Clean the Printhead using recirculation, priming or cycles of depriming and priming found on the Printer **Touchscreen** or in the Printer **Toolbox**. Rehydrate Printhead using distilled water and a wet, clean, lint-free cloth. **NOTE:** Air bubbles often disappear with Printer use.
Print shows regularly missing or misdirected nozzles or ink color mixing.	Debris on Printhead.	Perform startup routine. Clean the Printhead using a Cleaning Level on the Printer **Touchscreen** or in the Printer **Toolbox**. Wipe Printhead manually with distilled water and a wet, clean, lint-free cloth. Replace Printhead.
Ink mixing – Mixed or muddy colors.	**Causes:** Ink flooding, air in Printhead or a dirty Printhead.	Clean the Printhead using a Cleaning Level on the Printer **Touchscreen** or in the Printer **Toolbox**. Wipe Printhead manually with distilled water and a wet, clean, lint-free cloth.
No print or crisp blocks of missing drops.	Electrical failure or poor electrical connection.	Reseat Printhead. Replace Printhead.
System will not reprime ink after replacing Printhead Cartridge.	Printhead nozzles dry. Ink Tanks may be 1/3 full or less.	Wipe Printhead manually with distilled water and a wet, clean, lint-free cloth. Replace Ink Tanks.
Ink blobs or excessive ink from nozzles. 	Printer left idle or stored too long with ink still in hoses. Ink may congeal and eject all at once or cause a blockage that builds enough pressure to cause the hose to detach.	Deprime and clear ink from Printer hoses and Printhead before storing or leaving the Printer idle for long periods of time.

Printing Problems

CONDITION	PROBLEM	SOLUTION
Ink Tank installed, no Ink Level indication in Toolbox	Ink Tank contacts dirty, preventing Printer/Ink Tank communication.	Remove Ink Tank(s). Clean prism and QA Chip contacts; see **Maintenance**, *Cleaning Ink Tank Contacts*.
Extra lines; losing data	Database problem.	Check data in database program.
Improper output (*address information out of order, misfeeding, etc.*)	Wrong interface settings. Static electricity. Dirty Media Sensor.	Check software or database on PC. Close software and then turn Printer OFF and ON. Clean Media Sensor.
Media jams	Double feeding. Media is curled or bent. Media is too thin.	Adjust Sheet Separators on Feeder. Uncurl media. Minimum thickness for media is 0.004".
No communication	Improper cabling / connector. Unit not receiving power.	Use proper cable (*see Operator Manual*). Check plug connections, ON/OFF switch and fuse on back panel.
Print too light or missing character dots	Clogged or dirty Printhead. Running out of ink.	Check Printhead. Replace Ink Tanks.
Blurry address	Image is not sharp.	Clean Printhead using a Cleaning Level on the Printer **Touchscreen** or in the Printer **Toolbox**. Replace Ink Tanks or change Printer resolution setting. Check media thickness.
Split line of type	A line of type does not match up.	Check media thickness. Minimum thickness for media is 0.004". Increase resolution of print.
Feeding problems	Double sheets. Misfeeds.	Adjust Sheet Separators.

Software Problems

Refer to the manual for the application software being used.

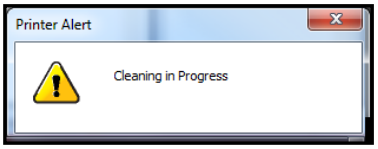
Printer Touchscreen (UI) Communication Problems

CONDITION	PROBLEM	SOLUTION
Printer Touchscreen (UI) Displays: **The printer cannot be found!**	User Interface (UI) is not able to connect to MPCA.	If you just installed a new MPCA or new SD Card, see “What to Expect After Installing New Micro SD Card” for troubleshooting help. Check Fast Network Switch. Check RJ45 cable that connect UI and MPCA to Network Switch.

Errors and Warnings

Printer Alert Window Messages

Messages sent from Driver and displayed on PC screen in a small popup window.

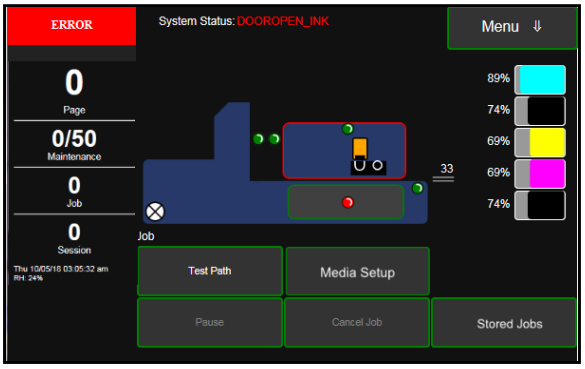


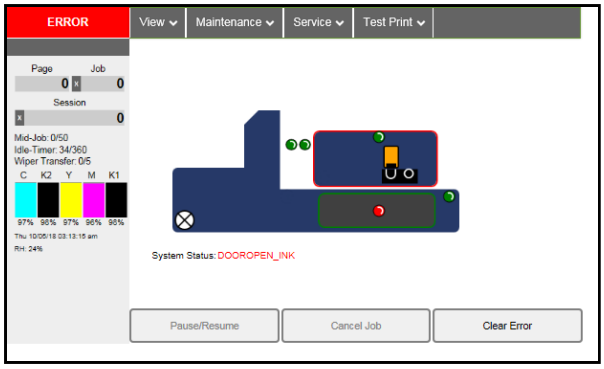
MESSAGE	SOLUTION
Cleaning in Progress	Wait until message disappears. Printer will start printing your job once cleaning process is complete.
Incompatible Printhead	Remove and reinsert your Printhead Cartridge. Replace Printhead. Printhead Cartridges must be purchased from authorized supplier for this printer model.
Incorrect … Ink Tank	Replace Ink Tank. Ink Tanks must be purchased from authorized supplier for this printer model.
…. Ink Low Example: Black Ink Low	Reorder Ink.
…. Out of Ink Example: Cyan Ink Out	Replace empty Ink Tank.
Load Paper	Out of Paper. Load paper into Printer and press **PAUSE/RESUME** button to resume printing.
Mechanical Jam	Check for and remove obstruction, then press **PAUSE/RESUME** button to resume printing. Check/Clean Sensors. If problem persists, contact technical support.
Missing Printhead	Remove Printhead Cartridge. Check/clean electrical contacts. Reinsert Printhead. Replace Printhead. If problem persists, contact technical support.
Multiple Inks Low	Reorder Ink.
Multiple Ink Tanks Out	Replace empty Ink Tanks.
Multiple Ink Tanks are missing	Insert missing Ink Tanks. Clean electrical contacts and reseat Ink Tanks.
Multiple Unauthorized Ink Tanks	Remove and reinsert Ink Tank. Replace Ink Tank. Ink Tanks must be purchased from authorized supplier for this printer model.
Paper Jam	Remove jammed media. Check for proper feed setup then press the **PAUSE/RESUME** button to resume printing. Check/Clean Sensors. If problem persists, contact technical support.
Printhead Latch Open	Ensure that the Printhead Cartridge is inserted properly, then close the Printhead Latch so it locks.
Print Zone Assembly (Clamshell) Open	Make sure Clamshell is completely closed and latched.
The … Ink Tank is missing	Insert missing Ink Tank. Clean electrical contacts and reseat Ink Tank.
Unauthorized … Ink Tank Installed	Remove Ink Tank. Ink Tanks must be purchased from authorized supplier for this Printer model.
Unauthorized Printhead	Remove Printhead Cartridge. Printhead Cartridges must be purchased from authorized supplier for this Printer model.

Toolbox System Status Messages

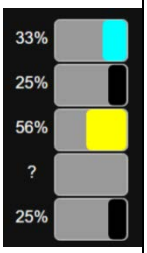
Use the Touchscreen or Toolbox screen to quickly determine and locate a problem in the Printer.

- When a problem is detected, the **Status Indicator** will show **ERROR** in a red box.
- **System Status** will display the basic problem (*in red*).
- **Printer Graphic Icon** will highlight item (*sensor/switch position in red*) and or systems that are affected.
- **Ink Levels** displays ink status. Ink Tank errors will be shown as "out" or "?" (not recognized, missing).

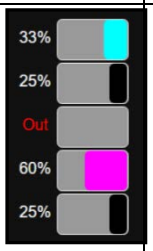




Listed below are some of the messages that may appear in **System Status** along with problem/cause and solution.

SYSTEM STATUS	PROBLEM / CAUSE	SOLUTION
System Status: **CARTRIDGE_MISSING_X** Example: CARTRIDGE_MISSING_M **or** **CARTRIDGE_MISSING_MULT** 	? = Ink Tank is missing or not recognized (*obtained from an unauthorized reseller*). **X** = color (C M Y K1 K2) **MULT** = more than one Tank color.	Insert missing Ink Tank or pop Ink Tank in and out to improve connection. Check/clean Ink Tank contacts. Tap **Clear Error** and then tap **Resume** button, from Job Menu, to resume printing. Replace Ink Tank. Check/replace QA Chip Assembly (Ink Tank Interface PCA), connections, wiring, MPCA.
System Status: **DATA_PATH_UNDERRUN**	Media is not moving from Entry to Exit Sensor with expected timing. Media is being delivered faster than printer can get image ready to print. Possible issue with format or orientation of job being sent. Encoder signal is erratic (not steady). Mechanical Issue	Check/clean Sensors and Reflector. Try selecting "Ignore Exit Sensor". Try slowing transport. Turn off "Over Speed". If using Normal print quality, select "Half Speed". Try increasing media gap. Turn off "Fast Feeding" or set "Feed Gap" to a higher value (30 or greater). Reduce complexity of print job. Try changing orientation setting in software/driver or setting a different media size. Try a job that worked before. Check clean Feeder and Paperpath Encoder Wheels and Sensors. Check for any mechanical issues with media transport system. Loose pulley, belt. Feeder section holding back of print zone section, etc.

Toolbox System Status Messages *(continued)*

SYSTEM STATUS	PROBLEM / CAUSE	SOLUTION
System Status: **DOOROPEN_INK**	Indicates that Ink Tank Door is open. Door Switch damaged.	Verify that Ink Tank Door is closed. Make sure that Ink Tank Door switch (*located at the upper right corner of the door*) is activated when the Ink Tank Door is open and closed. Use **Scan Sensors** in the Printer **Toolbox** to check that the Ink Tank Door switch is functioning.
System Status: **DOOROPEN_PRINTHEAD**	Indicates that Printhead Door is open. Door Switch damaged.	Verify that Printhead Door is closed. Make sure that Printhead Door switch (*located at the back center of the door*) is activated when the Printhead Door is open and closed. Use **Scan Sensors** in the Printer **Toolbox** to check that the Printhead Door switch is functioning.
System Status: **INK_OUT_X** Example: INK_OUT_YELLOW **or** **INK_OUT_MULT** 	One or more Ink Tanks are out of ink. **X** = Color. **MULT** = more than one Tank color. "**Out**" = System calculated that 250ml of ink was drawn from Tank or visible ink sensor sees no ink in Tank prism.	Open the Ink Tank Door. Replace empty Ink Tank(s). Verify Ink Tanks are seated firmly, and latches are fully closed. Check/clean Ink Tank Prisms and Ink Level Sensors. Close the Ink Tank Door and tap "**Clear Error**". The ink levels should fill in. **Tip**: A premature visible ink "**Out**" condition can occur if the printer is not on a sturdy, level surface. Replace Ink Tank Check/replace Ink Level PCA (visible ink sensor board), connections, wiring, MPCA.
System Status: **MAINTENANCE_BUSY**	Machine is performing maintenance. "Media Setup" menu may be open.	If you hear printer making noise, it is likely performing maintenance. Wait for printer to finish. Exit out of the "Media Setup" menu.
System Status: **MAINTENANCE_BUSY** **Wiper Overtemp**	Wiper Motor is overheated due to performing a Wiper Transfer (*removing excess ink off Service Station Wiper*) too often or for multiple or extended periods. Printer will continue maintenance after Wiper Motor cools down. Message will disappear once the temperature returns to operating range.	**Wait for Wiper Motor to cool down,** Printer will automatically resume operation. **Tip:** To reduce this issue; set **Mid-Job Servicing** interval to a higher number of pages. Consider setting **Wiper Transfer** to a value of 2 or 3. **NOTE:** If these values are set too high, print quality issues may occur; caused by clogged or dehydrated nozzles. Run **"Condition Wiper"** from Touchscreen Wiper Menu. This will rehydrate wiper roller and wiper motor module which may help to reduce energy it takes to turn motor.

Toolbox System Status Messages *(continued)*

SYSTEM STATUS	PROBLEM / CAUSE	SOLUTION
System Status: **MAINTENANCE_JAM** **Pump Error** – Ink Circulation Pump	Motor that drives component has detected a problem or movement is hindered.	Restart Printer. Clean encoder wheel and sensor. Check for loose damage connection in wiring and at motor/encoder. Pump connects to DPCA-1, J17B. Replace Pump, wiring, board
System Status: **MAINTENANCE_JAM** **Sump Error** – Sump Pump for waste ink	Motor that drives component has detected a problem or movement is hindered.	Restart Printer. Clean encoder wheel and sensor. Check for loose damage connection in wiring and at motor/encoder. Sump connects to DPCA-2, J17E. Replace Sump, wiring, board
System Status: **MAINTENANCE_JAM** **Lift Error** – Printhead Carriage Lifter	Printhead or Ink Tank Door opened during process. Motor that drives component has detected a problem or movement is hindered. Belt(s) too loose/tight. Bad wires/connection. Bad Motor, wiring, board.	Close doors (Printhead and Ink Tank) and tap "**Clear Error**". Check for obstruction. Lubricate (Super Lube 21030) Lift Motor Belt. Clean/relubricate (white lithium grease) Lifter slots/bearings. Check/clean the Lifter Home Sensor. Check/adjust belt tensions. Check for loose damaged pulley(s). Check for loose damage connection at motor and MPCA, P2003. Replace Motor, wiring, MPCA
System Status: **MAINTENANCE_JAM** **Wiper Error** – Wiper Motor	Wiper Roller is not turning, or it is too hard to turn. Ink coagulation making motor hard to turn. Wiper Motor cable is broken or disconnected. Failed Wiper Motor Module. Failed DPCA-1 board.	Run **"Condition Wiper"** from Touchscreen Wiper Menu. This will rehydrate the wiper roller and wiper motor module. Check cable and connections. Replace Wiper Motor Module. Replace DPCA-1 board.
System Status: **MECH_CANCELPAGE**	Job was cancelled by user pressing Cancel Job button.	Wait until the print job has cleared from Printer. Then manually clear the job from the computer's print queue. Send a new print job.

Toolbox System Status Messages *(continued)*

SYSTEM STATUS	PROBLEM / CAUSE	SOLUTION
System Status: **MECH_FAIL_PERMANENT** **Ink Valve failed**	Dual Pinch Valve was not properly registered at expected position. Mechanical failure, Motor failure or Sensor failure of Ink Valve has occurred.	Try rebooting (*restarting*) printer. Check for loose damage connections at Valve and MPCA (P2005). Monitor Ink Valve for physical movement at power-up. If no movement before error, then this is likely a Valve, Wiring or MPCA issue. If there is movement before error this is likely a Valve Sensor issue. Using **Scan Sensors** page in the Printer **Toolbox**, perform toggle test on Valve Sensor 1, Valve Sensor 2. If not responding correctly, clean/replace Valve Sensor PCB. Replace Valve, Wiring, MPCA.
System Status: **MECH_FAIL_PERMANENT** On System Status in Touchscreen or Toolbox to determine what component has a problem or failed.	One of Printer's mechanical components was not properly registered at expected position. Mechanical failure or Sensor failure.	Try rebooting (restarting) printer. Visually inspect component stated as a “Reason” for failure. Using Scan Sensors page in the Printer Toolbox, perform toggle test on Sensor responsible for registration of failed mechanical component position. Check for loose damage connection at component and PCB. Replace Component, Wiring, PCB
System Status: **ONLINE**	Printer Ready	System is ready to accept jobs and print.
System Status: **PAPERPATH_EXIT_SENSOR**	Exit Sensor does not see media. Media not passing over Exit Sensor or Underside of media is dark in color.	Check/clean Exit Sensor Reposition media so paper passes over Exit sensor or select “Ignore Exit Sensor” from “Media Setup” menu.
System Status: **PAPERPATH_FEED_TIMEOUT**	Out of Paper Hesitation in media feed. Media Thickness set too high. Media not passing under Feeder/Entry Sensors. Entry Sensor not working.	Load media into Printer and tap Clear Error and then tap Resume button, from Job Menu, to resume printing. If media is present; check/adjust Media Thickness, Guides and Separators. Reposition media or Feeder/Entry Sensor Assembly, so paper passes under sensors. Check/clean Sensor/Reflector. Adjust/replace Sensor.

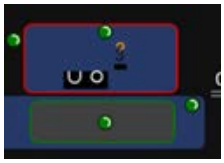
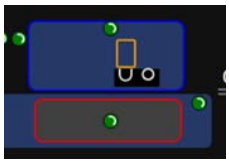
Toolbox System Status Messages *(continued)*

SYSTEM STATUS	PROBLEM / CAUSE	SOLUTION
System Status: **PAPERPATH_FEED_SERVO_ERROR** **(Feeder motor)**	Feeder Motor rotation is not detected, or Motor is over PWM limit.	Check for anything that may be hindering movement of Feeder system. Try rebooting (restarting) printer. If motor turns before error, this is likely an encoder signal issue. Clean Feeder Encoder Wheel and Sensor. Use Scan Sensors to check Encoder signal. Check for loose connection between Feeder Encoder and DPCA-2 (J17C). Check for loose connection between DPCA-2 P1 and Multiplex Board (J2) as well as between Multiplex Board (J1) and MPCA (P2004). If motor does NOT turn before error, this is likely a Motor or Motor drive issue. Check for loose connections between Feeder Motor and DPCA-2 (J18C). Check for loose connection between Feeder Encoder and DPCA-2 (J17C). Check for loose connection between DPCA-2 P1 and Multiplex Board (J2) as well as between Multiplex Board (J1) and MPCA (P2004). Replace Motor, Encoder Wheel, Encoder Sensor, wiring, DPCA-2, Multiplex PCB, MPCA.
System Status: **PAPERPATH_GAP_SERVO_ERROR** **(Thickness motor)**	Thickness Motor rotation is not detected, or Motor is over PWM limit.	Check for anything that may be hindering movement of Media Thickness drive system (clamshell height movement). Try rebooting (restarting) printer. If motor moves before error, this is likely a mechanical drag issue or encoder signal issue (encoder is part of motor, but encoder has a separate connection to DPCA-2 J17A) or Home Sensor issue (flag not interrupting sensor). If motor does NOT move before error, this is likely a Motor, wiring or connection (DPCA-2, J18A) issue. Clean Paperpath Encoder Wheel and Sensor. Use Scan Sensors to check Encoder signal. Check for loose connections between Motor and DPCA-2 (J17A & J18A). Replace Motor, wiring, DPCA-2.

Toolbox System Status Messages *(continued)*

SYSTEM STATUS	PROBLEM / CAUSE	SOLUTION
System Status: **PAPERPATH_PAGE_SEQUENCE**	Change in media length detected. Shinny media surface or hole in media. Hesitation or skew in media feed. Overlapping pieces.	Remove media from the Printer transport. Check/adjust sheet separation. Reposition media or Feeder/Entry Sensor Assembly, so paper passes under sensors. Avoid windows or holes in media. Turn off “Double Feed Detection” Tap Clear Error and then tap Resume button, from Job Menu, to resume printing.
System Status: **PAPERPATH_PAPERJAM**	Paper/Media jam detected. Printer has detected that one (or more) Media Sensors are blocked (interrupted). Entry or Exit Sensors not working properly.	Carefully remove jammed media from Printer and close Clamshell. System Status message in red should go away. Touchscreen and Toolbox Paperpath Sensor indicators should change from red to green. After jam is cleared, you can: Check/adjust sheet separation. Tap Clear Error and then tap Resume button, from Job Menu, to resume printing. Check/clean/adjust/replace sensors.
System Status: **PAPERPATH_SERVO_ERROR** **(PrintZone motor)**	Paperpath (PrintZone) Motor rotation is not detected, or Motor is over PWM limit.	Check for anything that may be hindering movement of Paperpath (PrintZone) drive system. Try rebooting (restarting) printer. ***If Motor turns before error***, this is likely an encoder signal issue. Clean Paperpath Encoder Wheel and Sensor. Use Scan Sensors to check Encoder signal. Check for loose connections between Encoder and DPCA-1 (J17A). ***If Motor does NOT turn before error***, this is likely a Motor or Motor drive issue. Check for loose connections between Paperpath Motor and DPCA-1 (J18A). Replace Motor, Encoder, Encoder Wheel, wiring, DPCA-1.

Toolbox System Status Messages *(continued)*

SYSTEM STATUS	PROBLEM / CAUSE	SOLUTION
System Status: **PRINTHEAD_MISSINGQA** 	? = Printhead missing or not recognized (not an authorized supply) Printhead not making proper connections.	Install Printhead. Try rebooting (restarting) printer. Remove the Printhead, clean contacts and reinstall the Printhead. Make sure there is nothing getting in the way of Printhead to PPCA connection. Replace Printhead. Refer to appropriate sections in this manual for removing and installing Printhead Cartridge Check for loose connections between PPCA and MPCA. Replace PPCA, wiring, MPCA
System Status: **PRINTHEAD_UNPRIMED** 	Printhead unprimed. Printhead Latch is open and or Door open. Printhead priming process has failed.	After installing Ink Tanks and Printhead you must close Printhead Latch and close all doors to start priming process. Do NOT open doors or this will interrupt the priming process. Try rebooting (restarting) printer. Remove Printhead Cartridge, wet print nozzles using distilled water and reinstall Printhead Cartridge. Refer to appropriate sections in this manual for removing and installing Printhead Cartridge.

Jams in Printer

If a jam occurs, **STOP the Printer.** Some possible causes for jamming are:

1. Feeding more than one piece of media (*double-feeding*).
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 Printer.
4. Envelopes caught under flap of another envelope or stick to one another.

Remove Jammed Media

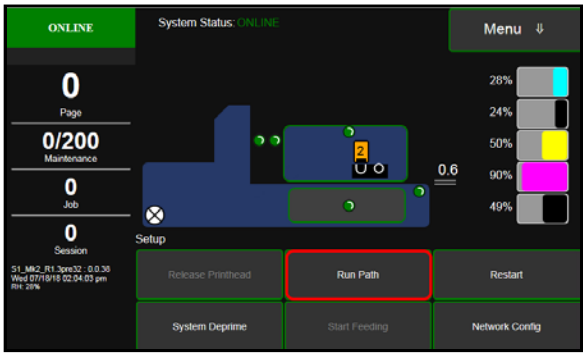
Clearing a jam depends on where jam occurred.

Feed Section:
Loosen Sheet Separators and remove jammed media.
Readjust Sheet Separators to media.

Print Area:

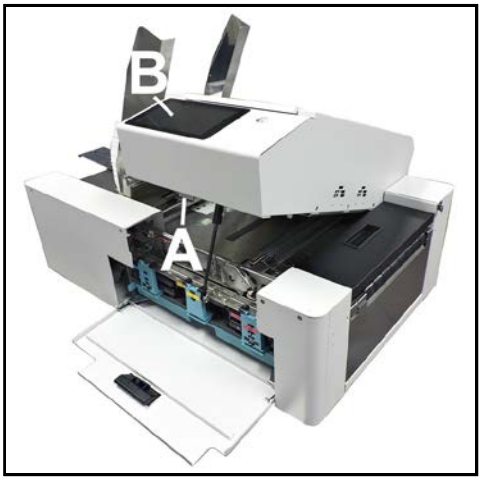
If you are sure nothing is obstructing the paper path:

- Open **Touchscreen "Setup" screen**. Press **"Run Path"**; this will clear the media from the paperpath without feeding more media..
- Press **"Clear Error"**.
- Press **"Resume"** to continue printing.



If you are not sure if the paper path is obstructed:

- Open the Ink Tank Door.
- Pull the Clamshell Latch **[A]** toward you to unlatch the Clamshell
- Raise Clamshell **[B]**.
- Clear jam, the carefully lower the Clamshell.



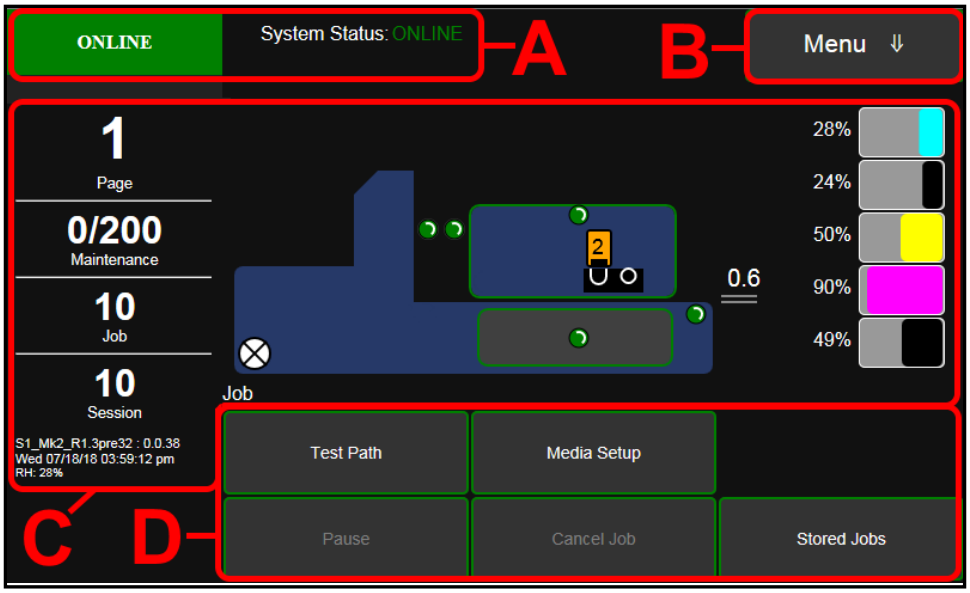
Misfeeds

Misfeeds can be corrected by readjusting or replacing the Sheet Separators. See **"Replacing Sheet Separators"** on previous page.

SECTION 3 – *Touchscreen and Toolbox Operation*

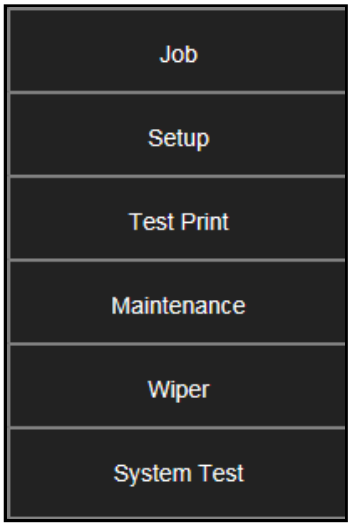
Tap the screen to view the **Printer Touchscreen.**

[A] System Status Indicator (*at top of screen*)
[B] Drop-Down Menu Options (*at top of screen*)
[C] Check Printer Status (*across middle of screen*)
[D] Five often-used control buttons (*at bottom of screen*)



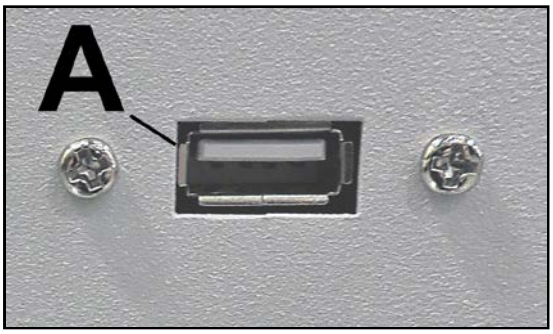
Drop-Down Menu Options

The **Menu** drop-down gives you five selections:
Job, Setup, Print, Maintenance, Wiper and **System Test.**



Using the Backup/Transfer Port

The USB port, located on the front of the printer, can be used to backup stored Print Jobs. Backed-up Print Jobs can then be transferred (uploaded) to another ColorMax 8 printer.



IMPORTANT
USB DEVICE MUST BE FORMATTED FAT 32 OR DEVICE WILL NOT WORK WITH PRINTER.

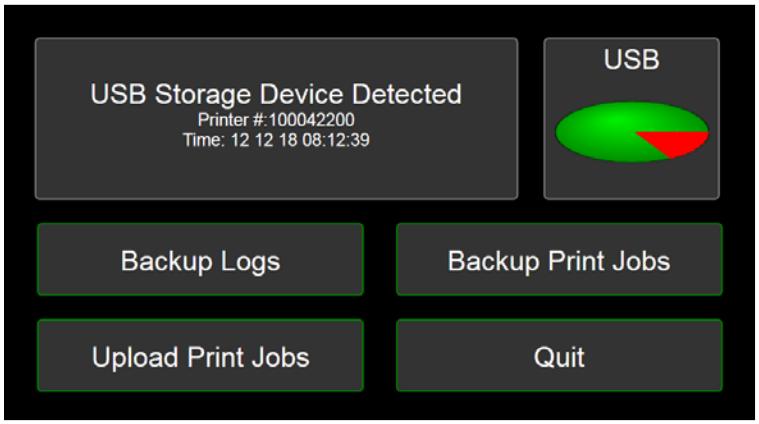
A technician may use this port to retrieve all system/job/debug Log files from the printer, so they can be archived for future troubleshooting purposes.
Tip: Individual Job and Debug Log files can be accessed from the printer's Toolbox (Service Menus).

When a FAT 32 formatted USB memory device is plugged into the USB port **[A]** (*located below the Touchscreen*), the **USB Backup** screen opens:

CAUTION: Do NOT connect devices, other than USB Flash Drives, to this port.

USB Storage Device Detected. Lists the Printer you are connected to, date and time.

USB: Graph shows the amount of usable memory left on the USB device plugged into the Printer.



Backup Logs: Use this feature to backup all system/job/debug Log files to the USB Flash Drive.
NOTE: Backed-up Print Jobs will be located under the \prns directory on the USB Flash Drive. Backed-up Log files will be located in the root directory. Log files are in a zipped (*.tgz) format. These files can be opened/unzipped using a zip file utility, such as "7-Zip".

Backup Print Jobs: Use this feature to backup all "stored jobs" to the USB Flash Drive.
NOTE: Stored Print Jobs are jobs that have been saved to printer memory for future use. See "Stored Jobs", for more details on saving and using stored Print Jobs.

Upload Print Jobs: Use this feature to transfer all "stored jobs" from the USB Flash Drive to the printer.
NOTICE: Do NOT attempt to load Print Jobs, such as PDF files, using this Port. System damage will occur.

Quit: Press to exit the backup screen and safely eject the USB device.

With UI version R0.2.02 and higher the following features are added to the above screen.
However, at the time of publication, these features were not fully vetted and should not be used until instructions on proper use are provided.

Upload Videos: For possible future use.

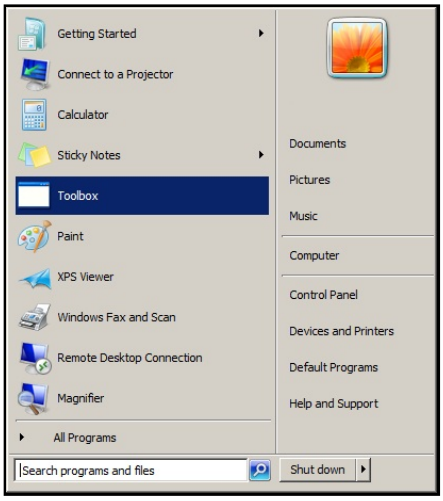
Apply Updates: For possible future use.

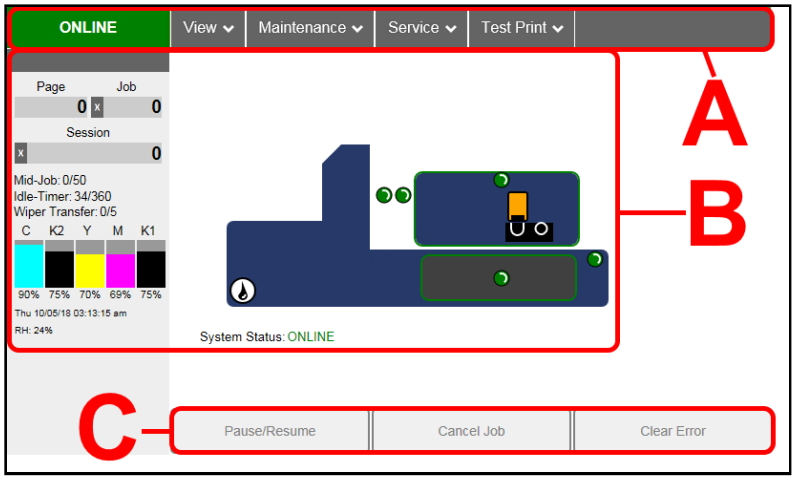
Using Printer Toolbox

To open Toolbox (*on a computer*):

Open **Start Menu**; then click on **Toolbox**, select **S Series Driver**:
NOTE: Conventional Screens: Use your cursor. **Touchscreens:** Tap buttons or selections or use your cursor.

[A] System Status Indicator and Drop-Down Menu Options (*at top of screen*).
[B] Check Printer Status (*across middle of screen*).
[C] Three often-used control buttons (*at bottom of screen*).



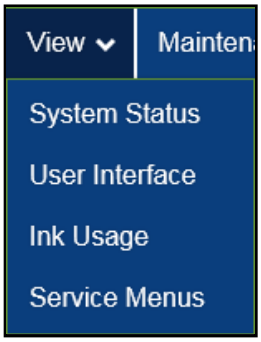


Drop-Down Menu Options

There are four **Drop-Down Menus**: **View, Maintenance, Service** and **Print**. The drop-down menus are available on every Toolbox screen allowing you to toggle between menus and select different Printer features and functions.

View Drop-Down

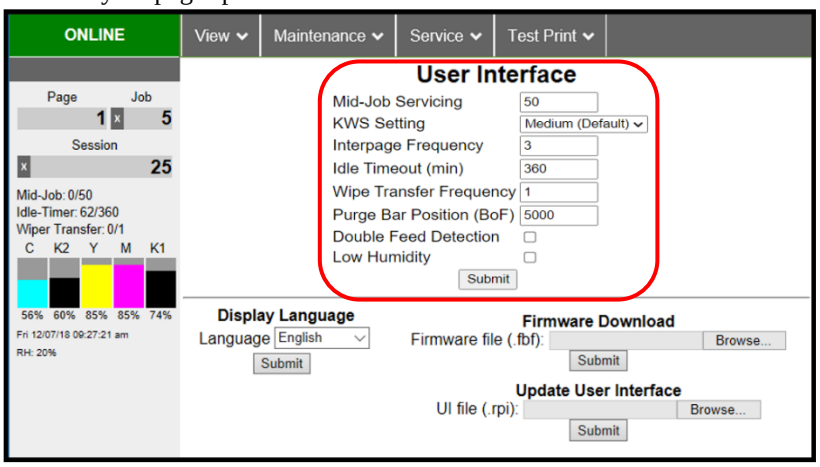
The **View** drop-down gives you four choices:
System Status, User Interface, Ink Usage and **Service Menus.**



User Interface

Use the items in this menu to adjust the following features.

Mid-Job Servicing – Sets frequency (number of pages printed) before automatic Printhead maintenance occurs. In this example, maintenance will run after every 50 pages printed. Common range is between 50 and 250 pieces. ***NOTE***: Higher values will increase productivity (less pausing for maintenance) but may also increase print quality issues. Experiment to find an acceptable selection for your application/environment.



KWS Setting – (*Keep Wet Spitting*) Use to help keep all Printhead nozzles hydrated while running a job.
This is done by firing all nozzles (dots), in a preset pattern/density, based on selection.
None (turns off KWS), ***Light*** (low density of KWS dots), ***Medium*** (default, medium density of KWS dots), ***Heavy*** (highest density of KWS dots). ***NOTE*:** Setting this feature to "None" will eliminate KWS dots being printed on media but may increase nozzle dehydration issues (nozzles that intermittently stop firing).

Interpage Frequency – Sets how often the Printhead purges, between pages, to help keep nozzles hydrated. For longer media, a setting of **1** is normal (*between every page*), for short media, a setting of **3** might be preferable (*purge after every third page*). ***NOTE*:** Setting this feature to a higher value may help to reduce ink overspray (ink buildup within printer). However, a higher value may also increase nozzle dehydration issues (nozzles that intermittently stop firing). Experiment to find an acceptable selection for your application/environment.

Idle Timeout (min) – Sets how often "Idle Maintenance" will run when Printer is "Idle" (not being used). Commonly set to 360 minutes (6 hours) but can be adjusted as needed. **NOTE:** Idle Maintenance is performed to help keep the Printhead and ink system in good working order, for the next time printer is used.

Wipe Transfer Frequency – Sets how often a "***Wiper Transfer***" (*removal of excess ink from Service Station's Wiper Roller*) will be performed, in relation to when Mid-Job Servicing (MJS) is performed. Common range is between 1 and 3. 1= after every time MJS is performed. 3= after every third time MJS is performed.
***NOTE*:** Setting a value of 1 in conjunction with a low MJS value (50 pages), when running short media, may cause "wiper overtemp" issues (wiper motor getting too hot because it is used too frequently). If you experience this issue, try setting Wiper Transfer Frequency value to 3. Experiment to find an acceptable selection for your application/environment.

Purge Bar Position (BoF) – Use to adjust the Bottom of Form (BoF) in micron increments ***(1000 =1mm)***.
BoF is where printer identifies trailing edge of media. Adjusting this value also moves the "Purge Bar" position.
What is a "Purge Bar"? To help keep all nozzles hydrated, the Printhead purges (spits) a small amount of ink, from all nozzles, into the gap between pieces. Purge frequency is based on "***Interpage Frequency***" setting. Adjustment to the "Purge Bar Position (BoF)" may be needed when running irregular-shaped pieces (*like an envelope being fed with an open, triangle shaped, flap*). In this case, the Entry Sensor may "read" the lower part of the triangle shaped flap as the trailing edge of the media. This may cause the Purge Bar to be sprayed onto the tip of flap, instead of between pieces.
Tip: Be sure to position the Feeder/Entry Sensor so it sees the longest continuous area of the media length.

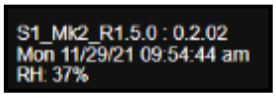
Double Feed Detection – When checked (*default*), printer stops feeding media when a double feed condition (*change in media length, due to media overlap*) is detected.
NOTICE: By unchecking "Double Feed Detection" you are reducing the printer's ability to detect a media feed issue. Therefore, printer transport may continue to run when a paper jam occurs. If "Double Feed Detection" is not selected it is strongly advised that you do NOT select "Ignore Exit Sensor" (located in Touchscreen Menu, under Job, Media Setup) at the same time.

Low Humidity – See next page.

Low Humidity

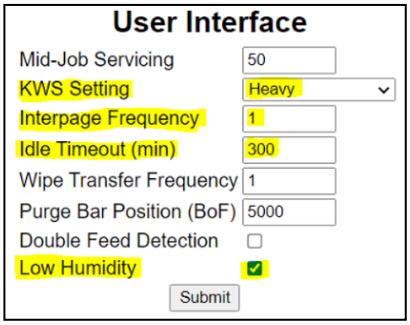
The Low Humidity mode can be used to help reduce print quality issues caused by low relative humidity levels. When relative humidity levels are below 30% the RH value, located near the bottom left-hand corner of the printer's Touchscreen, will flash RED, indicating that it would be a good idea to enable (turn on) low humidity mode.

NOTE: Low Humidity feature is available in printers with Firmware version R1.5.0 and higher. The printers Firmware version can be found near the lower left-hand corner of the printer's touchscreen.
Example: S1_Mk2_R1.5.0 : 0.2.02



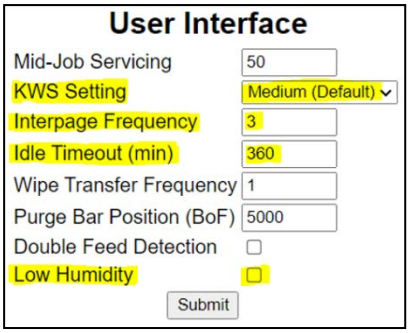
If you toggle Low Humidity mode to ON (selected) the following **User Interface** settings will automatically change to:

- **KWS: Heavy** – Increases Keep Wet Spitting from Medium to Heavy.
- **Interpage Frequency: 1** – Increases the frequency of the Purge, which occurs between pages, from every 3 pages to every 1 page.
- **Idle Timeout (min): 300** – Reduces the time interval for idle maintenance from every 360 minutes to every 300 minutes.



If you toggle Low Humidity mode to OFF (un-selected) the following **User Interface** settings will automatically change to:

- **KWS: Medium (Default)** - Decreases Keep Wet Spitting from Heavy to Medium.
- **Interpage Frequency: 3** - Decreases the frequency of the Purge, which occurs between pages, from every 1 page to every 3 pages.
- **Idle Timeout (min): 360** - Increases the time interval for idle maintenance from every 300 minutes to every 360 minutes.

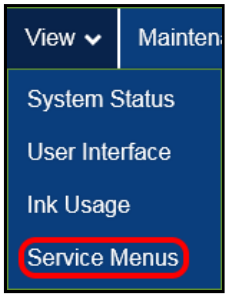


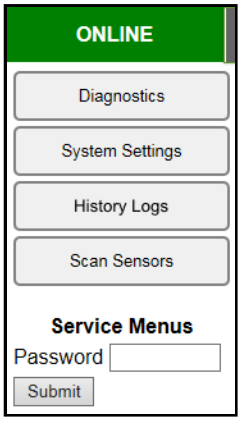
Click "**Submi**t" to apply settings.

NOTE: After toggling to a different Low Humidity mode selection (on to off or off to on), the operator can make (over-ride) changes to any of the User Interface values. However, if the Low Humidity mode selection is changed by the operator again, the values shown above will be automatically selected.

NOTICE: With R1.5.0 or higher Firmware, the following **Printer Control Configuration, Printout Control** features are also automatically changed, with the selection of **Low Humidity** mode (on to off or off to on).
When Low Humidity Mode is Toggled to ON (selected):
wipe_posn: 500 – Wipe position value is decreased from 1000 to 500, to increase wipe pressure. Reducing this value increases wipe pressure. A higher wipe pressure pulls more ink from head during wipe. This change helps to improve wiper roller hydration for better head cleaning results and to reduce wiper error conditions caused by a dry wiper motor module.
job_cont_dely: 2 – Next job wait time is reduced from 3 to 2 seconds. This cleans and caps the printhead quicker to help reduce nozzle dehydration.
When Low Humidity mode is toggled to OFF (un-selected):
wipe_posn: 1000 – Wipe position value is increased from 500 to 1000, to reduce wipe pressure.
job_cont_dely: 3 - Next job wait time is increased from 2 to 3 seconds.

Service Menus





Clicking **Service Menus** opens the **Service Menus** (*Diagnostics*) screen and service menu buttons.

Diagnostics button. Click to check the status of the Printer. (*See **Diagnostics** below.*)

System Settings button. Click to view, enter or change settings to connect Printer to your network. (*See **Network Settings.***) Also configure and set the Printer's **Date and Time**. In addition, set the level of detail desired for **Debug Logs**.

History Logs. Click to display a list of available Logs that can be opened or uploaded. Then select the Log or Logs to be uploaded.

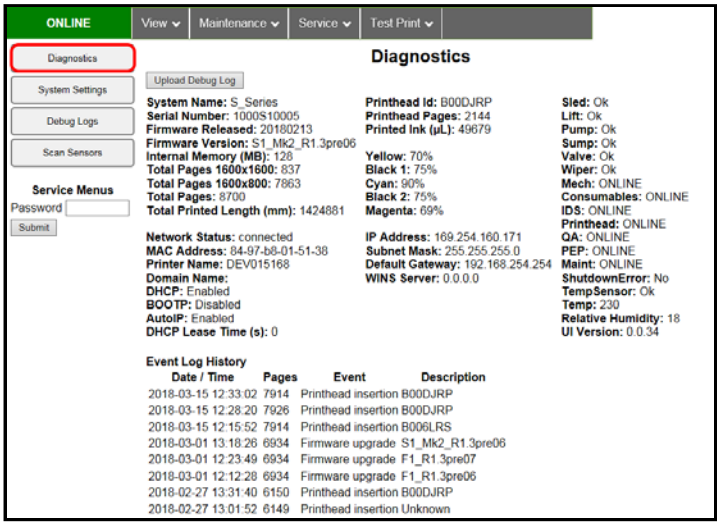
Scan Sensors button. Provides status and a log of sensor activity on sensors located throughout the Printer. (*See **Scan Sensors***.)

Service Menus, Password: Entering the **Service Menu password** provides access to more advanced Printer control and maintenance menus. For authorized service personnel only.

Diagnostics

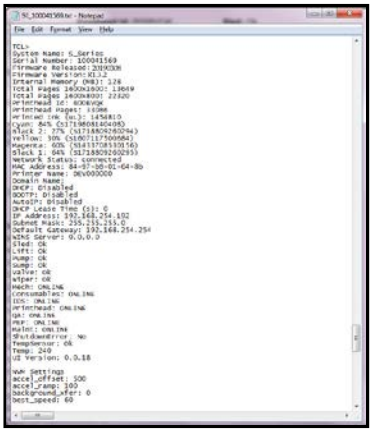
This is the screen that opens when you select **"Service Menus"**. From this screen, you can see current status of the Printer.

Other features:



Upload Debug Log – Upload and save a log of the Printer status to send to a technician to help diagnose a problem. Clicking this button creates a snapshot log showing everything going on with the Printer since powering up. (*See Sample Log below right.*)
NOTE: If a problem arises, try to recreate the problem, then press the **Upload Debug Log** button without performing any other actions. This may make it easier for the technician to determine the problem. If this is not possible, include any actions you may have taken after the problem began.

Other information provided in the Diagnostics window:



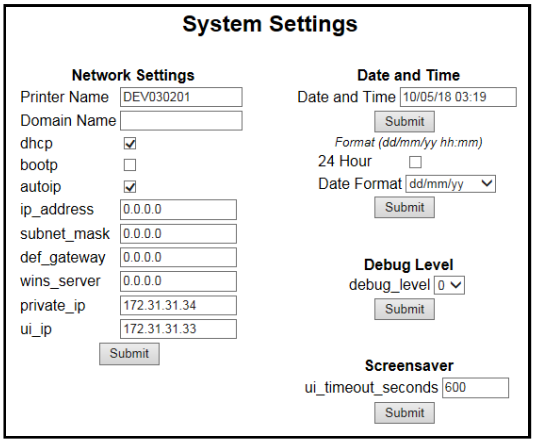
Event Log – Displays significant events occurring on the Printer (*such as firmware updates, errors, power off, etc.*) Useful for troubleshooting Printer problems.

NVM Settings – Displays Printer's current NVM (*Non-Volatile Memory*) settings. (*Once settings are saved, they remain even when Printer is turned off, until they are manually changed.*)

VARS Settings – Displays Printer's current VARs (*Variable*) settings. (*Settings that are set for a particular job that automatically revert to the default settings when the Printer is turned off or rebooted.*)

System Settings

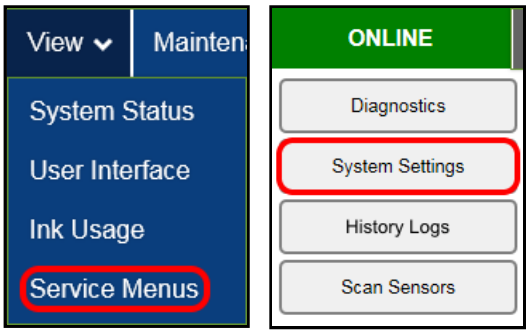
Set up a network connection for the Printer. You can also configure and set the Printer **Date and Time**, set the **Debug Log Level** and **Screensaver** sleep timeout.



Network Settings – Permits you to view, enter or change settings to connect the Printer to your network.

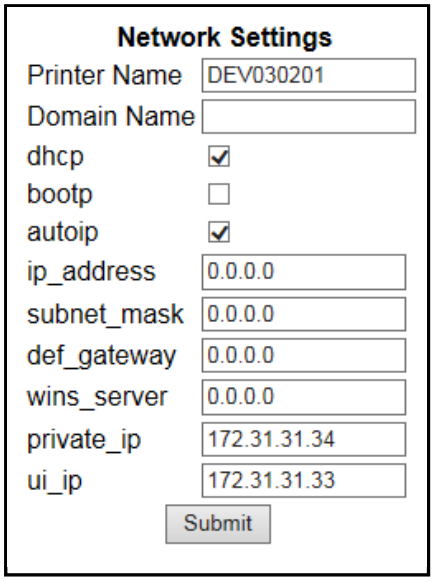
Network Connection Set Up:

1. Printer is still connected to computer via USB cable. **To connect the Printer to a network:** From the **Toolbox,** select **"View"** drop-down menu, click **"Service Menus"**, then click **"System Settings"**.



2. **"System Settings"** screen opens. Use **Network Settings** to enter correct settings for your network.

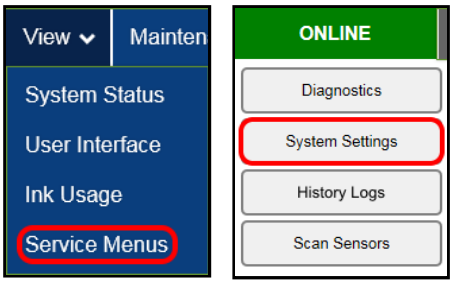
   NOTE: If manually changing the **ip_address**, make sure the **"dhcp" and "autoip" boxes are unchecked**. (*Default is checked*.) Enter changes in the appropriate boxes. Click **"Submit"**.

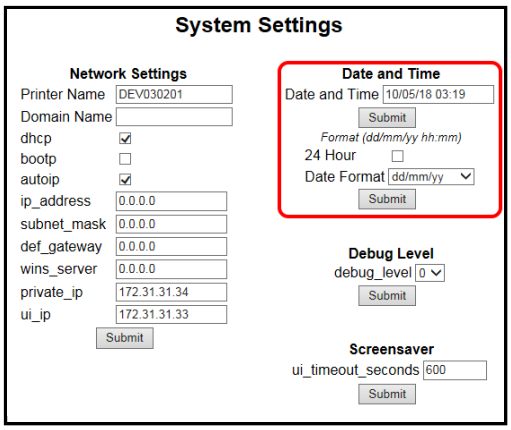


3. Connect Ethernet cable to Network Port on Rear Panel of Printer.

Date and Time – Enter or change the way the date and time will appear in the Printer Status section of the Toolbox screens. **To enter or change Date and Time:**

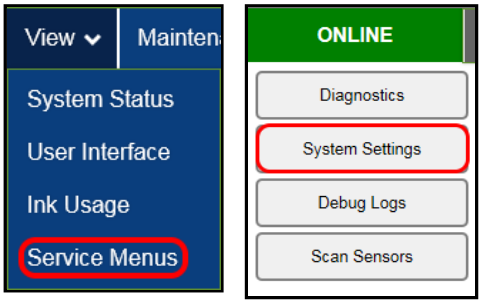
1. **From the Toolbox,** select **"View"** drop-down menu, click **"Service Menus"**, then click **"System Settings"**.
2. **"System Settings"** page opens. Use **Date and Time options** to enter, edit and format the Date and Time for the Printer.
3. Click **"Submit"**.

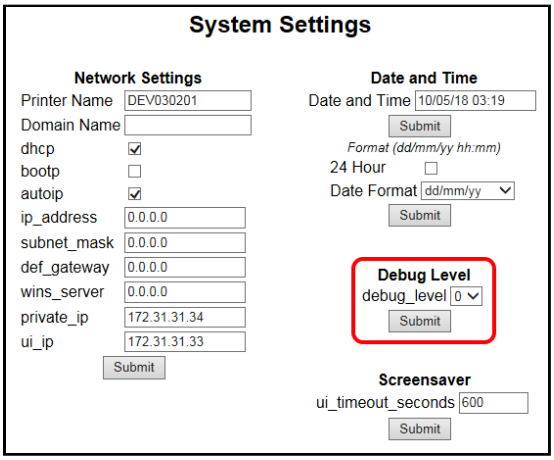




Debug Level – Set the detail level of the Debug Logs. **To change the Debug Level:**

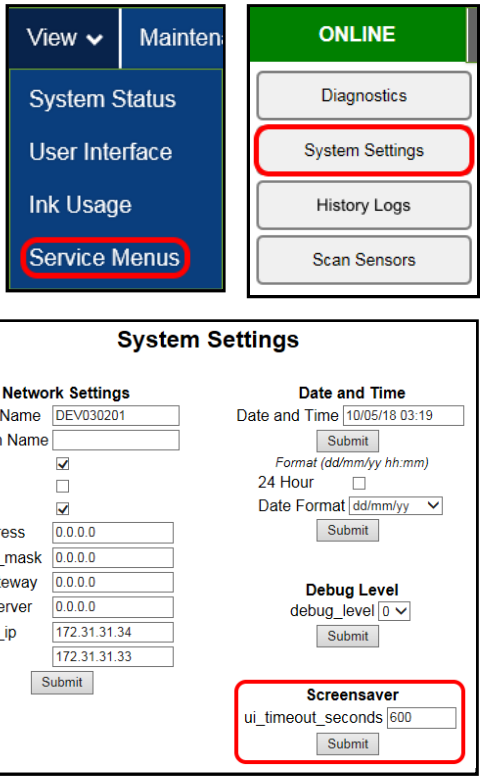
1. **From the Toolbox,** select **"View"** drop-down menu, click **"Service Menus"**, and then click **"System Settings"**.
2. **"System Settings"** page opens. Go to **Debug Level options** and select 0, 1, or 2 to set the desired level for the Printer. (0 = least detailed, 2 = most detailed). **NOTE:** Because of the amount of data collected and stored, it is recommended that you not set the **Debug Level** over 1 unless asked by a service technician.
3. Click **"Submit"**.





Screensaver – Set the amount of time the Touchscreen will remain idle before automatically going to Sleep Mode.

1. **From the Toolbox,** select **"View"** drop-down menu, click **"Service Menus"**, and then click **"System Settings"**.
2. **"System Settings"** page opens. Go to **Screensaver**. Enter the number of seconds the Touchscreen will remain idle before going to Sleep Mode.
3. Click **"Submit"**.



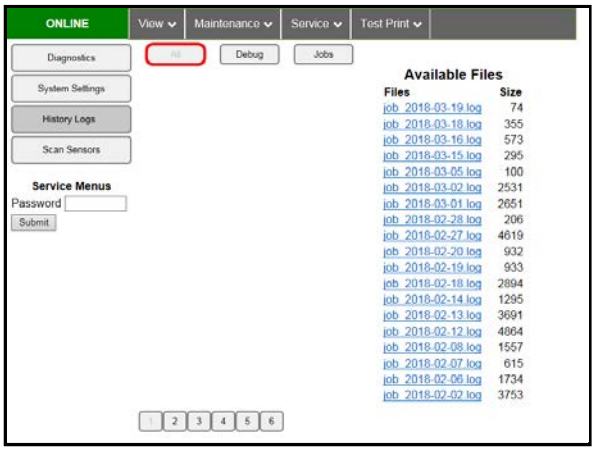
History Logs

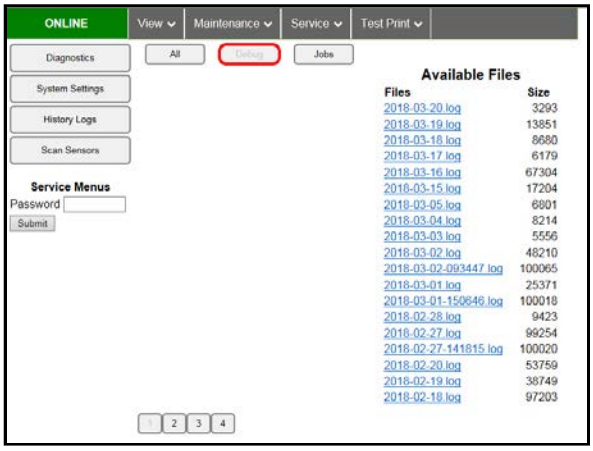
Access, print or send activity logs for the Printer and for jobs run on the Printer. These files are valuable for diagnosing and servicing problems.

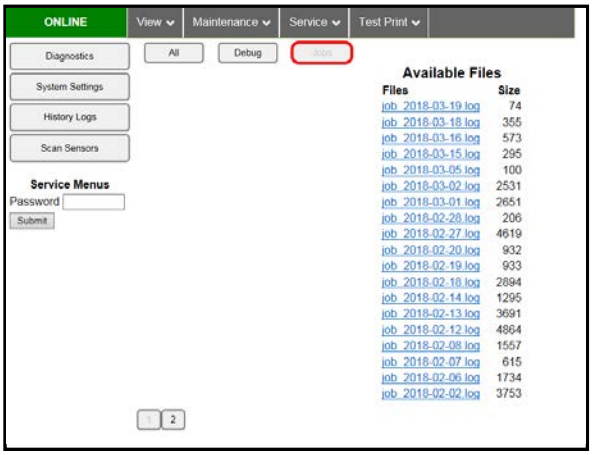
All – Shows all log files available.

Debug – Shows only **Debug** log files.

Jobs – Shows only **Jobs** printed log files.

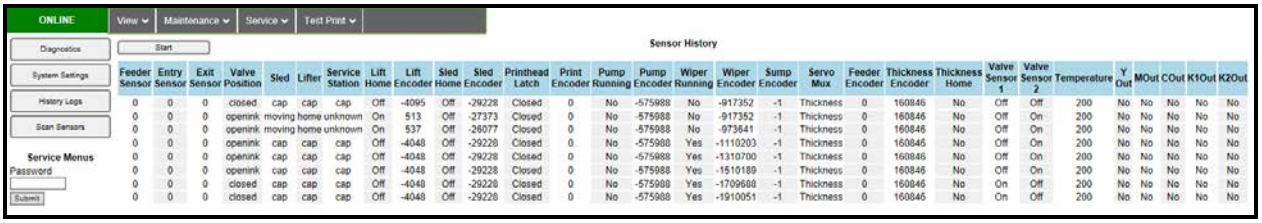






Scan Sensors

Provides status updates and an activity log on the Sensors located throughout the Printer. (*See chart at below.*) Click **"Stop"** button to stop scanning or click out of **"Scan Sensors"**.



SENSOR	DESCRIPTION
Feeder Sensor	Feeder Sensor. Paper present = 1. No Paper = 0
Entry Sensor (*Paper Path Entry*)	Entry Sensor. Paper present = 1. No Paper = 0
Exit Sensor (*Paper Path Exit*)	Exit Sensor. Paper present = 1. No Paper = 0 **Tip**: If media has dark colors on underside or total length of media doesn't pass over this sensor; you may experience false "paper jam" conditions. In this case, please select **"Ignore Exit Sensor"** (located under Job Menu, Media Setup).
Valve Position	Displays operating positions of Dual Pinch Valve**:** "OpenAir," "OpenInk," and "Closed". "Unknown" will display as Valve transitions between positions. **NOTE: If "Unknown" displays for more than a few seconds, it may indicate a problem.**
Sled (Service Station)	Sled Position. Cap, Print, Moving, Wipe, Wipe_Start, Wipe_End, Unknown
Lifter (Printhead)	Lifter Position. Cap, Print, Home, Inspect, Moving, Wipe_Dyn, Wipe_Spit, Unknown
Service Station	Current System Process. Cap, Cap_High, Print, Home, Inspect, Moving, Wipe, Wipe_Start, Wipe_End, Unknown
Lift Home	Printhead Carriage Lifter Home Sensor. Interrupted (fully raised) = On. Open = Off **Tip**: You can make the Lifter interrupt the Home Sensor by running "Full Clean Printhead". The Home sensor will be interrupted during the pressure prime and for about 40-60 seconds after the pressure prime occurs. You can also use "Sled-Lifter Control Scripts".
Lift Encoder	Printhead Carriage Lift Motor Encoder steps. Home = 0 to 2000. Base (bottom) = -67000 to -69000 1660 steps = ~1mm
Sled Home	Service Station Sled Home Sensor. Interrupted (fully left) = On. Open = Off
Sled Encoder	Service Station Sled Drive Motor Encoder steps. Home = 0 to 1200. Cap = -28,000 to -30,000.
Printhead Latch	Shows Printhead Latch Sensor. Open (sensor open). Closed (sensor interrupted)
Print Encoder	Displays Print Zone Encoder steps.
Pump Running	Shows if Ink Pump is activated. Yes/No
Pump Encoder	Shows Ink Pump Motor Encoder pulses (steps)
Wiper Running	Shows if Wiper Motor is activated. Yes/No
Wiper Encoder	Shows Wiper Motor Encoder pulses (steps)
Sump Encoder	Shows Sump Pump Motor Encoder pulses (steps)
Servo Mux	Identifies the Encoder Channel (Feeder or Thickness) that the system is currently using/monitoring.
Feeder Encoder	Shows Feeder Encoder pulses (steps) NOTE: The Feeder Encoder and Thickness Encoder share the same channel of communication. Only one can be displayed at a time. Value is displayed for item that is currently active or the last item that was active. See "Servo Mux" to identify active item.
Thickness Encoder	Shows Media Thickness (Clamshell Height) Motor Encoder pulses (steps) NOTE: The Feeder Encoder and Thickness Encoder share the same channel of communication. Only one can be displayed at a time. Value is displayed for item that is currently active or the last item that was active. See "Servo Mux" to identify the active item.

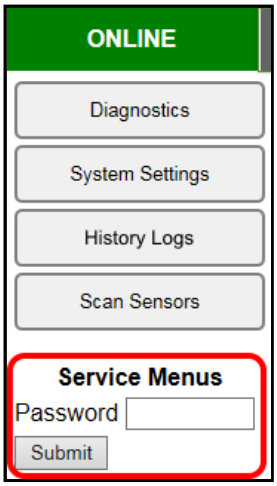
NOTE: Sled/Lift Encoder values will be different if printer fails sled/lift calibration during startup. However, if the range is similar to what is shown, the encoder output and range of physical movement is OK.

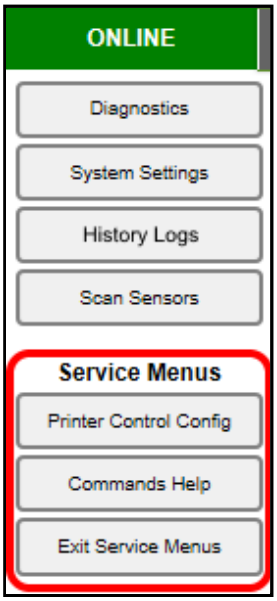
Scan Sensors (continued)

SENSOR	DESCRIPTION
Thickness Home	Media Thickness (Clamshell Height) Home Sensor. Interrupted = On. Open = Off **NOTE**: Sensor is only interrupted by flag during printer initialization. Since you don't have access to Toolbox during printer initialization, you will need to manually interrupt sensor with a dense object to test it. Also see "Check/Adjust Media Thickness Home Sensor Height".
Valve Sensor 1	Shows condition of Dual Pinch Valve Sensor 1. Interrupted = On, Open = Off **NOTE:** The combination of Sensor 1 and Sensor 2 readings provide Valve Position status (openink/closed/openair). **Valve Closed –** Sensor 1 On; Sensor 2 Off **Open Ink –** Sensor 1 Off; Sensor 2 Off **Open Air –** Sensor 1 Off; Sensor 2 On
Valve Sensor 2	Shows condition of Dual Pinch Valve Sensor 2. Interrupted = On, Open = Off **NOTE:** The combination of Sensor 1 and Sensor 2 readings provide Valve Position status (openink/closed/openair). **Valve Closed –** Sensor 1 On; Sensor 2 Off **Open Ink –** Sensor 1 Off; Sensor 2 Off **Open Air –** Sensor 1 Off; Sensor 2 On
Temperature	Temperature displayed in Celsius. Example: 250 = 25.0 C
Y Out	Visible Ink Sensor Yellow. No = Ink Present. Yes = Out of Ink
M Out	Visible Ink Sensor Magenta. No = Ink Present. Yes = Out of Ink
C Out	Visible Ink Sensor Cyan. No = Ink Present. Yes = Out of Ink
K1 Out	Visible Ink Sensor Black (right). No = Ink Present. Yes = Out of Ink
K2 Out	Visible Ink Sensor Black (left). No = Ink Present. Yes = Out of Ink

Advanced Service Menus

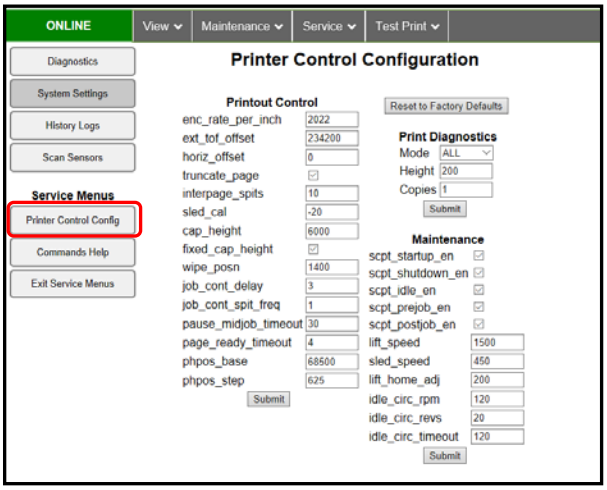
Opening **"Service Menus"** screen, then entering the password under **Service Menus**, opens the Advanced Service Menus. Now you can use the following options: **"Printer Control Config," "Commands Help,"** and **"Exit Service Menus."**





CAUTION: Printout Control and **Maintenance** settings should NOT be adjusted without knowledge of what these changes will do. In general, you should only make changes when instructed by a support agent or when following a written procedure. Setting these values improperly will cause problems with printer function and print quality.

Printer Control Configuration Screen:



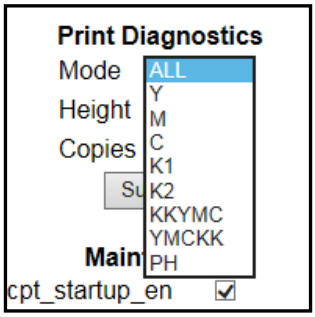
Used to help in troubleshooting or servicing the Printer by adjusting factory settings to test for or solve a problem. Also used to customize the Printer's output for special print jobs.

Printout Control – Change and set print parameters and Printer functions. See next page for details.

Reset to Factory Defaults – Press this button to return the Printer to the factory default settings.

Print Diagnostics – Similar to the Print Ink Channels test pattern, this feature can also be used to diagnose print quality issues. However, this feature also lets you select a specific color channel, change printout size and number of copies.

Mode: Select ALL (default) to print all colors or select a single color (Y, M, C, K1, K2).
KKYMC - prints vertical columns of ink colors in the order shown.
YMCKK - prints vertical columns of ink colors in the order shown.
PH - Printhead Test pattern.



Height: Set the size of the color sample to print. (200mm is the default size).
NOTE: This is the size of each color printed.

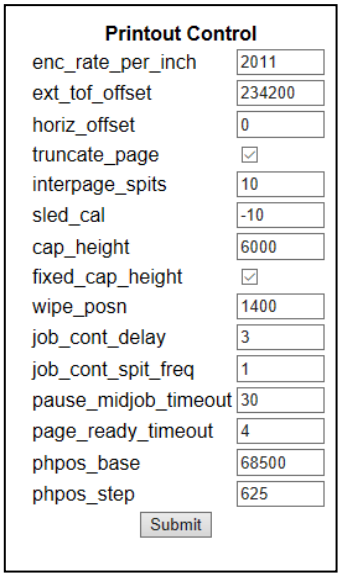
Copies: Set the number of copies desired (1 is the default).

Maintenance – Used to activate/deactivate certain maintenance options, adjust Service Station speed, and adjust the Lifter home position.

Click **"Submit"** to enable changes.

NOTE: Changes made in the **Printout Control** column are permanent until changed or **"Reset to Factory Defaults"** button is pressed. Changes made in the **Print Diagnostics** and **Maintenance** columns revert to default settings when Printer is turned off or rebooted.

Printout Control Features



enc_rate_per_inch – encoder rate per inch. Adjustments the scaling factor between the physical media movement and the dot spacing

ext_tof_offset – distance from the Entry (TOF) sensor and the first row of nozzles on the printed (microns)

horiz_offset – horizontal offset (left margin) in dots (nozzles). Max value = 14000. NOTE: 64 dots = ~1 mm. 7040 dots = ~110 mm (center point on printhead).

truncate_page – when set printing is stopped when the physical end of the page is detected and there is more print data available

interpage_spits – number of ejections (all nozzles) between pages during printing.

sled_cal – Sled calibration offset (1 = 0.1 mm). Adjusts for mechanical variance from unit to unit. Commonly used to align cap position with head. A more negative value moves sled closer to exit during capping. A more positive value moves sled closer to entrance when capping.
NOTE: 1 = 0.1 mm, 10 = 1 mm

cap_height – capper height. Encoder counts from home. Set how far the capper lowers into the capper.

fixed_cap_height – used a fixed cap height when set. If not set a dynamic height is used based on detecting the location of the capper module through mechanical resistance.
NOTE: Do NOT uncheck. Detecting cap position by measuring mechanical resistance is not very reliable.

wipe_posn – position (in encoder counts) above the cap position/height that the printhead should be lowered to for wiping

job_cont_delay – delay used to avoid recapping the printhead if jobs arrived within the delay time period. (seconds)

job_cont_spit_freq – frequency of nozzle spitting (length of time between spits) while the printer waits (with the printhead down and powered-up) to see if another job arrives. (seconds)

pause_midjob_timeout – timeout delay (s) in pause which triggers when the printer moves from a quick restart pause state to full pause (maintenance before restart)

page_ready_timeout – timeout to wait for a page to arrive before aborting the job (s)

phpos_base – base printhead height (encoder counts) for the print position incremental scaling (Ui Media Setup)

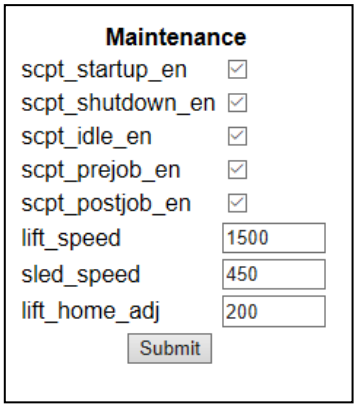
phpos_step – lifter encoder steps from the phpos_base for each incremental step of the print position
NOTE: the lifter encoder scaling is roughly 1000 counts per mm.

NOTICE: With R1.5.0 and higher firmware, the following **Printout Control** features are automatically changed, with the **User Interface** selection of **Low Humidity** mode (on to off or off to on).

When Low Humidity Mode is Toggled to ON (selected):
wipe_posn: 500 – Wipe position value is decreased from 1000 to 500, to increase wipe pressure. Reducing this value increases wipe pressure. A higher wipe pressure pulls more ink from head during wipe. This change helps to improve wiper roller hydration for better head cleaning results and to reduce wiper error conditions caused by a dry wiper motor module.
job_cont_dely: 2 – Next job wait time is reduced from 3 to 2 seconds. This cleans and caps the printhead quicker to help reduce nozzle dehydration.

When Low Humidity mode is toggled to OFF (un-selected):
wipe_posn: 1000 – Wipe position value is increased from 500 to 1000, to reduce wipe pressure.
job_cont_dely: 3 - Next job wait time is increased from 2 to 3 seconds.

Maintenance Features



scpt_startup_en:

scpt_shutdown_en:

scpt_idle_en:

scpt_prejob_en:

scpt_postjob_en:

lift_speed:

sled_speed:

lift_home_adj: sets how far the lifter raises the printhead after reaching (interrupting) the Lift Home Sensor. A minimum value of 200 (encoder pulses) is recommended; with a max value of 500.
NOTE: After the system stops driving the lifter (printhead) up, it is common for the lifter to drop a little. By setting an overshoot value between 200-500 encoder pulses, this helps to prevent the lifter from dropping too low, causing the Lift Home Sensor to read open, which will cause “maintenance jam, sled error”.
System will not move sled if the lifter isn’t raised (Lifter Home Sensor = 0, not home).
Debug Log example:
ss lift end pos=7041 home_pos=4294 (it should be close to 0) end_to_sensor=2747
So, lifter does not know where it is.
Therefore:
ss ***** ss_sled_goto cannot move sled when lifter is not raised

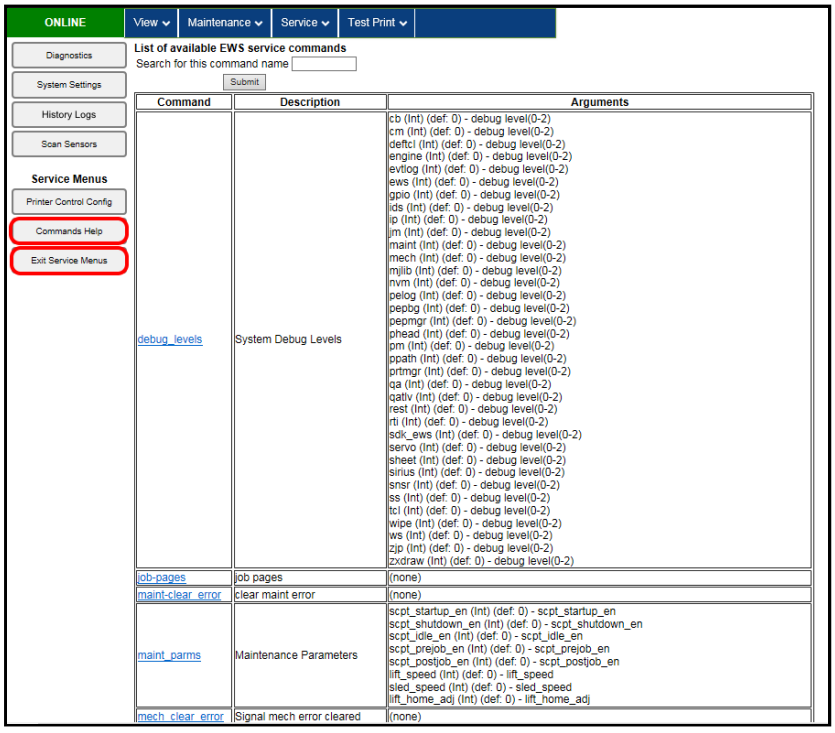
Possible cause for lifter (printhead) dropping more than 200 encoder pulses.

- Loose belts

Printer Commands Help Screen:

Provides a list and descriptions of available EWS service commands.

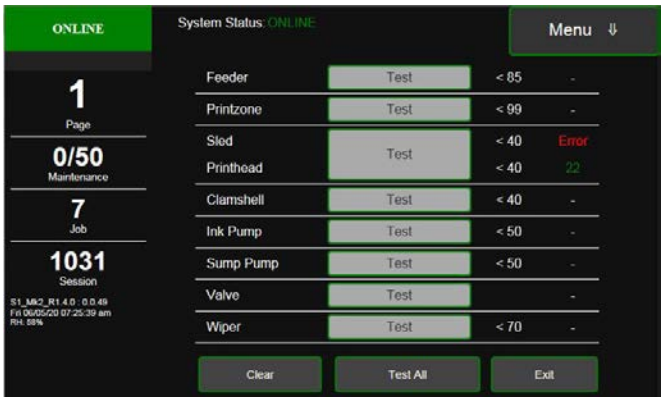
Clicking **“Exit Service Menus”** closes Service Menu options and returns to **User Interface** screen.



System Test

NOTE: These tests should only be performed by authorized service personnel.

System Test uses Pulse Wave Modulation (PWM) feedback to measure how hard the motors are working in the individual Printer systems.
This test is useful to check that all motor driven systems are operating within specifications. This test is commonly used after servicing the Printer or replacing parts, particularly belts.



NOTE: A belt that is set too tight will create a high PWM value, causing the related System Test to fail. Some component/belt replacements may require adjusting/checking multiple Printer systems/belts each time an adjustment, servicing or replacement is performed.

IMPORTANT! Out-of-specification systems will result in decreased Printer performance and shorter component service life.

Before using System Test:

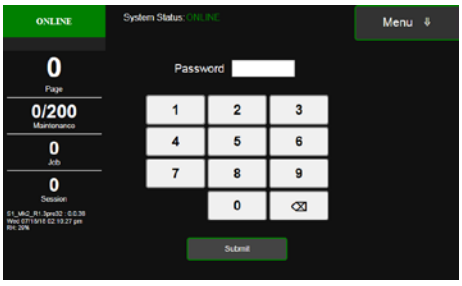
- A Printhead must be installed and recognized, to perform Sled & Printhead (Lifter) Test. If not, the Test will fail.
- Verify that the Ink Tank and Printhead Doors (covers) are closed.
- Check that no media is loaded in the Printer, separators are lifted and there are no obstructions in the paper path.
- Keep hands away from printer while Test runs.

To use System Test:

1. Tap Menu, then System Test.
   The message shown here is displayed.

2. Tap “Yes” and the Password screen opens.

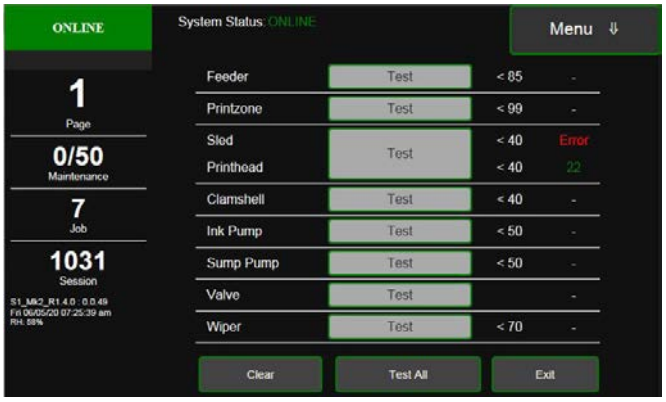
3. Enter the Password (630) and tap "Submit" to open the System Test screen.



4. Press the individual Test buttons to run the test on that system or press Test All to test all the systems listed in sequence.

   The numbers to the right of the Test buttons show the Maximum Pass Value for that system.
   Example: < 85 (less than 85)

   NOTE: These values have changed with different Firmware versions. Install current Firmware for best results.



After running a test on that system, the result appears to the right of the Maximum Pass Value.

Results:

- **GREEN value or OK** – Indicates that the test passed.
  Tip: A value less than 20 for the Sled/Printhead Test may not be acceptable if belts were made loose to achieve this value. Loose belts will not provide accurate positioning of the Sled and Lifter which can create Lift Errors and print quality issues.

- **YELLOW value** – Indicates that the system is operating close to its Maximum Pass Value.
  In this case you should run the test multiple times to verify it doesn't go over the Maximum Pass value.

- **RED value** – Indicates that the measured value is equal or greater than the Maximum Pass Value.
  If this occurs on a system with belts (*Feeder, Printzone, Sled, Printhead and Clamshell*), try loosening belt tension. After adjusting the belt(s), and/or replacing a component, retest the system(s) involved until all systems are green.

- **Error** – Indicates that the system test failed.
  This could be due to improper setup (no printhead installed, latch not closed, etc) or it could indicate that a motor wasn't able to turn (or movement was interrupted) or the feedback from that motor wasn't able to be obtained.

Test Name	Components/Systems Tested
Feeder	Feed Roller Belts Tension, Feed Roller Motor and Belt Tension
Printzone	Paperpath Motor, Paperpath Motor Belt Tension, Print, Intermediate and Exit Roller Belt Tension; Exit Conveyor Drive Belt Tension
Sled (Lift)	Service Station Position Motor, Service Station Motor Belt Tension and Service Station Position Belts Tension
Printhead (Lift)	Printhead Lift Motor, Printhead Motor Belts Tension, Printhead Lift Belts Tension
Clamshell	Media Thickness mechanism (Media Thickness Motor, Motor Belt Tension and Media Thickness Camshaft Belt Tension)
Ink Pump	Peristaltic Pump
Sump	Ink Waste Pump
Valve	Dual Pinch Valve
Wiper	Wiper Motor

Press "**Clea**r" to delete the test results.

Press "**Exit**" to close the System Test screen.

Updating Firmware and UI Software

Firmware and UI Software files are loaded through the Toolbox.

When there is a Firmware release, it is common for it to include the most current UI Software files.
Since UI Software is commonly compatible with many Firmware versions you may find that the printer already contains the current UI Software version. If the printer has an earlier UI Software version, than what was included in the release, it is strongly suggested that you update the UI Software in the printer as well.

- The Firmware File updates the software on the Main PCB (MPCA).
  At the time of publication the current Firmware version was R1.5.0 (S1_Mk2_R1.5.0-release-astro.fbf)
- The UI Software File updates the software on the UI (Raspberry Pi computer, Touchscreen Display)
  At the time of publication the current UI Software versions were
  - R0.2.02 (rpi_R0.2.02.rpz) for printer that currently have UI Software R0.2.xx installed.
  - R0.0.49/R0.1.05 (rpi_R0.0.49_R0.1.05.rpi) for printers that currently have UI R0.0.xx or UI R0.1.xx
  NOTE: If you select and submit the rpi_R0.0.49_R0.1.05.rpi file you will notice that the *rpi update file will only change the last two digits of the UI Software version. For example, R0.0.xx will update to R0.0.49 and R0.1.xx will update to R0.1.05.
  The center digit of the UI Software version represents the Pi computer's operating system. Although there is not currently a need to update the Pi computer's operating system, this can only be done by installing a new Micro SD Card. See "How to Create New Micro SD Card".

Before Loading Firmware, it is a good idea to capture current printer settings; in case something gets lost/changed during update process.
From Toolbox, click on View, Service Menus to access and obtain the following items.

- Diagnostics - capture screenshot
- Diagnostics - click on "Upload Debug Log" button to obtain current printer info.
- User Interface – capture screen shot.
- System Settings (Network Settings) - capture screen shot
- Service Menus. Enter Password (630) and hit Submit.
  Then choose "Printer Control Config" and captures screenshot.

IMPORTANT:

- If updating from R1.3 or earlier firmware, please be sure to load R1.3.1 first. Then load current firmware release. If not, "Over Speed" feature, within S Series Driver Printing Preferences, may not show.
- If you plan to down-grade the firmware below R1.4.0, please make sure the MPCA is compatible with older firmware. If the MPCA has a starting serial number of 41918XXXXX or higher, it is only compatible with firmware R1.4.0 and higher. If you load earlier firmware, you will render the MPCA inoperable.

PROCEDURE:

1. Load Firmware File
   a. Open Toolbox
   b. Click on View and select User Interface
   c. Locate the "Firmware Download" feature and click on "Browse".
   d. Locate and select (open) the desired "Firmware file (.fbf)".
      NOTE: Look for the *.fbf file extension
   e. Click on "Submit" button.
   f. Once firmware file has been successfully loaded the printer will reboot.
   g. After successfully loading R1.3.2 or higher firmware, please be sure to set Printer Control Config items to Factor Default (press "Reset to Factory Default" button in Printer Control Config screen).
   h. Then reboot printer to save changes to non-volatile RAM.
      NOTE: If you skip this step and the printer is shutdown improperly, the settings will revert to previously saved settings.

2. Load UI File (if needed)
    a. Open Toolbox
    b. Click on View and select User Interface
    c. Locate "Update User Interface" feature and click on "Browse".
    d. Locate and select the desired and compatible "UI file (.rpi or .rpz)".
       UI version R0.0.xx and R0.1.xx require *.rpi file.
       UI versions R0.2.xx require *.rpz file.
    e. Click on "Submit" button.
    f. Once the UI File has been successfully loaded the UI (display) will reboot.

3. Check to be sure the features in the following menus are still set the way you want them:
   User Interface
   System Settings (Network Settings)

   NOTE: Some Firmware Updates require specific Printer Control Config menu settings, which are obtained by performing “Reset to Factory Default” after the firmware is loaded. Before manually changing Printer Control Config menu items back to previous settings, please contact support, so we can confirm that the desired changes are OK.

4. Quickly Test Printer for Proper Operation and Communication with Customer’s Computer.
   Be sure to do a quick test sending data to print from the customers software before continuing to the next step.

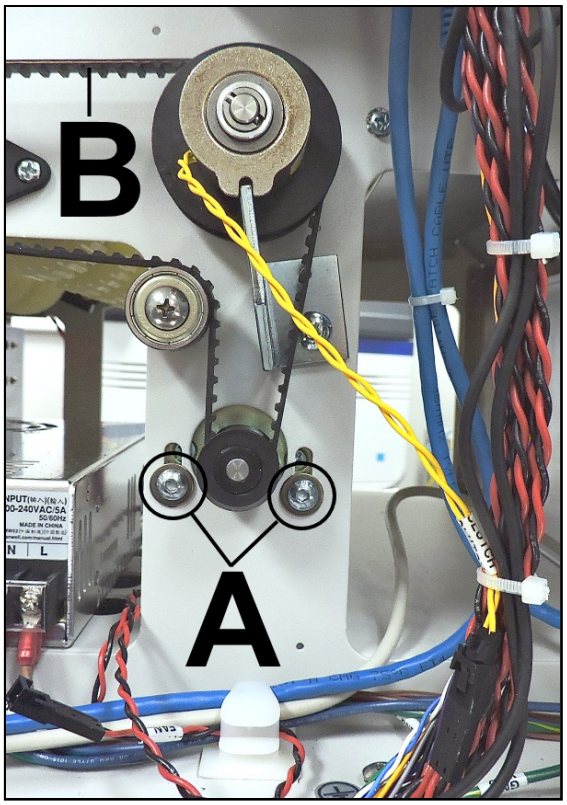
5. Check and Update the Printer Driver (S Series Driver) on the customer’s computer.
   As a general rule, the first two digits of printer driver version should match the printer’s firmware version.
   For Example:
   The R1.4.x printer driver should be used with printers that contain R1.4.x firmware.
   The R1.5.x printer driver should be used with printers that contain R1.5.x firmware.

   TIP: Since updating software (including printer drivers) on a customer’s computer system can be challenging, we suggest that you test for proper printer communication using the customer’s current printer driver before updating their printer driver. That way, if it works (communicates and prints) with their current printer driver and then you update the printer driver and it stops working, you know where the issue is located (within the Printer Driver and or Driver settings).

6. Thoroughly Test Printer for Proper Operation and Communication with Customer’s Computer.
   Perform a more thorough test of the printer and communication with the customers computer/software.

SECTION 4 – *Adjustments*

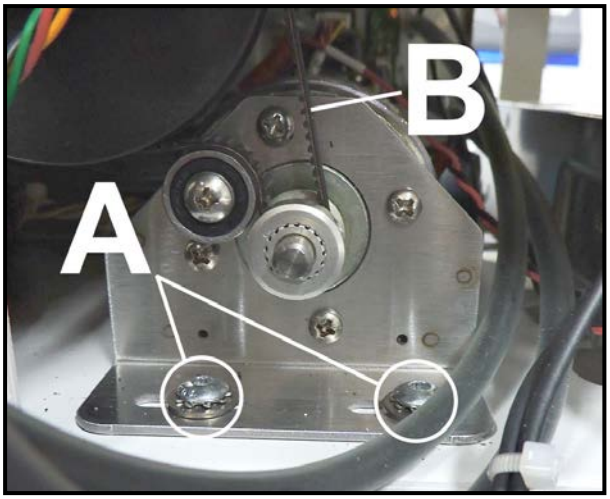
Feed Drive Motor Belt Tension Adjustment



1. Remove Non-Operator Side Cover.
2. Loosen (2) mounting screws and washers **[A]**.
3. **Move Motor Assembly up or down to tension the Belt [B].**
   When properly tensioned, there should be about 1/8" of deflection in the Belt. Tighten Idler Pulley screw. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and re-tension the Belt as necessary.

   NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Feeder** and **Printzone Test** to check that system is operating properly.
4. Tighten mounting screws.
5. Reinstall Side Cover.

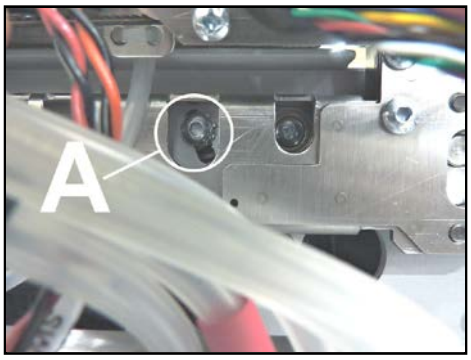
Paper Path Drive Motor Belt Tension Adjustment



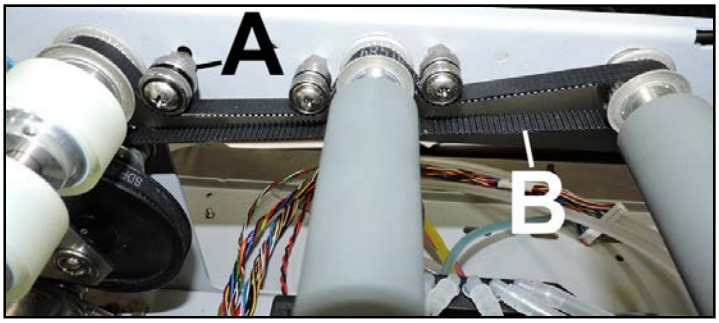
1. Remove Non-Operator Side Cover.
2. Loosen (2) mounting screws and washers **[A]**.
3. **Move Motor Assembly right or left to tension the Belt [B].**
   When properly tensioned, there should be about 1/8" of deflection in the Belt. Tighten Idler Pulley screw. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and retention the Belt as necessary.

   NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Feeder** and **Printzone Test** to check that system is operating properly.
4. Tighten mounting screws.
5. Reinstall Side Cover.

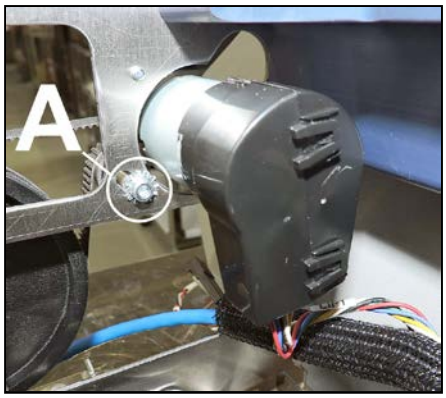
Paper Path Rollers Belt Tension Adjustment



1. Remove Non-Operator Side Cover.
2. Remove Paper Path Plate Assembly.
3. **Loosen Idler/Tension Pulley screw and washer [A]** (*located on Non-Operator side*)**.** Move Idler Pulley Assembly up or down to tension the Belt **[B]**. When properly tensioned, there should be about 1/8" of deflection in the Belt. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and re-tension Belt as necessary.
4. **NOTE:** This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Feed** and **Printzone Test** to check that system is operating properly.
5. Tighten Idler/Tension Pulley screw.
6. Reinstall Paper Path Plate Assembly and Non-Operator Side Cover.

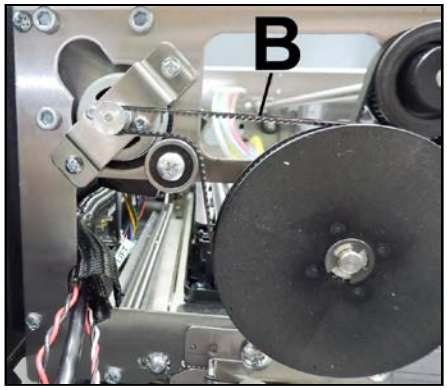


Printhead Lift Motor Drive Belt Tension Adjustment



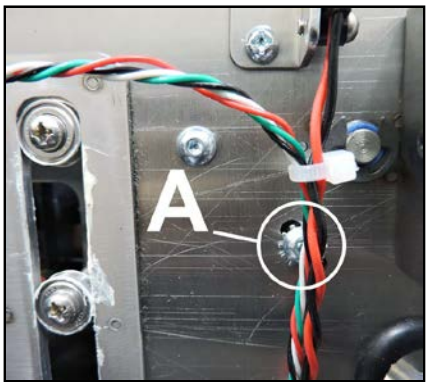
1. **Remove the Control Panel Cover.** Disconnect the Touchscreen Ethernet Cable if necessary. Carefully set Control Panel Cover Assembly aside.
2. Loosen the Idler/Tensioner Assembly **[A]**.
3. Move the Idler Pulley Assembly up or down to tension the Belt **[B]**. When properly tensioned, there should be about 1/8" of deflection in the Belt. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and re-tension the Belt as necessary.

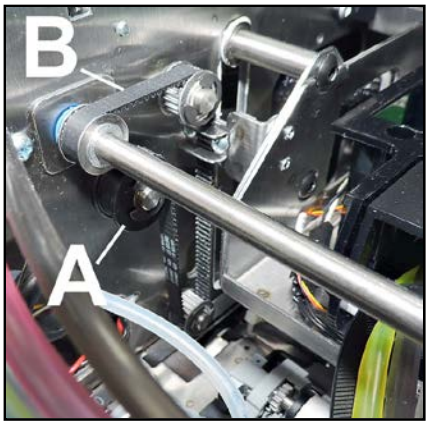
   NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Printhead Test** to check that system is operating properly.
4. Tighten Idler Pulley screw.
5. Reinstall Control Panel Cover.

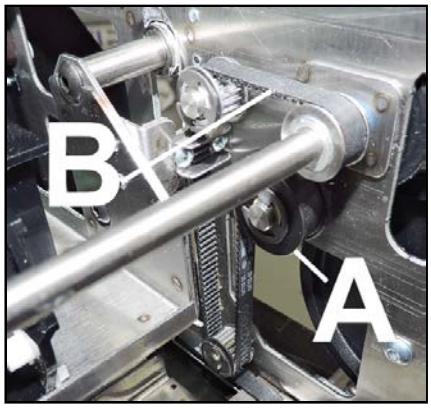


Printhead Lift Assembly Belts Tension Adjustment

NOTE: To ensure proper Printer operation, it is recommended that you check/adjust both Printhead Lift Assembly Belts at the same time.



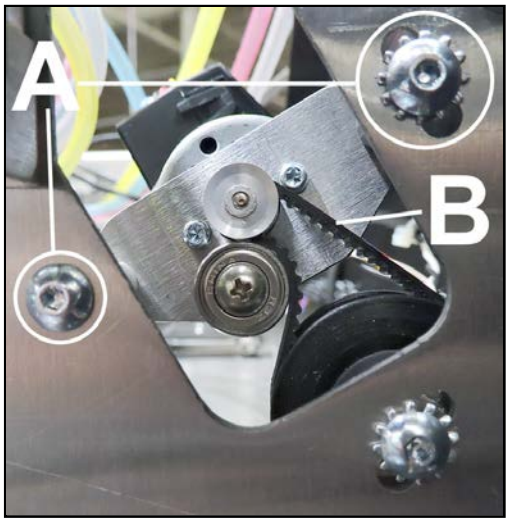


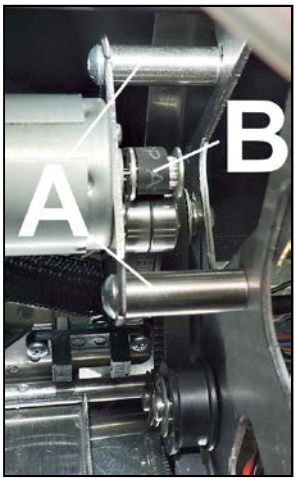


1. **Remove the Control Panel Cover.** Disconnect the Touchscreen Ethernet Cable if necessary. Carefully set Control Panel Cover Assembly aside.
2. **Non-Operator Side:** Remove Top Assembly (Clamshell) Rear Cover.
3. **Open the Top Cover.**
4. Loosen the Idler/Tensioner Pulley Assembly **[A]** (*1 on each side*). This should release tension on the inner Lifter Belts.
5. Move Idler Pulley Assembly up or down to tension the Belt **[B]**. When properly tensioned, there should be about 1/8" of deflection in the Belt. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and re-tension the Belt as necessary.

   NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Printhead Test** to check that system is operating properly.
6. Tighten Idler Pulley Assembly screw.
7. Reinstall Control Panel Cover.

Service Station Motor Drive Belt Tension Adjustment



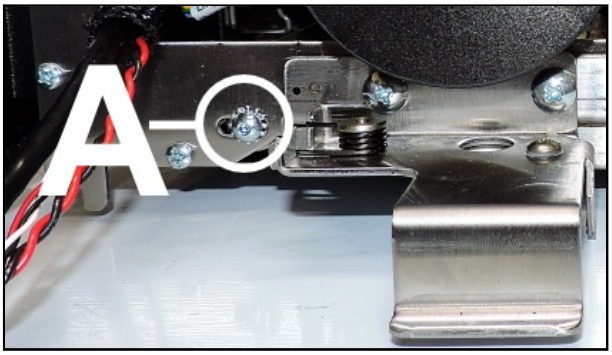


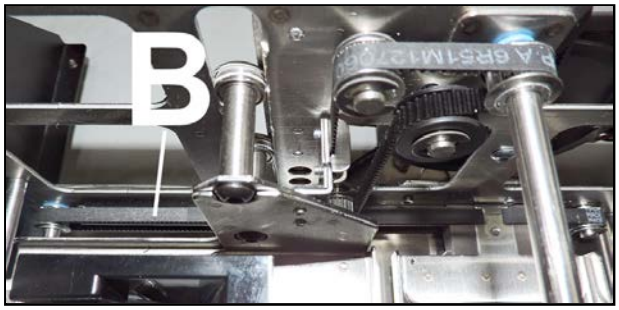
1. **Remove the Top Assembly (Clamshell) Rear Cover.**
2. **Open the Top Cover.**
3. Loosen (2) screws **[A]** securing the Service Station Motor Assembly to the Clamshell Frame.
4. Move Idler Pulley Assembly up or down to tension the Motor Drive Belt **[B]**. When properly tensioned, there should be about 1/8" of deflection in the Belt. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and re-tension the Belt as necessary.

   NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Sled Test** to check that system is operating properly.
5. Tighten Idler Pulley screw.
6. Reinstall Control Panel Cover.

Service Station Positioning Belts Tension Adjustment

NOTE: To ensure proper Printer operation, it is recommended that you check/adjust both Service Station Positioning Belts at the same time.





1. **Remove the Control Panel Cover and Top Assembly (Clamshell) Rear Cover.**
2. **Open the Top Cover.**

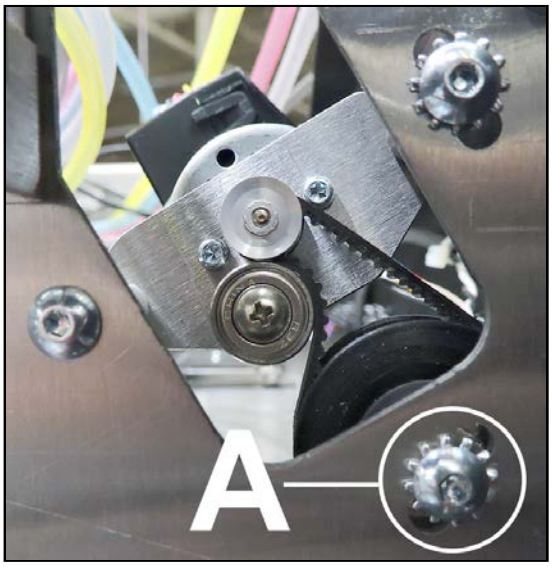
Operator Side:

3. Loosen Service Station Positioning Belt Tension Pulley **[A]** (*1 screw*).
4. Move Pulley Assembly right or left to tension the Positioning Belt **[B]**. When properly tensioned, there should be about 1/8" of deflection in the Belt. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and re-tension Belt as necessary.

   NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Sled Test** to check that system is operating properly.
5. Tighten Position Belt Tension Pulley screw.
6. Reinstall Control Panel Cover.

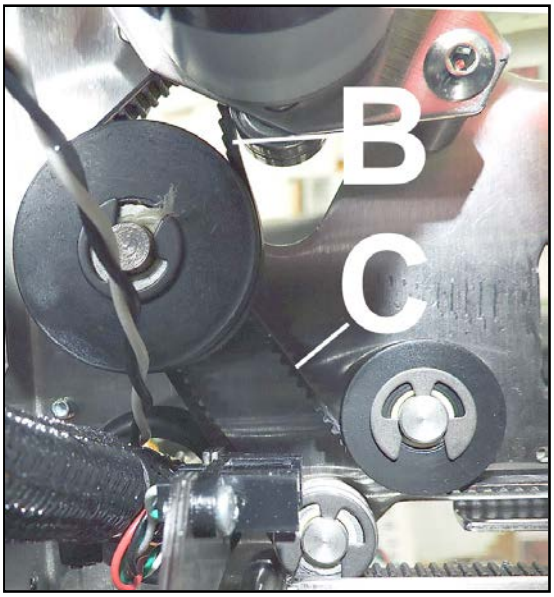
Non-Operator Side:

1. Loosen the Service Station Belt Tensioner Pulley **[A]** **(***1 screw*). **NOTE: This will release tension on both the Service Station Motor Drive Belt and the Positioning Belt. When adjusting this Belt, you will need to recheck and re-tension the Service Station Motor Drive Belt.**



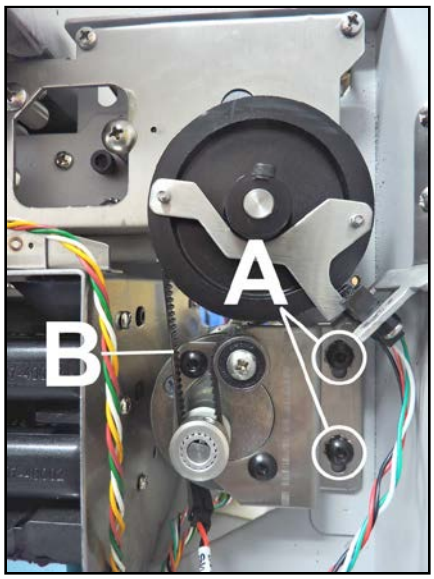
2. Move Service Station Belt Tensioner Pulley up or down to tension both the Motor Drive Belt **[B]** and Positioning Belts **[C]**. When properly tensioned, there should be about 1/8" of deflection in the Belts. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and re-tension the Belt as necessary.

   NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section.
   System Test: Press **Sled Test** to check that system is operating properly.



3. Tighten the Service Station Belt Tensioner Pulley screw.
4. **Reinstall Covers and close Top Cover.**

Media Thickness Lift Motor Drive Belt Tension Adjustment



1. Open the Ink Tank Door. Release and raise the Clamshell.
2. Remove the Left-hand Operator Side Cover.
3. Loosen (2) screws **[A]** securing the Media Thickness Lift Motor to the Printer Side Frame.
4. Move the Motor up or down in the slots to tension the Belt **[B]**. When properly tensioned, there should be about 1/8" of deflection in the Belts. Move the Belt back and forth to reset the Belt position and check for additional slack. Recheck and re-tension the Belt as necessary.

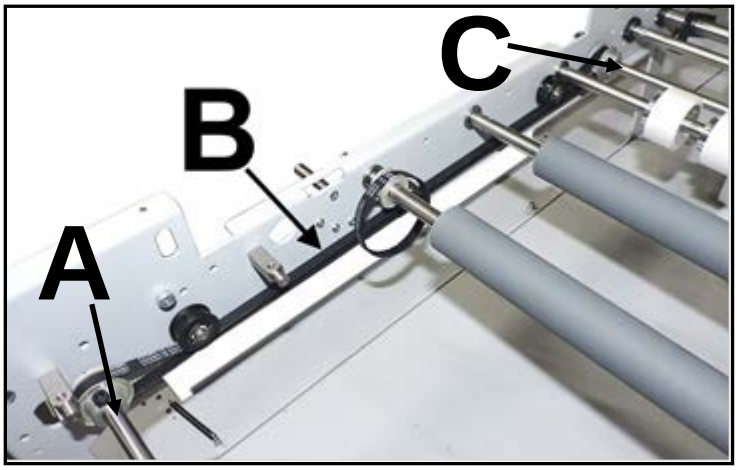
   NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Clamshell Test** to check that system is operating properly.
5. Tighten the mounting screws.

Media Thickness Cam Shaft Timing Adjustment

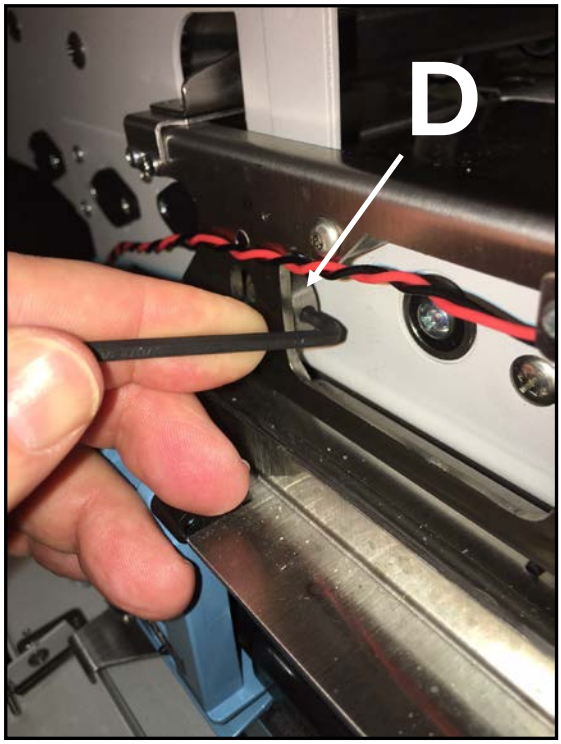
Check/Adjust Cam Shaft Timing

Verify that the Clamshell raises/lowers evenly (comparing entrance end to exit end). If it does, then you can skip this procedure. If it doesn't, then media transport pressure from entry to exit will vary, resulting in media feed and print quality issues.

The Camshaft Belt **[B]** connects the two Cam Shafts **[A]** and **[C]**. The timing between these two Cam Shafts can be adjusted using the following procedure.



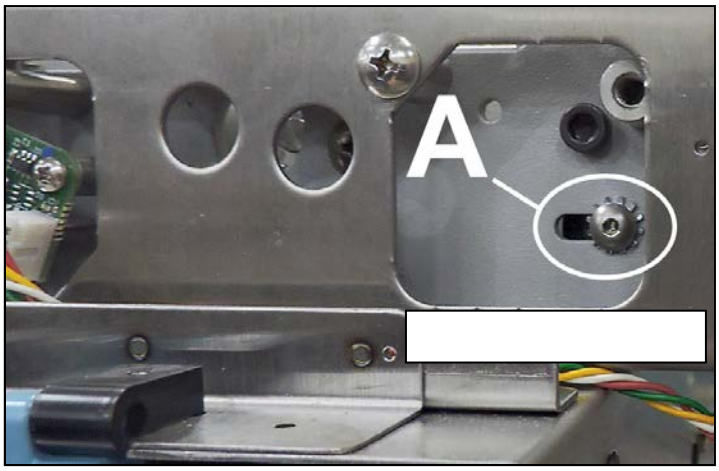
1. **Set Media Thickness to 5 mm before powering off the printer.**
2. Open the Ink Tank Door.
   Release and raise the Clamshell.
3. Remove the Left-hand Operator Side Cover. Remove the Right-hand Operator Side Cover. Remove the Non-Operator Side Cover.
4. Remove **Paper Path Plate** Assembly.
   Tip: This step is only necessary if you are unable to access the setscrew hole in Cam **[D]**. In this case removing the Paper Path Plate will give, you access to other areas where you may be able to rotate the Cam Shaft, from inside the frame.
5. Insert a 1/8" Allen wrench into the setscrew hole on the front, left Cam **[D]**, as shown.
   NOTE: 1/8" Allen wrench is larger than the setscrew. You do NOT want to loosen the setscrew.
   Tip: If setscrew, on Cam, is not accessible then you will need to power-up printer and change Media Thickness setting to rotate Cam and expose screw. Then power off and return to this step.



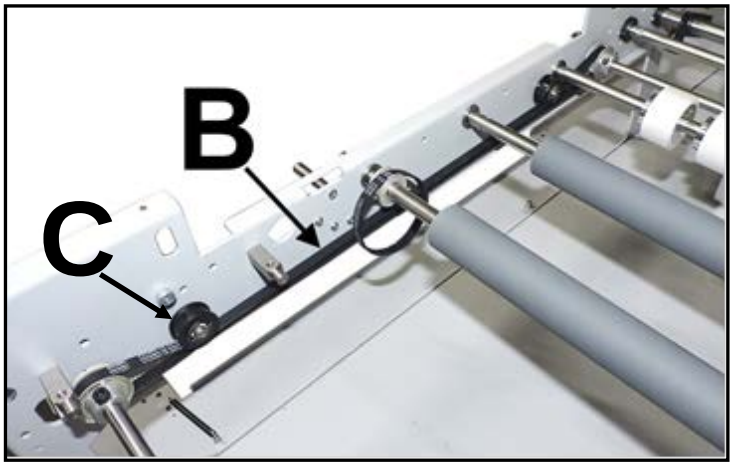
6. Using the Allan wrench and Cam as a lever, force the Cam Shaft to rotate (cause Belt [B] to skip a tooth on Cam Shaft [C] Pulley) in the direction needed to make the Clamshell raise/lower evenly.
   Tip: To get a visual reference on entrance and exit Cam positions, remove back cover. Cam Lobes on both shafts is visible from non-operator side of the printer.
7. Remove Allen wrench from Cam **[D]**.
8. Check for proper operation. Power-up and check that Clamshell raises/lowers evenly.
   If not, power-down and adjust as needed.

   TIP: If you find that this adjustment does not hold, you will need to remove the "Center Plate" (table-top) to access and verify that the Pulleys (located on shafts A & C) are secure to their shafts. Pulley on shaft C is a friction fit pulley. If it is not secure to the shaft it can slip/rotate.

Media Thickness Camshaft Belt Tension Adjustment



1. Open the Ink Tank Door. Unlock and raise the Clamshell.
2. Remove the Left-hand Operator Side Cover. Remove the Right-hand Operator Side Cover. Remove the Non-Operator Side Cover.
3. Remove **Paper Path Plate** Assembly. **Tip**: You may be able to skip this step. Removing the Paper Path Plate will give you access to Belt [B] so you can check tension/deflection. However, checking tension on such a long belt is very subjective. We have found that most units are adjusted so Screw [A] is positioned near the center of slot.



4. Loosen the Screw **[A]** that secures the Belt Tension Pulley **[C]**.
   NOTE: Do NOT remove Screw **[A]**, only loosen it.
5. To tension the Belt **[B],** use Screw **[A]**, which is attached to Tension Pulley **[C],** to move Tension Pulley right or left in the slot.
   Loosen ←→ Tighten
   When desired belt tension is achieved, secure screw **[A]**.
   When properly tensioned, there should be about 1/8" of deflection in the Belt **[B]**.
   Tip: Checking tension, on such a long belt, is very subjective. Therefore, we suggest that you center the Screw [A], in the slot and test for proper operation. Tighten or loosen as needed.

NOTE: This adjustment is only an approximation, further adjustment may be necessary. See **"Testing Belt Tension"** at the end of this section. **System Test:** Press **Clamshell Test** to check that system is operating properly.

Testing Belt Tension

Verify that belts are properly tensioned by using the **System Test** (*available through the Touchscreen or Toolbox*). Before running the **System Test**, make sure that the Printer is powered up, all Printer systems are connected and functioning, and the paper path is clear of obstructions. Once you run a **System Test**, use the result to determine if the belt adjustment for that system is within parameters or if loosening or tightening the belt(s) is required. **NOTE: An error or out of range reading may also indicate a problem with that system's components or connection.**

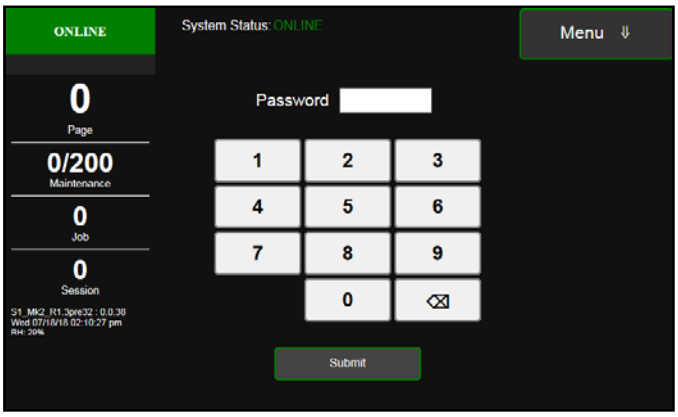
IMPORTANT!

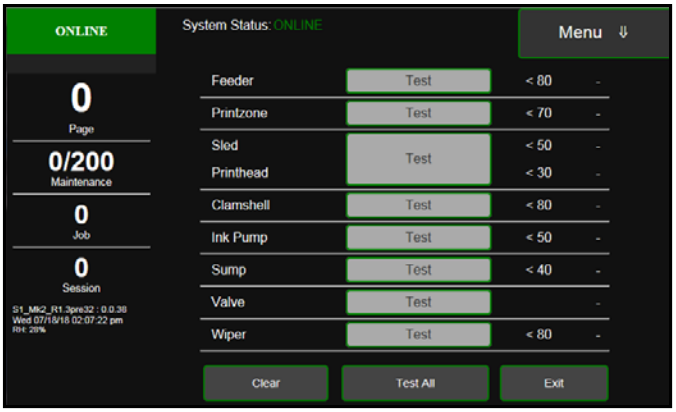
Failure to properly tension belts can cause poor Printer performance and premature component failure.

NOTE: These tests should only be performed by authorized service personnel.

System Test allows testing individual or all Printer systems to check that they are operating within specifications. It also allows service people to check the Printer after servicing or replacing parts, particularly belts.

NOTE: Some component/belt replacements may require adjusting/checking multiple Printer systems/belts each time an adjustment, servicing or replacement is performed.





To use System Test:

1. **System Test** can be accessed from the **Touchscreen** or **Toolbox:**

   Touchscreen (*shown*): Tap **Menu**, then **System Test**. The **Password** screen opens. Enter the password and tap **"Submit"** to open the **System Test** screen.

   Toolbox: Click **Service Menus**, then enter the password to open the advanced **Service Menus**. Click on **Commands Help** and scroll down to **System Test.** Click **System Test** to open it.

2. **IMPORTANT: Check that no media is loaded in the Printer and there are no obstructions in the media path.**

3. Press the individual **Test** buttons to run the test on that system. Press **Test All** to test all the systems listed in sequence. Press **Clear** to delete the results.

4. The numbers to the right of the **Test** buttons show the normal operating result for that system. After running a test on that system, the result appears to the right of that number.

Results:

- **Error in red** – There is a problem with that system (*For example, a disconnected wire harness, or worn or broken component*.)
- **Red number** – There is an issue with that system or component. It may be a loose connection or indication that the component is about to fail. If the result is larger than the target number on systems with belts (*Feeder, Printzone, Sled, Printhead and Clamshell*); the belt(s) are probably too tight and need adjusting. If the result matches the target number, but the number is red, that system will function normally. However, adjusting the belts on that system to run at a lower number might increase component life. After adjusting the belt(s), and/or replacing a component, retest the system(s) involved until all systems are green.
- **Green number or OK** – The system is operating within its optimum range. No further action is needed. **NOTE: Yellow** indicates that the system is operating closer to its optimum range limit. Printer should function properly, but you may want to check that system more often.

Test Name	Components/Systems Tested
Feeder	Feed Roller Belts Tension, Feed Roller Motor and Belt Tension
Printzone	Paperpath Motor, Paperpath Motor Belt Tension, Print, Intermediate and Exit Roller Belt Tension; Exit Conveyor Drive Belt Tension
Sled (Lift)	Service Station Position Motor, Service Station Motor Belt Tension and Service Station Position Belts Tension
Printhead (Lift)	Printhead Lift Motor, Printhead Motor Belts Tension, Printhead Lift Belts Tension
Clamshell	Media Thickness mechanism (Media Thickness Motor, Motor Belt Tension and Media Thickness Camshaft Belt Tension)
Ink Pump	Peristaltic Pump
Sump	Ink Waste Pump
Valve	Dual Pinch Valve
Wiper	Wiper Motor

SECTION 5 – *Disassembly/Assembly Procedures*

Printer Basic Disassembly

- **Turn off Power**
- **Disconnect Power Cord**
- **Disconnect Interface Cable**

Service Disassembly Procedures

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 HARNESSES 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.**

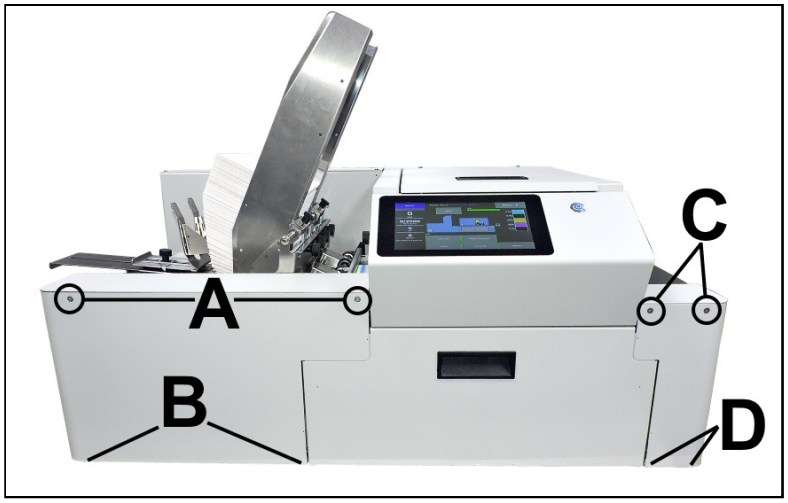
CAUTION

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.**

Printer Covers

Operator Side Covers



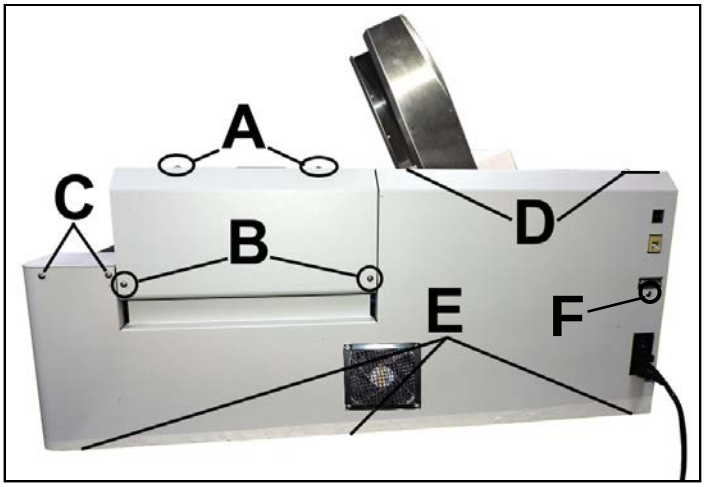
Left-Hand Cover:

1. Release and raise the Clamshell and open I**nk Tank Door**. Remove (2) screws at top **[A]** and bottom **[B]** of Left-hand Cover.
2. **Reassemble in reverse order.**

Right-Hand Cover:

1. Remove (2) screws at the top **[C]** and (2) screws at the bottom **[D]** of the Right-hand Cover.
2. **Reassemble in reverse order.**

Non-Operator Side Covers



Top Assembly (Clamshell) Rear Cover:

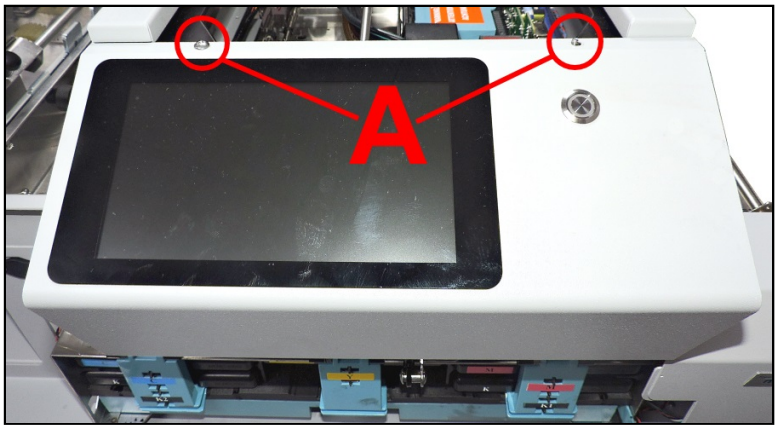
1. Remove (2) screws from top **[A]** and bottom **[B]** of Top Assembly (Clamshell) Rear Cover.
2. **Reassemble in reverse order.**

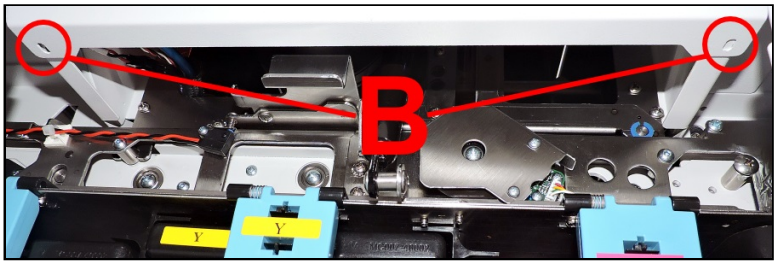
Non-Operator Side Cover:

1. Remove (2) screws **[C]** and (2) screws **[D]** from the top of the Non-Operator Side Cover.
2. Remove (3) screws from bottom **[E]** of Non-Operator Side Cover.
3. Remove (1) screw **[F]** from Non-Operator Side Cover.
4. Carefully pull Cover away from Printer. Disconnect Fan Assembly wire harness from the Interface Board wire harness at connector.
   DO NOT strain or break wire harness or connectors.
5. **Reassemble in reverse order.**

Control Panel

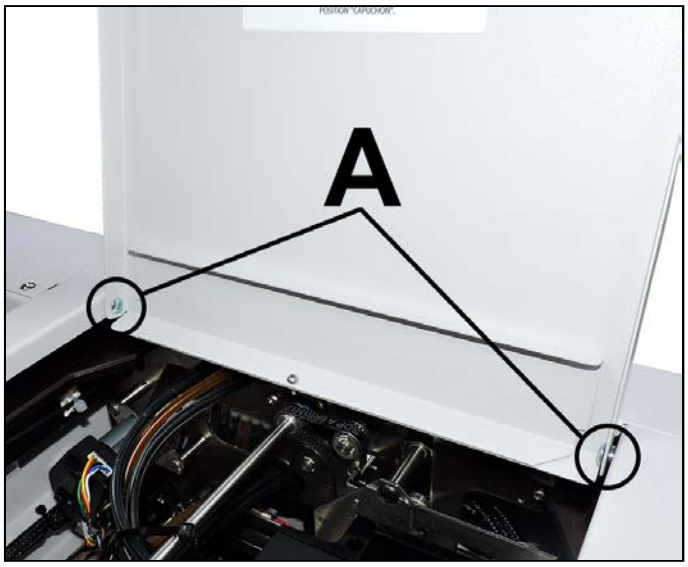
1. Open the **Top Cover** and **Ink Tank Door**.
2. Remove (2) screws at top **[A]** and (2) screws from bottom **[B]** of Control Panel.
3. Carefully lift the Control Panel Assembly off of the Printer.
   NOTE: Be careful of stretching or breaking wiring harnesses, cables and connectors.
4. **Reassemble in reverse order.**





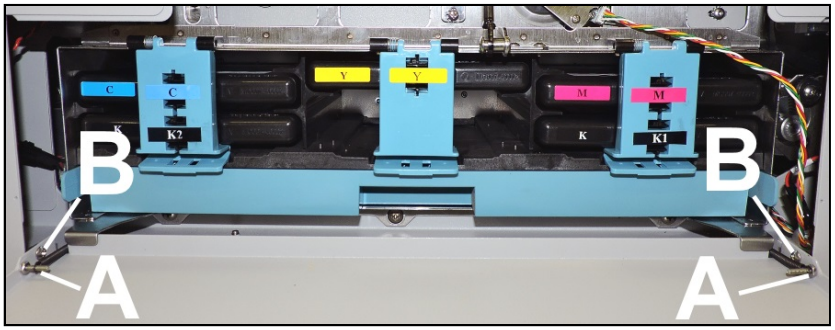
Top Cover (Printhead Door)

1. Open the **Printhead Door (Top Cover)**.
2. Remove (2) screws **[A]** from the rear of the Clamshell.
3. Remove the Top Cover from the studs.
4. **Reassemble in reverse order.**



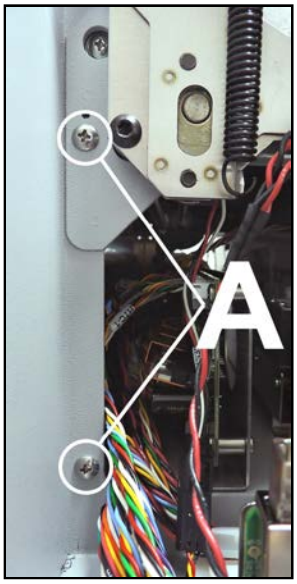
Ink Tank Door

1. Open the **Ink Tank Door.**
2. Carefully unhook (2) springs **[A]** from the Ink Tank Door studs.
3. Remove (1) mounting screw from each side **[B]**. Remove Door.
4. **Reassemble in reverse order.**

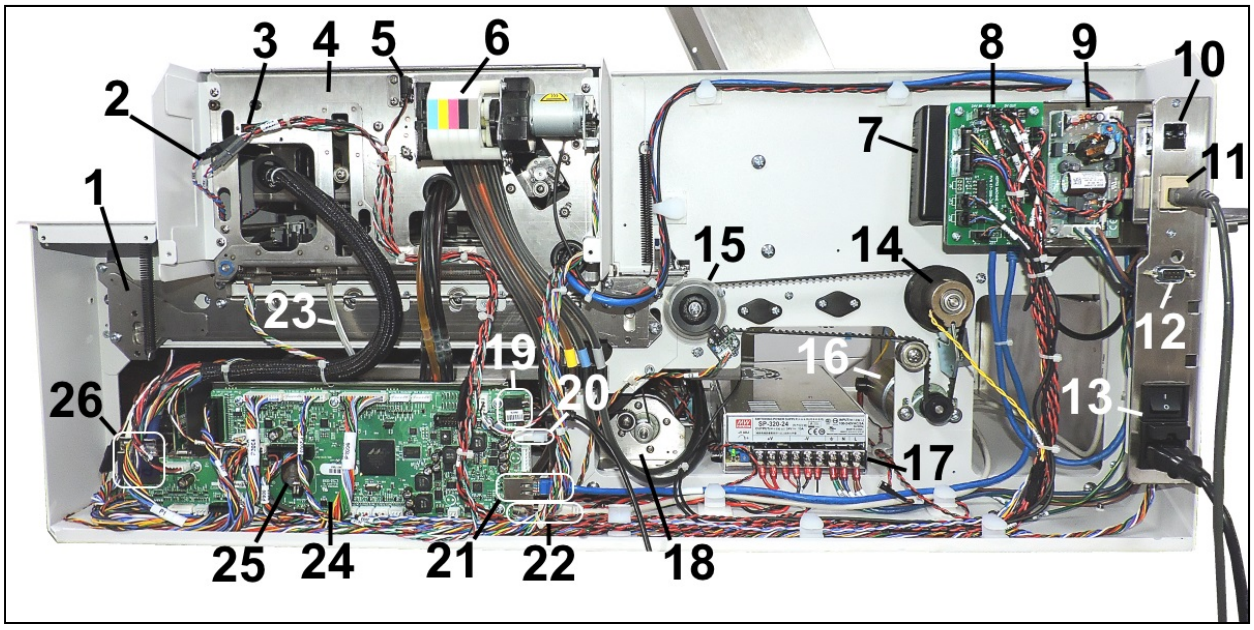


Exit Cover

1. Remove the right-hand Operator Side Cover.
2. Remove Non-Operator Side Cover.
3. Remove (4) screws (*2 screws per side*) **[A]** securing the cover to the Side Frames. Remove Cover.
4. **Reassemble in reverse order.**



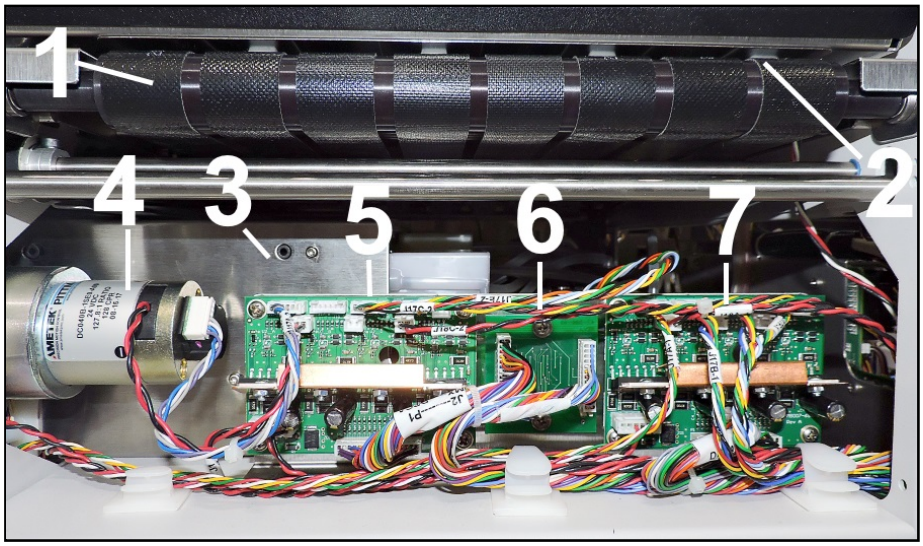
Major Components under Non-Operator Side Covers



1. Media Thickness Lift Assembly
2. Exit Fan Wire Harness
3. Printhead Lifter Sensor
4. Top Assembly (Clamshell)
5. Top Cover (Printhead Door) Switch
6. Main Peristaltic Pump
7. Fast Internet Switch (*behind Interface Board*)
8. Interface PCB
9. 5V DC Power Supply
10. Ethernet Port
11. USB Port
12. DB9 External Device Port
13. Power Switch, Receptacle, Fuse
14. Clutch Assembly
15. Feeder Encoder Assembly
16. Feed Motor
17. 24V DC Power Supply
18. Media Transport Motor
19. Service Ports
20. 24 VDC Power Inlet
21. Ethernet Cable
22. USB Cable
23. Ink Waste Hose
24. MPCA
25. Internal Memory Battery (CR 2032)
26. Data Cables

Major Components under Exit End Cover

1. Exit Media Conveyor
2. Exit Media Sensor
3. Ink Station
4. Media Thickness Adjustment Motor
5. DPCA 2
6. Multiplex (MX) PCB
7. DPCA 1

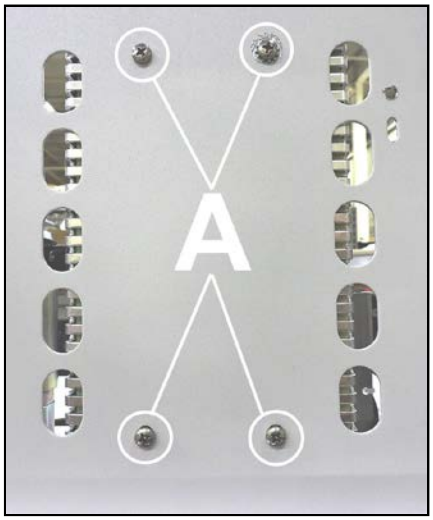


General Disassembly and Assembly

Replace 24V DC Power Supply

1. Remove Non-Operator Side Cover.
2. Remove (4) mounting screws and washer **[A]** securing the Power Supply (*located under the Printer Base*). **NOTE: Before disconnecting Power Supply, note where wires are connected, then disconnect wires. Remove the Power Supply.**

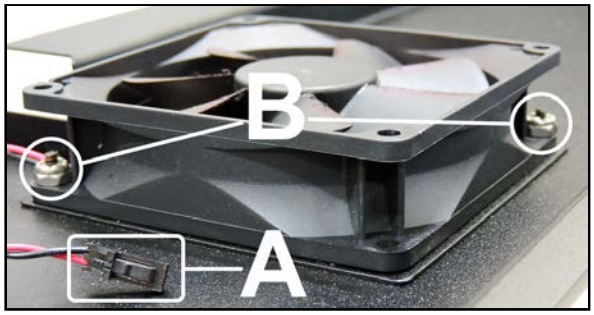
   Tip: As you remove each wire, connect it to corresponding terminal on new Power Supply.

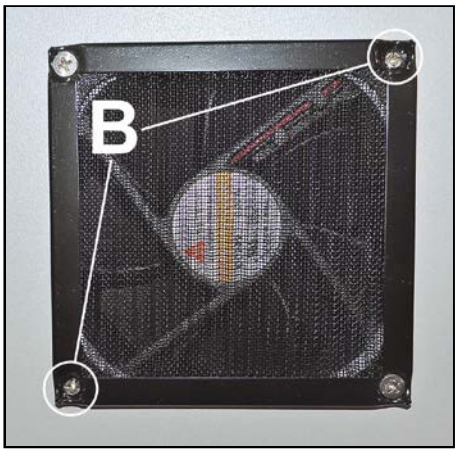


3. Connect wires to correct terminals on new Power Supply.
4. Reinstall Power Supply with (2) mounting screws.
   NOTE: Be sure to reinstall the washer and screw into the unpainted mounting hole in the Base.
5. Reinstall Outlet Port Assembly (3 screws).

Replace Side Fan Assembly

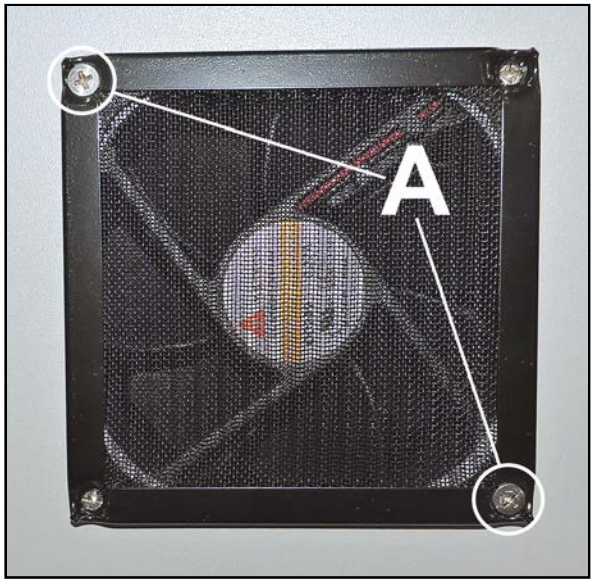
1. Remove Non-Operator Side Cover. Disconnect Fan Wire Harness at connector **[A]**.
2. **Remove** Side Fan Assembly (*2 screws, 2 nuts*) **[B]** from the Side Cover.
3. Install Fan with (2) mounting screws and nuts.
4. Connect wire harness on new Side Fan Assembly to correct connector.





Replace Side Fan Filter

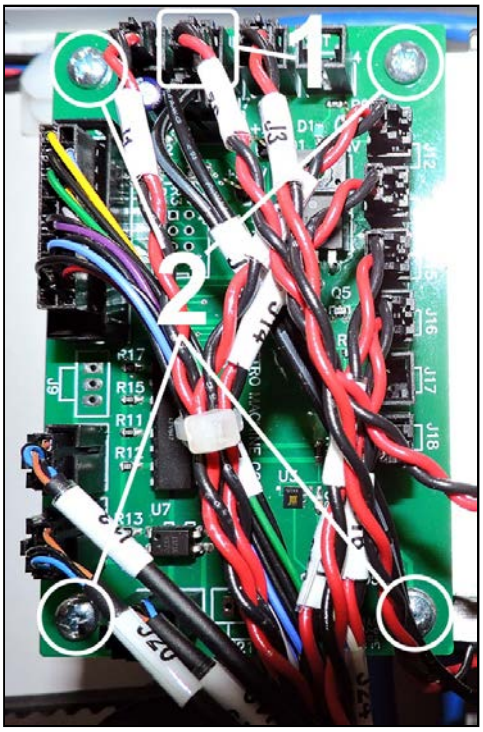
1. Remove (2) screws **[A]** securing Filter to the Non-Operator Side Frame.



Replace Interface PC Board

CAUTION

MAKE SURE THAT YOU ARE PROPERLY GROUNDED BEFORE HANDLING PC BOARD. STATIC ELECTRICITY CAN DAMAGE BOARD.



1. Remove Non-Operator Side Cover.
2. Disconnect PC Board power cord **[1]** from the **J2** terminal on PC Board.
3. Disconnect remaining wire harnesses from the Interface PC Board terminals.
   NOTE: Wire harnesses and PC Board are labeled for easy reconnection.

CAUTION

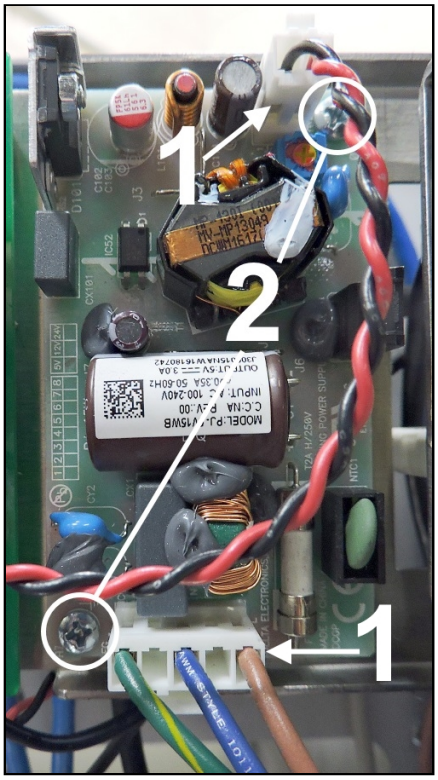
DO NOT DAMAGE WIRES DURING REMOVAL.

4. Remove four screws **[2]** that attach PC Board to Inlet Port Bracket and remove PC Board.
5. **Reassemble in reverse order.**

Replace 5V DC Power Supply

CAUTION

MAKE SURE THAT YOU ARE PROPERLY GROUNDED BEFORE HANDLING PC BOARD. STATIC ELECTRICITY CAN DAMAGE BOARD.



1. Remove Non-Operator Side Cover.
2. Disconnect two wire harnesses **[1]** from the Power Supply Terminals.

CAUTION

DO NOT DAMAGE WIRES DURING REMOVAL.

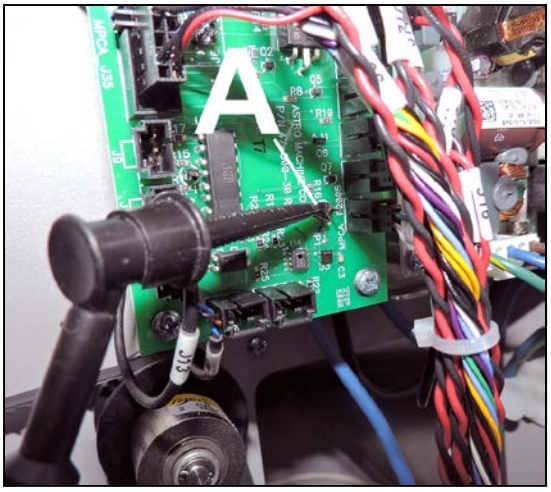
3. Remove two screws **[2]** that attach Power Supply to Outlet Port Bracket and remove the Power Supply.
4. **Reassemble in reverse order.**
   NOTE: Adjust Power Supply voltage after installing new the Power Supply. See procedure on next page.

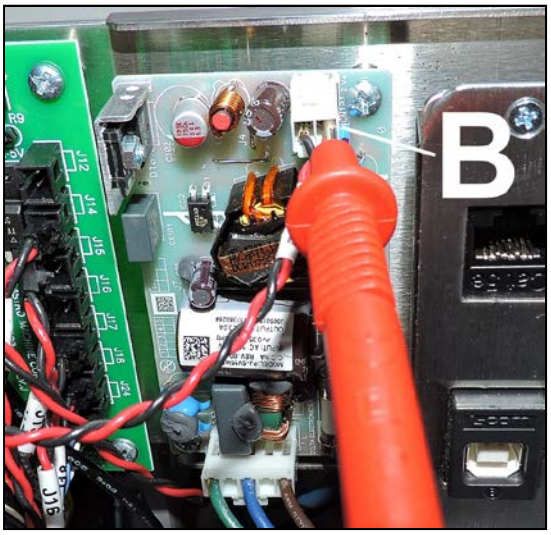
Adjust 5V DC Power Supply Voltage

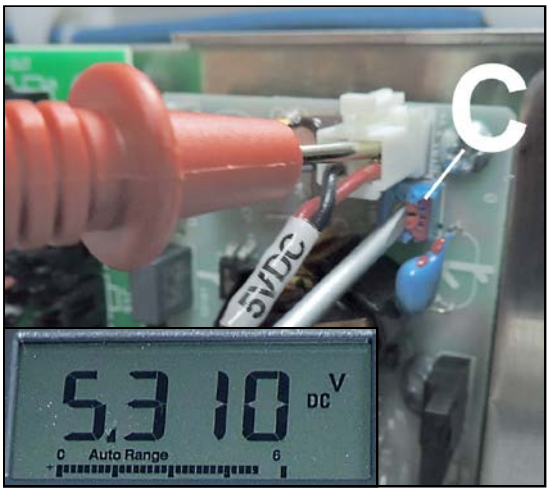
CAUTION

MAKE SURE THAT YOU ARE PROPERLY GROUNDED BEFORE HANDLING PC BOARD. STATIC ELECTRICITY CAN DAMAGE BOARD.

1. Remove the Non-Operator Side Cover.
2. The **5VDC Power Supply** does not have its own test points. Using a voltmeter, attach the **black (-) probe** to **GND [A]** on the **GPIO (*Interface*) Board** and insert the **red (+) probe** into the output terminal (CN101) on the **5VDC Power Supply [B]**.
3. Adjust the potentiometer **[C]** to obtain a reading of **5.3 VDC**.
4. Turn Printer power **OFF**. Reinstall the Side Cover.



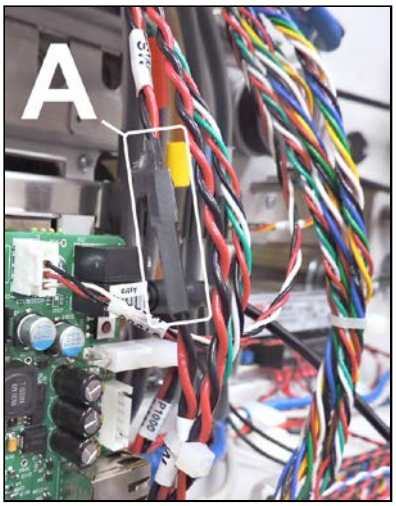




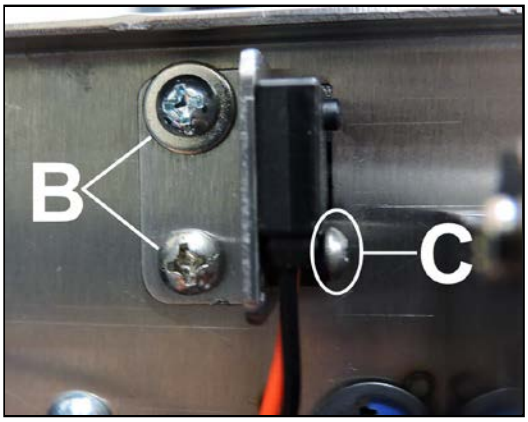
Replace Fast Internet Switch

1. Remove Non-Operator Side Cover.
2. Switch **[A]** (*located behind the Interface PC Board and 5V DC Power Supply*) is secured with hook & loop tape. Carefully pull the Switch away from the Printer Side Frame.
3. Carefully lift the Switch out of the Printer. Disconnect power cord **[B]** and other cables.
4. **Reassemble in reverse order.**

Replace Top Cover Switch

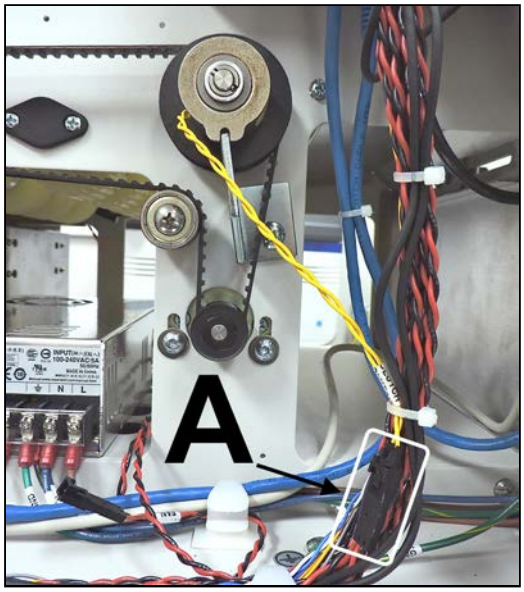


1. Remove Non-Operator Side Cover.
2. Disconnect Switch Assembly wire harness **(SW)** from Interface Board wire harness **(SW) [A]**. Carefully cut wire ties to release wire harness.
3. Remove (2) screws and a washer **[B]** to remove Switch Assembly and Bracket.
4. Remove (1) screw **[C]** to remove Switch Assembly from the Bracket.
5. **Reassemble in reverse order.**

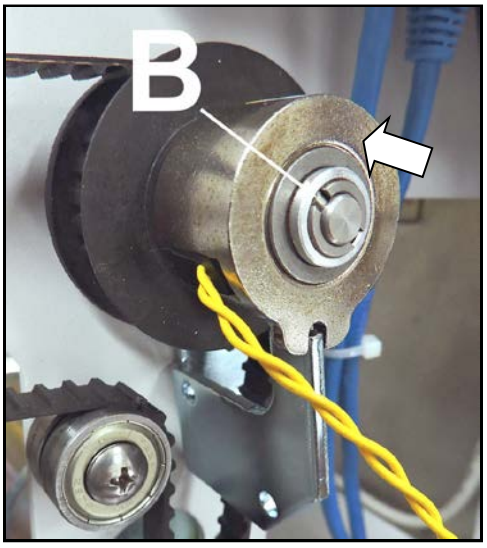


Replace Clutch

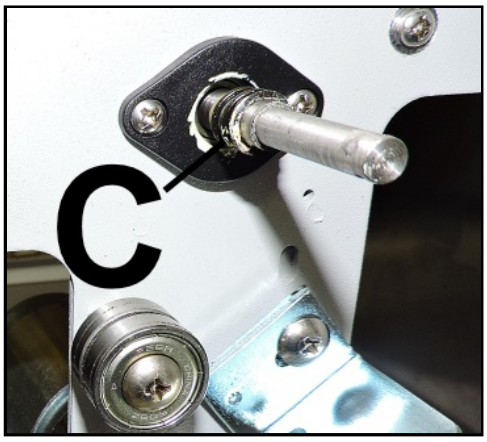
1. Remove the Non-Operator Side Cover.
2. Disconnect the Clutch wire harness from the Clutch extension wire harness at the connector **[A]**.



3. Push the Clutch in toward the Pulley to access retaining pin **[B]**. Remove retaining pin.

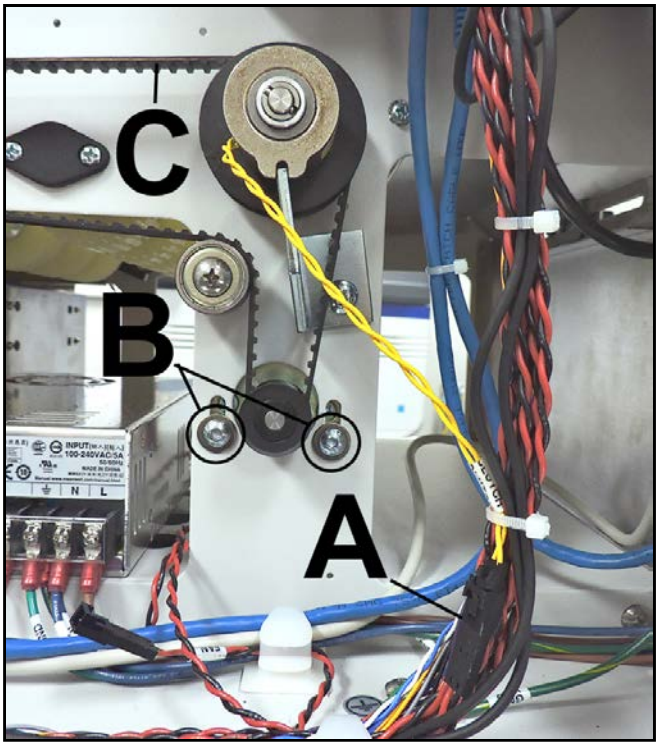


4. Remove the Clutch from the Feed Roller Shaft.
   NOTE: The Pulley is also removable. Watch for washers on either side of the Pulley and for a Spring [C] mounted behind the Pulley. When reinstalling the Pulley, first apply a dab of white lithium grease to the shaft near the bearing.



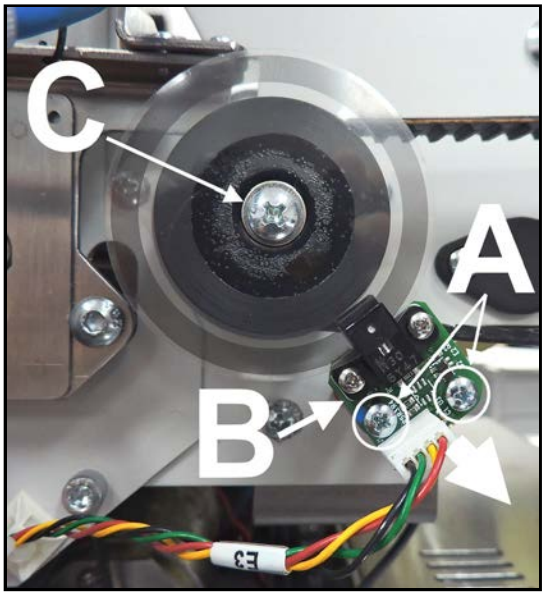
5. **Reassemble in reverse order.**

Replace Feed Drive Motor and Belt



1. **Remove the Non-Operator Side Cover.**
2. **To remove the Feed Drive Belt:**
   [A] Disconnect the Clutch wire harness at the connector.
   [B] Loosen (2) motor mount screws. Slide motor in slots to release Belt tension.
   [C] Remove the Belt.
   [D] Install in reverse order.
   Tension the Belt for proper operation. See "Tensioning the Feed Motor Drive Belt" in the Adjustments section.
3. **To remove the Feed Drive Motor:**
   [B] Remove (2) motor mount screws.
   [C] Remove the Motor Assembly. Disconnect the Red (POS) and Black (NEG) wire harnesses.
   [D] Install in reverse order.
   Tension the Belt for proper operation. See "Tensioning the Feed Motor Drive Belt" in the Adjustments section. System Test: Press **Feeder Test** to check that system is operating properly.

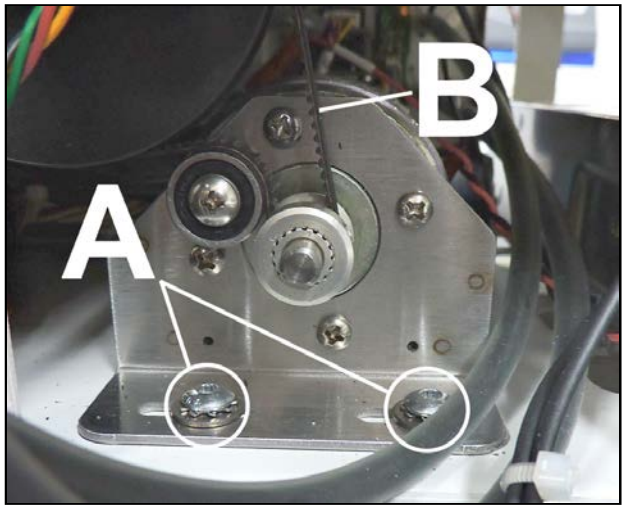
Replace Feeder Encoder

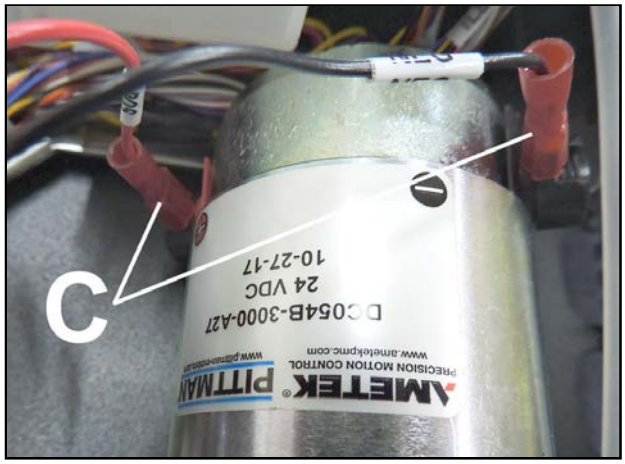


1. **Remove the Non-Operator Side Cover.**
2. **Remove the Encoder Sensor from the Non-Operator Side Frame.**
   [A] Remove (2) screws holding Encoder Circuit Board to two standoffs.
   [B] Remove the Encoder Sensor by carefully moving the Sensor down and away from the Encoder Wheel.
   NOTE: Be very careful not to damage the flexible Encoder Wheel.
3. **Remove the Encoder Wheel Assembly from the Pull-Out Shaft Assembly.**
   Remove screw and washer from the center of the Encoder Wheel **[C]**. **Do not bend or damage Encoder Wheel during removal.**
4. **To Reinstall:** Insert screw with washer through Encoder Wheel. Apply Blue Loctite to threads. Insert screw into threaded end of the Pull-Out Shaft.
5. **Reassemble in reverse order. NOTE:** Check that Encoder Wheel and Drive Belt turn freely.

Replace Paper Path Drive Motor

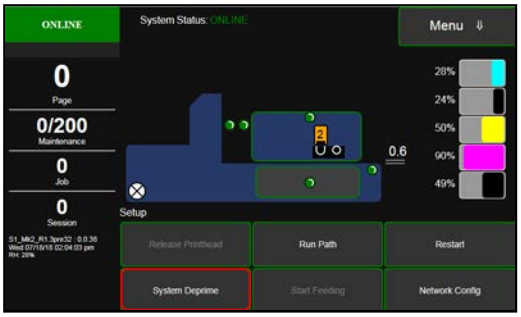
1. Remove Non-Operator Side Cover.
2. Remove (2) mounting screws and washers **[A]**.
3. Disengage drive belt **[B]** from pulleys.
4. Slowly pull Motor Assembly through the opening in the Side Frame. Disconnect the **POS** red and **NEG** black wire harnesses **[C]** from the Motor Assembly.
5. Remove the Motor Assembly.
6. **Reassemble in reverse order.**
   NOTE: Adjust Motor position to properly tension belt. See "Paper Path Drive Motor Belt Tension Adjustment" in the Adjustments Section of the manual. System Test: Press **Printzone Test** to check that system is operating properly.

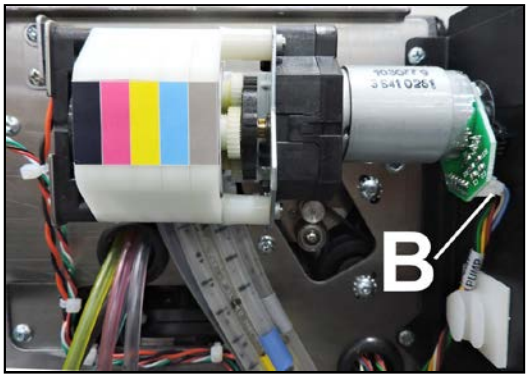




Replace Peristaltic Pump

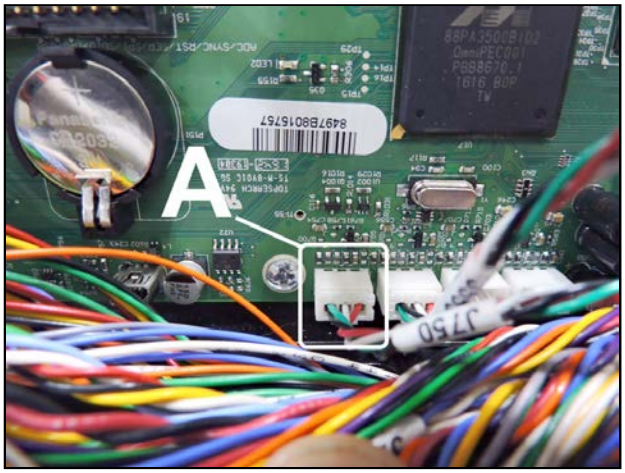
1. Before powering the Printer OFF, open **"Service"** from the **"Menu"** drop-down. Tap **"System Deprime"**. Power Printer OFF.
2. Remove Non-Operator Side Cover.
3. Open **Top Cover**. Remove (2) screws **[A]** securing the Pump Assembly to the Clamshell Frame.
4. Disconnect the Peristaltic Pump Assembly wire harness **[B]** from the circuit board attached to the Assembly.
5. Carefully pull the Pump Assembly away and disconnect the ink hoses from the hose barbs. **Watch for drips. NOTE: Hoses are color coded to the colors on the Pump for easy assembly. DO NOT mix ink hoses!**
6. **Reassemble in reverse order.** Run **System Test** to check operation. **System Test:** Press **Ink Pump Test** to check that system is operating properly.

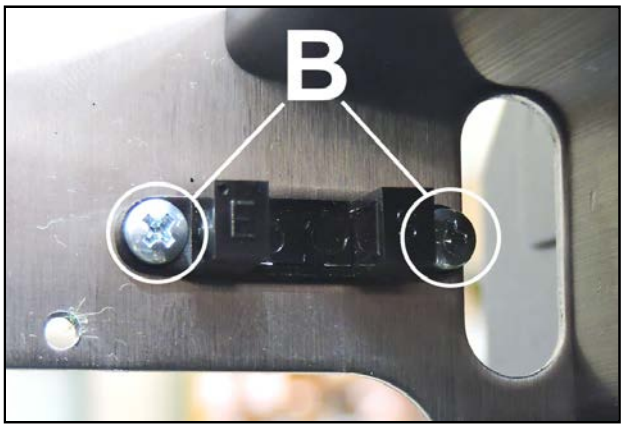




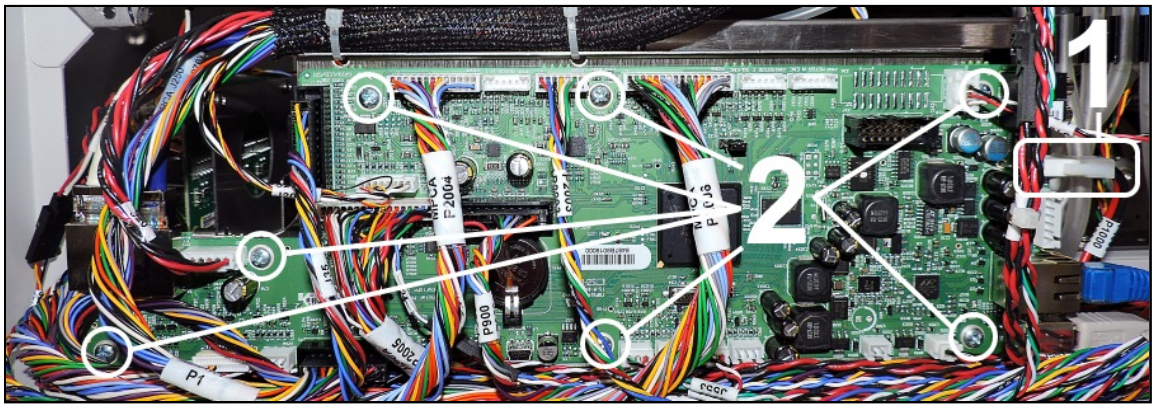
Replace Printhead Home Sensor

1. Remove Non-Operator Side Cover.
2. Disconnect the Sensor wire harness from MPCA terminal **(J750) [A]**. Carefully cut wire ties as necessary to release the wire harness**.**
   NOTE: Make a note of how the wire harness is routed and wire tied through the Printer for easier installation.
3. Open **Top Cover**. Remove (2) screws **[B]** securing the Printhead Lifter Home Sensor to the Top Assembly Frame.
4. Carefully pull Sensor Assembly wire harness through the Clamshell Side Frame.
5. **Reassemble in reverse order.**
   NOTE: Be sure to carefully route and wire tie the wire harness.





Replace Main PC Board (MPCA)



CAUTION

MAKE SURE THAT YOU ARE PROPERLY GROUNDED BEFORE HANDLING PC BOARD. STATIC ELECTRICITY CAN DAMAGE BOARD.

Before you Begin:

- When ordering a new board; please be sure to provide the serial number of the printer with your order. This info is needed in order for the printer's serial number to be programmed into the new board.
- Verify that you have ordered and received the proper board (MPCA, 47-500-100G, SAP# A0110244) for the ColorMax 8 Printer. Although the same physical board is used in other products, these boards are not interchangeable.
- If first five digits of MPCA Serial Number are 41918 or higher, only firmware R1.4.0 or higher can be used on this board. Installing a lower firmware version will make the board/printer inoperable.
- Follow proper static handling precautions.
- Do not pull on the wires to disconnect cables. Damage will result.

Procedure:

1. Power OFF Printer and unplug power cord.
2. Remove Non-Operator Side Cover.
3. Disconnect Power Cable **[1]** and Interface Cables (USB, Network) from MPCA.
4. Carefully disconnect wire harnesses (cables) from MPCA Board terminals.
   To disconnect the cables; pull on the connector, NOT the wires.
   The use of a "connector puller tool", like the one shown here, is highly recommended. PFEB0158A JST Puller (SAP#: 9101827U).

CAUTION

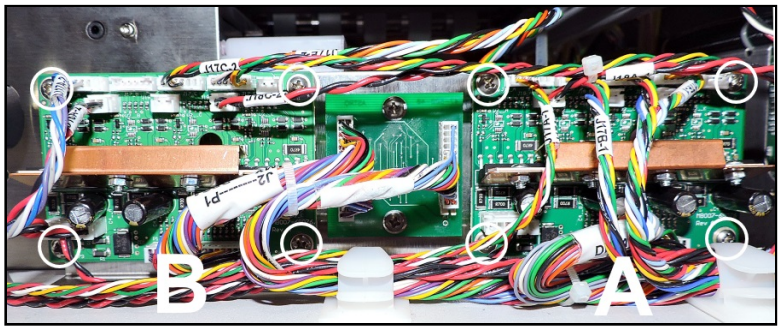
DO NOT DAMAGE WIRES DURING REMOVAL.

5. Remove (7) screws **[2]** that attach MPCA Board to Bracket and remove PC Board.
6. Reassemble in reverse order.
   NOTE: Wire harnesses and PC Board are labeled for easy reconnection.

TIP: If the printer's touchscreen displays "The printer cannot be found!", please see section titled "What to Expect After Installing New Micro SD Card" for troubleshooting information.

Replace DPCA Boards

TO REMOVE INDIVIDUAL DPCA BOARDS:

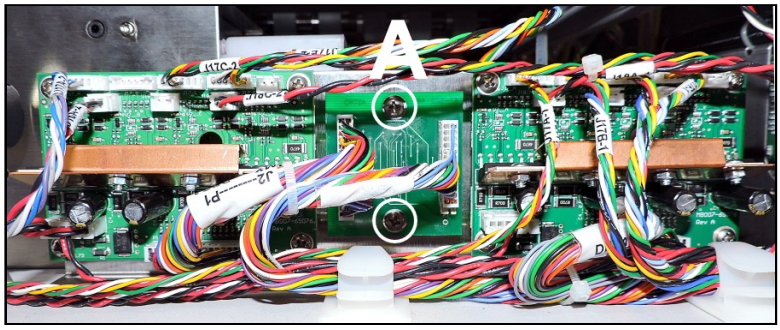


1. Remove Exit Cover (*4 screws*).
2. Disconnect wire harnesses from terminals on DPCA 1 **[A]** and/or DPCA-2 **[B]**.
   NOTE: Wire harnesses are labelled for easy reconnection. DPCA-1 wire harnesses are labelled (-1) and DPCA-2 wire harnesses are labelled (-2).
3. Remove (4) mounting screws securing DPCA-1 or DPCA-2 to the DPCA Bracket. Remove the DPCA Board.
4. **Reassemble in reverse order. NOTE: Be sure to carefully reconnect the wire harnesses to the correct DPCA Board.**

TO REMOVE DPCA/MULTIPLEX PCB ASSEMBLY:

1. Remove Exit Cover (*4 screws*).
2. Remove (2) screws and washer securing the DPCA Bracket to the Printer Base (*access under Printer*).
3. Carefully disconnect wire harnesses from the Multiplex PCB and DPCA-1 and DPCA-2. Remove Assembly. **NOTE: Wire harnesses are labelled for easy reconnection. DPCA-1 wire harnesses are labelled (-1) and DPCA-2 wire harnesses are labelled (-2).**
4. **Reassemble in reverse order. NOTE: Be sure to carefully reconnect the wire harnesses to the correct DPCA Board.**

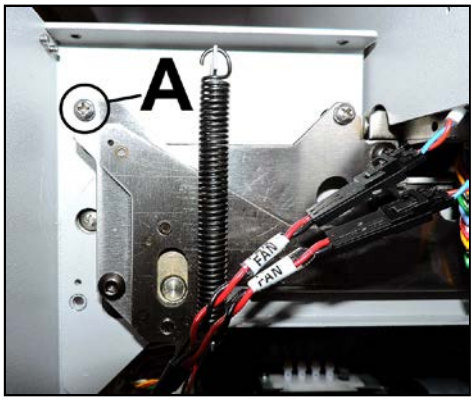
Replace Multiplex (MUX) Board

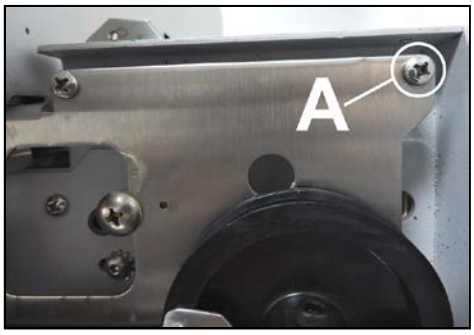


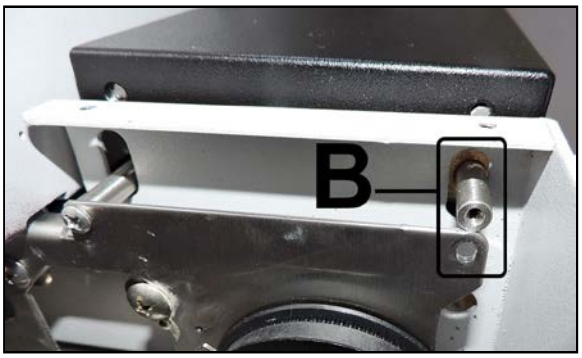
1. Remove Exit Cover (*4 screws*).
2. Disconnect wire harnesses from terminals on Multiplex PCB **[A]**.
   NOTE: Wire harnesses are labelled for easy reconnection.
3. Remove (2) mounting screws securing MX Board to the DPCA/Multiplex PCB Bracket. Remove the Multiplex Board.
4. **Reassemble in reverse order.**
   NOTE: Be sure to carefully reconnect the wire harnesses.

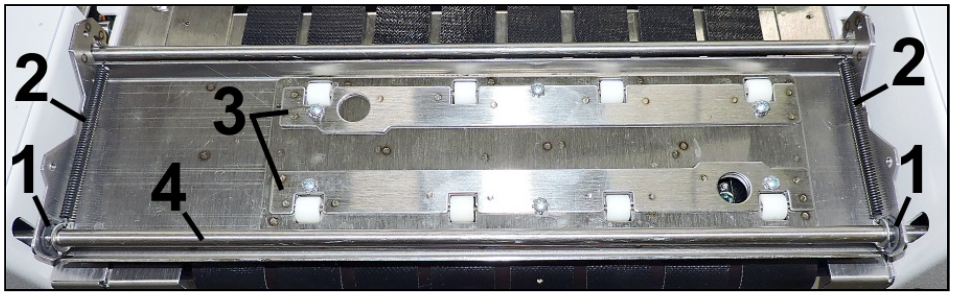
Replace Exit Cover and Exit Wheel Assembly

1. Before powering off the Printer, position the **Media Thickness** adjustment to its lowest setting.
2. Remove Non-Operator Side Cover and Right-hand Operator Side Cover.
3. Open Clamshell and Exit Conveyor Cover.
4. Remove (2) screws securing the Exit Wheel Assembly **[A]** (*1 screw per side*) to the Printer Side Frames.
5. Raise the rear of the Assembly up in the adjustment slots in the Side Frame to access the mounting screws in the Cover.
6. Remove (4) screws securing the Cover to the Exit Roller Assembly **[C]** (*2 screws per side*). Remove the Cover. This will provide access to the Exit Wheels Assembly components.
7. **Remove the Exit Wheel Assembly** by removing the (2) E-Clips from the Support Rod and maneuvering the ends of the Support Rod through the slots in the Side Frame.
8. **Reassemble in reverse order.**



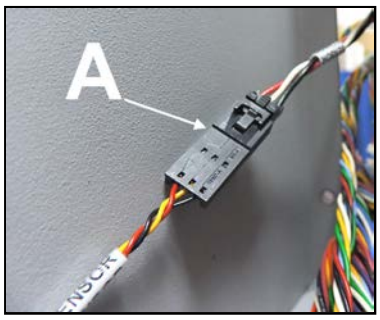


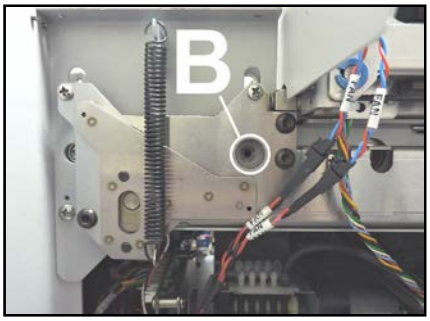




1.	E-Clips (x2)
2.	Exit Wheel Assembly Release Springs (x2)
3.	Exit Wheels and Springs
4.	Support Rod

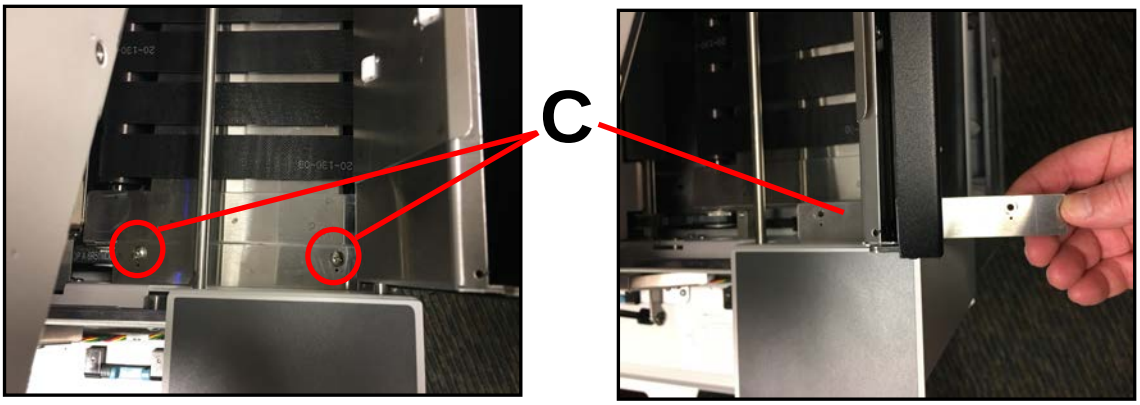
Replace Conveyor Assembly





1. **Set the Media Thickness to lowest position (0.1mm) before powering-down printer.** This provides access to the screw [B].
2. **Power-down. Power OFF and disconnect power cord.**
3. **Remove Right-hand Operator Side Cover, Non-Operator Side Cover and Exit Cover.**
4. **Disconnect Media Exit Sensor at the wire harness connector [A].**
5. **Remove mounting screw [B]**, located at non-operator side.
6. **Reconnect power and power-up printer.**
7. **Set Media Thickness to highest position (10 mm).** This provides enough room to lift and remove conveyor assembly.
8. **Power-down. Power OFF and disconnect power cord.**
9. **Open the Ink Tank Door.**
10. **Open the Clamshell.**
11. **Remove the Print Platen and Drip Tray Assembly.**
12. **Remove two long screws from Conveyor Securing Plate [C].**
13. **Remove Conveyor Securing Plate.**
14. **Remove Transport Roller Belt**. You will need to lift the Conveyor Assembly up and shift it towards entrance end of printer; to create slack for removing the Transport Roller Belt.
15. **Remove Conveyor Assembly from printer.**
16. **Install in reverse order.**

    NOTE: Remember to reattach the Transporter Roller Belt, reconnect the Media Exit Sensor wire harness **[A]** and reinstall the Print Platen and Drip Tray Assembly.

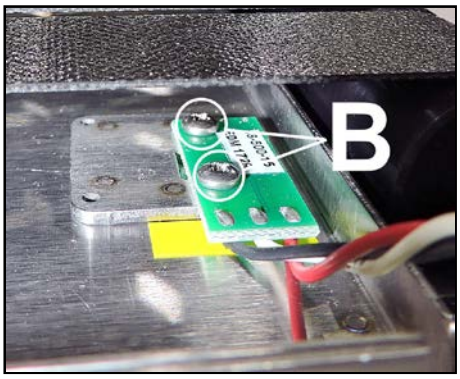


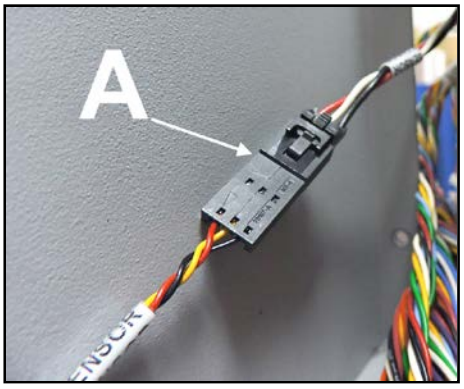
IMPORTANT

A "CUSTOM" JIG (47-100-01T) IS REQUIRED TO REPLACE MOST OF THE COMPONENTS IN THE EXIT CONVEYOR ASSEMBLY. IF YOU DON'T WANT TO PURCHASE THIS TOOL (JIG), YOU CAN ORDER A NEW EXIT CONVEYOR ASSEMBLY (47-101-20) AND OR SHIP THE ASSEMBLY TO THE DISTRIBUTOR FOR REPAIR.

Replace Media Exit Sensor

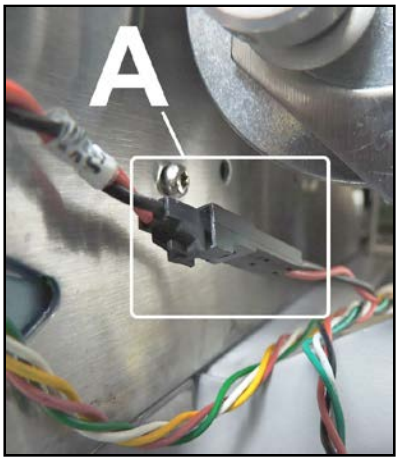
1. **Follow procedure to "Replace Conveyor Assembly".** Once Conveyor Assembly is out of printer, proceed to next step.
2. **Turn the Conveyor Assembly over.** Remove (2) screws **[B]** securing the Sensor Assembly to the Conveyor.
   NOTE: DO NOT remove the tape strip under the Sensor.
3. **Install in reverse order.**
   NOTE: When reinstalling Conveyor Assembly, be sure to reattach the Transporter Roller Belt and reconnect the Media Exit Sensor wire harness **[A]**.

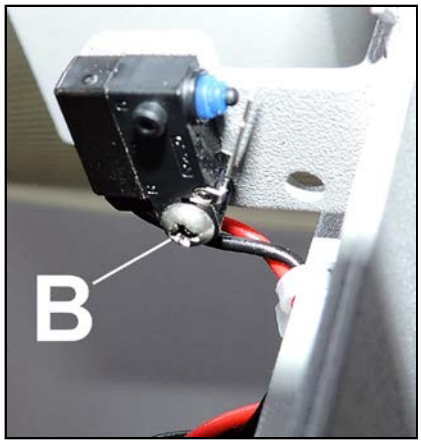




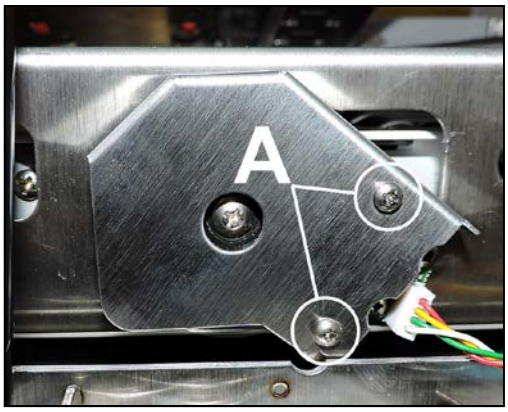
Replace Ink Door Switch

1. Open the Ink Tank Door.
2. Remove Right-hand Operator Side Cover. (*4 screws*).
3. Disconnect the Ink Door Switch wire harness at the SW connector **[A]**.
4. Remove (1) screw **[B]** securing the Switch to the Printer Frame. Remove Ink Door Switch Assembly.
5. **Reassemble in reverse order.**

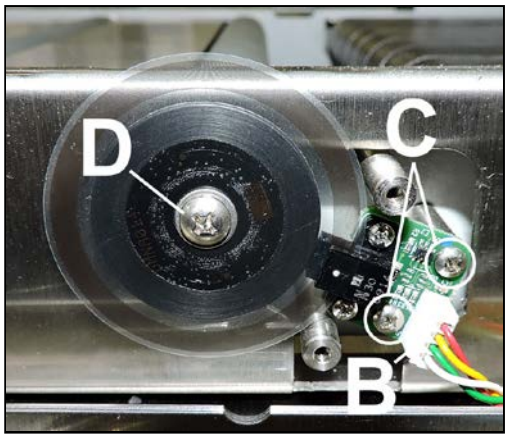




Replace Media Path Encoder Assembly



1. Open Clamshell.
2. Loosen (2) screws **[A]** securing Encoder Cover to the Side Frame. Then remove screws.
   Tip: Loosen both screws before removing either screw. This will prevent the cover from spinning and damaging the encoder wheel, when you break the screws loose. Start both screws before tightening either screw.
3. Disconnect wire harness **[B]** from Encoder Sensor Assembly PC Board.
4. Remove (2) screws **[C]** securing Encoder Sensor Assembly to Side Frame and pull away from Encoder Wheel. **NOTE: Be careful not to damage Wheel.**
5. Remove (1) screw and washer **[D]** holding Encoder Wheel to Roller Shaft. Remove Encoder Wheel.
6. **Install in reverse order.**

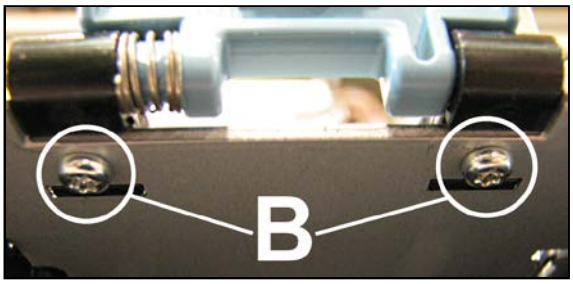


Replace Ink Tank Latches

Ink Tanks must be removed prior to replacing latches. See **"Replace Ink Tanks"** in **Maintenance Section**. Printer must be flat on a level surface.

[A] Open Latch.

[B] Remove (2) screws located on underside of latch hinge block. (*You may need a mirror to see screw heads*.) Remove Latch Assembly.

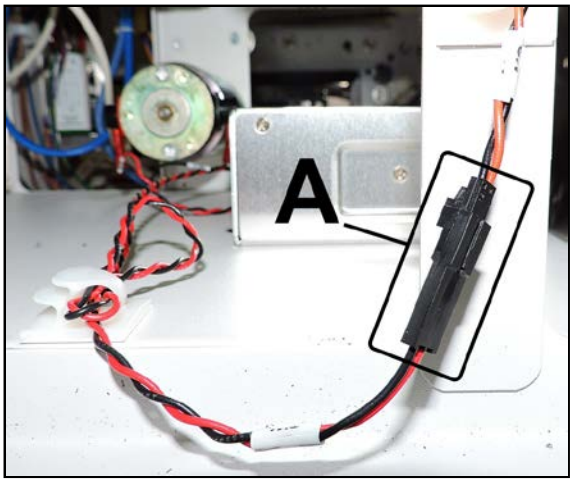


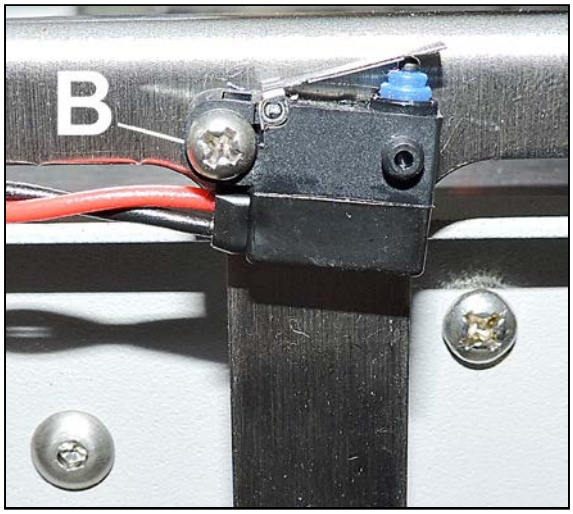
CAUTION

LATCHES ARE SPRING-LOADED, BE CAREFUL THAT SPRINGS DO NOT FLY OFF.

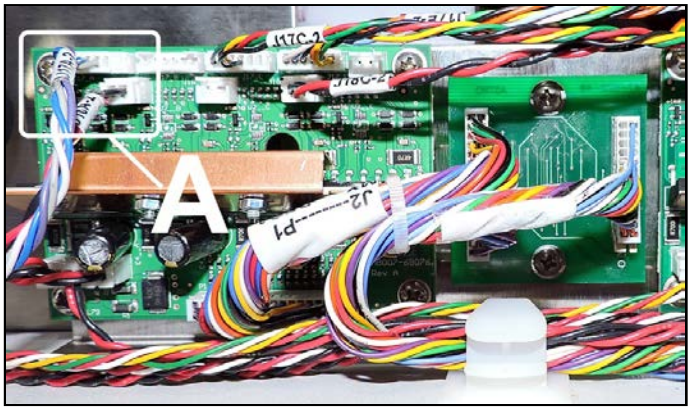
Replace Top Assembly (Clamshell) Switch

1. Remove Left-hand Operator Side Cover.
2. Disconnect Clamshell Switch **(SW)** Wire Harness **[A]** at the connector.
3. Remove (1) screw **[B]** securing Switch Assembly to the Side Frame. Remove Switch Assembly.
4. **Reinstall in reverse order.**

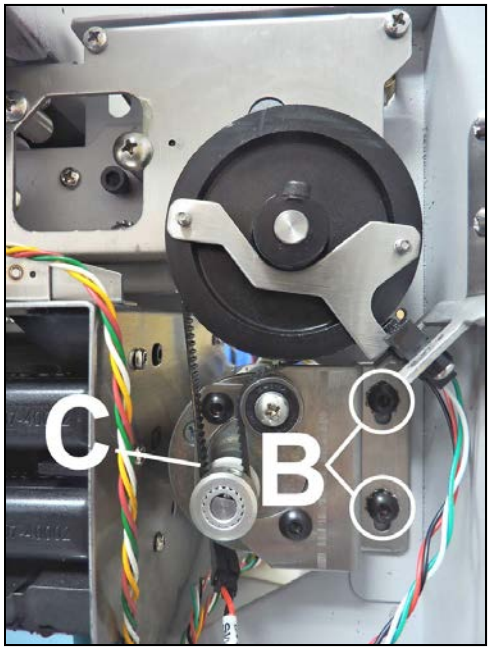




Replace Media Thickness Motor

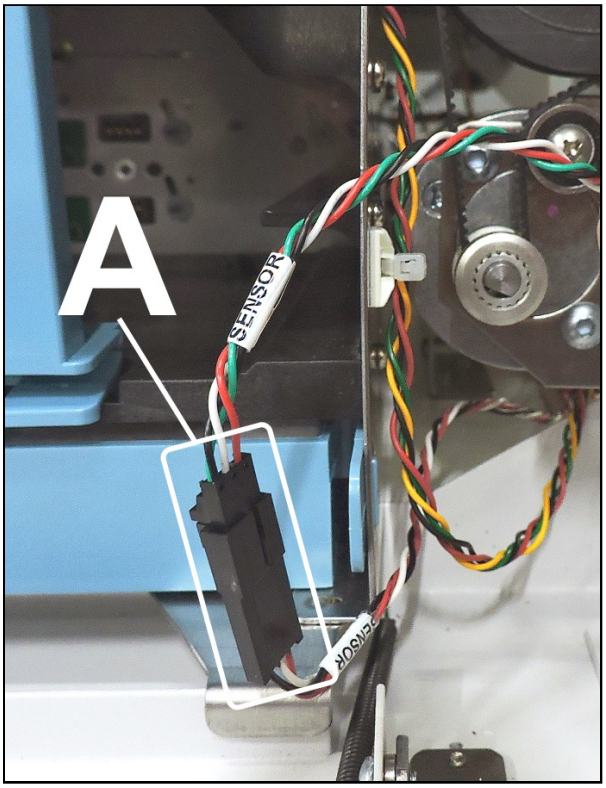


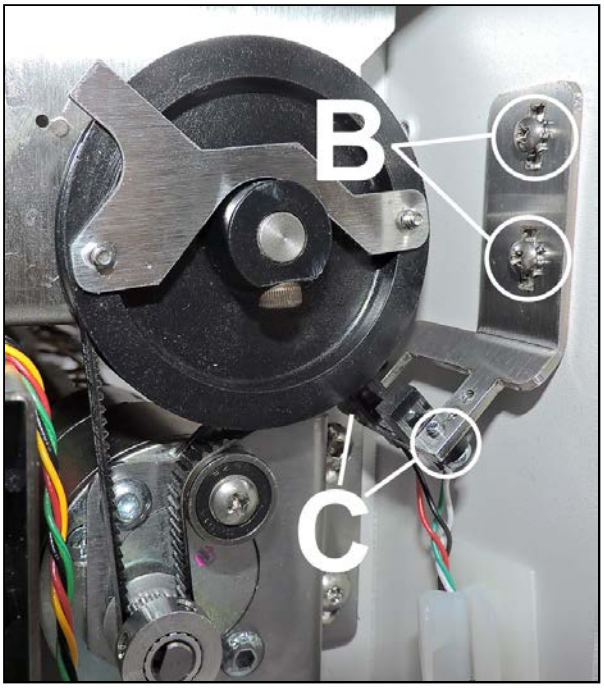
1. **Remove Right-hand Operator Side Cover, Non-Operator Side Cover and Exit Cover.**
2. **Open the Ink Tank Door.**
3. Disconnect the Media Thickness Motor to DPCA-2 wire harnesses **J17A** and **J18A [A]** from the DPCA-2 terminals.
4. Remove (2) screws **[B]** securing the Media Thickness Motor Bracket to the Side Frame.
5. Remove Belt from Motor Pulley **[C]** and remove the Motor Assembly.
6. **Reinstall in reverse order. NOTE: Check/adjust tension on the Media Thickness Motor Drive Belt. See "Media Thickness Motor Belt Tension Adjustment" in the Adjustments Section. System Test:** Press **Clamshell Test** to check that system is operating properly.



Replace Media Thickness Home Sensor

1. **Remove Right-hand Operator Side Cover.**
2. **Open the Ink Tank Door.**
3. Disconnect the Media Thickness Home Sensor at the wire harness connector **[A]**.
4. Mark the current Sensor Bracket mounting position on Side Frame and Sensor mounting position on Bracket.
   NOTE: Bracket has three Sensor mounting positions.
5. Remove (2) screws **[B]** securing the Sensor Bracket Assembly to the Side Frame.
6. Remove (2) screws **[C]** securing the Sensor Assembly to the Bracket.
7. **Install in reverse order.**
   NOTE: Refer to "marks" made in Step 4 to obtain proper mounting positions for Sensor and Bracket. Remember to reconnect the Media Thickness Home Sensor wire harness **[A]**.
8. **Before re-installing Right-hand Operator Side Cover, see "Check/Adjust Media Thickness Home Sensor Height" on next page.**





Check/Adjust Media Thickness Home Sensor Height – S/N 100043977 and Lower

NOTE: The following adjustment procedure applies to Printers with serial number 100043977 and lower. Please see the next page for printers with a higher serial number.

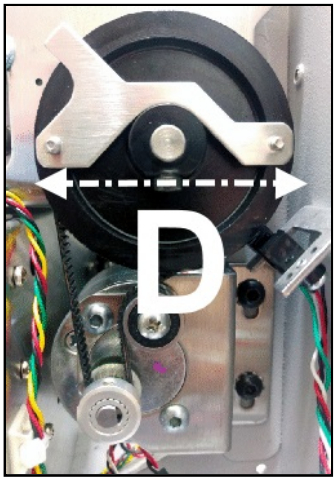
1. After installing Home Sensor or Bracket, power-up Printer and set Media Thickness to 0.1mm.
2. Restart Printer and observe the behavior of the Media Thickness Pulley.
   During printer initialization, the motor should drive the Pulley counter-clockwise. The Media Thickness "home position" is automatically registered when the Flag on the Pulley interrupts the Home Sensor. This should be the highest position for the Clamshell (Top Assembly).
   Then the motor should reverse, and the drive Pulley should turn clockwise until it reaches the 0.1mm position set in step 1.
   Not seeing the behavior described above?
   - If Pulley turns clockwise at start-up, for more than ¼ revolution, then the Home Sensor may be bad/blocked/disconnected.
   - If Pulley turns counter-clockwise at start-up, but Flag passes through Home Sensor, then Sensor Bracket is set too low. Flag missing sensor.
   - If Pulley quickly rotates (jogs) a short distance in both directions at start-up and a motor stall noise accompanies this movement, then the system is not seeing an encoder signal from the Thickness motor. Check connections, replace motor, replaced DPCA board and or associated wiring harnesses.

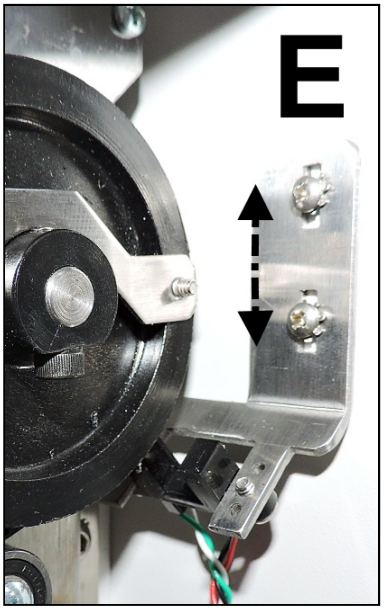
   Tip: You can also force printer to recalibrate the Media Thickness Home Position using "System Test", "Clamshell Test" feature.
3. When the Pulley stops, with printer displaying 0.1mm, note the position of the bottom edges of the Sensor Flag Assembly **[D]** on the Pulley.

   [1] Sensor position OK: Flag Assembly will be parallel to the Printer Base.

   [2] Sensor too high: Flag end of Assembly is lower. Lower the Sensor Bracket **[E]**.

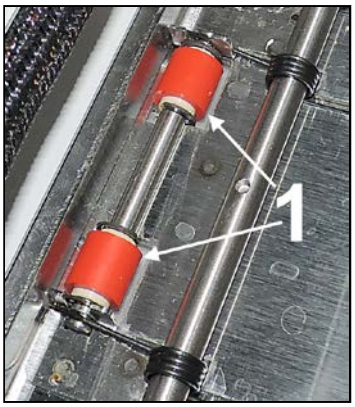
   [3] Sensor too low: Flag end of Assembly is higher. Raise the Sensor Bracket **[E].**





4. If adjustment is needed, loosen (2) screws securing the Sensor Bracket **[E]** to the Side Frame. Adjust Sensor Bracket position as needed.
5. Repeat from Step 2 until you achieve proper adjustment.
6. Check for proper operation.

Tip: With the Media Thickness at the 0.1mm position, check that the Media Guide Wheels **[1]** (*located inside the Clamshell*) are in contact with the Feed Rollers below. If the wheels spin freely in this position, the Home Sensor Bracket position is too high or there is some other issue.

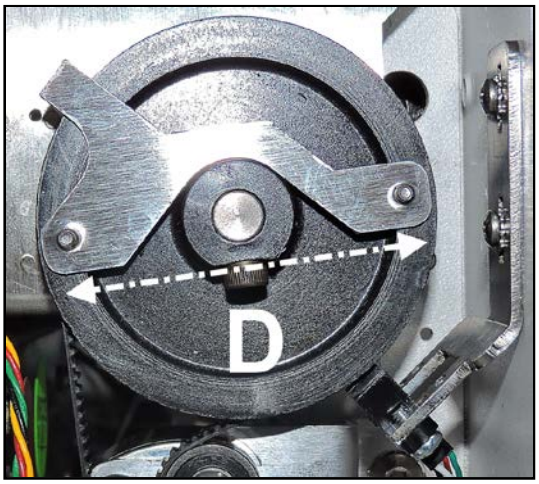


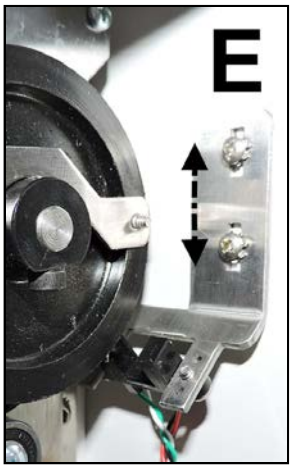
Check/Adjust Media Thickness Home Sensor Height – S/N 100043978 and Higher

NOTE: The following adjustment procedure applies to Printers with serial number 100043978 and above.

1. After installing Home Sensor or Bracket, power-up Printer and set Media Thickness to 0.1mm.
2. Restart Printer and observe the behavior of the Media Thickness Pulley.
   During printer initialization, the motor should drive the Pulley counter-clockwise. The Media Thickness "home position" is automatically registered when the Flag on the Pulley interrupts the Home Sensor. This should be the highest position for the Clamshell (Top Assembly).
   Then the motor should reverse, and the drive Pulley should turn clockwise until it reaches the 0.1mm position set in step 1.
   Not seeing the behavior described above?
   - If Pulley turns clockwise at start-up, for more than ¼ revolution, then the Home Sensor may be bad/blocked/disconnected.
   - If Pulley turns counter-clockwise at start-up, but Flag passes through Home Sensor, then Sensor Bracket is set too low. Flag missing sensor.
   - If Pulley quickly rotates (jogs) a short distance in both directions at start-up and a motor stall noise accompanies this movement, then the system is not seeing an encoder signal from the Thickness motor. Check connections, replace motor, replaced DPCA board and or associated wiring harnesses.

   Tip: You can also force printer to recalibrate the Media Thickness Home Position using "System Test", "Clamshell Test" feature.
3. When the Pulley stops at the 0.1mm position, note the position of the bottom edges of the Sensor Flag Assembly **[D]** on the Pulley:

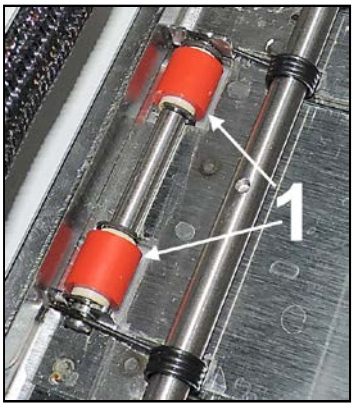
   

   [1] Sensor position OK: Assembly **[D]** is positioned as shown.

   [2] Sensor too high: Flag end of Assembly **[D]** is lower than pictured. Lower the Sensor Bracket **[E]**.

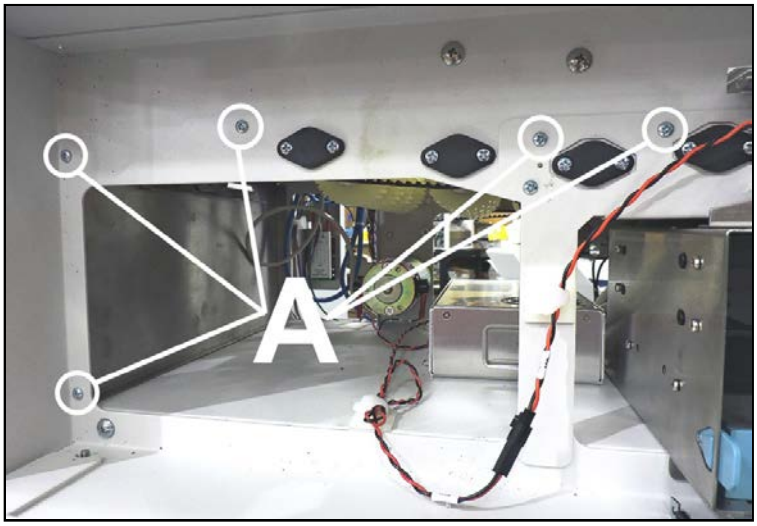
   [3] Sensor too low: Flag end of Assembly **[D]** is higher than pictured. Raise the Sensor Bracket **[E]**.
4. If adjustment is needed, loosen (2) screws securing the Sensor Bracket **[E]** to the Side Frame. Adjust Sensor Bracket position as needed.
5. Repeat from Step 2 until you achieve proper adjustment.
6. Check for proper operation.

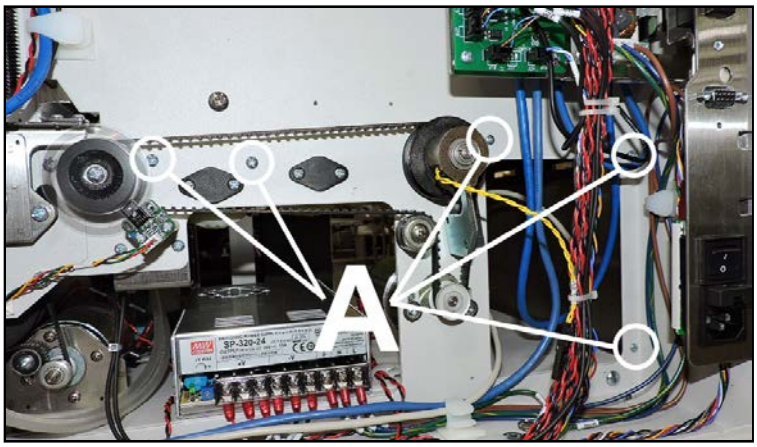


Tip: With the Media Thickness at the 0.1mm position, check that the Media Guide Wheels **[1]** (*located inside the Clamshell*) are in contact with the Feed Rollers below. If the wheels spin freely in this position, the Home Sensor Bracket position is too high or there is some other issue.

Replace Center Plate Assembly

1. Remove Left-hand Operator Side Cover and Non-Operator Side Cover. (*You may also have to remove the Printer Ports Bracket*.)
2. Remove (10) mounting screws **[A]** (*5 screws per side*).
3. **Install in reverse order.**





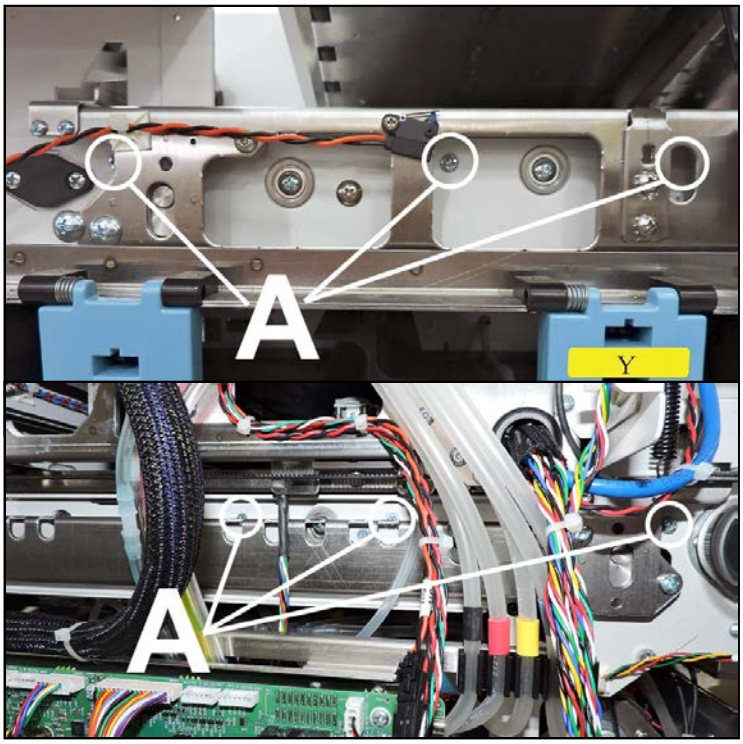
Replace Paper Path Plate

1. Remove Right-hand Operator Side Cover and Non-Operator Side Cover.
2. Power-up printer and set Media Thickness to 7.0 mm. This is necessary to provide access to the screws **[A]**.
3. Power-down the printer. Turn Off Main Power Switch and unplug.
4. Remove the Control Panel and carefully set the Control Panel Assembly aside.
   Tip: If you are careful, you do not need to disconnect the wiring from the Control Panel.
5. Open the Ink Tank Door, unlock and raise the Clamshell.
6. Carefully Remove the Print Platen and Drip Tray Assembly.
7. Remove (2) screws **[G]** that secure the upper Hinge Plate to the Clamshell frame. This will disengage the Clamshell Support (pneumatic lifter) from the Clamshell frame.

   CAUTION: Be sure to support the Clamshell so it does not slam shut during this process.

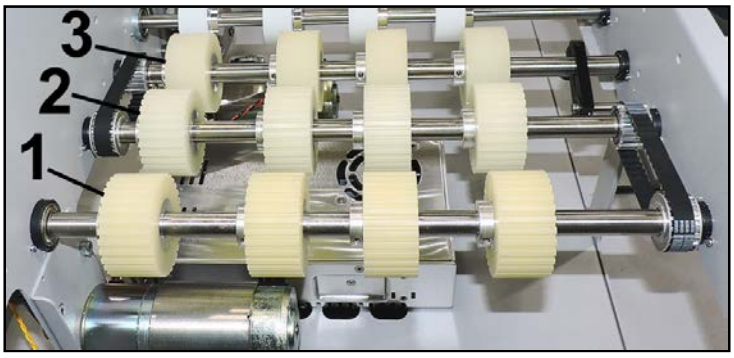
   Tip: After detaching the Clamshell Support, you can loosely attach the Control Panel using one screw on top. Then place something under the front corner of the clamshell to hold the Clamshell up (open).

8. Remove (6) mounting screws **[A]** (*3 per side*) that secure the Paper Path Plate to the frame.
9. Carefully remove the Paper Path Plate from the printer.
10. **Install in reverse order.**

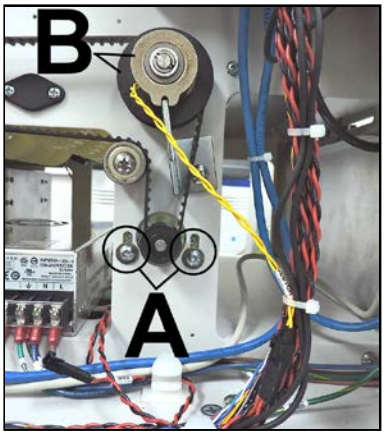


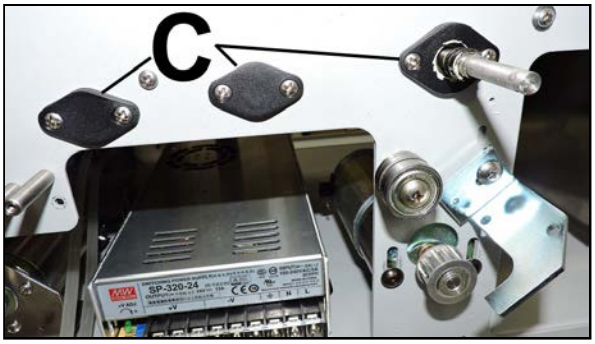
Replace Feed Roller Assemblies

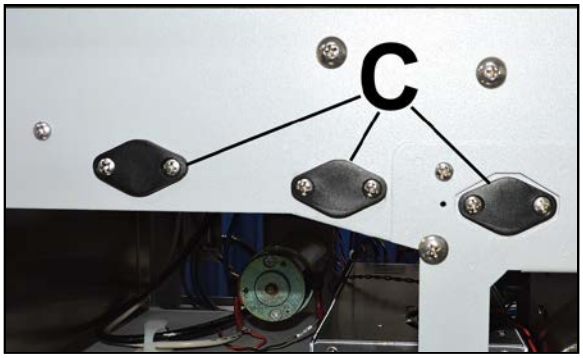
Follow the steps below to remove the Rear [1], Middle [2] and Front [3] Feed Roller Assemblies:



1. Remove the Left Operator Side Cover and the Non-Operator Side Cover.
2. Remove the Separator Assembly.
3. Remove the Center Plate Assembly.
4. Loosen the Feed Motor mounting screws **[A]** to release tension on the Drive Belt.
5. Remove the Clutch and Pulley Assemblies **[B]**.
6. Remove (2) screws **[C]** securing the Bearing Housings to Side Frames (*3 Bearing Housings on each side*).
7. Remove Brake Assembly **[D]** from the mounting stud by removing the C-clip.
8. Remove the Feed Roller(s) from the Printer.
9. **Install in reverse order**. **Remember to reinstall the Brake Assembly and Feed Roller Belts.**
   NOTE: Check/adjust tension on the Feed Motor Drive Belt. See "Feed Roller Belt Tension Adjustment" in the Adjustments Section. System Test: Press **Feeder Test** to check that system is operating properly.





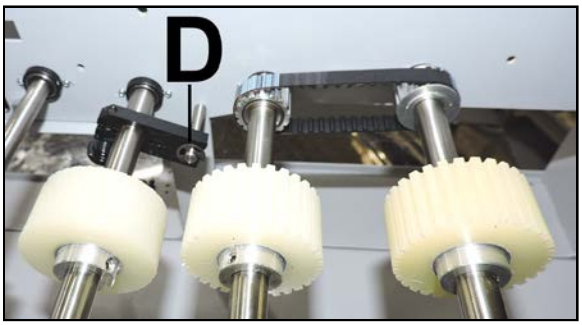


IMPORTANT

When installing the unidirectional rimless pulleys (*roll CCW, will not roll CW*) on the Middle or Front Feed Shafts, note the numbers etched into the bearing races:

Middle Feed Shaft: The numbers should face ***toward*** the shaft rollers.

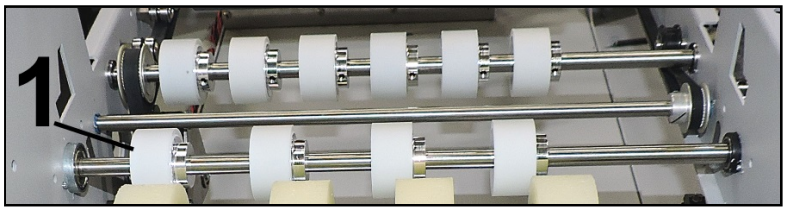
Front Feed Shaft: The numbers should face ***away*** from the shaft rollers.

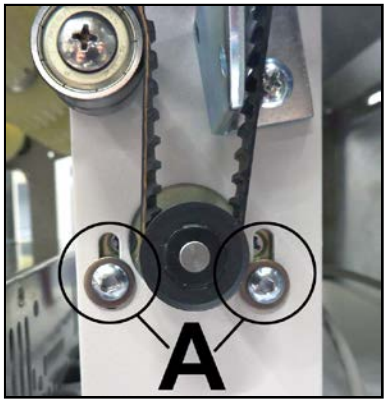


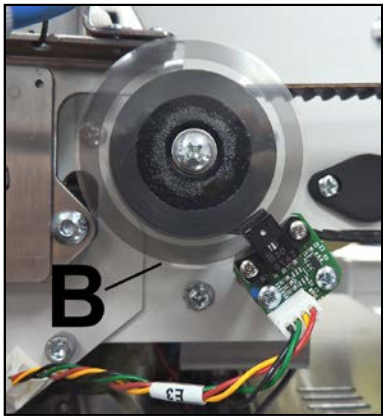
Replace Pull-Out Shaft Roller Assembly

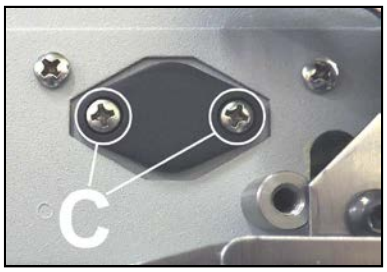
Follow the steps below to remove the Pull-Out Shaft Roller Assembly [1]:

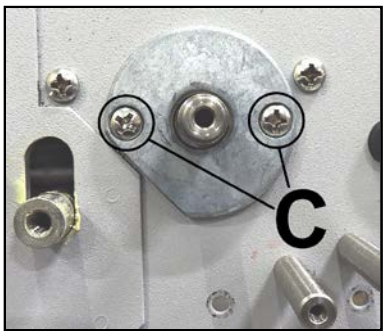
1. Remove the Left Operator Side Cover and the Non-Operator Side Cover.
2. Open the Ink Tank Door. Release and raise the Clamshell.
3. Remove the Separator and Center Plate Assemblies
4. Loosen the Feed Motor mounts **[A]** to release Feed Drive Belt tension.
5. Remove the Feed Encoder Assembly and Pulley **[B]**.
6. Remove (2) screws securing the Bearing Housings to the Side Frames **[C]** (*1 Bearing Housing on each side*.)
7. Remove the Pull-Out Shaft Roller Assembly.
8. **Install in reverse order. NOTE: Check/adjust tension on the Feed Motor Drive Belt. See "Feed Roller Belt Tension Adjustment" in the Adjustments Section. System Test:** Press **Feeder Test** to check that system is operating properly.











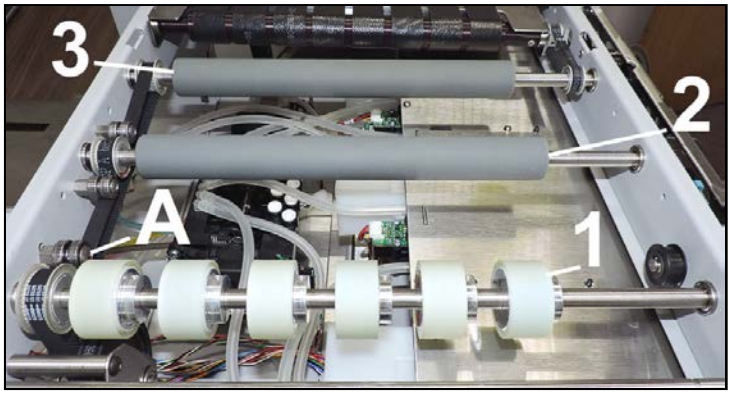
Replace Paper Path Rollers

The **Paper Path Rollers** include the

[1] Delivery Roller

[2] Input Print Roller

[3] Output Print Roller

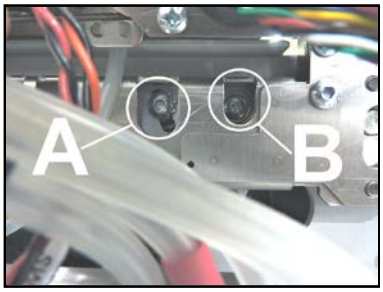


1. Remove Right-hand Operator Side Cover and Non-Operator Side Cover.
2. Remove Paper Path Plate.
3. Power-up printer and set Media Thickness to 4.0 mm. This is necessary to provide access to the screws that secure roller shafts.
4. Power-down the printer. Turn Off the Main Power Switch and unplug.
5. Re-attach the Clamshell Support, removed during the "Paper Path Plate" removal process. Install (2) screws **[G]** and secure the upper Hinge Plate to the Clamshell frame.
   This will safely hold the Clamshell open during roller removal process.
   NOTE: The Clamshell Support will need to be detached again, in order to reinstall the "Paper Path Plate".

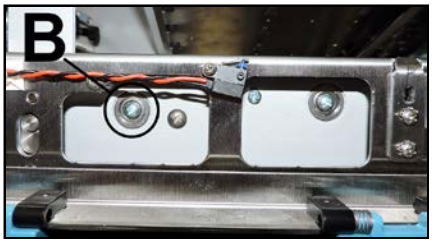
Remove the Delivery Roller [1]:

1. Loosen Idler/Tensioner Roller **[A]** mounting screw (*located on Non-Operator side*) to release tension on the Paper Path Drive Belt.

   Tip: If you remove the Input Print Roller, this will create slack on Belt [F] and you may be able to avoid loosening and repositioning of Idler/Tensioner [A].
   If you need to loosen Tensioner, get a feel for the current belt tension so you know how to readjust it. Mark the Idler/Tensioner Roller **[A]** mounting screw's position on the frame before loosening it.



2. Remove (2) screws **[B]** securing the Entry Roller Bearing to the Side Frames (*1 screw per side*).

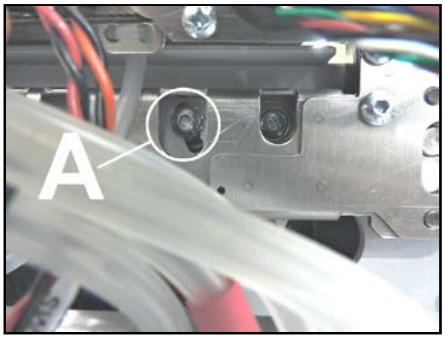


3. Disengage the Entry Roller Pulley from the Belt and remove the Entry Roller **[1]** from the Printer.
4. **Install in reverse order**.
   NOTE: Check/adjust tension on the Drive Belt. See "Paper Path Roller Belt Tension Adjustment" in the Adjustments Section. System Test: Press **Printzone Test** to check that system is operating properly.

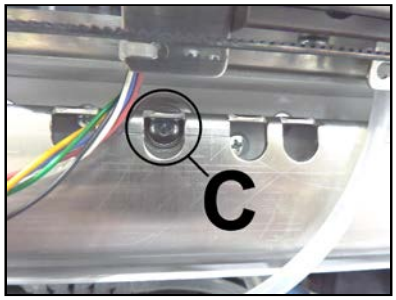
Remove the Input Print Roller [2]:

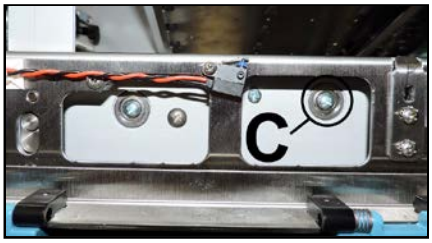
1. Loosen Idler/Tensioner Roller **[A]** mounting screw (*located on Non-Operator side*) to release tension on the Paper Path Drive Belt.

   Tip: Get a feel for the current belt tension so you know how to readjust it. Mark the Idler/Tensioner Roller **[A]** mounting screw's position on the frame before loosening it.

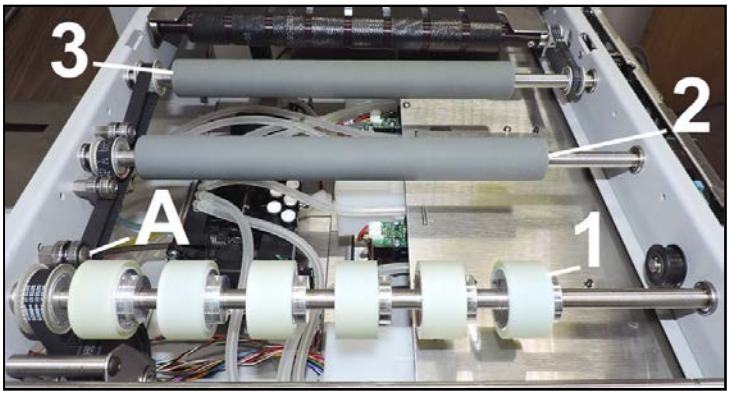


2. Remove (2) screws **[C]** securing the Bearing to Side Frames (*1 screw per side*).
3. Disengage the Input Roller Pulley from the Paper Path Drive Belt and remove the Input Roller **[2]** from the Printer.





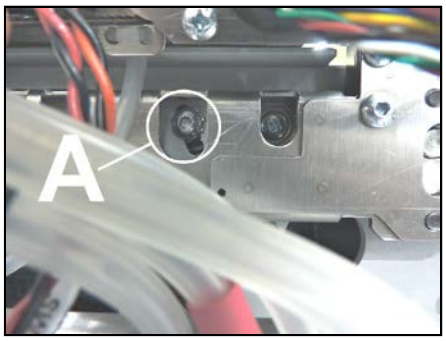
4. **Install in reverse order**. **NOTE: Check/adjust tension on the Belts. See "Paper Path Roller Belt Tension Adjustment" in the Adjustments Section. System Test:** Press **Printzone Test** to check that system is operating properly.



Remove the Output Print Roller [3]:

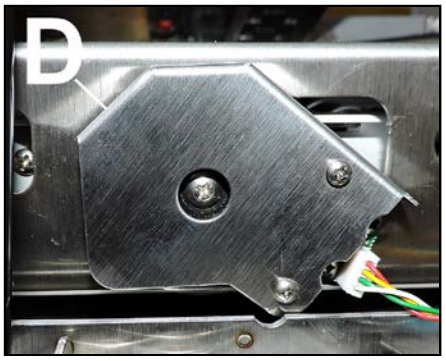
1. If necessary, loosen Idler/Tensioner Roller **[A]** mounting screw (*located on Non-Operator Side*) to release tension on the Paper Path Drive Belt.

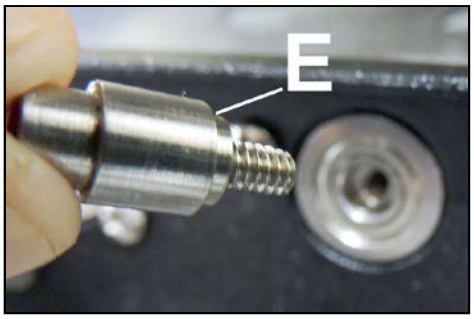
   Tip: If you remove the Input Print Roller, this will create slack on Belt [F] and you may be able to avoid loosening and repositioning of Idler/Tensioner **[A]**. If you need to loosen Tensioner, get a feel for the current belt tension so you know how to readjust it. Mark the Idler/Tensioner Roller **[A]** mounting screw's position on the frame before loosening it.



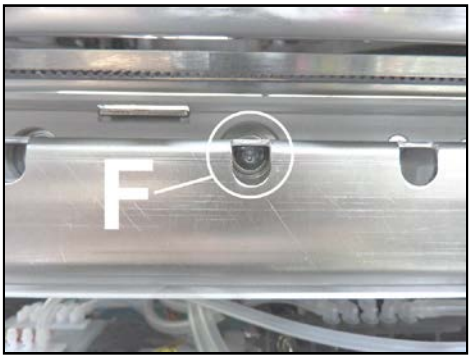
2. Remove the Encoder Guard and Paper Path Encoder Wheel **[D]**. Remove the Encoder Shaft Extension **[E]**. Hold the Extension with pliers and unscrew while holding the Roller in place. (*You may have to remove the Ink Drip Tray and Exit Guide Top Assembly for access*.)

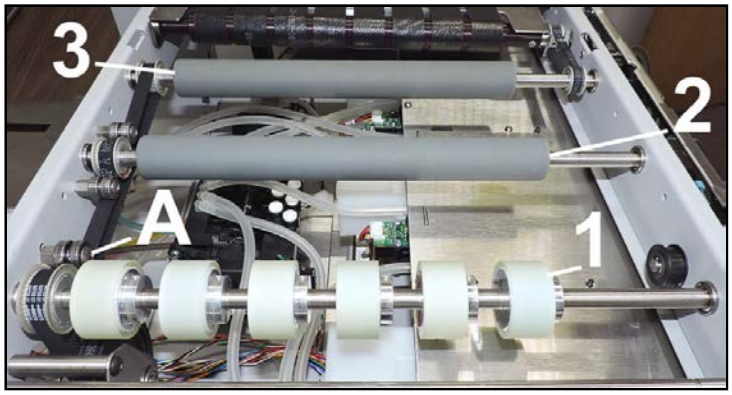
   Tip: To help avoid damaging encoder wheel with Guard, loosen both screws before removing either one.





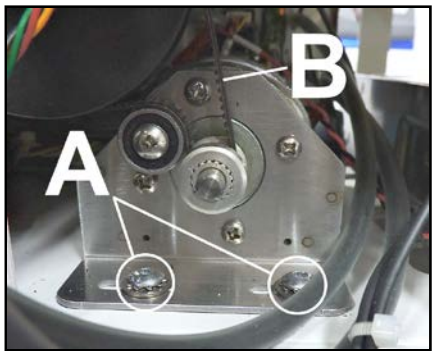
3. Remove (1) screw **[F]** securing the Bearing to Non-Operator Side Frame.
4. Disengage the Output Roller Pulley from the Paper Path Drive Belt and the Exit Conveyor Belt and remove the Output Roller **[3]** from the Printer.
5. **Install in reverse order. NOTE: Check/adjust tension on the Belts. See "Paper Path Roller Belt Tension Adjustment" in the adjustments Section. System Test:** Press **Printzone Test** to check that system is operating properly.

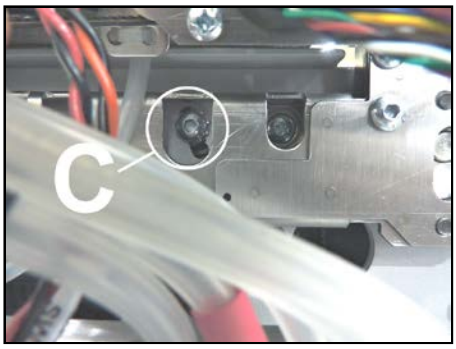




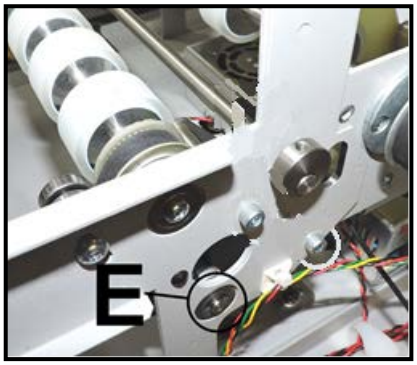
Replace Paper Path Drive Motor Belt and Paper Path Rollers Belt

NOTICE:
You may need to power the printer on/off a number of times during this process to adjust Media Thickness.
To access the screws that secure the Paper Path Plate, set Media Thickness to 7 mm.
To access the screws securing the Paper Path Rollers, set Media Thickness to 4 mm.

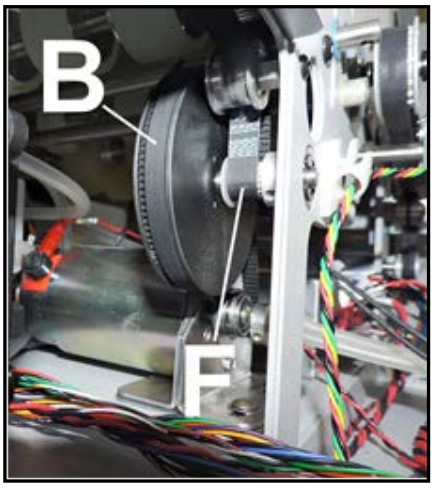




1. Remove the Paper Path Plate.
2. **If you plan to <u>replace</u> the Paper Path Rollers Belt [F]:** Remove the Paper Path Rollers. See **"Replace Paper Path Rollers".**
3. Power-down the printer. Turn Off the Main Power Switch and unplug.
4. Loosen the Paper Path Motor mounting screws **[A]** and slide motor/bracket assembly to the left, to release tension on the Paper Path Motor Drive Belt **[B]**.
5. If necessary, loosen the Idler/Tensioner Roller **[C]** to release tension on the Paper Path Rollers Belt **[F]**.
   Tip: If you remove the **Input Print Roller**, this will create slack on Belt [F] and you may be able to avoid loosening and repositioning of Idler/Tensioner [C]. If you need to loosen Tensioner, mark its current position before loosening screw.



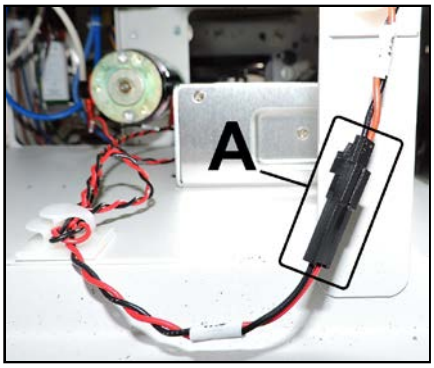
6. If you only need to replace Motor Belt **[B],** skip to **Step 8**.
7. If you need to replace Belt **[F]** or both Belts **[B]** & **[F]**:
   a. Remove the C-Clip, at position **[E],** that holds the Pulley Shaft and Bearing to the Side Frame.
   b. Remove shoulder bearing from opening **[E]**. Use your fingers behind the frame to push Bearing out towards you and remove.
      NOTE: There is commonly a metal flat washer behind this bearing. Keep track of it during install.
   c. Walk belt **[F]** around the front of the Pulley Shaft, at position **[E].**
      Tip: If desired, you can then walk belt **[B]** around the front of the Pulley Shaft at this time.



8. ***If you only need to replace Motor Belt*** **[B]:**
   Remove the Bearing and C-Clip at the opposite end of the Pulley Shaft. Then remove the shoulder bearing. This will allow you to remove Belt **[B]**, by walking the belt off the other end of the Pulley Shaft, without removing Belt **[F]**.
9. **Install in reverse order.**
   NOTE: Check/adjust tension on the Belts. See "Paper Path Roller Belt Tension Adjustment" and "Paper Path Motor Drive Belt Tension Adjustment" in the Adjustments Section.
   System Test: Press **Printzone Test** to check that system is operating properly.

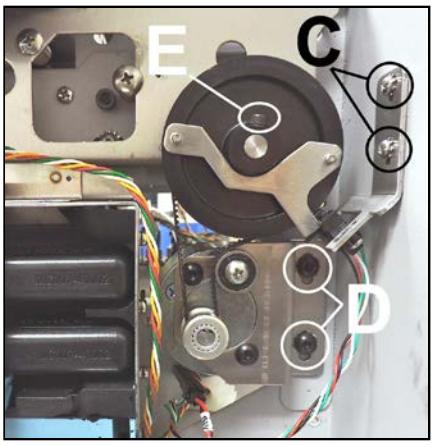
Remove Media Thickness Adjusting Assembly

1. Remove both Operator Side Covers.
2. Remove the Non-Operator Side Cover and the Top Assembly (Clamshell) Rear Cover.
3. Open the Ink Tank Door. Release and raise the Clamshell.

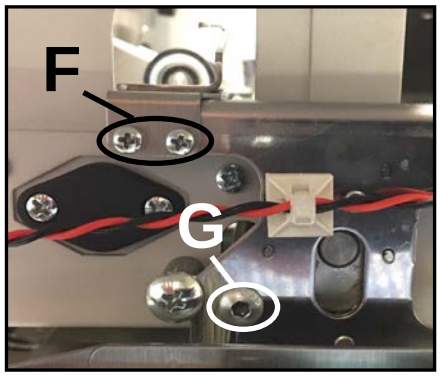


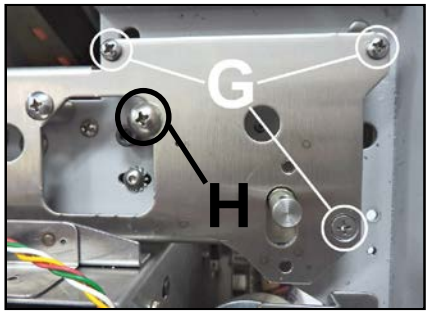
Operator Side:

1. Disconnect the Top Assembly (Clamshell) Switch wire harness at the connector **[A]**.
2. Remove the Paper Path Encoder Guard **[B]**.
   Tip: To help avoid damaging encoder wheel with Guard, loosen both screws before removing either one.
3. Remove (2) screws to remove the Encoder Sensor.
4. Remove the screw and carefully remove the Encoder Wheel and Hub.
5. Mark the Sensor Bracket location. Then remove (2) screws **[C]** securing the Media Thickness Sensor Bracket. Carefully set the Sensor Assembly aside.
   Tip: You can skip this step if the Flag is clear of the Sensor.



6. Check (get a feel for) the current belt tension. Mark the current motor bracket location. Then loosen the Media Thickness Adjusting Motor mounting screws **[D]** to release tension on the Drive Belt.
7. Mark the location of the screw **[E]** on the shaft. Then loosen the mounting screw **[E]** to remove the Media Thickness Lift Pulley and Belt.



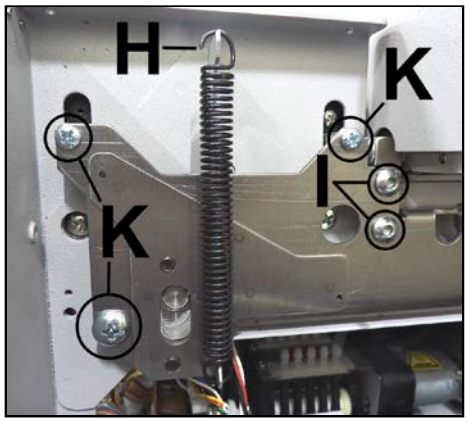


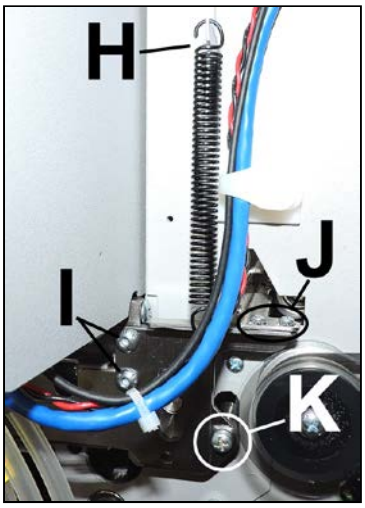
   Tip: If Media Thickness Sensor Bracket was not removed in Step 5; to avoid damaging Home Sensor or Flag, rotate Pulley so metal Flag isn't within Sensor. Then remove Pulley from shaft.
8. Remove (2) screws **[F]** securing the Hold-down Wheels Support.
9. Remove (4) screws **[G]** securing the Media Thickness Lift Frame to the Lift Supports.
10. Remove (2) screws **[H]** that capture/guide the Lift Frame.
    NOTE: When reinstalling, you will need to apply Loctite. Tighten only enough to capture/guide the Lift Frame. Do NOT pinch/bind the Lift Frame.

11. Remove the Lift Frame from the Printer.
    NOTE: You don't need to remove the Clamshell Support (pneumatic lifter) to remove the Lift Frame. You can work frame out, then slide it to the right to remove.
    If you want to remove the Clamshell Support to make Lift Frame removal easier:
    Remove (2) screws that secure lower hinge plate to Ink Station frame.
    CAUTION. Be sure to support Clamshell while doing this.
12. Re-install in reverse order.
    See section titled "Re-installing Media Thickness Lift Pulley, Motor and Belt" for tips on reinstalling this assembly.
13. Gently lower and lock the Clamshell.

Non-Operator Side:

1. Unhook (2) Springs **[H]** from the Upper Mounts on the Printer Side Frame.
2. Remove (4) screws **[I]** securing Top Assembly (Clamshell) Hinge Pins to the Media Thickness Lift Frame.
3. Remove (2) screws **[J]** securing the Hold-down Wheels Support to the Lift Frame.
4. Remove (4) screws **[K]** securing the Lift Frame to the Lift Supports.

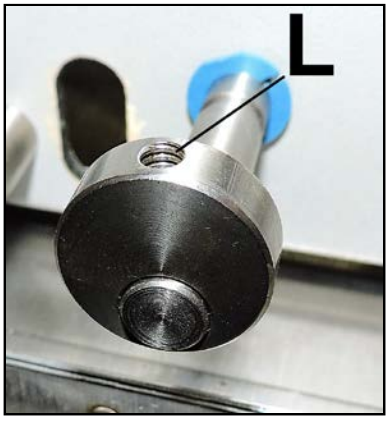




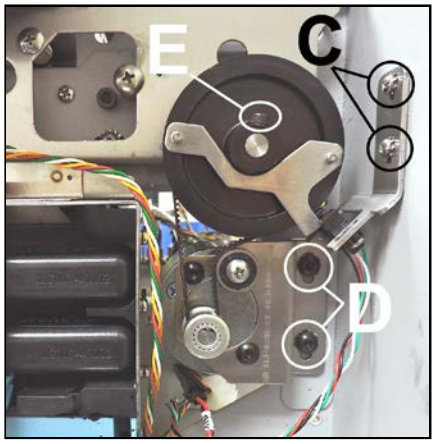
5. Remove the Lift Frame from the Printer.

Eccentric Shafts:

1. Remove setscrew **[L]** securing the Eccentric Cam to the shaft. Slide the Shaft out of the Printer.
   Tip: Mark the cam position on the shaft to make re-assembly easier.
2. **Reinstall in reverse order.**
   IMPORTANT! Make sure the lobes on the Cam face the same way at both ends of the shaft. Once installed make sure all four of the cams on both shafts face the same direction. If not, correct as needed.
   Tip: There is a hole in the shaft for each cam. If you are sure that cams are properly installed (setscrew in hole) but the cams on one of the shafts are in a different orientation than the cams on the other shaft, then you will need to make a timing adjustment. See "**Media Thickness Cam Shaft Timing Adjustment**".



Re-installing Media Thickness Lift Pulley, Motor and Belt



1. After installing Eccentrics and Lift Frames.
2. Turn the Media Thickness drive shaft so the cams push the clamshell to the highest position. **Tip:** High point of cam lobes will be facing ~12 o'clock.
3. Install Pulley, as shown.
   Tip: Flat side of Pulley hub will be facing up. Screw [E] is inserted from top. Don't over-tighten screw or you will crack plastic Pulley.

   IMPORTANT: Pulley must be installed in the orientation shown, when cam lobe high points are in their ~12 o'clock position. If not lift movement will not be correct.
   CAUTION! Be careful not to damage the Home Sensor in this process.
4. **Test for proper mechanical function.**
   Make sure the Flag enters the Home Sensor when Clamshell is at its highest position.
   With Clamshell at highest position, turn the Lift Pulley clockwise to lower Clamshell fully.
   Verify that there are no obstructions when Clamshell is raised/lowered using Lift Pulley.
5. Install and tension Belt by shifting motor up/down. Secure (2) screws [D].
6. If removed, re-install Home Sensor bracket (with Home Sensor) and adjust as needed. See "Check/Adjust Media Thickness Home Sensor Height".

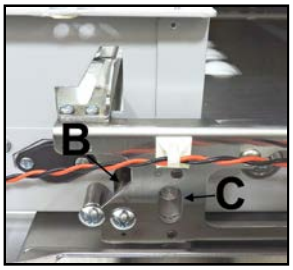
Lubrication:

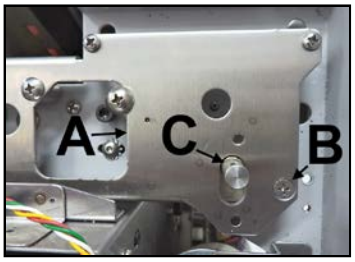
When reassembling the Media Thickness Adjustment Assembly, apply a dab of white lithium grease to the following areas:

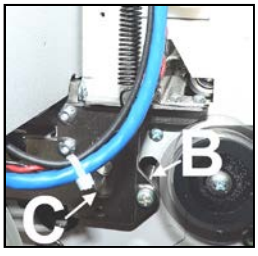
[A] Along the frame edge contacted by the restrainer screw.

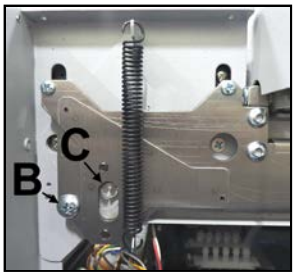
[B] On the Support Shafts.

[C] On (4) Lift Cams on the Eccentric Shafts.







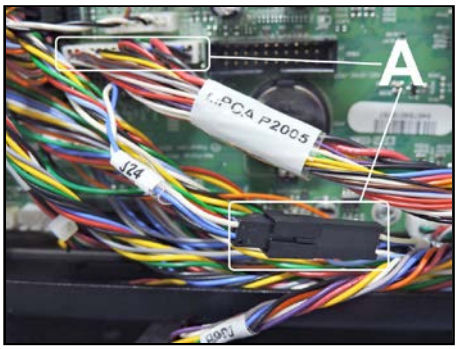


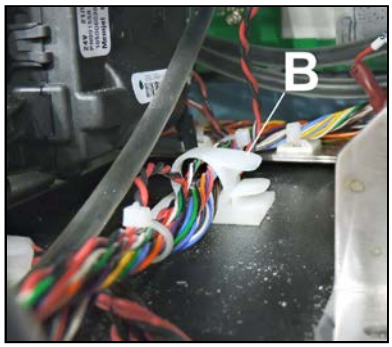
Ink Station Disassembly

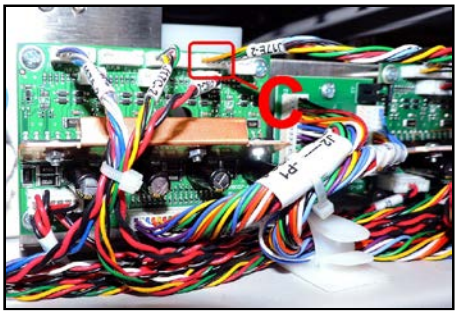
Remove Ink Station

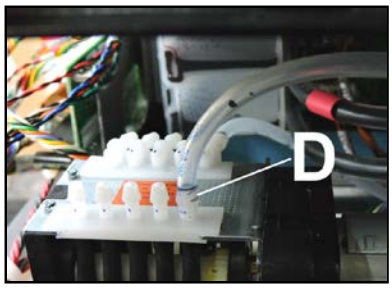
Removing the Ink Station allows easy access to all of the components. Make sure you have run **System Deprime** before powering the Printer OFF. **NOTE: Be careful of ink drips when disconnecting Ink Hoses.**

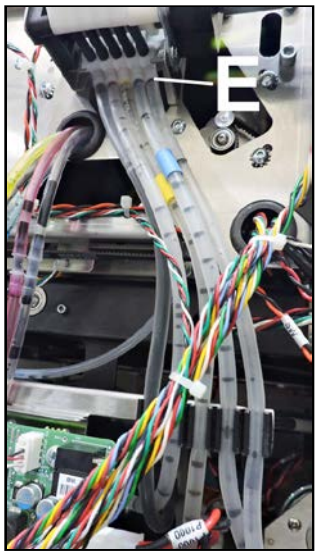
1. Remove the Non-Operator Side Cover and Exit Cover.
2. Remove Ink Tank Door.
3. Disconnect wire harness bundle **P2005** from MPCA **[A]**. Disconnect **J24** at connector. Pull wire harness away from other wires so it will not snag or pull. Open the wire clamp **[B]** inside the Printer to release the wire harness.
4. Disconnect Waste Pump wire harness **J17E-2** from DPCA-2 **[C]**.
5. Disconnect the hose from the top of the Ink Waste Pump **[D]**.
6. Disconnect 5 color-coded hoses from under the Peristaltic Pump **[E]**.
7. Disconnect 5 color-coded hoses going to the Dual Pinch Valve at the hose barb connectors **[F]**.
8. Remove the Support Strut and Top Bracket (*2 screws*) **[G]**.

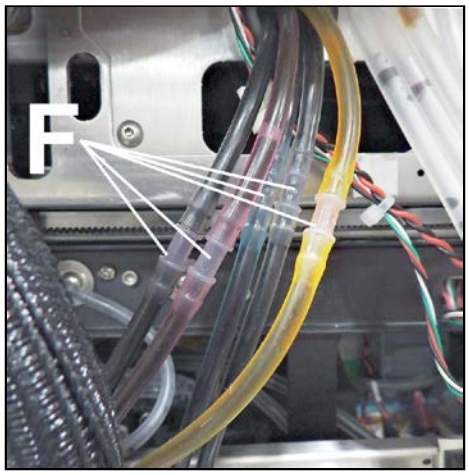










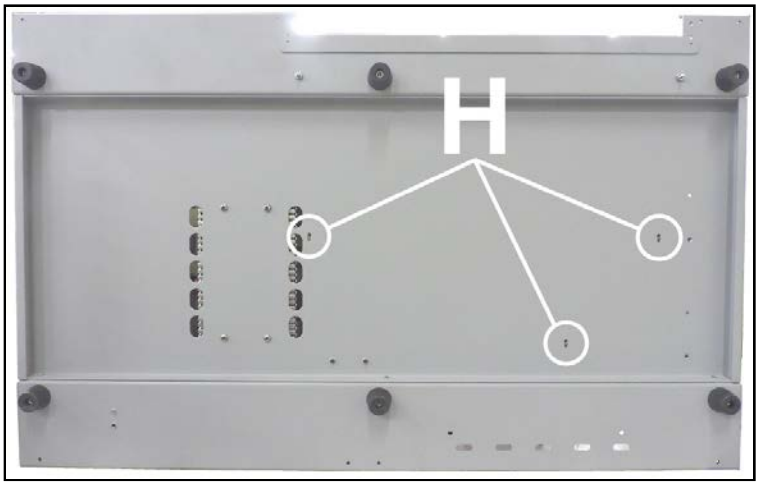


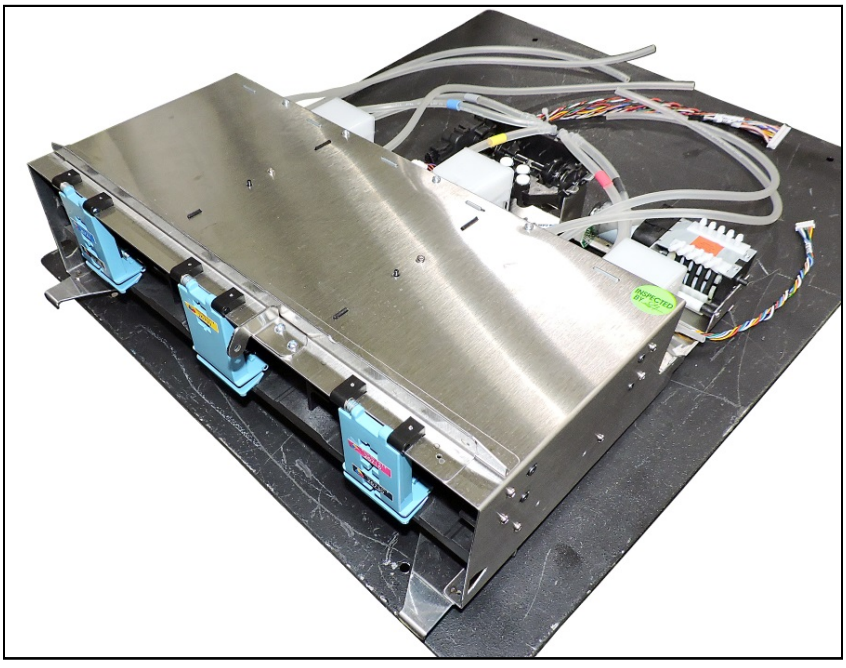
9. Remove (3) mounting screws and washers securing the Ink Station to the Printer Base **[H]**.

10. Remove (2) screws securing the Ink Station to the Operator Side Frame **[I]**.

11. Carefully slide the Ink Station out of the Printer.
NOTE: Make sure the wire harnesses and ink hoses do not snag on anything.

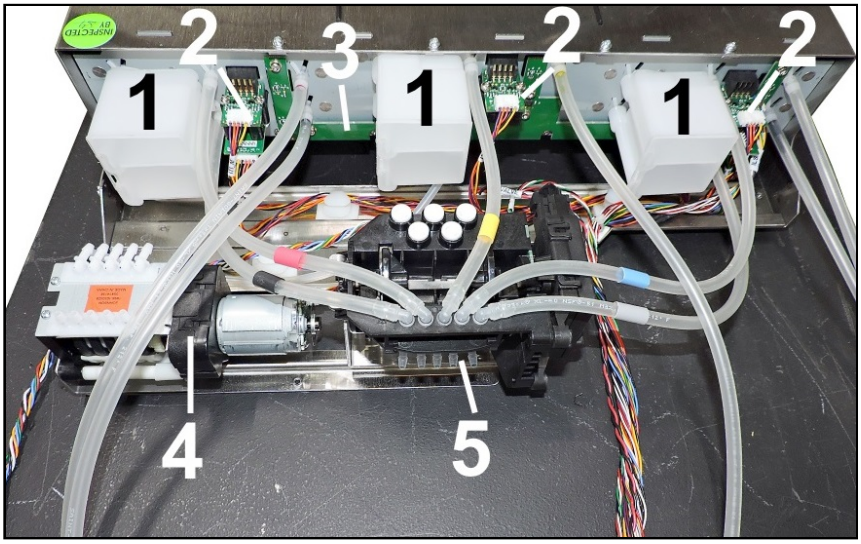
12. **Reassemble in reverse order. Wipe the Ink Station area in the Printer to clean up any ink drips that may have occurred.**
NOTE: Be sure to carefully route and reconnect the wire harnesses and to secure the P2005 wire harness bundle to the wire clamp inside the Printer. Make sure the ink hoses are connected to the correct color-coded positions.
DO NOT MIX INK HOSES!





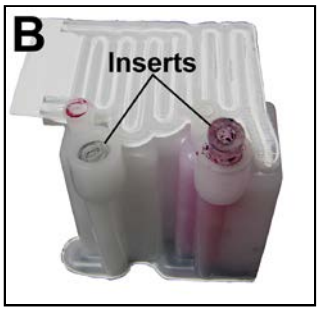
Ink Station Components

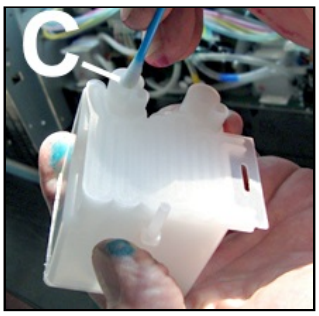
1. Buffer Boxes (x3)
2. QA Chip Assembly (x3)
3. Ink Tank Level PCA
4. Peristaltic Pump (*Waste Pump for Service Station*)
5. Dual Pinch Valve

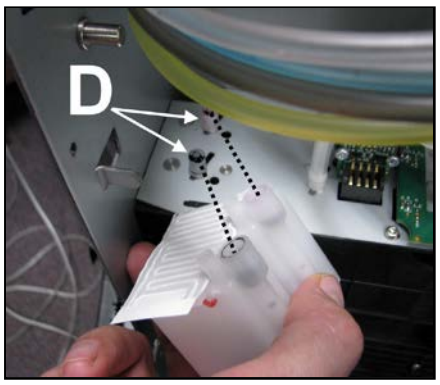


Replace Buffer Boxes (*3 per Printer*)

1. Each Buffer Box is held in place by (2) screws **[A]** accessed through Ink Tank Station. Use a long Phillips screwdriver, remove screws and pull up on box to remove it from Chassis.
2. **Remove the old Tubing Inserts (2) [B]** from the used Buffer Box (*or from the ink barbs if pulled loose from the Buffer Box*). Cut pieces of tubing (TYGON AN80007 1/8" ID x 1/4" OD, 1/16" thick wall tubing) into 6.5-7mm (17/64"-9/32") pieces to use as new inserts. **NOTE: Make sure that the ends of the tubing are cut square and that the edges are smooth.**
3. Install the inserts on the ink needle nipples in the Ink Tank Station (*isopropyl alcohol works as a good lubricant*). Make sure the barb is flush with the end of the tubing.



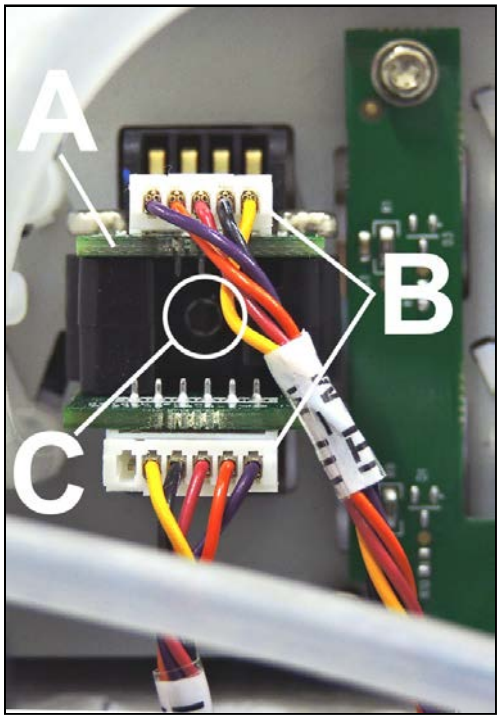




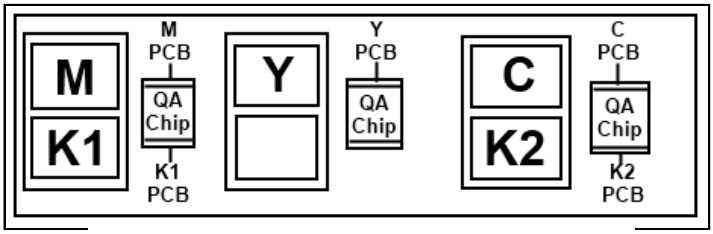
4. Apply alcohol on the inside of the ink inlet fitting **[C]** on the new Buffer Box. Push the new Buffer Box down onto the Ink Tubing Inserts **[D]** installed previously until the standoff posts are pressed firmly against the bulkhead.
5. Attach Buffer Box with (2) screws from inside Ink Tank Station.

Replace QA Chip Assembly (*3 per Printer*)

1. Each QA Chip Assembly **[A]** is held in place by (1) screw accessed through the center of Chip Assembly. Carefully disconnect the wire harness(es) **[B]** from the Printed Circuit Boards.
2. Remove mounting screw **[C]**.
3. Remove screws that attach Ink Tank Interface PCA to plastic mounting assembly.
4. **Install in reverse order. NOTE:** Make sure wire harnesses are plugged into correct Printed Circuit Board.



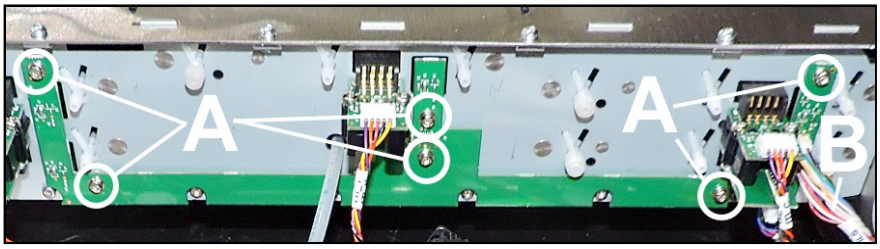
MPORTANT!
Please be sure you have ordered and are replacing with the appropriate Ink Tank Interface PCA.
M, Y, C = 123-2616 Ink Tank Interface PCA
K1 = 123-2614 Ink Tank Interface PCA
K2 = 123-2615 Ink Tank Interface & Temperature Sensor PCA



Buffer Boxes and QA Chip Assemblies

Replace Ink Tank Level PCA

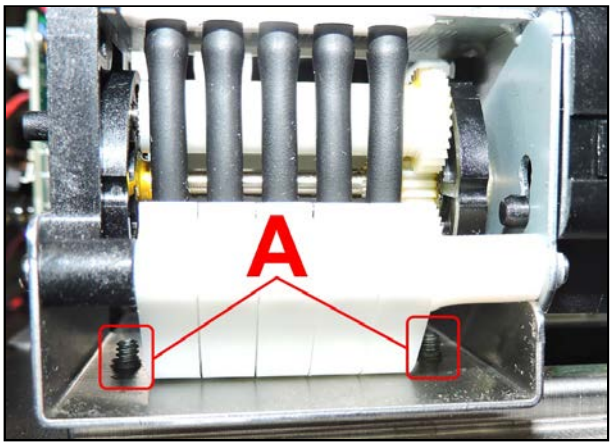
1. Remove (6) mounting screws **[A]**.
2. Disconnect wiring harness **[B]**.
3. **Install in reverse order.**



Replace Peristaltic Waste Pump Assembly

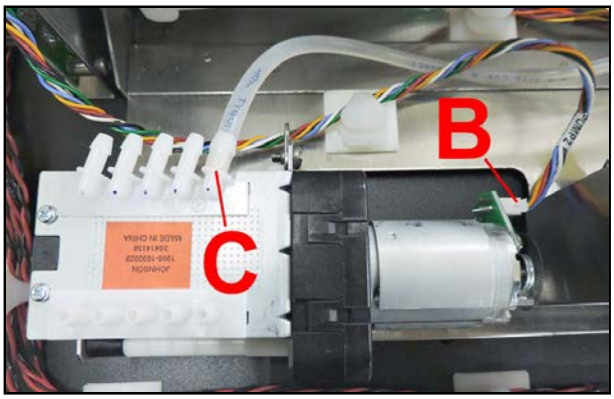
Remove old Pump Assembly:

1. Remove (2) screws **[A]** that attach the Pump Assembly to the Ink Station Base. (*Located under the Ink Station Base*.)
2. Disconnect wire harness connector **[B]** from Pump Motor Circuit Board terminal.
3. Remove Ink Hose from hose barb **[C]**. **IMPORTANT! Make sure you know where Ink Hose connects.**
4. Remove old Pump Assembly.



Install new Pump Assembly:

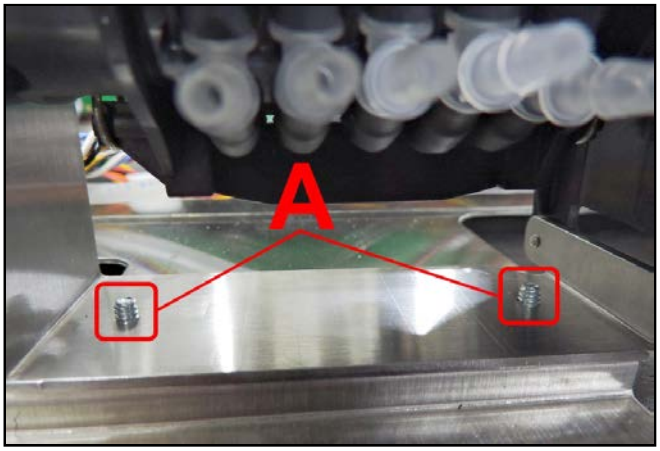
1. Plug wire connector into new Pump Assembly Motor Circuit Board **[B]**.
2. Attach to Pump Assembly to Ink Station Base with (2) screws **[A]**.
3. Attach Ink Hose to hose barb on Pump Assembly **[C].** **IMPORTANT! Make sure you know where Ink Hose connects for reassembly.** Run **System Test** to check operation. **System Test:** Press **Sump Test** to check that system is operating properly.



Replace Dual Pinch Valve Assembly

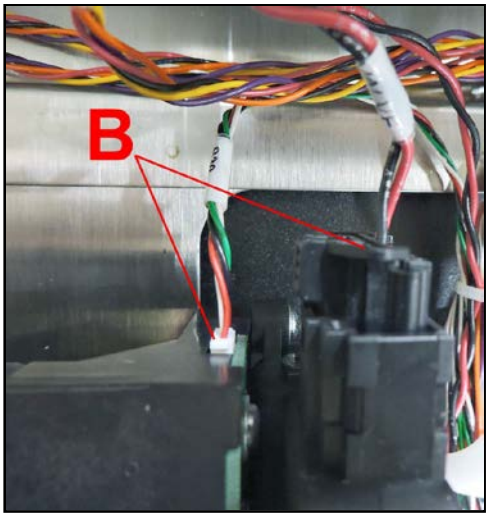
Remove old Valve Assembly:

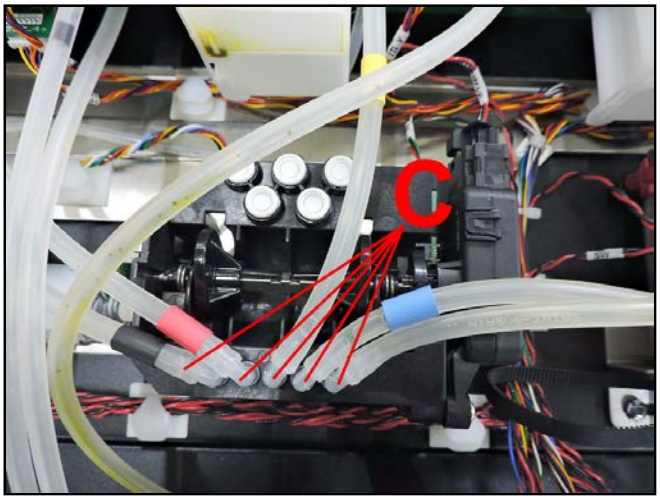
1. Remove (2) screws **[A]** that attach the Valve Assembly to the Ink Station Base. (*Located under Ink Station Base.*)
2. Unplug (2) wire harness connectors **[B]** from the Valve Assembly.
3. Disconnect Ink Hoses **[C]**.
   IMPORTANT! Make sure you know where each Ink Hose connects.
4. Remove old Pinch Valve Assembly.



Install new Pinch Valve Assembly:

1. Plug wire connectors into the new Pinch Valve Assembly **[B]**.
2. Attach the Valve Assembly to the Base with (2) screws **[A]**.
3. Reattach Ink Hoses into same connectors **[C]** they were removed from.
   NOTE: Check that Hoses were not stretched or damaged when they were disconnected. If damaged, or you have any doubt, cut the damaged or stretched portion off before installing.
   Run System Test to check operation. System Test: Press **Valve Test** to check that system is operating properly.

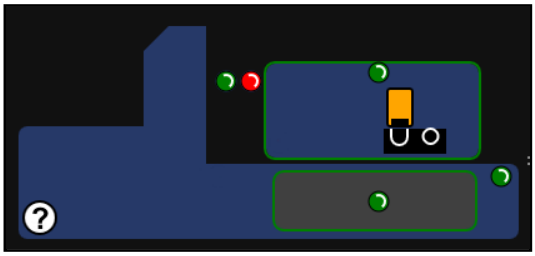


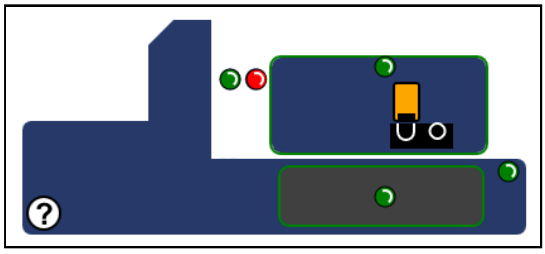


Clean Dual Pinch Valve Sensors

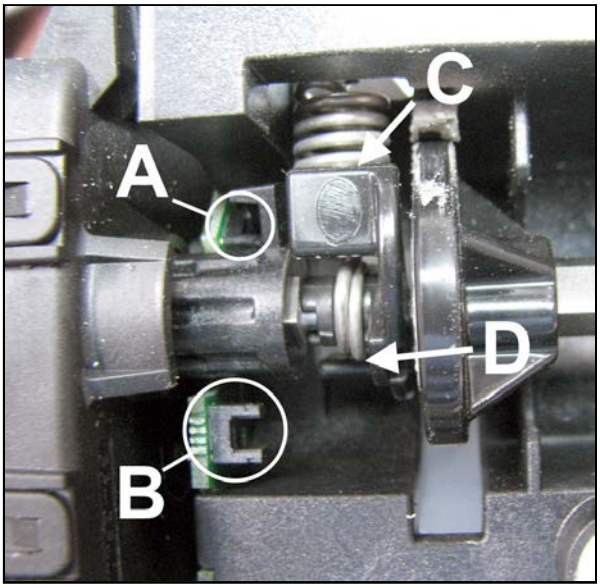
If the **"Valve: Unknown"** icon **(?)** appears for other than a few seconds in the **"Valve:"** section of the Printer Icon on the Touchscreen or in the Toolbox, it may indicate that the DPV Sensors are blocked.

The Ink Station must be removed for this procedure. See **"Remove Ink Station"** on previous pages. It is also assumed that Ink Tanks and the Ink Waste Tray are already removed.





1. Use canned air to blow debris off two Sensors **[A & B]** located on DPV Sensor PC Board.
2. As a preventive measure, apply a small amount of Super Lube Grease (*or Teflon-based lubricant equivalent*) to space between springs and DPV Adaptor **[C & D]**. (*Use a small brush or toothpick to reach these small, tight areas.*)



CAUTION

DO NOT GET GREASE ON SURROUNDING AREAS INCLUDING DPV SENSOR PC BOARD, SENSORS OR SENSOR FLAGS.

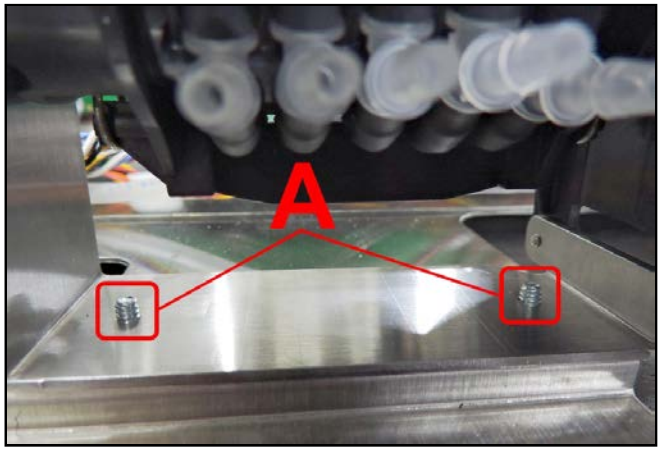
Replace Dual Pinch Valve Sensor PC Board

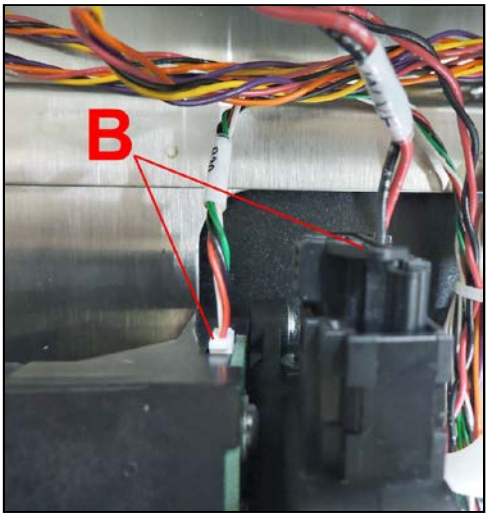
To perform this operation, you will need a **Dual Pinch Valve Wrench (#42-301-08)**. The **Pinch Valve Wrench** holds the spring-loaded Pinch Valve Shaft in place when replacing the PC Board.

Remove Dual Pinch Valve Assembly:

1. Remove (2) screws **[A]** that attach the Valve Assembly the Ink Station Base. (*Located under Ink Station Base.*)
2. Unplug (2) wire harness connectors **[B]** from the Valve Assembly.

IMPORTANT! Ink hoses are still attached. Carefully pull Pinch Valve Assembly away from the Ink Station Base without kinking or pulling out hoses.

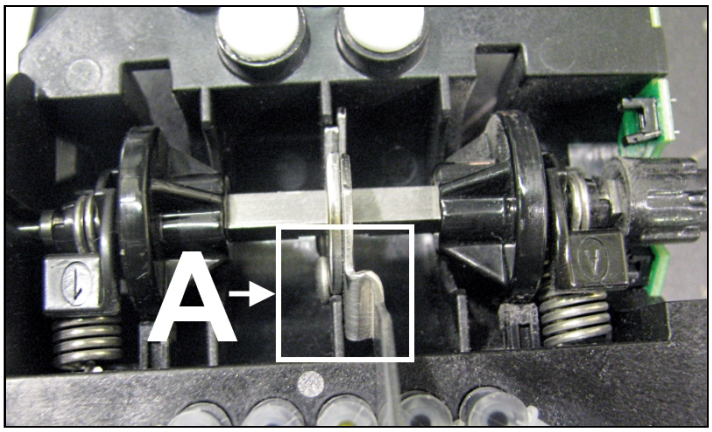




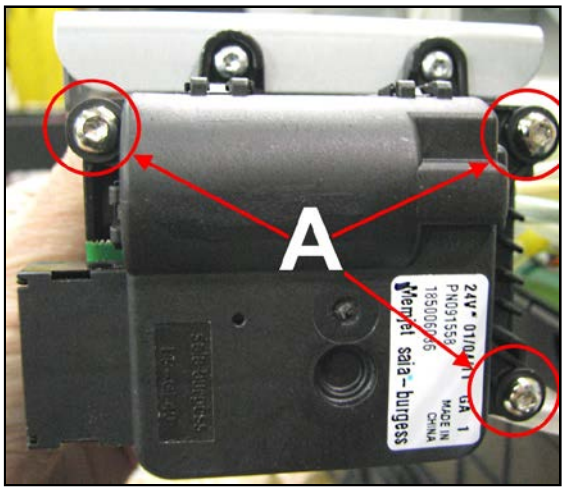
Replace Pinch Valve Sensor PC Board

1. **Secure spring-loaded shaft** using **Dual Pinch Valve Wrench**. Position wrench exactly as shown.
   NOTE: Wrench fits around shaft (*as shown*). See that the Wrench head and screw head **[A]** fit around Pinch Valve housing rib (*as shown*).

   IMPORTANT! This Step keeps spring-loaded shaft in position when Pinch Valve Motor Assembly is removed. Make sure Wrench is positioned correctly before proceeding.



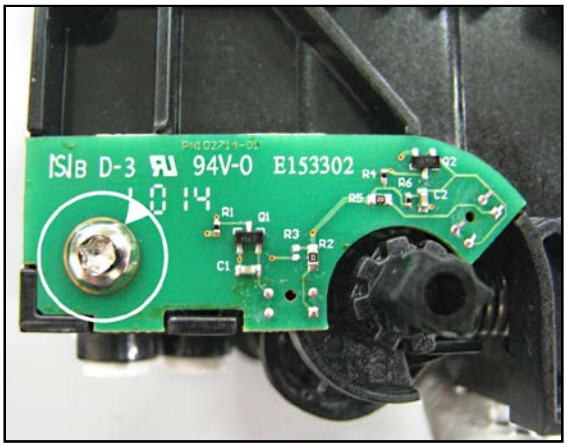
2. **Remove Motor Assembly.** Remove three (3) screws **[A]** holding Pinch Valve Motor Assembly on Pinch Valve Body. Remove Motor Assembly.



3. Remove one (1) screw to remove Pinch Valve Sensor PC Board.

4. Install new Pinch Valve Sensor PC Board using screw removed in **Step 3**.
NOTE: Make sure PC Board is installed flush against Pinch Valve body.

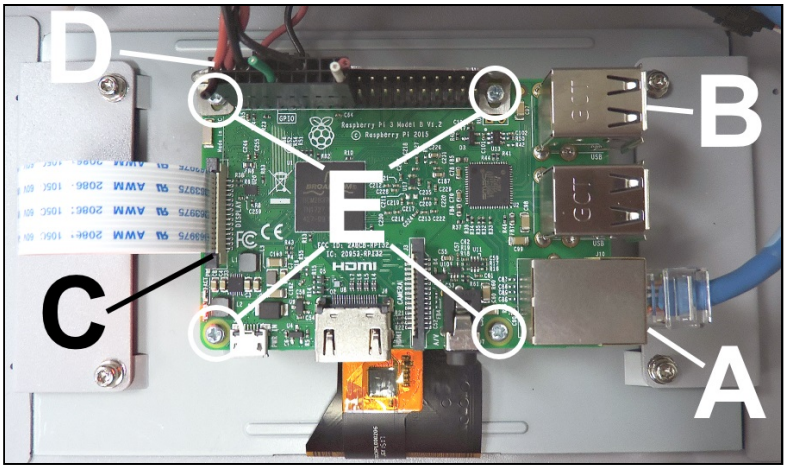
5. **Reinstall Pinch Valve Assembly in reverse order.** Run **System Test** to check operation.
System Test: Press **Valve Test** to check that system is operating properly.



Top Assembly (Clamshell) Disassembly

Replace Touchscreen Interface PC Board

1. **Open the Top Cover. Remove the Control Panel Cover.**
2. Disconnect the Ethernet cable **[A]**, (2) USB cable **[B]**, ribbon cable (Display) **[C]** and the **J8** wire harness **[D]**.
3. Remove (4) screws **[E]** securing the PC Board and the J8 terminal bracket to the Touchscreen Display studs.



NOTICE:

If a properly programmed Micro SD Card is NOT installed in the Touchscreen Interface PC Board, the Touchscreen will not function (display will stay dark).
A Micro SD Card is NOT included with a new Touchscreen Interface PC Board (Raspberry Pi Computer).
If needed the SD Card can be ordered separately or you can create one using the information found on the next page.
It is strongly suggested that you create your own SD Card, to save cost and time.

How to Create New Micro SD Card

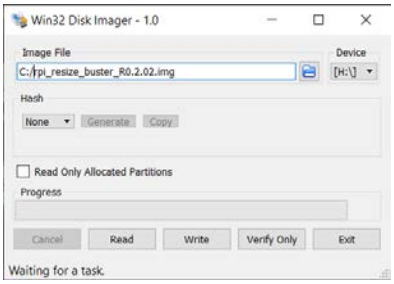
The Micro SD Card contains the UI (raspberry pi computer) operating system.

NOTE: You cannot "copy" a ColorMax 8 SD Card using standard Windows features, since the file system on the SD Card will not be recognized by Windows. Even if you have an SD Card Duplicator, we do NOT recommend copying an SD Card that was removed from a working printer for use in other printers. Copied SD Card may not work properly. For example, the Stored Jobs feature may not work.
Instead, we suggest creating a new SD Card using an "image file" as described below.

Items Needed:

- Windows 7/8/8.1/10 Computer
- Win32 Disk Imager* software or some other disk imaging utility.
  NOTE: This freeware software can be downloaded from the following site.
  https://win32diskimager.download/
- SD Card Adapter – used to connect microSD Card to computer.
- 64 GB microSD Card - SanDisk Ultra, microSDXC UHS-1
- Image file – file used to create a working SD Card. Contact tech support to obtain Image File.

1. SD Card Preparation:
   a. Make sure SD Card is correct size and type for use in ColorMax 8, as described above.
   b. If you are using a NEW SD Card than you can proceed to Step 2.
   c. If you are re-using SD Card, refer to "Micro SD Card Partition Removal Procedure" on next page.
   NOTE: You must remove partitions from a used SD Card before you will be able to write (burn) image to SD Card. If you skip this step the "image" write process will fail.
2. Disconnect all other External Drives (External Hard Drives, Thumb Drives, etc.) from computer to prevent accidently choosing and imaging the wrong device, rendering it inoperable.
3. Connect SD Adapter, containing microSD Card, to computer.
   If you receive the following Windows messages, please ignore these messages.
   "You need to format the disk in drive X: before you can use it" Do NOT select Format or Cancel.
   "There is a problem with this drive. Scan the drive now and fix it." Do NOT select Scan and fix.
4. Open "Win32DiskImager.exe". Right-click and select Run as Administrator.
5. Browse and Select UI Image File:
   From the Win32 Disk Imager screen, click on the "folder" icon. Locate and select (open) the image file you plan to use to create the SD Card.
   Example: rpi_resize_buster_R0.2.02



6. Verify that the correct "Device" is selected/displayed. If unsure, remove SD Card Adapter to verify device letter disappears. Then reconnect to verify that device letter re-appears.
7. You can leave "Hash" set to "None"
8. You can leave "Read Only Allocated Partitions" unchecked.
9. Select "Write" from Win32 Disk Imager
   Image will be written to the microSD Card. This will take a while.
10. Once finished "Write Successful" should appear. Click on Exit, to close Win32 Disk Imager
    Ignore any messages regarding "You need to format the disk in drive X: before you can use it". Do NOT choose Format. You can close this message screen.
11. Safely Eject and Remove SD Card Adapter, containing microSD Card, from computer.

For information on locating/replacing Micro SD Card see "Replace Touchscreen Micro SD Card".
You will also find notes on how to correct "***Printer cannot be found***" message that will commonly occur after installing a new microSD Card into printer.

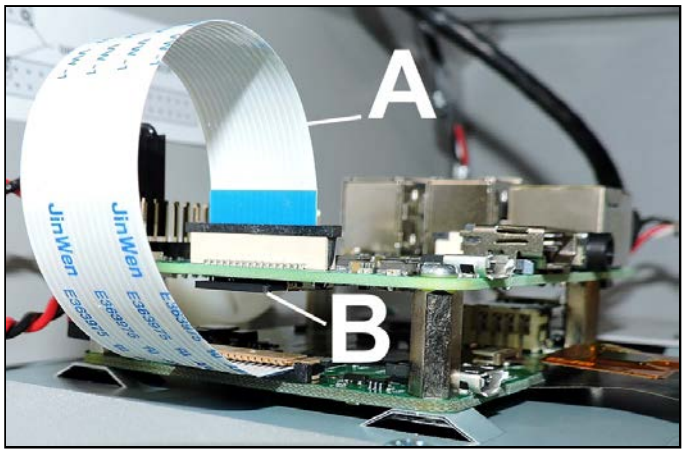
Micro SD Card Partition Removal Procedure

NOTE: This procedure must be completed before you will be able to successfully write an "image" to a used SD Card. For example, SD Card you plan to use, was removed from ColorMax 8.
This procedure is NOT required if you are using a new (unused) SD Card.

1) Disconnect all other external drives from computer.
2) Connect SD Card (USB adapter) to computer.
   If you receive the following Windows messages, please ignore these messages.
   "You need to format the disk in drive X: before you can use it" Do NOT select Format or Cancel.
   "There is a problem with this drive. Scan the drive now and fix it." Do NOT select Scan and fix.
3) Search for "CMD" on computer.
4) Locate "Command Prompt", right-click and run as administrator
5) Type the following commands at Command Prompt and press ENTER.
   a) Type "Diskpart"
   b) Type "list disk" (select the disk you want to clean)
   c) Type "select disk #" (disk # that represents the SD Card).
      IMPORTANT: Be sure this is the SD Card. You can verify by removing SD card and typing "list disk" again. If "disk #" does not show, then this was the correct device. Reconnect SD card and type "list disk" again. Then select disk # that represents SD Card.
   d) Type "clean"
   e) Type "create partition primary"
   f) Type "Active"
   g) Type "select partition 1"
   h) Type "exit" to exit Diskpart.
6) Close the "Command Prompt" window.
7) Safely remove SD Card Adapter, including microSD Card, from computer.
8) If the following warning messages are present, you can CANCEL or CLOSE them now.
   "You need to format the disk in drive X: before you can use it"
   "There is a problem with this drive. Scan the drive now and fix it."
9) The SD Card is now ready for "image" to be written to it. Please proceed to Step 2 on previous page.

Replace Touchscreen Micro SD Card

1. **Open the Top Cover. Remove the Control Panel Cover.**
2. The SD Card is located under the Ribbon Cable **[A]**. Gently pull the Micro SD Card **[B]** out of the port.
3. **Reinstall or replace in reverse order. NOTE: Make sure Micro SD Card is oriented correctly (*contacts facing up*) before reinstalling in the port.**



NOTE: We do NOT suggest swapping Micro SD Cards between printers. If you do so the Stored Jobs features may not work properly. If a properly programmed Micro SD Card is NOT installed in the Touchscreen Interface PC Board, the Touchscreen will not function (display will stay dark).

What to Expect After Installing New Micro SD Card

During initial boot-up, you may get a screen filled with text. This is normal.
Touchscreen (UI) may reboot several times.
It is common for the "The printer cannot be found" screen to appear, since the UI is unable to connect to the Main PC Board (MPCA), due to the UI's IP Address being different on the new Micro SD Card.

<u>To fix this issue:</u>

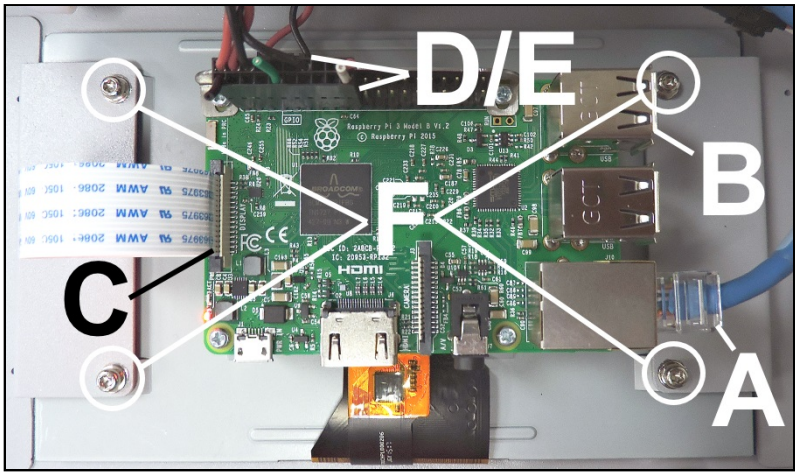
- Run S Series Driver installer and connect printer via USB, if this hasn't been done yet.
- Open Toolbox, Service Menus, System Settings.
- Change private IP and UI IP to the following "default" values, shown below, and press Submit.
  private_ip: 172.31.31.34
  ui_ip: 172.31.31.33.
- Reboot printer.

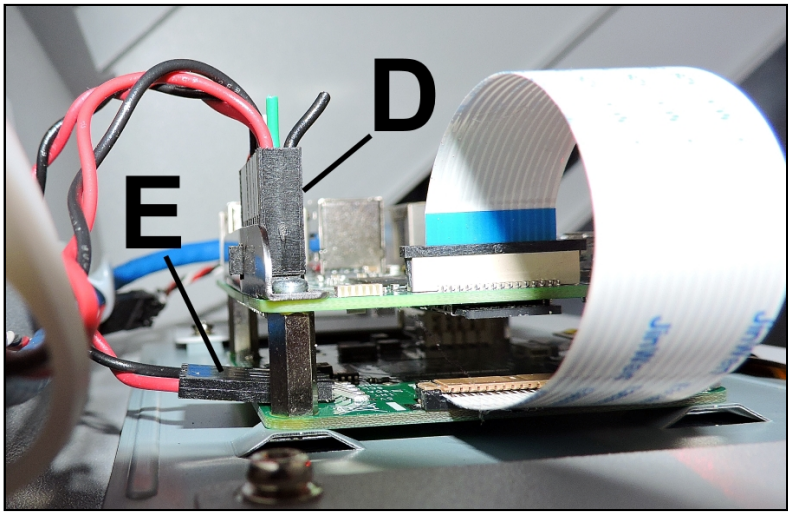
Once printer is operational and Touchscreen (UI) is functioning as normal:

- Update to latest UI Software (R0.2.02 at time of publication).
  NOTE: You cannot use the Toolbox to update from UI Software R0.0.xx to R0.1.xx or R0.1.xx to R0.2.xx)
  This can only be done by installing a new Micro SD Card.
- Check/Update Printer Firmware (R1.5.0 at time of publication).
- If printer boots up with wrong splash screen branding (such as Quadient vs Rena), contact tech support to obtain desired Splash Screen branding file.
- Set desired System Settings (Network Settings, Date and Time).
- Test for proper operation and communication before updating driver. By doing this, if you have an issue after updating driver, you know where the issue is located (driver issue or driver settings issue).
- Check/Update Printer Driver (S Series Driver, R1.5.0 at time of publication)
- Test for proper operation.

Replace Touchscreen

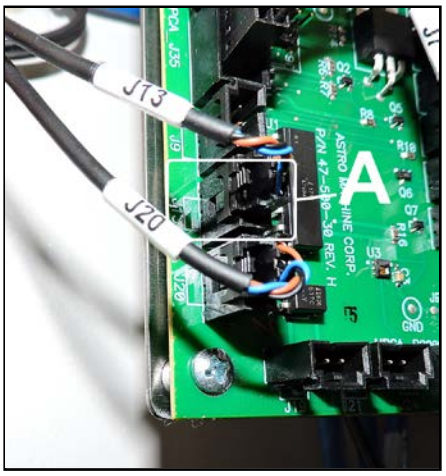
1. **Open the Top Cover. Remove the Control Panel Cover.**
2. Disconnect the Ethernet cable **[A]**, (2) USB cables **[B]**, ribbon cable (Display) **[C]** and the **J8** wire harness **[D]**.
3. Disconnect the wire harness **[E]** connected to the lower Touchscreen PC Board.
4. Remove (4) screws **[F]** securing the Touchscreen Display Assembly to the Control Panel Cover.

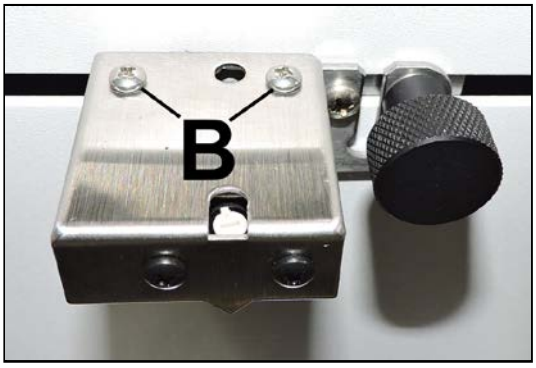


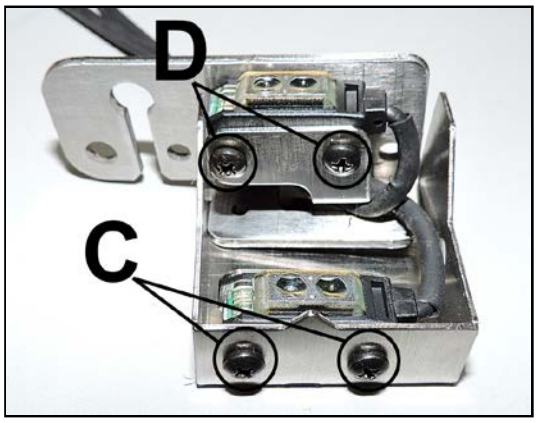


Replace Feeder Sensor

1. **Remove Non-Operator Side Cover.**
2. Disconnect the **Feeder Sensor** wire harness from the **(J13)** Interface PCB terminal **[A]**. Cut wire ties as necessary.
3. Remove (2) screws **[B]** securing the Sensor Housing to the Sensor Bracket.
4. Pull the Sensor Housing and Feeder Sensor away from the Bracket. Remove (2) screws **[C]** securing Feeder Sensor to the Sensor Housing.
5. Remove (2) screws **[D]** securing the Media Sensor to the Sensor Bracket. This allows clearance to carefully pull the Sensor wire through the slot in the Clamshell and Sensor Bracket.
6. **Install in reverse order. IMPORTANT: Sensor must be adjusted. See "Adjust the Feeder Sensor" below.**



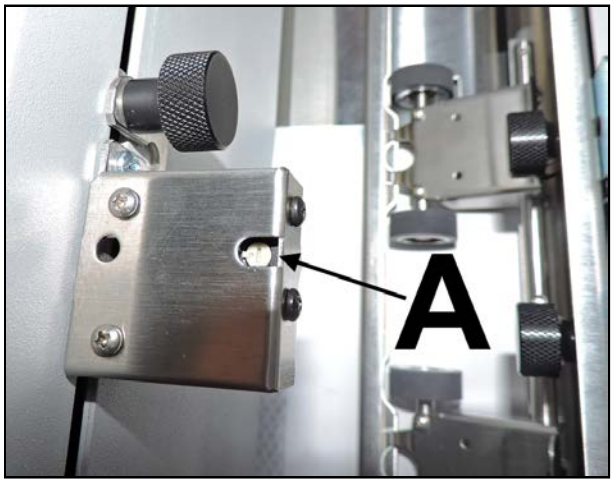


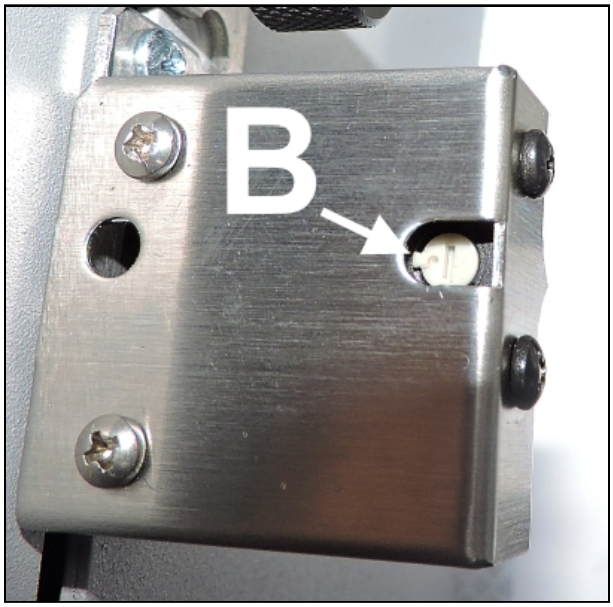


Adjust Feeder Sensor

IMPORTANT: Make all adjustments from the Non-Operator Side of the Printer and use Media Setup to set the Clamshell in its lowest position.

1. Use a small flat tip screwdriver to adjust the Feeder Sensor. Access the Sensor potentiometer through the front port **[A]** in the Sensor Housing.
2. Turn the Sensor potentiometer until the flag (*pointer*) is in the 9 o'clock position **[B]**.

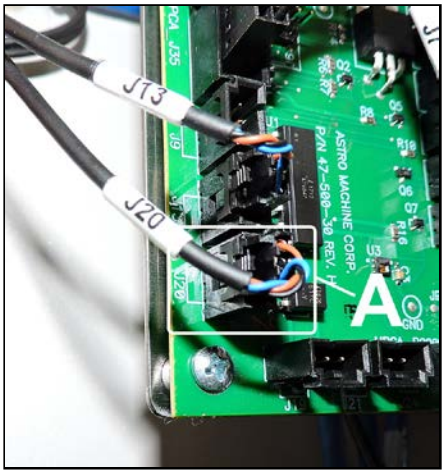


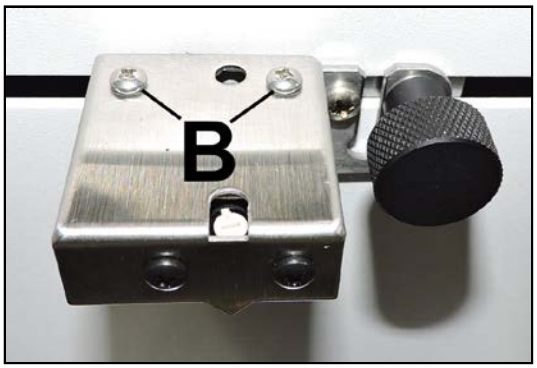


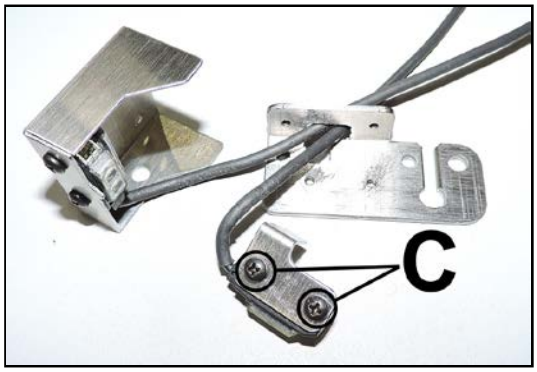
Replace Media Sensor

Media Sensor:

1. **Remove Non-Operator Side Cover.**
2. Disconnect the **Media Sensor** wire harness from the **(J20)** Interface PCB terminal **[A]**. Cut wire ties as necessary.
3. Remove (2) screws **[B]** securing the Sensor Housing to the Sensor Bracket.
4. Pull the Sensor Housing and Feeder Sensor away from the Bracket. Remove (2) screws **[C]** securing the Media Sensor to the Sensor Bracket. Carefully pull the Sensor wire through the slot in the Clamshell and Sensor Bracket.
5. **Install in reverse order. IMPORTANT: Sensor must be adjusted. See "Adjust the Media Sensor" below.**





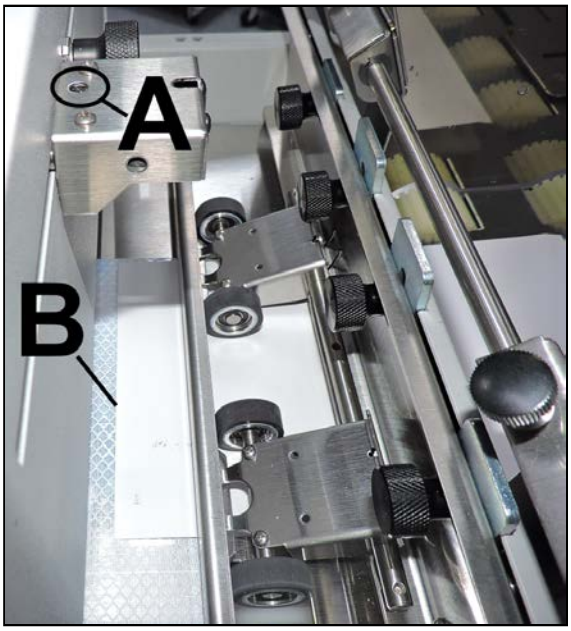


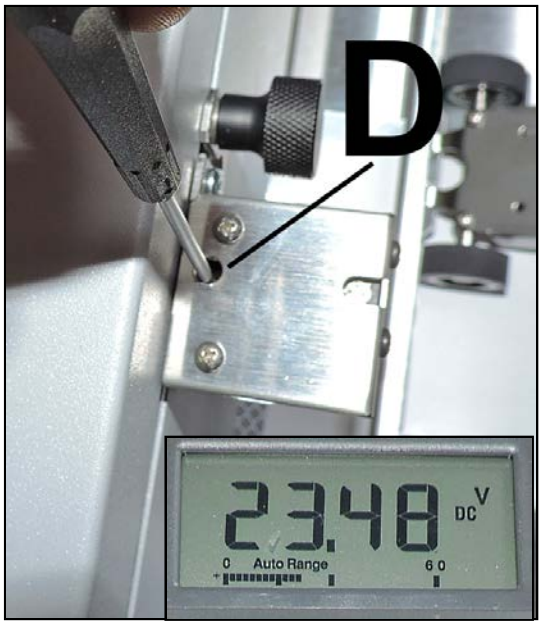
Adjust Media Sensor

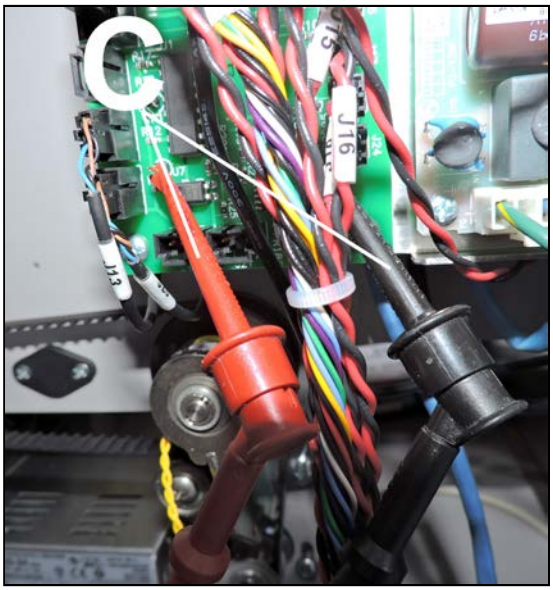
IMPORTANT: Make all adjustments from the Non-Operator Side of the Printer and use Media Setup to set the Clamshell in its lowest position.

1. Use a small flat tip screwdriver to adjust the Sensor. Access the Sensor potentiometer through the rear port **[A]** in the Sensor Housing.
2. Insert a white sheet of paper about 0.3" **[B]** away from the entry Side Panel of the Clamshell (*under the Sensor*).
3. **Connect a voltmeter: [C]** Connect **black (-) probe** to **GND** and the **red (+) probe** to **TP2** on the **GPIO (*Interfac*e) PC Board.**
4. Adjust the potentiometer **[D]** on top of the **Sensor** fully CW. Then adjust it CCW very slowly just until the point where the voltmeter changes from **0.5** to **23/24 VDC. Stop turning the potentiometer immediately.**

IMPORTANT: This adjustment only works in the CCW direction. If you miss the point where the voltage readout changes to 23/24 VDC, redo Step 4 from the beginning.

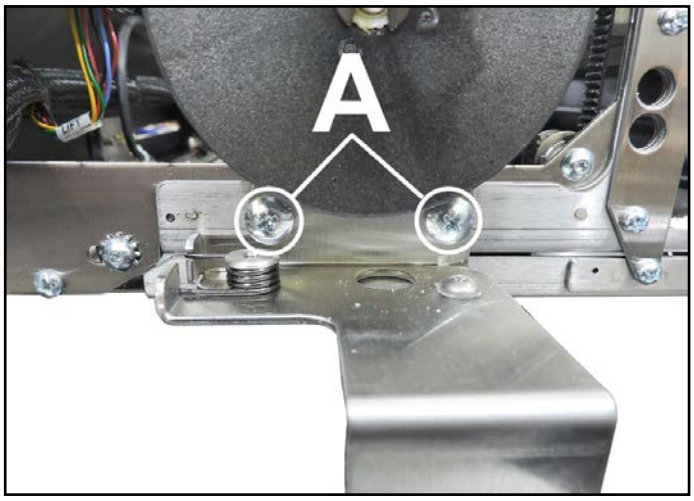


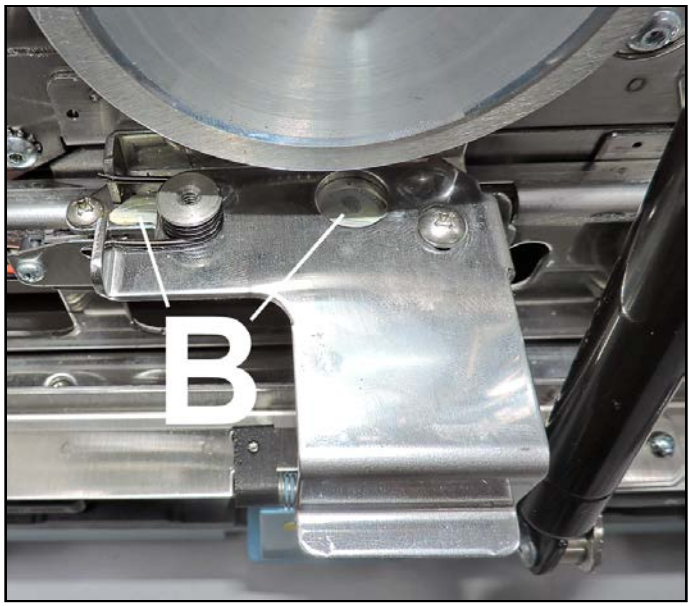




Remove Clamshell Latch Release Assembly

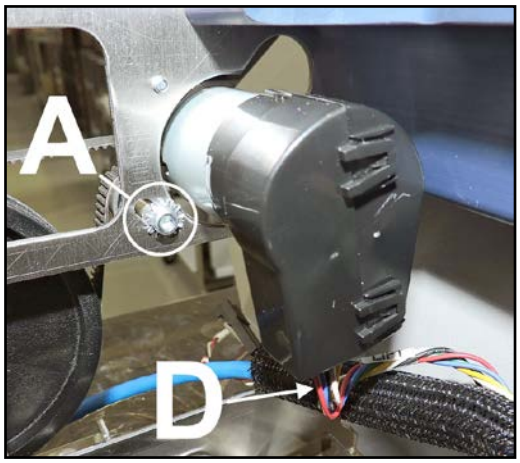
1. **Remove the Control Panel Cover.**
2. Remove (2) screws **[A]** securing the Clamshell Latch Release Assembly to the Clamshell Frame.
3. Remove the Clamshell Latch Release Assembly from the Printer.
4. **Install in reverse order.**
   Apply a small amount of lithium grease between the Latch Release and the Latch Release Bracket [B].

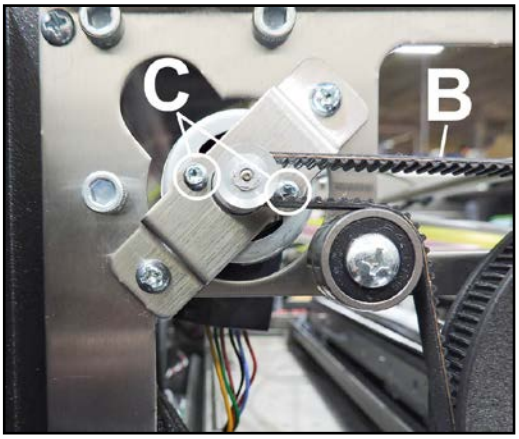




Remove Printhead Lift Motor Assembly and/or Drive Belt

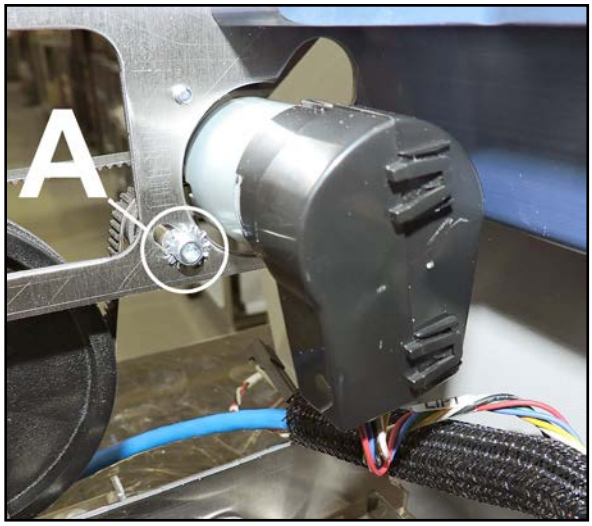
1. **Remove the Control Panel Cover.** Disconnect the Touchscreen Ethernet Cable if necessary. Carefully set Control Panel Cover Assembly aside.
2. Loosen the Idler/Tensioner Assembly **[A]**. Slide Assembly in slot to loosen the Drive Belt **[B]**.
3. Remove the drive belt from the Printhead Lift Motor.
4. Remove (2) screws **[C]** securing Lift Motor to the Lift Motor Bracket.
5. Turn Motor Assembly to disconnect the Lift Motor wire harness **[D]**.
6. Remove the Printhead Lift Motor Assembly through the Clamshell Frame.
7. **Install in reverse order. NOTE: Check/adjust tension on the Belt. See "Printhead Lift Motor Drive Belt Tension Adjustment" in the Adjustments Section. System Test:** Press **Printhead Test** to check that system is operating properly.

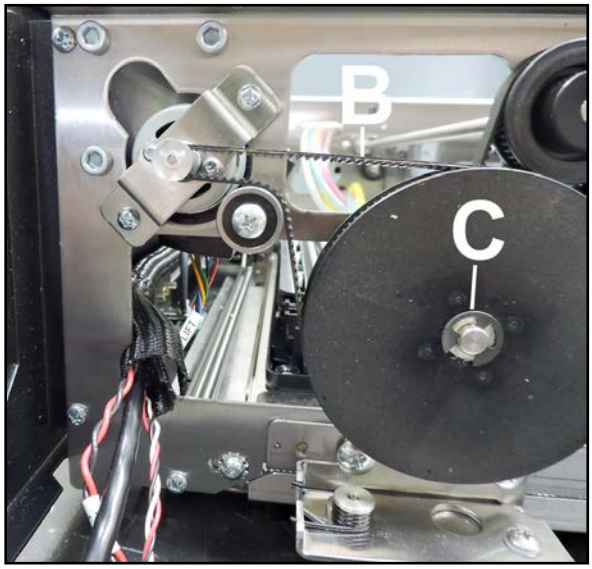




Remove Printhead Lift Motor Assembly Large Pulley

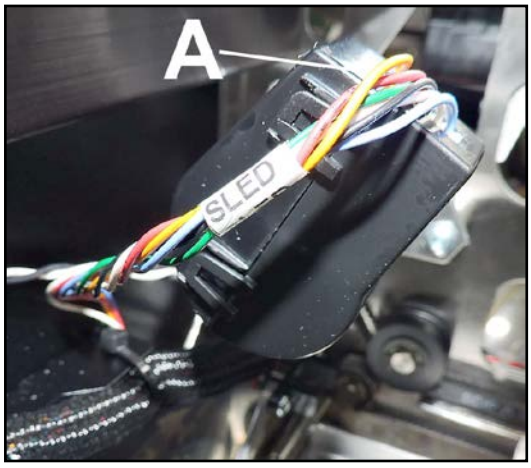
1. **Remove the Control Panel Cover.** Disconnect the Touchscreen Ethernet Cable if necessary. Carefully set Control Panel Cover Assembly aside.
2. Loosen the Idler/Tensioner Assembly **[A]**. Slide Assembly in slot to loosen the Drive Belt **[B]**.
3. Remove the drive belt from the Large Pulley. Remove the e-clip **[C]** securing Large Pulley to the Mounting Stud.
4. Slide Large Pulley off of the Stud.
5. **Install in reverse order.**
   NOTE: Check/adjust tension on the Belt. See "Printhead Lift Motor Drive Belt Tension Adjustment" in the Adjustments Section.
   System Test: Press **Printhead Test** to check that system is operating properly.

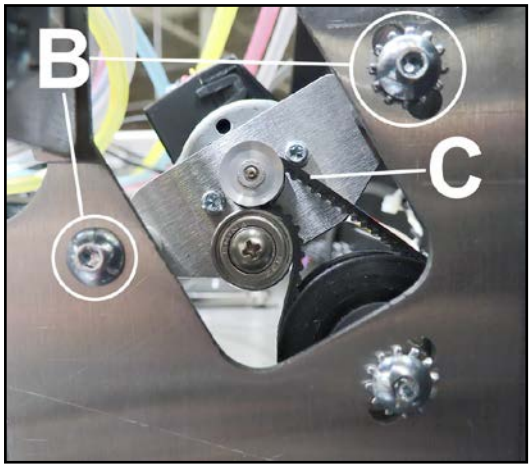




Remove Service Station Sled Motor Assembly

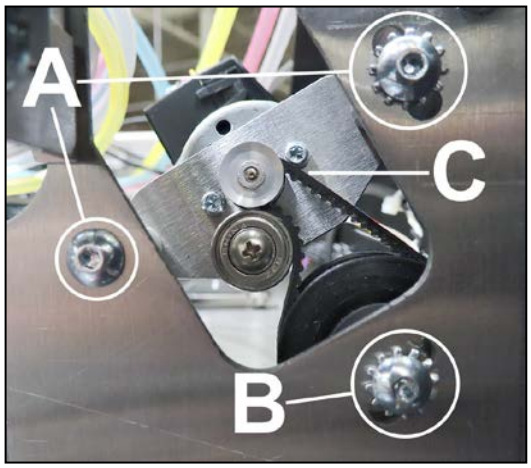
1. **Remove the Top Assembly (Clamshell) Rear Cover.**
2. Disconnect the Sled Wire Harness **[A]** from the Service Station Sled Motor Assembly.
3. Remove (2) screws **[B]** securing the Service Station Motor Assembly to the Clamshell Frame.
4. Remove the drive belt **[C]** from the Motor Assembly Pulley. Remove Motor Assembly from the Printer.
5. **Install in reverse order.**
   NOTE: Tension the Drive Belt, see "Service Station Motor Drive Belt Adjustment" in the Adjustments Section. System Test: Press **Sled Test** to check that system is operating properly.





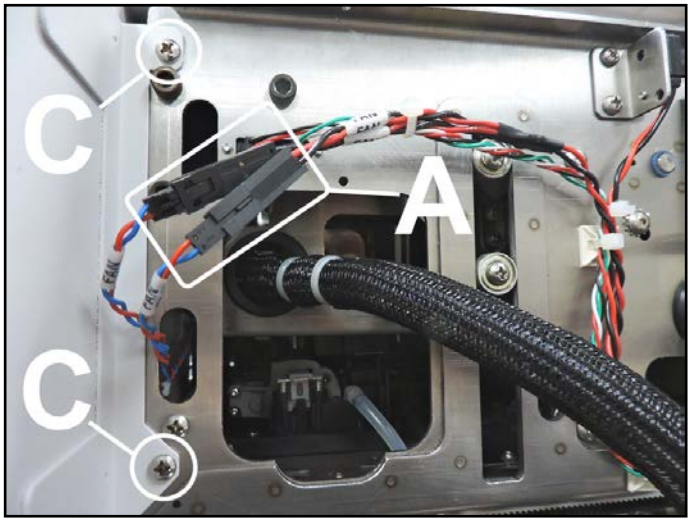
Remove Service Station Sled Motor Drive Belt

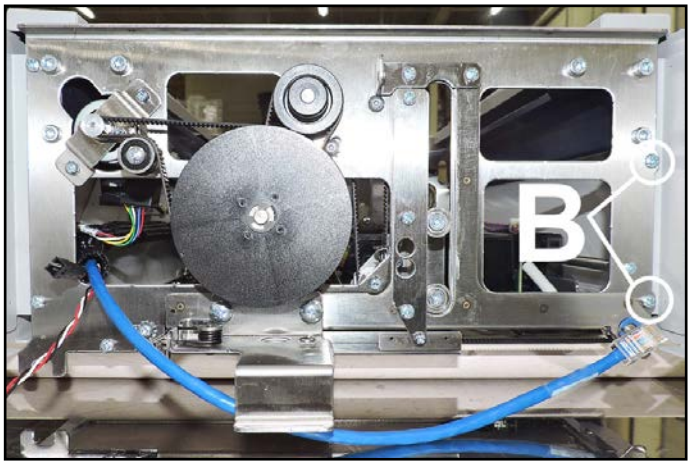
1. **Remove the Top Assembly (Clamshell) Rear Cover.**
2. Loosen (2) screws **[A]** securing the Service Station Motor Assembly to the Clamshell Frame.
   You may have to also loosen (1) screw **[B]** securing the Drive Belt Pulleys.
3. Remove the drive belt **[C]** from the Sled Motor Assembly Pulley and the larger Drive Belt Pulley.
4. **Install in reverse order.**
   NOTE: Tension the Drive Belts; see "Service Station Motor Drive Belt Adjustment" in the Adjustments Section. System Test: Press **Sled Test** to check that system is operating properly.

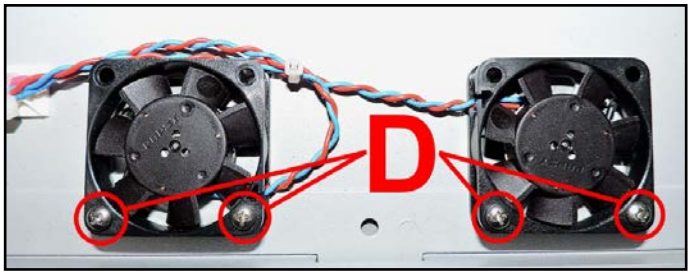


Replace Top Assembly (Clamshell) Exhaust Fan Assemblies

1. **Remove the Top Assembly (Clamshell) Rear Cover and Non-Operator Side Cover.**
2. **Open the Top Cover. Remove the Control Panel**, but there is no need to disconnect the wire harnesses. Carefully set the Control Panel Assembly aside.
3. Disconnect the Fan wire harnesses **[A]** at the wire harness connectors.
4. **Remove the Top Assembly (Clamshell) Exit Side Cover.** Remove (2) screws on Control Panel Side **[B]** and 2 screws at rear **[C]**.
5. Remove the (2) screws **[D]** securing the Fan Assemblies to the Top Assembly (Clamshell) Side Cover.
   NOTE: You may have to cut wire ties to release the wire harnesses.
6. **Install in reverse order.**



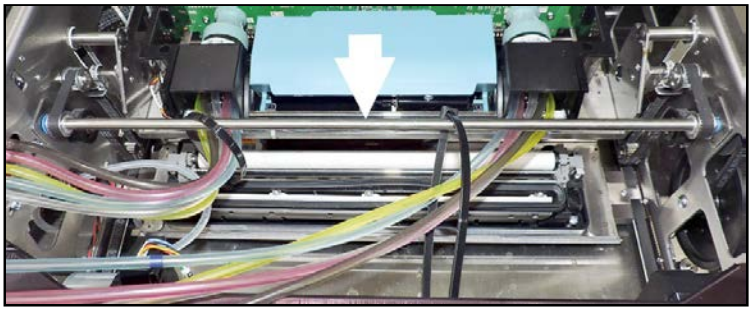




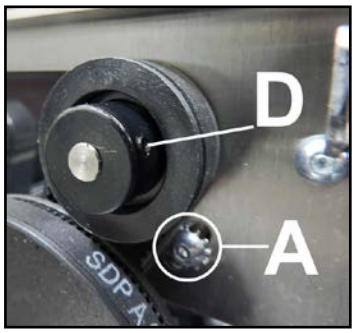
Replace Clamshell Exhaust Fan Filters

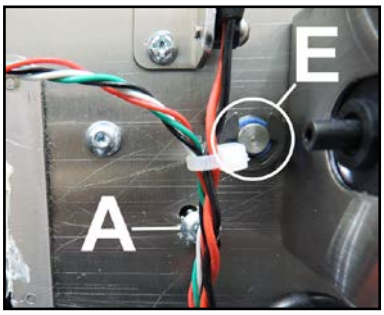
1. Open Top Exit Wheels Cover.
2. Remove (3) screws securing the Filter Assembly to the Head Exit Side Panel.
3. **Install in reverse order.**

Remove Printhead Lifter Drive Shaft Assembly

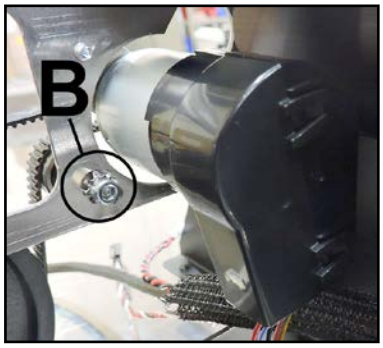


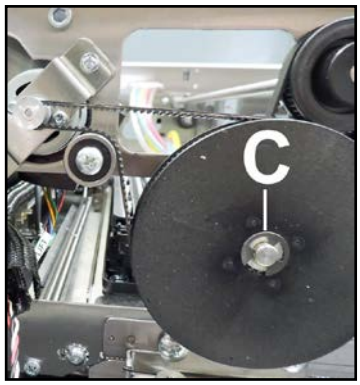
1. **Remove the Control Panel Cover.**
2. **Remove the Top Assembly (Clamshell) Rear Cover.**
3. Loosen Tensioner Assembly screw **[A]** (*1 each side*). This should release the tension on the inner Lifter Belts.
4. **Operator Side.** Loosen Tensioner Assembly **[B]** for Large Pulley belt. Remove the belt from the Large Pulley. Remove the E-clip securing the Large Pulley **[C]** from the mounting stud. Loosen setscrew **[D]** securing the Black Lifter Belt Pulley to the Lifter Drive Shaft Assembly.





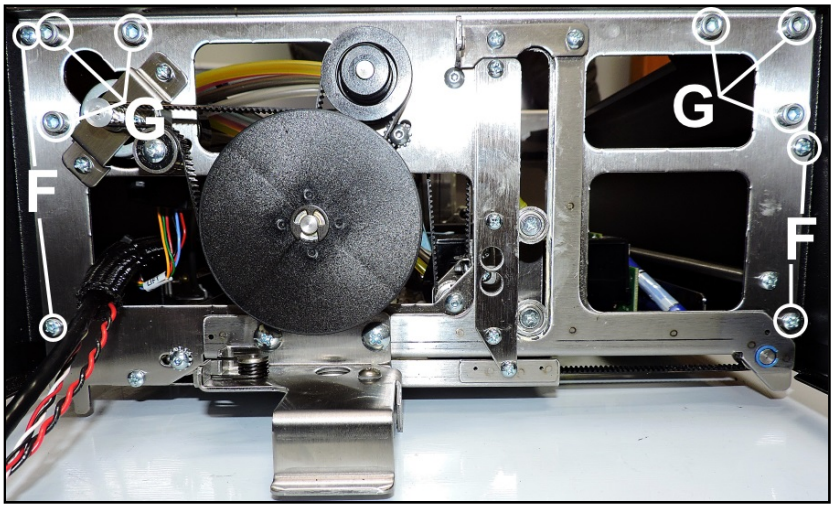
5. **Non-operator Side.** Remove the E-clip **[E]** securing the Lifter Drive Shaft Assembly.
6. **Control Panel Side:** Remove (4) screws **[F]** securing the Top Assembly (Clamshell) Side Covers (*2 each side*). Loosen (6) screws **[G]** securing the Top Supports. (*3 screws per side.*)





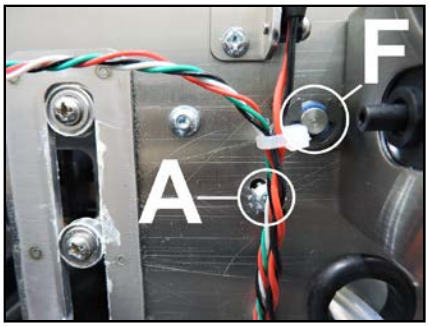
7. Pull the Side Frame away from the Clamshell enough to release the Drive Shaft Assembly.

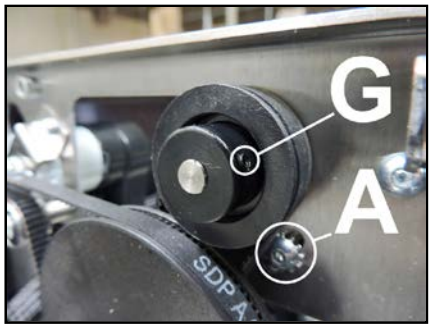
   NOTE: You can also replace the blue plastic bearings if necessary.



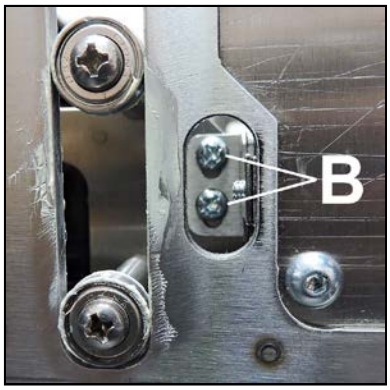
8. **Install in reverse order: NOTE: Install the Shaft Assembly back through the inner Lifter Belts and the wire ties securing the Ink Hoses. Tension the Drive Belts; see Tensioning the various Drive Belts in the Adjustments Section. System Test:** Press **Printhead Test** to check that system is operating properly. **NOTE: Ink Hose wire tie should be positioned with the buckle facing down.**

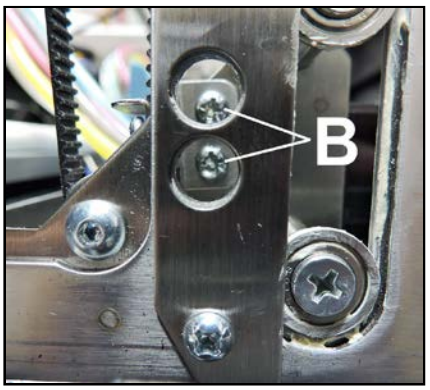
Remove Printhead Lifter Belts



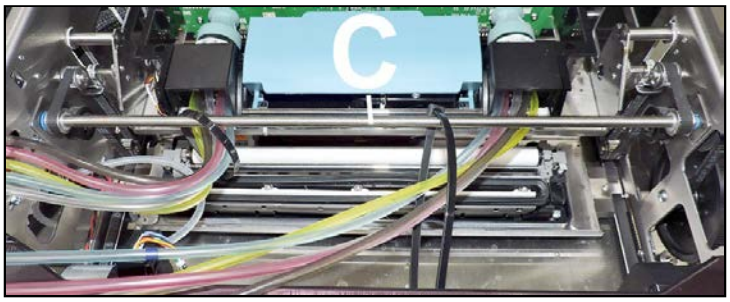


1. **Open the Top Cover.** Move the Printhead Lift Assembly to its lowest position.
2. **Control Panel Side:** Remove the Control Panel Cover.
3. **Non-Operator Side:** Remove the Top Assembly (Clamshell) Rear Cover.
4. Loosen Tensioner Assembly screw **[A]** (*1 each side*). This should release tension on the inner Lifter Belts.
5. Through the access holes in the Clamshell Frame, remove (4) screws **[B]** (*2 on each side*) securing the Lift Belt Clamp Brackets to the Lift Assembly.

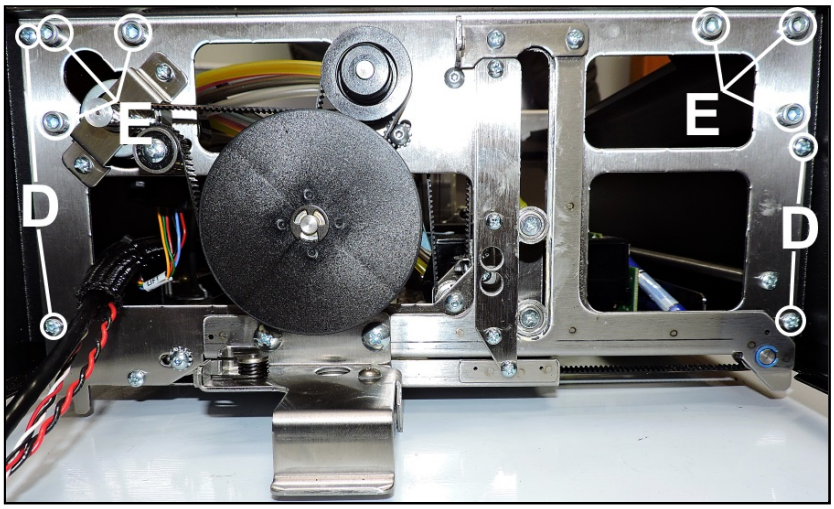




Remove the Lift Assembly Drive Shaft [C]:

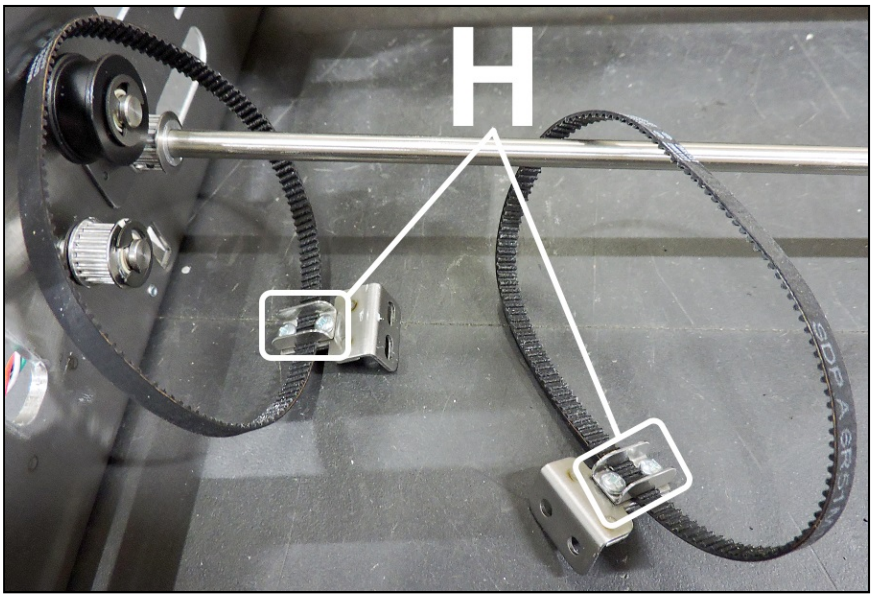


6. **Control Panel Side:** Remove (4) screws securing the Top Assembly (Clamshell) Side Panels **[D]** (*2 each side*). Loosen (6) screws securing the Top Supports **[E]**. (*3 screws per side.*)
7. Remove E-clip **[F]** from Non-Operator side of the Lift Motor Drive Shaft.
8. Remove the Lift Motor Drive Pulley (*and Belt*) **[G]** on Operator Side.
9. Pull the Side Frame away from the Clamshell enough to release the Drive Shaft Assembly.



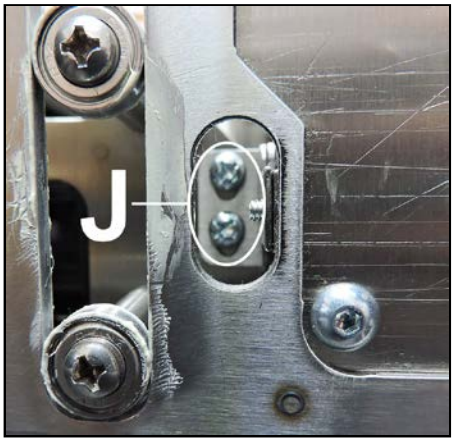
10. Remove the Shaft. Remove Belt(s).

11. Remove (2) screws **[H]** securing Bracket Assembly to Belt(s).



12. **Reassemble in reverse order. NOTE:** Remember to reinstall the Lift Belt Clamp Bracket on the new Belt. Make sure the Brackets are oriented correctly, depending on which side the Belt is being installed. Loop Belts over the Drive Shaft before installing the Drive Shaft in the Printer. Pass the Drive Shaft through the two Ink Hose wire ties. Reinstall the outer small Lift Drive Belt.

IMPORTANT: Align the Printhead Locator Assembly with the Printer using a level. Make sure the Printer is on a flat, level surface. With the Printhead Assembly at the top of its travel, make sure the upper Printhead Lift bearings (*1 on each side*) touch the top of guide track at the same time [I]. Adjust the Assembly as needed to make it level.

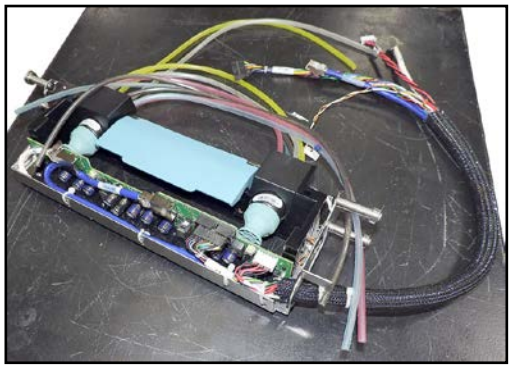


If necessary, perform fine levelling of the Printhead Locator by adjusting the Lift Belt Bracket on the Non-Operator side of the Printer. With the Locator Assembly in its lowest position, loosen the (2) mounting screws [J] to move the Bracket up and down slightly until the Printhead Locator Assembly is level in the Printer. If the Printhead is not level it will cause printing problems and not align with the Service Station Capping Station correctly, which can affect Printhead service life.

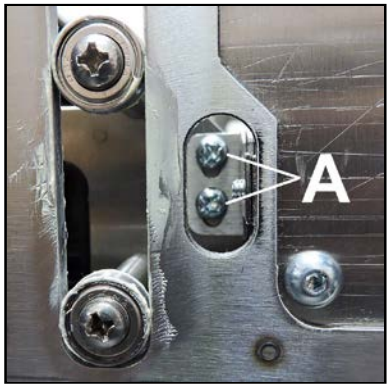
Check/adjust tension on the Belt(s). See **"Printhead Lift Assembly Belts Tension Adjustment"** in the Adjustments Section**. System Test:** Press **Printhead Test** to check that system is operating properly.

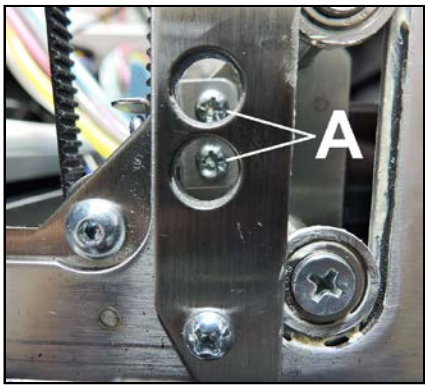
Remove Printhead Nest Assembly

Before starting, make sure you have deprimed the system to prevent ink drips and spills. Turn Printer power OFF.

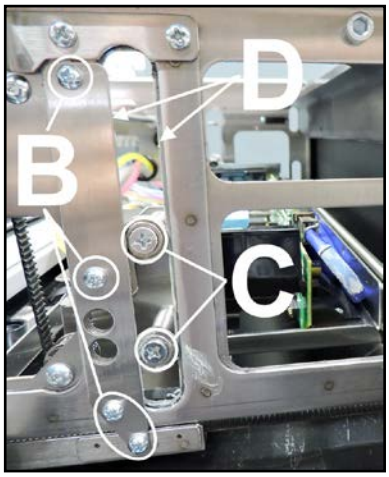


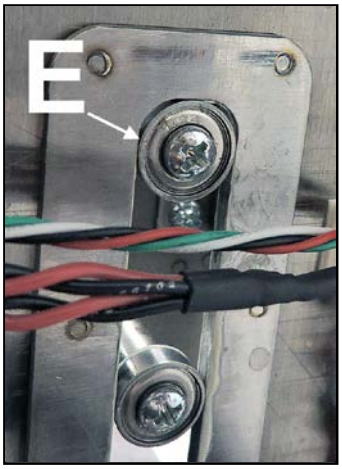
1. **Remove the Control Panel Cover.**
2. **Remove Clamshell Rear Cover.**
3. **Move the Printhead Lift Assembly to its lowest position.**
4. Disconnect wiring harnesses **P1**, **P2001** and **J20** and Data Cables **J50** and **J60** from the MPCA. Cut wire ties if necessary.
5. Disconnect the Ink Hoses from the Peristaltic Pump and the Dual Pinch Valve.





6. Through the access holes in the Clamshell Frame, remove (4) screws (*2 on each side*) securing the Lift Belt Clamp Brackets to the Lift Assembly **[A]**.
7. **Operator Side: Support the Printhead Lift Assembly if necessary so it does not fall.** Remove (4) screws **[B]** securing the Lift Assembly Retainer to the Clamshell Frame. **IMPORTANT! DO NOT BEND RETAINER.**





8. Remove (2) Bearings **[C]** (*1 screw each*).
9. Gently maneuver the Printhead Nest Assembly out of the Printer.
10. **Install in reverse order.** **NOTE:** Do not mix ink hoses! Apply a light coating of white lithium grease to the track followed by the metal rollers on the Printhead Lift Assembly **[D].**

IMPORTANT: Align the Printhead Nest Assembly with the Printer using a level. Make sure the Printer is on a flat, level surface. With the Printhead Assembly at the top of its travel, make sure the upper Printhead Lift bearings (*1 on each side*) touch the top of the guide track at the same time **[E].** Adjust the Assembly as needed to level it.

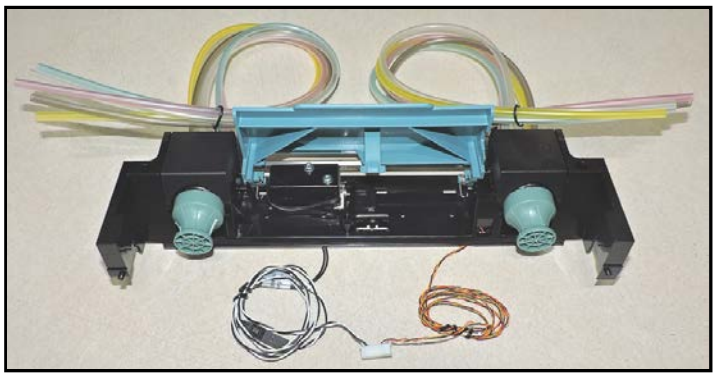
If necessary, perform fine levelling of the Printhead Nest Assembly by adjusting the Lift Belt Bracket on the Non-Operator side of the Printer. With the Locator Assembly in its lowest position, loosen the (2) mounting screws [A] to move the Bracket up and down slightly until the Printhead Nest Assembly is level in the Printer. If the Printhead is not level it will cause printing problems and not align with the Service Station Capping Station correctly, which can affect Printhead service life.

Check/adjust tension on the Belt(s). See **"Printhead Lift Assembly Belts Tension Adjustment"** in the Adjustments Section**. System Test:** Press **Printhead Test** to check that system is operating properly.

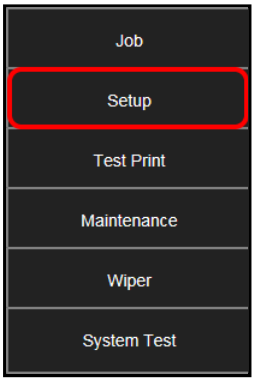
Remove Printhead Locator Assembly

Printhead Locator Assembly includes:

- Printhead Lever Latch and Springs
- Lever Latch Solenoid and Latch Open/Closed Sensor and wire harness
- Pump side and Valve side Ink Revolvers with ink hoses attached
- Lever Latch Support Base Assembly



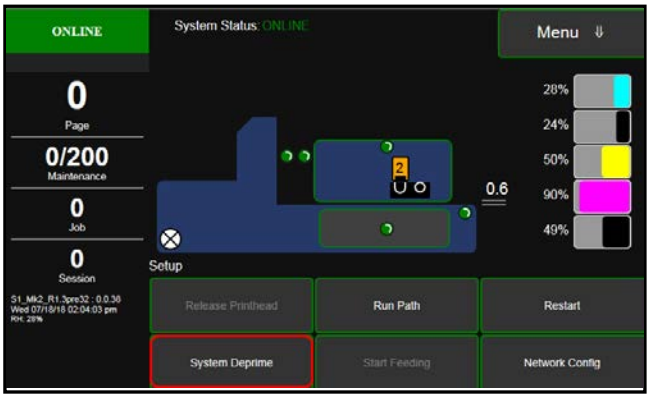
1. **Open Top Cover** (Printhead Door). From the Touchscreen, tap **"Setup"** in the **Menu** drop-down, then tap **"System Deprime"**. The Printer pumps any ink in system back into Tanks. Then the Printhead Latch pops open.



2. Once Latch pops up, press the Power Button to shut down the Printer.

CAUTION

DO NOT PRY OR MANUALLY LIFT PRINTHEAD LATCH OR LATCH MAY BREAK. ONLY OPEN LATCH USING THE RELEASE PRINTHEAD COMMAND ON THE TOUCHSCREEN OR IN THE COMPUTER TOOLBOX.



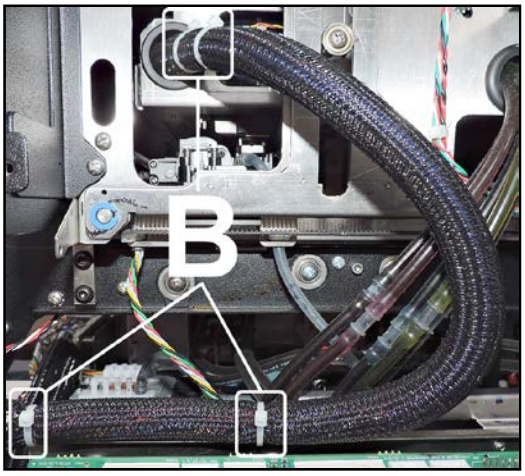
3. Remove Printhead Cartridge by tilting it toward ink lines, then carefully lifting it out of Printhead Compartment.
Place in protective packaging cap.

4. Remove the non-operator side Clamshell and Side Covers.

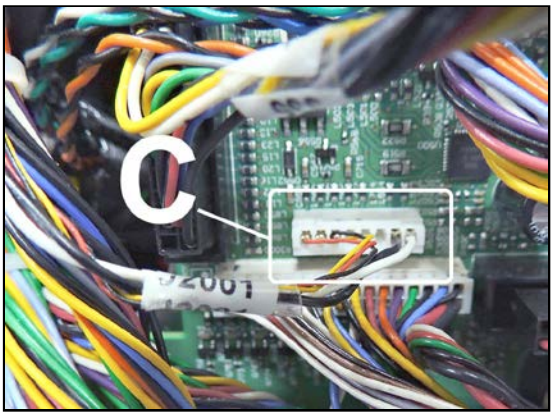
5. Carefully cut the wire ties **[A]** securing the wire harness to the Printhead Nest Frame.
NOTE: You will also have to cut the wire ties [B] closing the black wire bundle wrap cover to separate the wire harness from the rest of the bundle.

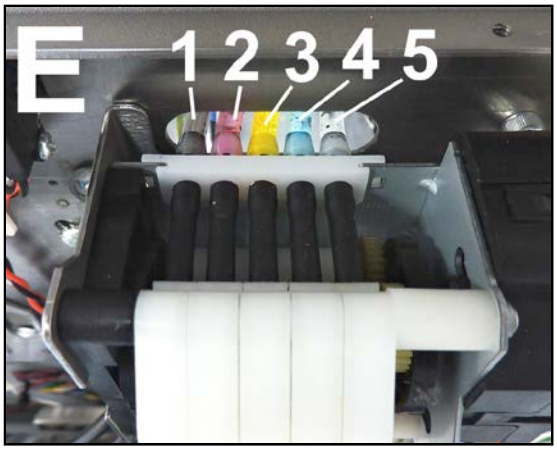
6. Disconnect the **J2001** wire harness from the **MPCA [C]**. Carefully pull the wire harness through the Clamshell Frame.

7. Disconnect the **Valve Ink Revolver** (*Operator Side*) ink hoses from the barb connectors going to the the **Dual Pinch Valve [D]**. Note the order and position of the hoses for later installation:
1 = K1 (black), 2 = M, 3 = Y, 4 = C, 5 = K2 (gray).
Carefully pull the hoses through the Print Engine Frame.
NOTE: Hoses may leak a little ink.

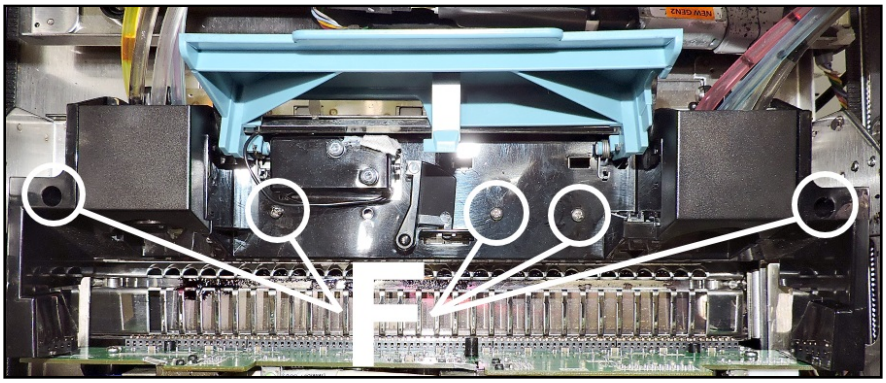


8. Disconnect the **Pump Ink Revolver** (*Non-Operator Side*) ink hoses from the barb connectors on the **Peristaltic Pump** (*Non-Operator Side*) **[E]**. Note the order and position of the hoses for later installation:
1= K1 (black), 2 = M, 3 = Y, 4 = C, 5 = K2 (gray).
Carefully pull the hoses through the Clamshell Frame.
NOTE: Hoses may leak a little ink.





9. Remove 5 screws **[F]** securing the **Latch Support Base Assembly** to the Print Engine Frame.
10. Lift the **Assembly** out of the Print Engine. **IMPORTANT:** Watch for drips. Make sure wiring and hoses do not get pinched or snagged.



Install the new Printhead Cartridge Locator Assembly:

1. Align the pins on the **Locator Assembly** with the holes in the **Pen Driver PCB**.
2. Install the 5 screws removed in **Step 9** above.
3. **Reinstall in reverse order**.

Remove Pen Driver Printed Circuit Assembly (PCA)

Location: Top Assembly (Clamshell) next to Printhead Cartridge Bay.

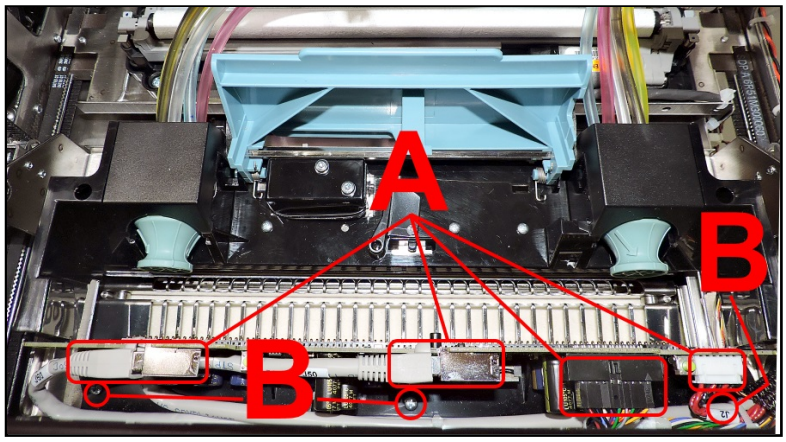
[A] Open the Top Cover.
Disconnect (2) Ethernet data cables, then unplug power connector and Main PCA harness connectors.

[B] Remove (3) screws holding Head Board Mount.

[C] Remove Pen PCA from unit.

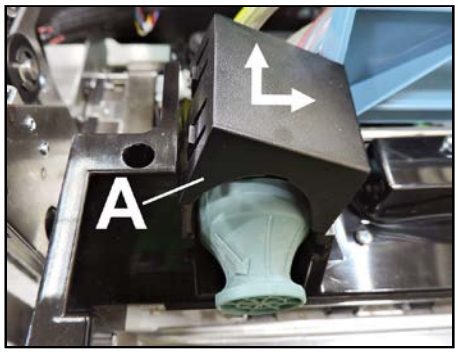
[D] Remove (2) screws attaching PCA to Head Board Mount.

Install in reverse order.



Replace Ink Revolvers

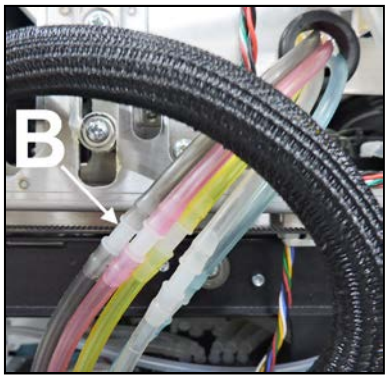
First deprime the system and remove the Printhead Cartridge.
New Ink Revolvers include attached leader hoses and hose connectors.

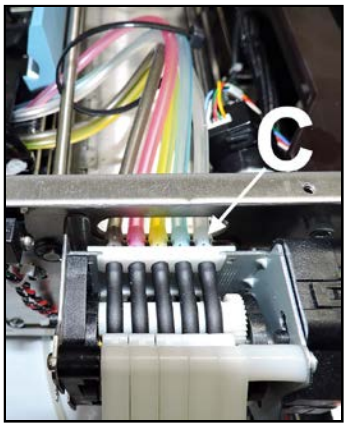


NOTE: The procedure is slightly different for the Valve side Ink Revolver and the Pump side Ink Revolver (*both are labeled*).

IMPORTANT! Only install a Valve side Ink Revolver on the Valve side and a Pump side Ink Revolver on the Pump side.

1. **Remove the Non-Operator Side Cover and Top Assembly (Clamshell) Rear Cover.**
2. Remove Revolver Cover by pushing the Cover toward the center of the Printer. Then lift the Cover to release the tabs. Lift out Cover and set aside. **NOTE:** Cover does not have to be removed to clean Ink Revolver Couplings.
3. Route the hose leads from new Revolver through same frame cutouts as the existing hoses.
4. **Work one hose at a time.**



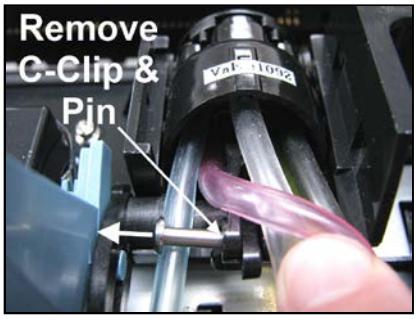


Valve Side: Ink hoses are connected to the Dual Pinch Valve (DPV). Disconnect the Valve Revolver ink hoses at the hose barbs **[B]**. Carefully match and connect existing ink hoses to the hose leads on new Ink Revolver.
NOTE: Trim hoses as necessary to fit.

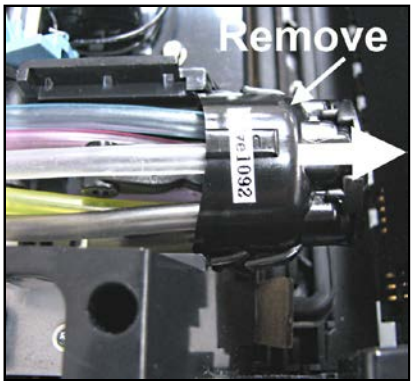
Pump Side: Ink hoses are connected to the Peristaltic Pump. Disconnect the Pump Revolver ink hoses from the Peristaltic Pump **[C]**. Carefully match, trim and connect the hose leads on new Ink Revolver to the Peristaltic Pump hose barbs. **NOTE: Trim hoses as necessary to fit.**

IMPORTANT! Do not mix colors! Ink hoses (*including two black ink hoses*) are NOT interchangeable!

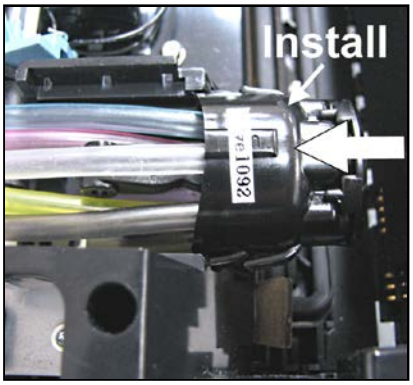
5. Once all hoses are connected to new Ink Revolver, remove C-Clip from hinge pin holding the old Ink Revolver. Remove pin.



6. Slide old Ink Revolver forward in its track and remove.

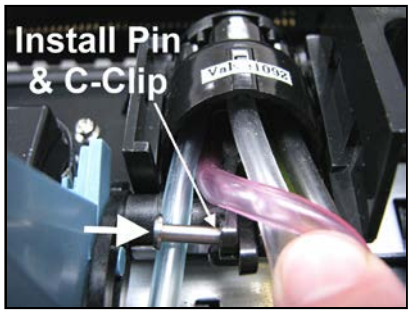


7. Slide new Ink Revolver back into its track and align yoke on rear with hinge bracket. Make sure new Revolver is turned correctly.



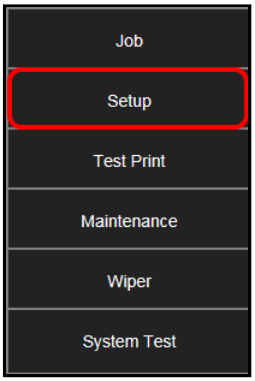
8. Reinstall Pin and C-clip.

9. Reinstall Ink Revolver Cover.



Replace Printhead Lever Latch

Printhead Lever Latch is easily broken if forced open manually. **Tools & Supplies needed:** nitrile powder-free gloves, needle nose pliers or tweezers, small flathead screwdriver.

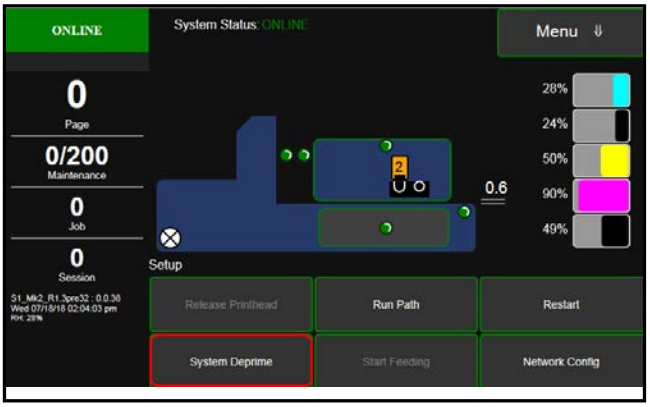


Remove Printhead Latch:

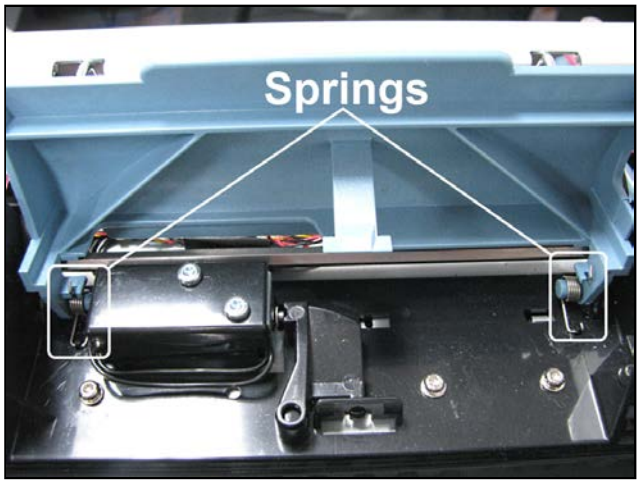
1. **Open Top Cover** (Printhead Door).
   From the Touchscreen, tap **"Setup"** in the **Menu** drop-down, then tap **"System Deprime"**. The Printer pumps any ink in system back into Tanks. Then the Printhead Latch pops open.
2. Once Latch pops up, , press the Power Button to shut down the Printer.

CAUTION

DO NOT PRY OR MANUALLY LIFT PRINTHEAD LATCH OR LATCH MAY BREAK. ONLY OPEN LATCH USING THE RELEASE PRINTHEAD COMMAND ON THE TOUCHSCREEN OR IN THE COMPUTER TOOLBOX.

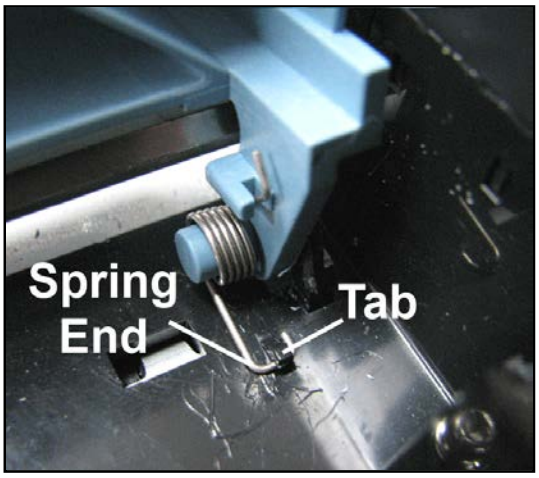


3. Lift Latch manually to access (2) Latch Springs.



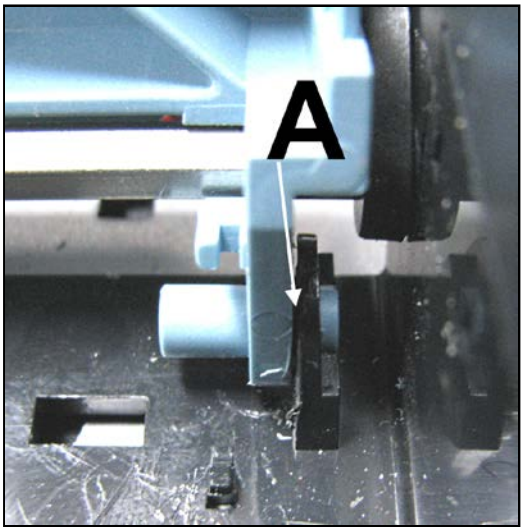
4. Remove Printhead Cartridge by tilting it toward ink lines, then carefully lifting it out of Printhead Compartment. Place in protective packaging cap.

5. Use needle-nose pliers or tweezers to gently pull rounded end of Spring out from beneath plastic tab in housing. Remove Spring. Repeat procedure to remove second Spring.



6. **Gently** insert a small, flathead screwdriver between blue Printhead Latch Pin and black plastic hinge **[A]** and rotate to pop Printhead Latch out of hinge without damaging either piece.

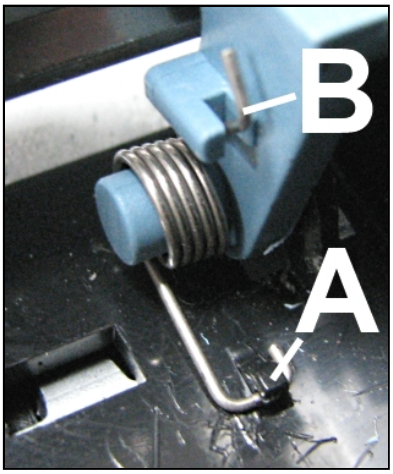
CAUTION
BE CAREFUL. Black Plastic Hinge breaks easily. Use only gentle pressure when removing/installing Printhead Latch Pin.



7. Other side should now easily slide out of hinge.
8. Discard Printhead Latch according to local regulations.

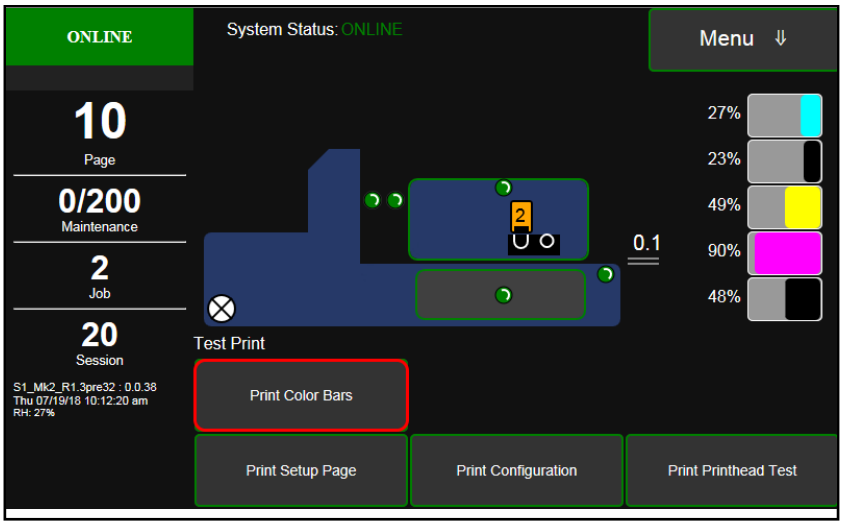
Install new Printhead Latch:

1. Align right tab of Latch with right hinge and gently press into place. Repeat for left side.
2. **[A]** Use needle-nose pliers to install right Spring into plastic tab in base of housing. **NOTE: Be sure to position Spring as shown.** **[B]** Use needle-nose pliers to position other end of Spring into notch in Printhead Latch.
3. Repeat **Steps 2A** and **2B** for left side.
4. Remove Printhead from protective cap and wipe Printhead surface according to standard installation procedure, then install.
5. **Restart Printer**.
6. Manually close Printhead Latch until it clicks. Printer automatically primes and is ready for testing.
   NOTE: If Printhead Latch is closed with system powered down, Printer will not prime automatically.



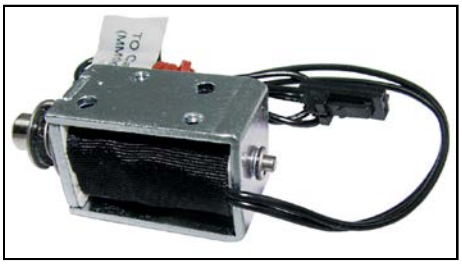
Testing:

1. Restart Printer if necessary.
2. Using the **Touchscreen**, Tap **"Menu"** then **"Print"** on the drop-down menu. Tap **"Print Color Bars"** to confirm unit is functioning properly.

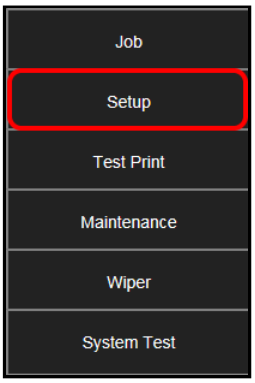


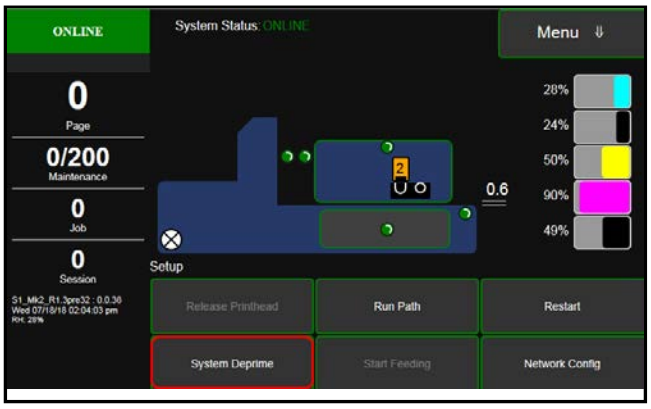
Replace Printhead Lever Latch Solenoid

To replace Lever Latch Solenoid:



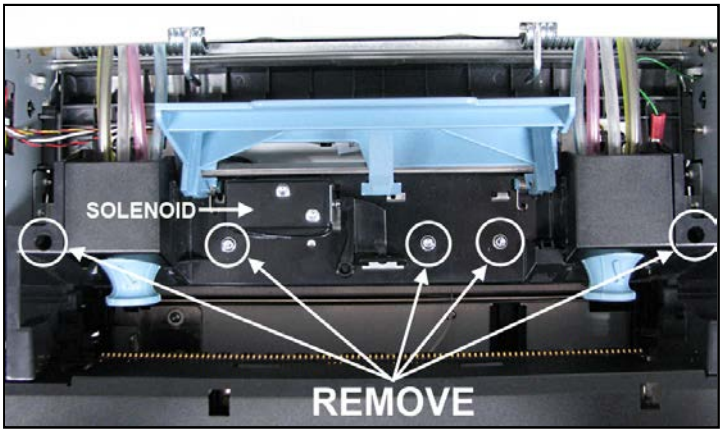
1. **Open Top Cover.** From the Touchscreen, tap **"Setup"** in the **Menu** drop-down, then tap **"System Deprime"**. The Printer pumps any ink in system back into Tanks. Then the Printhead Latch pops open.



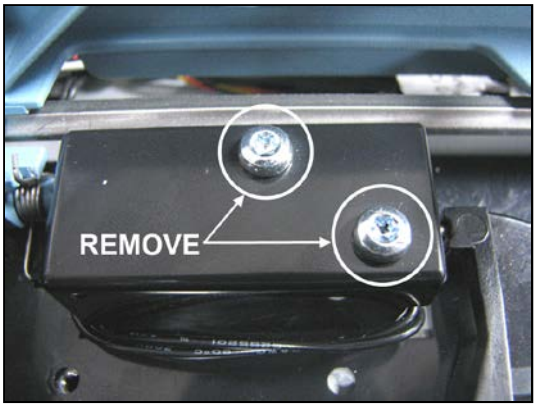


2. Once the Latch pops up, press the Control Panel Power button to shut down the Printer.
3. Lift Latch manually to access Solenoid and Latch Support Base.
4. Remove Printhead Cartridge by tilting it toward ink lines, then carefully lifting it out of Printhead Compartment. Place in protective packaging cap.

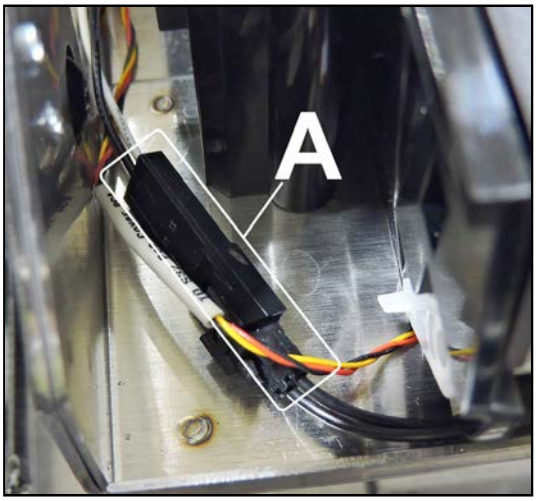
5. Remove five (5) screws securing Latch Support Base Assembly to Printhead Lift Base.



6. Remove two (2) screws securing Solenoid to Base Assembly.

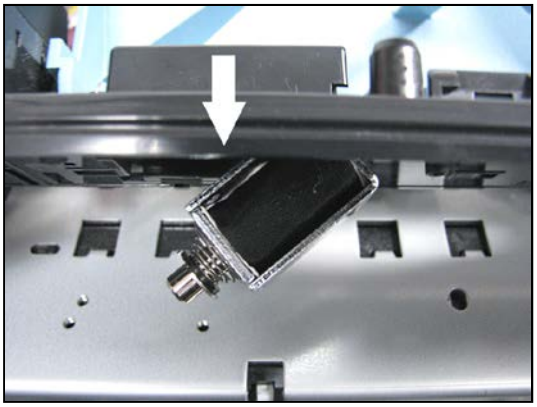


7. Cut two cable ties securing Solenoid Wire Harness to the Printhead Lift Base. Disconnect Solenoid connector **[A]** from wiring harness.



8. Carefully lift Base Assembly just enough to remove Solenoid assembly from under Base Assembly.

9. Install new Solenoid.
Reassemble in reverse order.

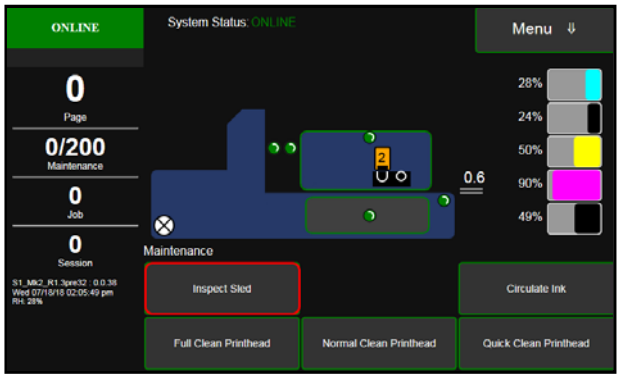


Inspect the Service Station

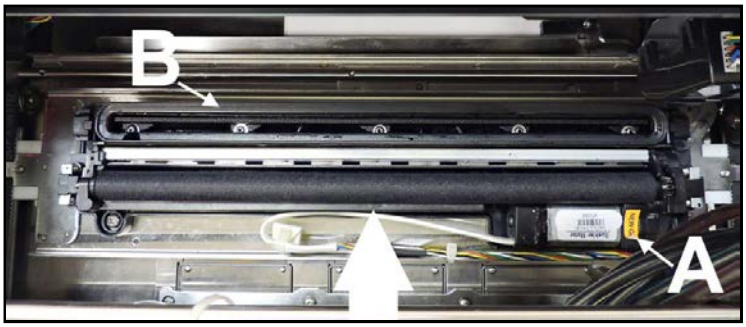
The Service Station (*located directly under the Printhead Assembly*) cleans Printhead Cartridge of excess ink and debris, keeps Printhead hydrated and protected when not in use, captures and removes ink used to keep nozzles clear. It moves out of the way of the Printhead during printing. It is designed to provide a long service life.

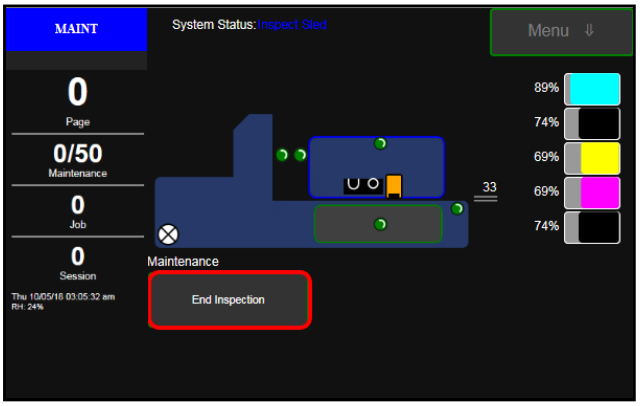
To access the Service Station for inspection and cleaning:

1. Using the **Touchscreen**, select **"Menu,"** then tap **"Maintenance"** from the drop-down menu. Tap **"Inspect Sled"**. The Service Station **[A]** moves out from under the Printhead Assembly.
2. Open the Top Cover.
3. Visually inspect the Service Station for cleaning or service. Use a dry, lint-free cloth to soak up any excess ink from the Cap Station **[B]**.
4. Tap **"End Inspection"** on the Touchscreen to move the Service Station back under the Printhead Assembly.



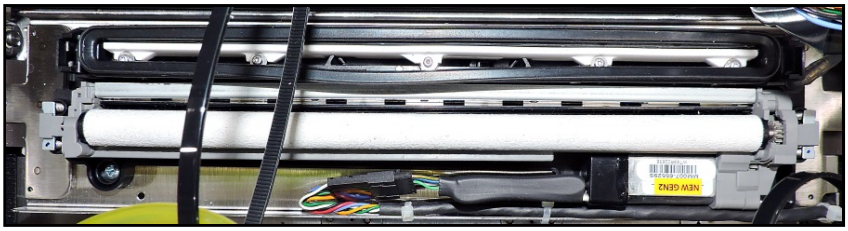
5. Close the Top Cover.

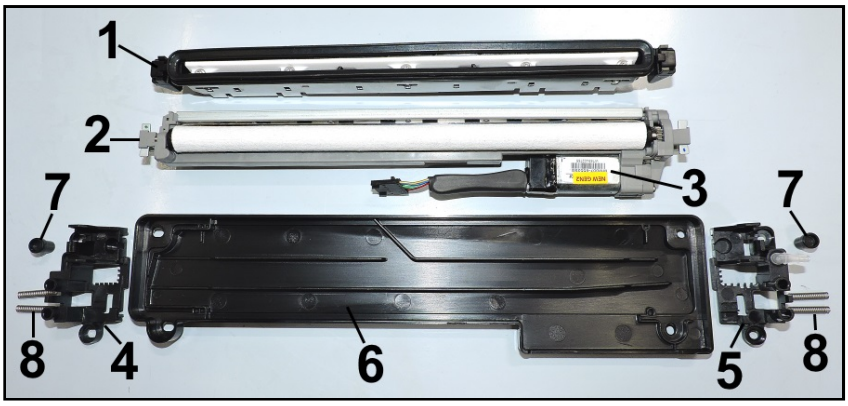




Service Station Components

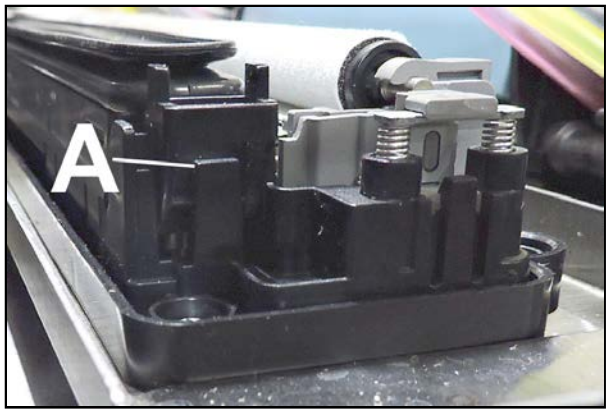
1. Capping Station
2. Wiper Roller Assembly
3. Wiper Motor Assembly
4. Operator Side Bracket
5. Non-Operator Side Bracket
6. Service Station Base
7. Capping Station Inserts (2)
8. Wiper Roller Assembly Springs (4)



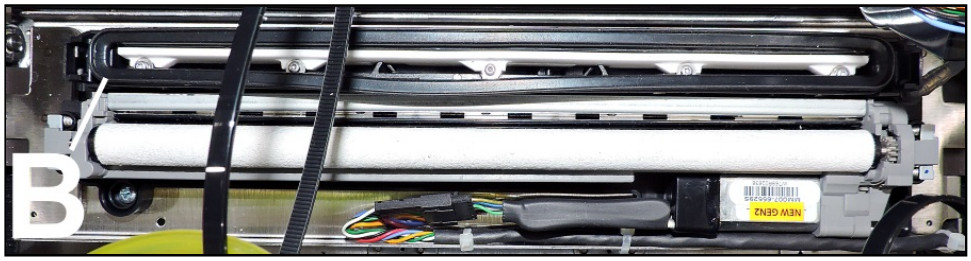


Remove Capping Station

1. Using the **Touchscreen**, select **"Menu,"** and tap **"Maintenance"** from the drop-down menu. Tap **"Inspect Sled"**. The Service Station moves out from under the Printhead Assembly.
2. Open the Top Cover.
3. Gently release the tabs **[A]** (*one located at each end*) securing the Assembly to the Service Station Base.
4. Lift the Capping Station **[B]** out of the Printer. **NOTE: Be careful, watch for dripping ink. Do not lose the (2) inserts the Capping Station rests on (*located behind the release tabs*).**

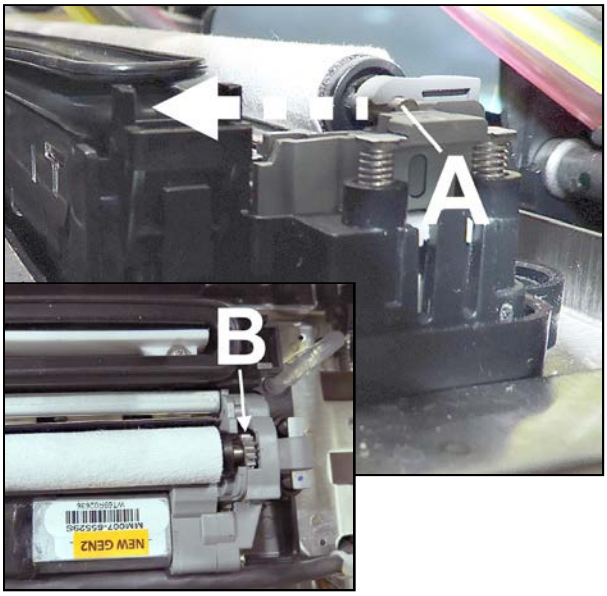


5. **Install in reverse order.**



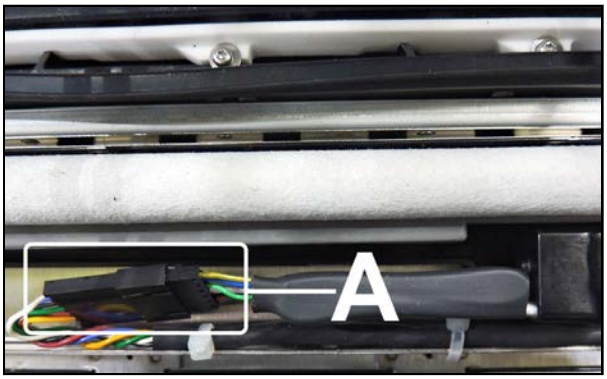
Remove Wiper Roller

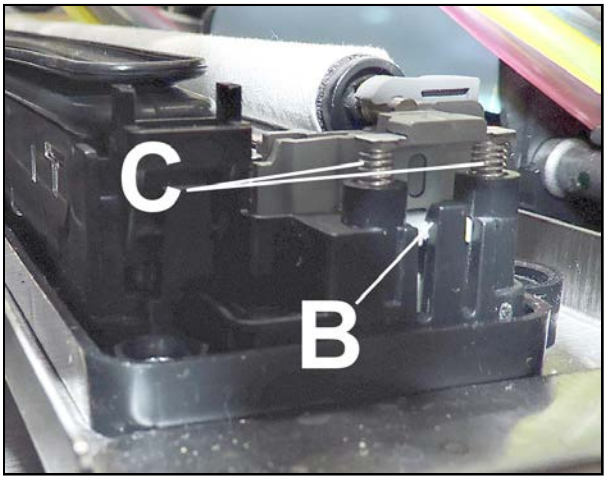
1. Using the **Touchscreen**, select **"Menu,"** and tap **"Maintenance"** from the drop-down menu. Tap **"Inspect Sled"**. The Service Station moves out from under the Printhead Assembly.
2. Open the Top Cover.
3. Release the Roller by pushing the non-geared end toward the Capping Station **[A]**. This will unsnap it out of the bracket. Then lift the Wiper Roller out of the Wiper Roller Assembly.
4. **Install in reverse order. Be sure to insert the gear end of the Roller first and check that the gear teeth mesh with the other gears.**
   NOTE: Any time the Wiper Roller is cleaned or replaced, apply a small amount of waterproof plumber's faucet and valve grease to the gear [B]. DO NOT get any grease on the Wiper Roller.



Remove Wiper Roller Assembly

1. Using the **Touchscreen**, select **"Menu,"** and tap **"Maintenance"** from the drop-down menu. Tap **"Inspect Sled"**. The Service moves out from under the Printhead Assembly.
2. Open the Top Cover.
3. Disconnect the Wiper Motor wire harness at the connector **[A]**.
4. Gently release the tabs **[B]** securing the Assembly to the Service Station Base.
5. Lift the Wiper Roller Assembly out of the Printer. **NOTE: Be careful not to lose the springs [C] located under the Assembly. (*2 at each end of the Assembly*.)**
6. **Install in reverse order.**
   Run **System Test** to check operation.
   System Test: Press **Wiper Test** to check that system is operating properly.

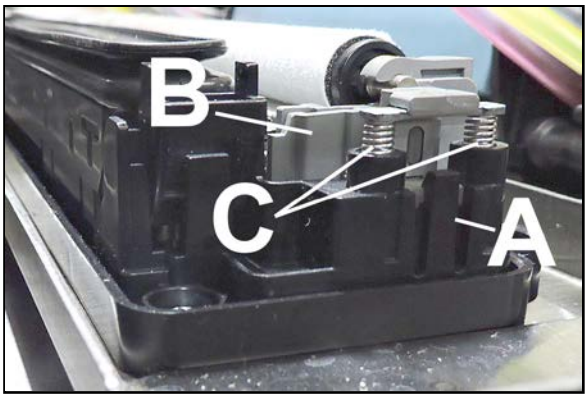




Remove Wiper Roller Assembly Springs

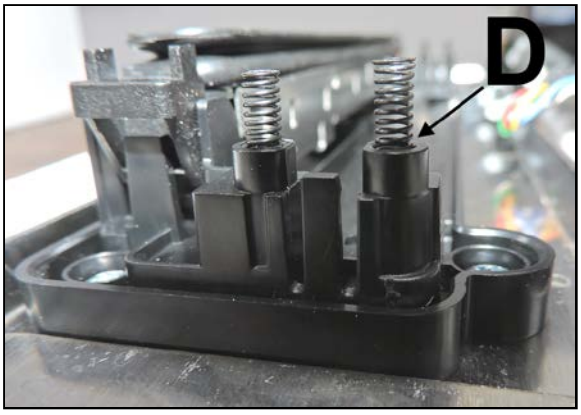
Remove Springs:

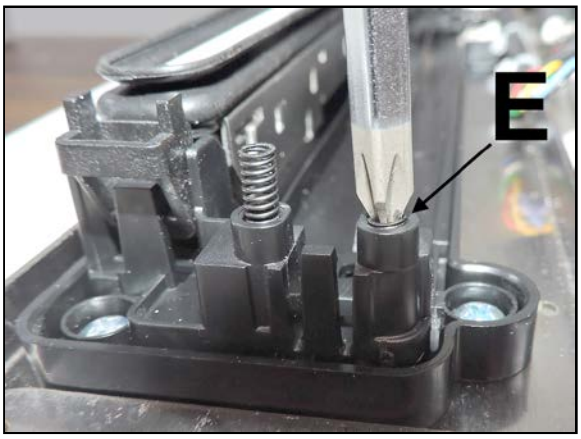
1. Using the **Touchscreen**, select **"Menu,"** and tap **"Maintenance"** from the drop-down menu. Tap **"Inspect Sled"**. The Service moves out from under the Printhead Assembly.
2. Open the Top Cover.
3. Gently release the tabs **[A]** securing the Assembly to the Service Station Base.
4. Lift the Wiper Roller Assembly **[B]** out of the out of the way to access the Springs **[C]**. (*2 at each end of the Assembly*.)
5. Remove the (4) Springs.

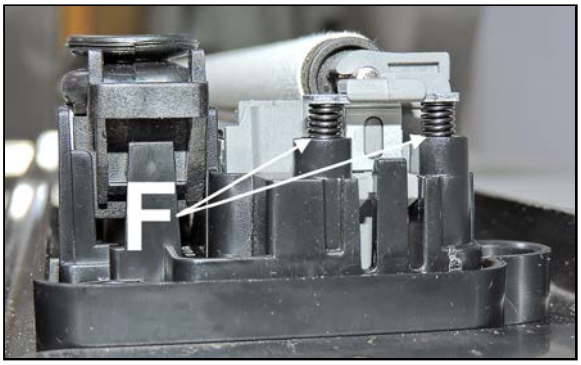


Install new Springs:

1. Carefully insert the Springs into Spring Mounts **[D]** by hand. **NOTE: DO NOT force the Spring. Be sure to keep the Spring straight.**
2. Use a medium Phillips head screwdriver to slowly and carefully push the Spring into the mount until the end of the Spring is level or slightly below the edge of the mount **[E]**.
3. Exert slightly more downward pressure to seat the Spring. (*You may feel or hear a slight click*.)
4. Repeat the procedure to install the remaining Springs. **NOTE: Make sure the Springs are inserted fully and that tops of Springs are level.**
5. Reinstall the Wiper Roller Motor Assembly. Check that the Assembly is properly aligned **[F]** and that the latches are securely fastened.

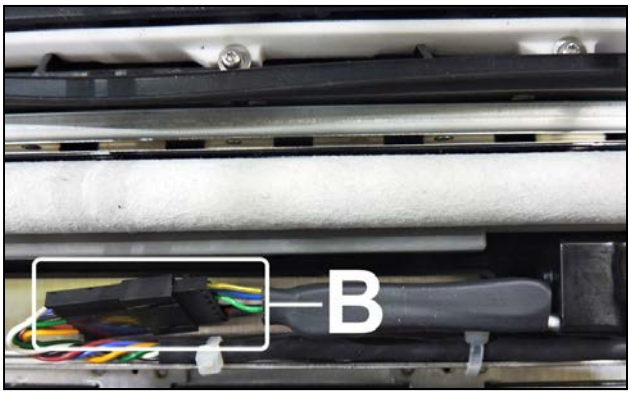


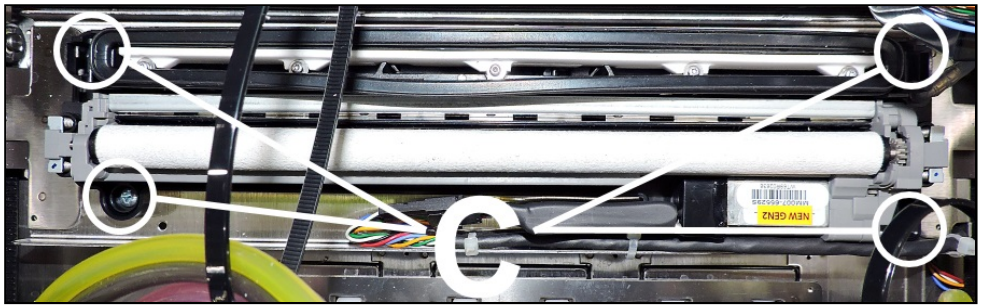




Remove Service Station Base Plate

1. Using the **Touchscreen**, select **"Menu,"** and tap **"Maintenance"** from the drop-down menu. Tap **"Inspect Sled"**. The Service Station moves out from under the Printhead Assembly.
2. Open the Top Cover.
3. Disconnect Ink Waste hose from the hose barb **[A]**.
4. Disconnect the Wiper Motor wire harness at the connector **[B]**.
5. Remove (4) screws **[C]** securing the Service Station Base to the Service Station Sled
6. Lift the Service Station Assembly and Base out of the Printer. **Be careful, watch for dripping ink.**
   NOTE: Capping Station – Do not lose the (2) inserts the Capping Station rests on (*located behind the release tabs*).
   NOTE: Wiper Roller Assembly – Be careful not to lose the springs located under the Assembly. (*2 at each end of the Assembly*.)
7. **Install in reverse order.**

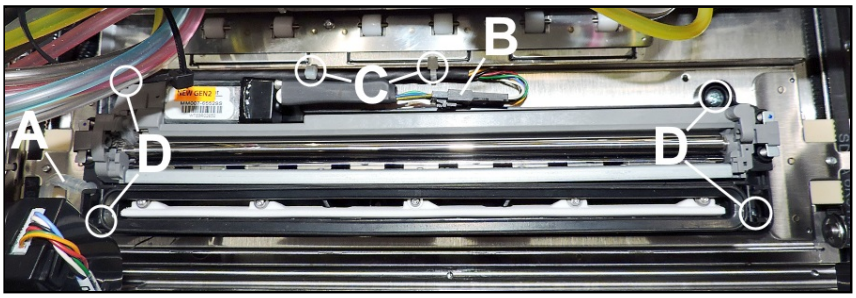


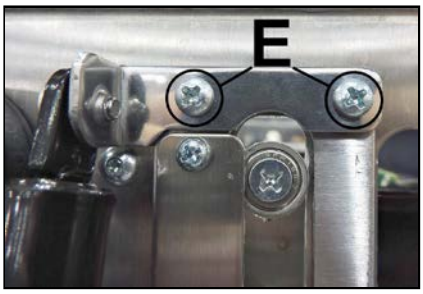


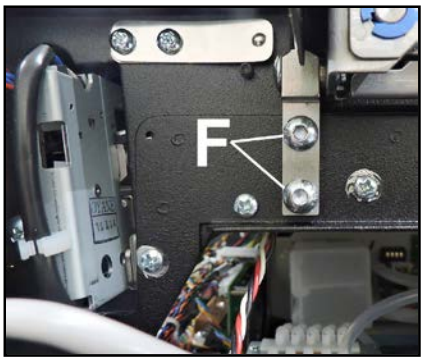
Remove Service Station Sled

NOTE: This procedure requires two people.

1. Remove the Top Assembly (Clamshell) Rear Cover.
2. Disconnect the Ink Hose from the hose barb **[A]**.
3. Disconnect the Wiper Motor wire harness at the connector **[B]**.
   Cut the (4) wire ties securing the wire harness to the Service Station Sled **[C]**.
4. Remove (4) screws securing the Service Station Base to the Sled **[D]**. Remove the Service Station Assembly.
5. Position the Service Station Sled under the Printhead Assembly.

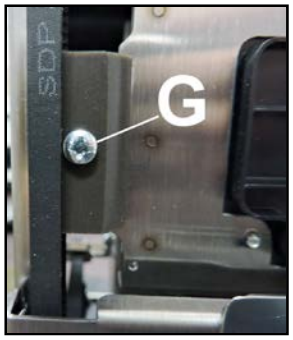




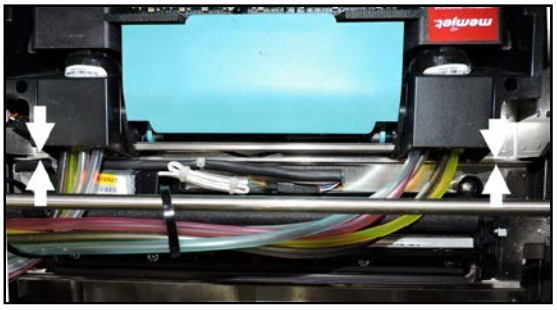


6. **Operator Side:** Remove (2) screws securing the Support Strut Bracket **[E]** to the Clamshell Frame.
7. **Remove Top Assembly (Clamshell).** Remove (4) screws securing the two Clamshell hinges to the Printer **[F]** (*2 screws per hinge*).
8. Release the Clamshell Latch.
9. **Carefully lift the Top Assembly (Clamshell) off of the Printer. DO NOT pull or strain ink hoses or wire harnesses.**

   NOTE: You may have to detach the ink hoses from the hose loom, note the order for reassembly. Put clean, dry rags on the Printer to protect against damage and gently rest the Clamshell back on the Printer**.**



10. **Carefully** lift the Clamshell so you can access and remove the Service Station Slides (*1 screw per side*) **[G]** through the Printhead opening in the underside of the Clamshell. Try to keep the Assembly level to prevent any ink spills. You may have to have the other person hold the Clamshell to do this.
11. Slide the Service Station Sled out from under the Printhead Assembly and lift it out of the Printer.
12. **Install in reverse order.**
    NOTE: Grooves on the Slides face out toward the Operator and Non-Operator Sides. The lower groove in the Slides fit around the flange edge of the Top Assembly (Clamshell) Base Plate (Media Guide). The upper side of the Belt is held between the groove in the top of the Slides and the mounting ends of the Service Station Sled**.**

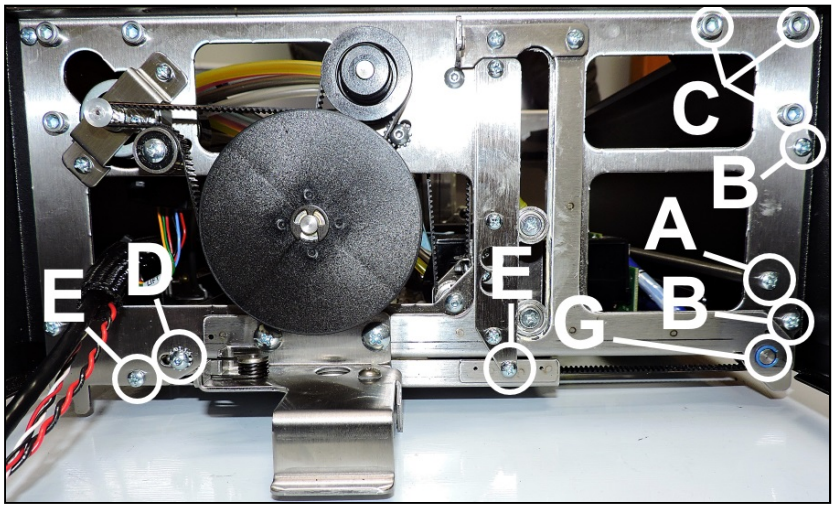


    IMPORTANT: Make sure the Service Station is installed parallel to the Printhead Locator Assembly. Check this by lowering Printhead Locator Assembly to its lowest point and pushing the Service Station Assembly up against it [*see arrows*]. They should meet flush with no gaps at either end.

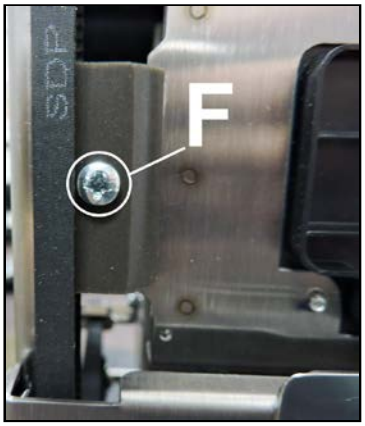
Remove Service Station Positioning Belts

1. **Open the Top Cover.**
2. **Position Service Station Sled under the Printhead Assembly.**
3. **Remove the Control Panel Cover and the Top Assembly (Clamshell) Rear Cover.**

Operator Side:



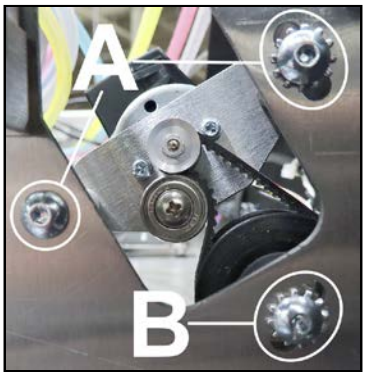
1. Remove (1) screw **[A]** securing the Support Rod. Remove (4) screws **[B]** securing the Top Assembly (Clamshell) Side Panels to the Clamshell Frame. (*2 screws per side*). Loosen (3) screws **[C]** securing the Top Supports. (*3 screws per side*.) Loosen the Service Station Belt Tension Pulley **[D]**. Take Belt off Pulley if necessary. Remove (2) screws **[E]** securing the Side Frame to the Base Plate.

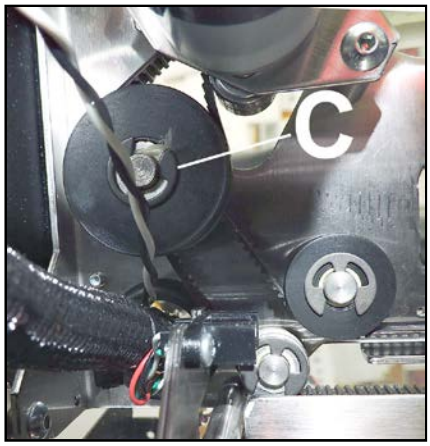


2. **Open the Ink Tank Door. Release and raise the Clamshell.** Remove (1) screw **[F]** securing the Service Station Slide to the Service Station Sled. (*Access through the Printhead opening in the underside of the Top Assembly*.) Lower the Clamshell.
3. Pull the Side Frame away from the Clamshell enough to release the Service Station Motor Drive Shaft Assembly **[G]**.
4. Remove the Belt.
5. **Install in reverse order.**
   NOTE: Check/adjust Positioning Belts tension. See "Service Station Position Assembly Belts Tension Adjustment" in the Adjustments Section. **System Test:** Press **Sled Test** to check that system is operating properly.

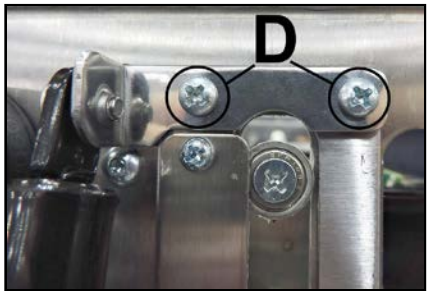
IMPORTANT: Make sure the Service Station is installed parallel to the Printhead Locator Assembly. Check this by lowering Printhead Locator Assembly to its lowest point and pushing the Service Station Assembly up against it [*see arrows*]. They should meet flush with no gaps at either end.

Non-Operator Side (NOTE: This procedure requires two people.):

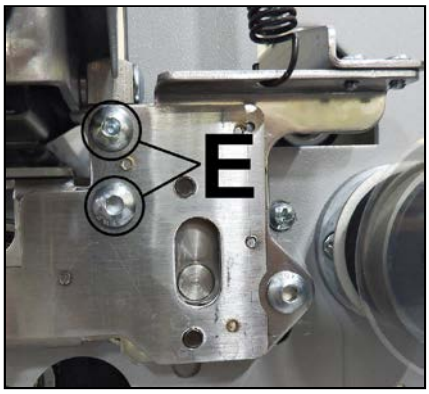




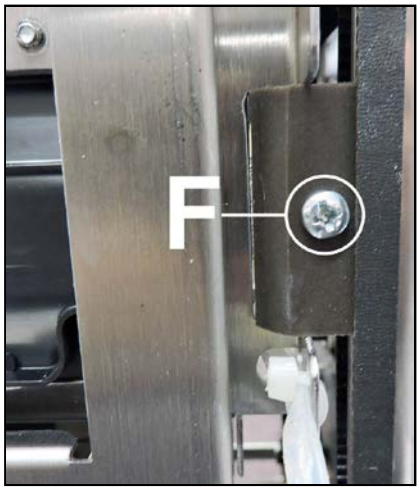
1. Loosen Service Station Motor and Motor Belt Tensioners screws **[A]** and **[B]**. This should release tension on the inner Non-Operator Side Service Station Belts.
2. Remove the E-clip securing the Service Station Belt Tensioner Pulley **[C]** and remove the larger black Pulley.



3. **Operator Side:** Remove (2) screws securing the Support Strut Bracket **[D]** to the Clamshell Frame.
4. **Remove Top Assembly (Clamshell).** Remove (4) screws **[E]** securing the Clamshell hinges to the Printer (*2 screws per hinge*).



5. **Carefully lift the Top Assembly (Clamshell) off of the Printer. DO NOT pull or strain ink hoses or wire harnesses.** **NOTE:** You may have to detach the ink hoses from the hose loom, note the order for reassembly. Put clean, dry rags on the Printer to protect against damage and gently rest the Clamshell back on the Printer.
6. **Carefully** lift the Top Assembly (Clamshell) so you can access and remove (1) screw securing the Service Station Slide **[F]** to the Service Station Sled. (*Access through the Printhead opening in the underside of the Clamshell.*)
   Try to keep the Assembly level to prevent any ink spills. You may have to have another person hold the Clamshell to do this.

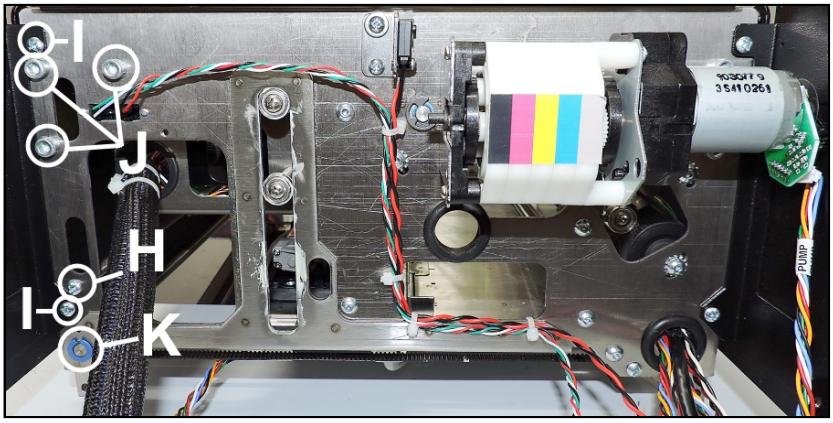


7. Remove (1) screw **[G]** securing the Media Guide Base Plate to the Side Frame.

8. Remove (1) screw **[H]** securing the Support Rod.
   Remove (2) screws **[I]** securing the Top Assembly (Clamshell) Side Panels
   (*2 screws per side*).
   Loosen (3) screws **[J]** securing the Top Supports
   (*3 screws per side.*)

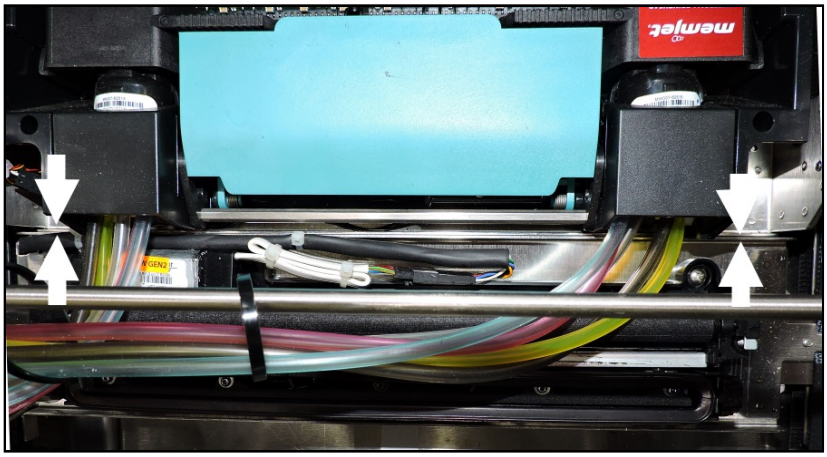
9. Pull the Side Frame away from the Clamshell enough to release the Service Station Motor Drive Shaft Assembly **[K]**.

10. **Remove the Belt.** Note how the belt is routed through the Pulleys.



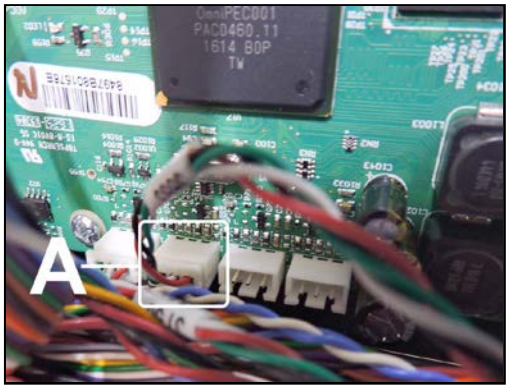
11. **NOTE:** Check/adjust Positioning Belts tension. See "Service Station Position Belts Tension Adjustment" in the Adjustments Section**.**
    System Test: Press **Sled Test** to check that system is operating properly.

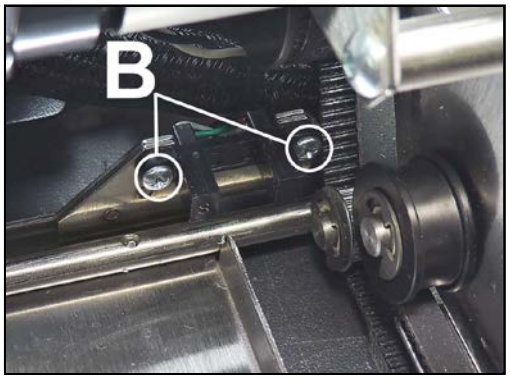
    IMPORTANT: Make sure the Service Station is installed parallel to the Printhead Locator Assembly. Check this by lowering Printhead Locator Assembly to its lowest point and pushing the Service Station Assembly up against it [*see arrows*]. They should meet flush with no gaps at either end.



Remove Service Station Home Sensor

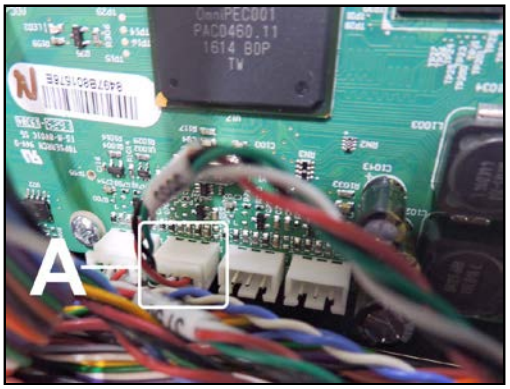
1. Remove the Non-Operator Side Cover.
2. Open the Top Cover.
3. Disconnect wire harness **J553 [A]** from the MPCA terminal. You may have to cut wire ties to release the wire harness from the wiring bundle.
4. Remove (2) screws **[B]** securing the Sensor to the Clamshell. Carefully remove the Sensor Assembly. **Take care not to snag the wiring harness.**
5. **Install in reverse order.**
   NOTE: Make sure to replace any wire ties removed in Step 3.

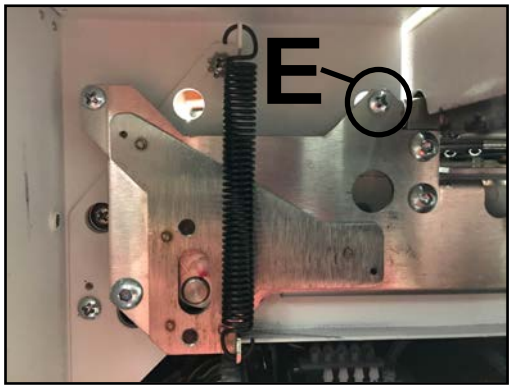


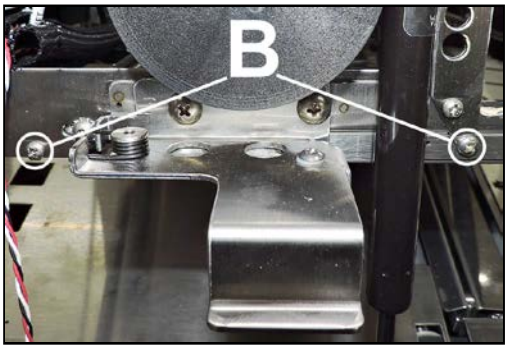


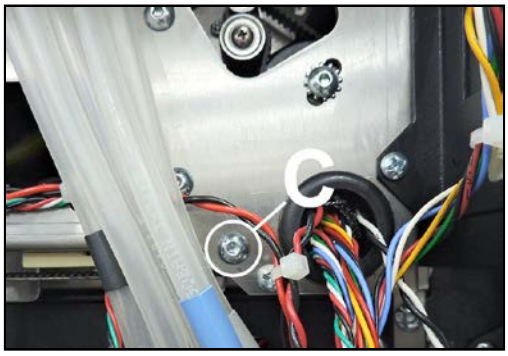
Remove Media Guide Assembly (Base Plate w/ Transport Wheels)

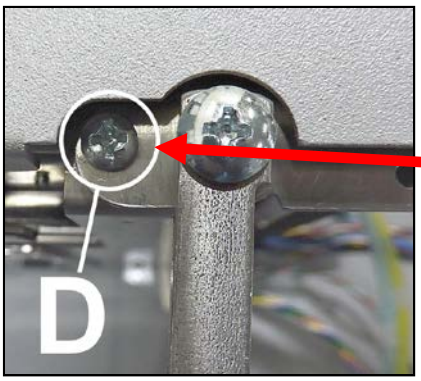
1. **Before powering off printer, set Media Thickness to 10mm** (Clamshell set to highest position).
2. Power down, power-off and unplug printer.
3. Remove the Control Panel Cover.
4. Remove the Rear Top Assembly (Clamshell) Cover and Non-Operator Side Cover.
5. Disconnect the Service Station Sled Home Sensor wire harness **J553 [A]** from the MPCA. Cut wire ties as necessary to release the wire harness.
6. Open the Exit Roller Assembly.
7. Remove (1) screw **[E]**, located at non-operator side of printer.
   Tip: Removing screw allows end of shaft to float so you can access screw **[D]**.
8. Remove (4) screws securing the Media Guide to the Clamshell:
   a. (2) Screws **[B]** on Control Panel side.
   b. (1) Screw **[C]** on Rear Clamshell.
   c. (1) Screw **[D]** located next the Clamshell hinge.
   Tip: Screw **[D]** is located at Exit End of printer (Exhaust Fan side of Clamshell).





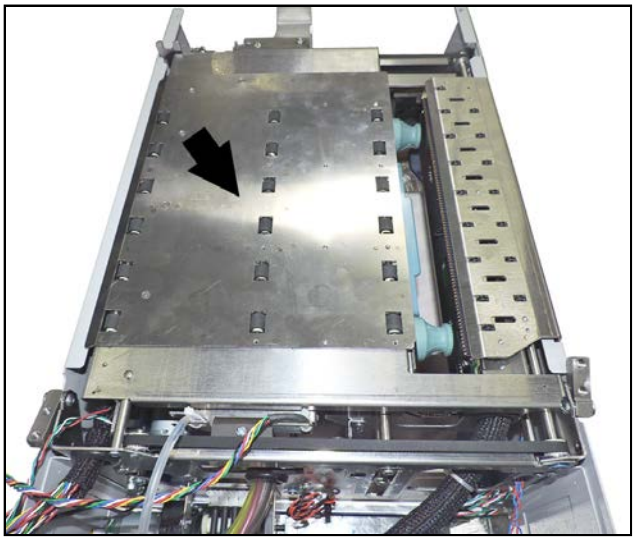






9. Release and open the Clamshell.
10. Remove the Media Guide Assembly from the Printer.
    NOTE: This also provides access to the transport wheels located on the Media Guide Assembly (Base Plate w/ Transport Wheels)
11. **Install in reverse order.**

NOTE: For instructions on replacing Media Guide Wheels and Springs, see "**Replace Media Guide Wheel Assemblies & Springs**".



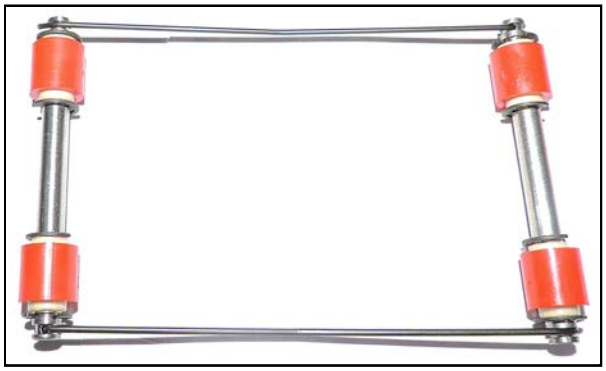
NOTE: Picture shows Top Assembly (Clamshell Assembly), which has been removed from printer and turned over, so you can see bottom of Media Guide Assembly. It is NOT necessary to remove the entire Top Assembly to remove the Media Guide Assembly.

Replace Media Guide Wheel Assemblies and Springs

Follow the steps below to replace the Media Guide Wheel Assemblies and Springs. These can be ordered as a Kit (47-113-90) or as individual components.

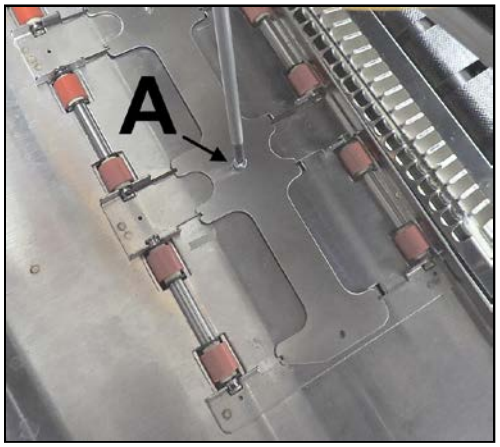
Wheel Assembly Kit (47-113-90) Includes:

- 6 Wheel Assemblies
- 6 Wheel Springs

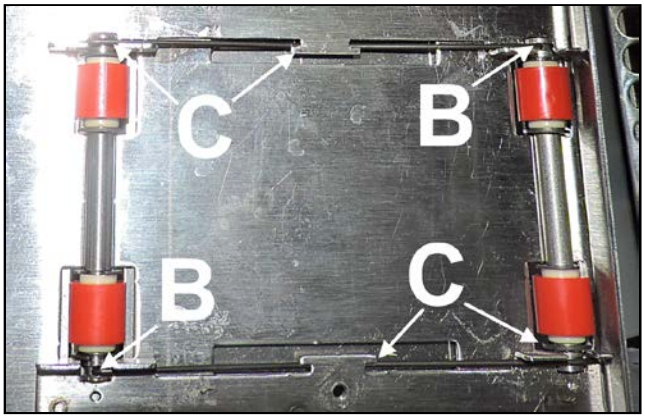


Remove the Wheel Assemblies and Springs

1. **Remove "Top Assembly (Clamshell) Media Guide Assembly" as described in previous section.**
   Tip: Yom may be able to access and remove the Wheels and Springs without disconnecting or removing the Service Station Sled Home Sensor Assembly.
2. Lower the Media Plate Assembly to the Media Path surface under the Clamshell.
   IMPORTANT: DO NOT pinch, twist or pull the Service Station Sled Home Sensor wire harness.
3. Remove the (4) screws securing the Wheel Spring Retainer **[A]** to the Media Guide Plate. Remove the Retainer.



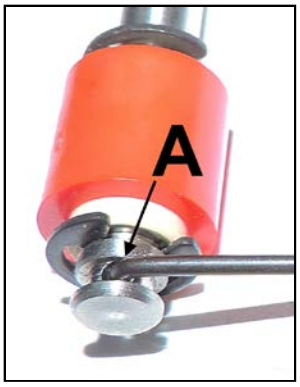
4. Using a pick or other small pointed tool, carefully release the Springs and Wheel Assemblies.
   NOTE: One end of the Spring is inserted into the axle of the wheel assembly **[B]**, the other end rests on the axle **[C]**. It is easier to release the resting end first.
5. Remove the Springs and Wheel Assemblies.



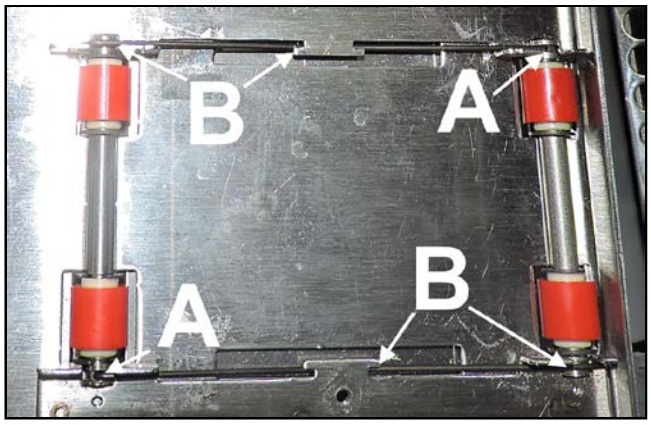
Install the Wheel Assemblies and Springs

IMPORTANT: When replacing the Wheel Assemblies, install the Feeder-side Wheel Assemblies with the hole drilled in the axle facing toward the Control Panel side of the Printer. Install the Exit-side Wheel Assemblies with the hole drilled in the axle facing toward the Non-Operator side of the Printer.

NOTE: Install the Wheel Assemblies in pairs (*one Feeder and one Exit-side Wheel Assembly and Springs together*).

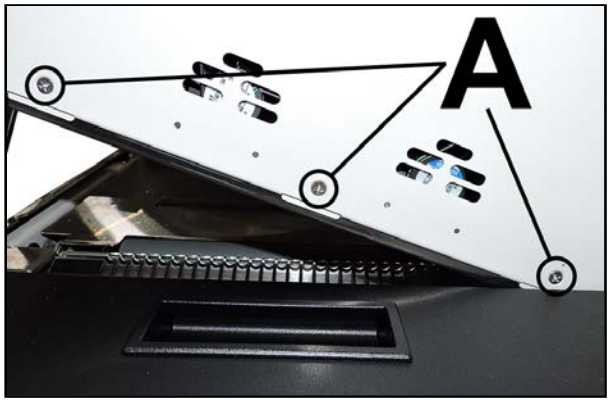


1. Insert the angled end of the Spring in the hole drilled in the Wheel Assembly Axle **[A]**.
2. Install the Wheel Assembly in the Media Guide Plate. Snap the Spring under the tab on the Media Plate and the other end fits into the groove on the opposite Wheel Assembly **[B].**
3. Repeat **Steps 1 and 2** to install the remaining Wheel Assemblies and Springs.
4. Reinstall the Media Guide Plate. **IMPORTANT:** Reach inside the Clamshell and press down on each corner of the Media Guide as you tighten that corner's screw. This will ensure that the Media Guide surface will be level with the Printer.
5. Reinstall the Control Panel Cover. Close the Covers and lower the Clamshell.



Remove Top Assembly (Clamshell) Star Wheel Assembly

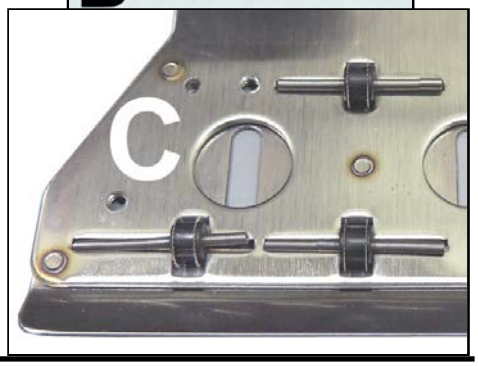
1. **Open the Ink Tank Door.**
   Release and raise the Clamshell.
2. Remove (3) screws **[A]** securing the Star Wheel Assembly to the Top Assembly (Clamshell) Side Cover.
3. Remove the Star Wheel Assembly **[B]**.
4. **Install in reverse order.**



Replace Star Wheel Assembly

1. **Remove the Star Wheel Assembly from the Top Assembly (Clamshell).**
2. Remove 5 screws **[A]** securing the Star Wheel Guide Top to the Exit Star Wheels Assembly Base.

3. Remove Star Wheel Guide Top. Remove the Star Wheel Assemblies to be replaced from the Star Wheels Assembly Base.
4. Assemble new Star Wheel Assemblies by sliding a Star Wheel onto a Spring-Axle **[B]**.
5. Align the new Star Wheel Assemblies in the Star Wheel Guides **[C]**.
6. Reinstall the Star Wheel Guide Top onto the Star Wheel Guide Base and secure with 5 screws.
7. Reinstall the Star Wheel Assembly onto the Clamshell.



SECTION 6 - *Maintenance*

General, periodic maintenance is needed to keep Printer in good working order. Many tasks can be performed by operators with basic supplies, no special tools needed. Other tasks should only be performed by trained service personnel. **NOTE:** High volume usage may require more frequent maintenance.

Maintenance Supplies & Equipment: Flashlight, small telescoping mirror, hard-bristled toothbrush, tweezers, small flathead screwdriver, powder-free nitrile gloves, protective clothing and eyewear, vacuum with wand, deionized/distilled water, Super Lube 21030 synthetic grease (*or equivalent*), Loctite 38650 copper anti-seize (*or equivalent*), can of compressed air, foam or lint-free cotton swabs, lint-free wipes, disposable shop towels.

AS NEEDED MAINTENANCE (Depending on Printer usage)	
Cleaning (Remove media fibers and ink residue):	Media path, Service Station (Wiper Roller, Platen)
Ink Drip Tray	Empty and clean weekly or as needed.
Ink Revolver Couplings	Inspect and clean after every Printhead removal.
Printhead	Wipe as needed to maintain print quality.
Printhead Pen Driver PCA	Clean contacts after every Printhead removal.
Lubrication	Printhead Lift Assembly, Media Thickness Adjustment Assembly, Clamshell Latch Release Assembly, Service Station Wiper Roller Gear
Replacement	Wiper Roller, Ink Waste Tray, Ink Revolver Couplings, Tubing, Belts.
DAILY MAINTENANCE	
Printhead	Clean manually prior to installing. **Clean after:** Installing and priming, removing and replacing, priming or repriming, contamination. media jams and when automated servicing does not clear nozzles.
Media Path	Clean to remove excess ink residue and debris.
Print Engine: System Components, Paper Path surfaces (upper and lower)	Clean to remove excess ink residue and debris. **NOTE: DO NOT wipe Starwheel Assemblies.**
Service Station: Capping Station and Platen	Empty/clean excess ink residue and debris.
BI-WEEKLY MAINTENANCE	
Media Sensors	Clean to remove excess ink residue and debris.
Print Engine	Clean to remove excess ink residue and debris.
Wiper Roller, Cap Station Seal	Inspect for proper operation and wear.
MONTHLY MAINTENANCE	
Ink Tubing, Connections, Peristaltic Pump, Pinch Valve & Vents, Buffer Boxes, Ink Revolver Couplings	Inspect for leaks, kinks, pinches, proper operation.
Ink Waste Tray	Inspect for excessive ink saturation or leakage.
Printhead Lift Motor Belts, Service Station Motor Belts, Feed Motor Belt, Paper Path Motor Belt, Media Thickness Adjustment Belts	Inspect for proper tension, operation, debris and wear.
YEARLY MAINTENANCE	
Check Firmware Version	Verify latest version and update if needed.
Grit Rollers	Clean to remove excess ink residue and debris.
Ink Tank Latches/Ink Tank Bay	Inspect for proper operation, wear, debris, leakage.
Inspect Moving Parts: Media Path, Pump, Pinch Valves, Printhead Lift and Service Station	Verify smooth operation. Listen for unusual noise indicating damage or wear.
Lubrication	Printhead Lift Assembly, Clamshell Latch Release Assembly, Media Thickness Adjustment Assembly, Service Station Wiper Roller Gear
Service Station: Wiper Roller, Sled Assembly	Clean to remove excess ink residue and debris.

WARNING!

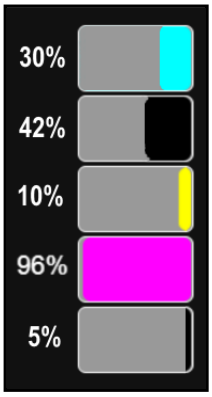
ALWAYS POWER DOWN PRINTER BEFORE CONNECTING OR DISCONNECTING ANY WIRING HARNESSES OR CABLE CONNECTIONS TO AVOID SERIOUS SHOCK OR INJURY.

CAUTION

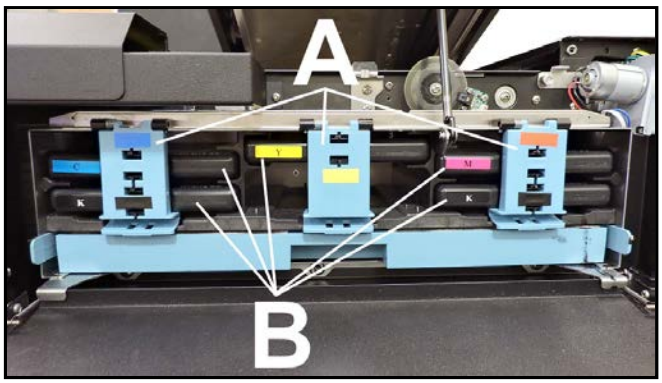
- **ALWAYS USE APPROPRIATE PERSONAL PROTECTION EQUIPMENT (PPE).**
- **USE ELECTROSTATIC DISCHARGE (ESD) PROTECTION WHEN MAINTAINING EQUIPMENT.**
- **DISPOSE OF ALL MAINTENANCE WASTE IN ACCORDANCE WITH LOCAL REGULATIONS.**

Replace Ink Tanks

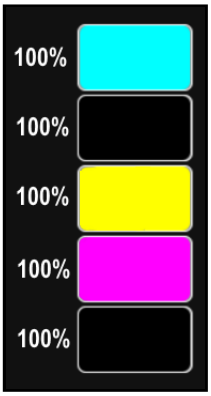
Replace Ink Tanks when ink runs out.



1. **Look at the Control Panel Touchscreen.** Ink Tank Status information appears left side of the Touchscreen. Note that some or all of Ink Tank indicators may be low or empty.



2. **Open Ink Tank Door** (*hinged at bottom*)**.** (*Disconnects Printer communication with Ink Tanks and allows safe installation and replacement*.) Open Ink Tank Latches **[A]** and pull Ink Tank(s) **[B]** out of Printer.
3. Remove new Ink Tank(s) from packaging.
4. Slide new Ink Tanks (*labels up*) into appropriate color slots **[B]**. Close Ink Tank Latches. **INSTALLATION**
   Tip: Make sure Ink Tanks seat properly. Insert Ink Tank into appropriate Ink Station, then pull Ink Tank back about an inch and push forward firmly to ensure that Ink Nozzles penetrate seals on Ink Tanks**.**



5. **Close the Ink Tank Door.** Ink colors fill in as Ink Tanks are installed. If ink colors do not fill in after a few seconds, open the Ink Tank Door and reinstall Ink Tank(s).
   NOTE: If Ink Tank is installed, but Ink Tank indicator still does not refresh, see "Cleaning Ink Tank Contacts" below**.**
6. When Printer stops processing and no errors appear on the System Status screen, Printer is ready for use.

WARNING!

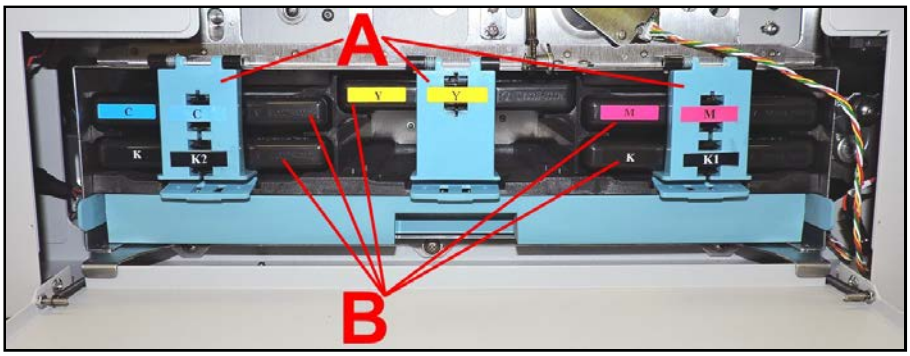
Ink in Ink Tanks may be harmful if swallowed. Keep new and used Ink Tanks out of reach of children. Discard empty Ink Tanks immediately.

Clean Ink Tank Contacts

When reinstalling or replacing Ink Tanks, the Ink Level indicators on the Touchscreen may not refresh. This may be due to a dirty Ink Tank Level Prism and/or QA Chip contacts on that Ink Tank(s).

Clean contacts as follows:

1. **Remove Ink Tank(s).** Open Ink Tank Door. Release Ink Tank Latch(es) **[A]**. Remove Ink Tank(s) **[B]** that did not refresh.



2. Clean Ink Level Prism **[A]** and QA Chip contacts **[B]** with a clean, dry, lint-free cloth. **NOTE: Dampen cloth with distilled water to wipe Prism, but DO NOT get QA Chip contacts wet.**

3. Reinstall Ink Tank(s) (*labels up*); close Ink Tank Latch(es). Close Ink Tank Door.

Ink Tank Storage

Ink Tank storage should take place, in the original/sealed packaging, under the following conditions:

Storage Temperature Range:	**Long Term:** 41°F to 113°F (5°C to 45°C) **Short Term:** -13°F to 158°F (-25°C to 70°C) **NOTE:** Cumulative storage duration below 41°F (5°C) or above 113°F (45°C) must not exceed 72 hours.
Humidity Range:	5% to 95% Relative Humidity, non-condensing
Atmospheric Pressure Range:	70 kPa to 106 kPa
Electrostatic Discharge:	8 kV air discharges or 4 kV contact discharges* ***When tested in accordance with IEC 61000-4-2**

- Store Ink Tanks with contacts (septum seals and QA chip) facing up.
- Exposure to conditions that are not permissible may lead to damage which is not externally visible.

Opened Ink Tanks should be installed and remain in the Printer until they are empty and need to be replaced. If you find it necessary to remove Ink Tanks from the printer, for an extended period of time, it would be best to place them in individual, sealed plastic bags. This will help to seal the Ink Tanks and protect people/property from any ink that may drip from the septum seals.

Ink Tank Disposal

Safely dispose of Ink and Ink Tanks in accordance with local/national regulations.

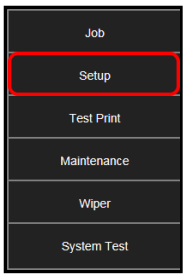
Clean up spills with soap and water. Abrasive soap is effective in cleaning ink off your hands.

Clean/Replace Printhead Cartridge

Cleaning

The Printhead is cleaned automatically each time Printer is turned on or when the **"Quick Clean Printhead"** routine is performed. This can be found under **"Service" Tab**, **"Normal Clean Printhead"** in **Printer Driver** or **"Maintenance"** drop-down menu on **Touchscreen**. If running automated Cleaning Levels doesn't help improve print quality, Printhead Cartridge can be cleaned manually.

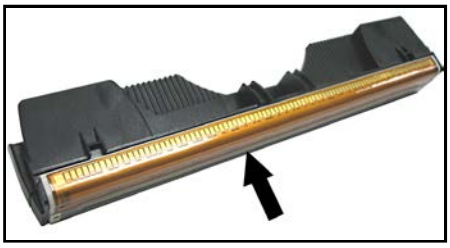
1. **Open Top Cover.** From the Touchscreen, tap **"Setup"** in the **Menu** drop-down, then tap **"System Deprime"**. The Printer pumps any ink in system back into Tanks. Then the Printhead Latch pops open.



CAUTION

DO NOT PRY OR MANUALLY LIFT PRINTHEAD LATCH OR LATCH MAY BREAK. ONLY OPEN LATCH USING THE RELEASE PRINTHEAD BUTTON ON THE TOUCHSCREEN OR IN THE PRINTER TOOLBOX.

2. Make sure Printhead Latch is fully opened to retract ink lines. Remove used Printhead Cartridge by tilting it toward ink lines **[3]**, then carefully lifting it out of Printhead Compartment.



3. Moisten Printhead nozzles using deionized/distilled water (*reference ASTM D5127-90 Type E-II Electronic Grade Water*) and a damp, lint-free cloth, wiping end to end. (*Gray strip located below orange strip*.) **Take care not to damage copper contacts, metal plate, or gold Printhead surface.**
4. Reinstall Printhead, close Printhead Latch and close Top Cover**.**

Generally, when ink supply is adequate and print quality remains poor, or when automated cleaning processes or manually cleaning Printhead does not help image quality, replace Printhead.

CAUTION

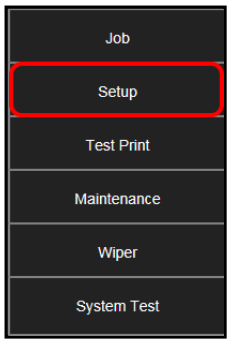
- **Use electrostatic discharge (ESD) protection when handling.**
- **Hold Printhead Cartridge by handles ONLY.**
- **DO NOT touch ink couplings, nozzle surface or electrical contacts.**
- **DO NOT unpack Printhead Cartridge until Printer is ready for installation. Once unwrapped, delay in installing Printhead can compromise print quality due to dehydration.**
- **DO NOT place an unwrapped Printhead on any surface before installing. Protect Printhead from scratches, dust, fibers, dirt and other contaminants at all times.**

Replace Printhead Cartridge

IMPORTANT

TO ENSURE OPTIMUM PRINTING PERFORMANCE, INSPECT AND REPLACE THE WIPER ROLLER AS NECESSARY WHEN REPLACING THE PRINTHEAD.

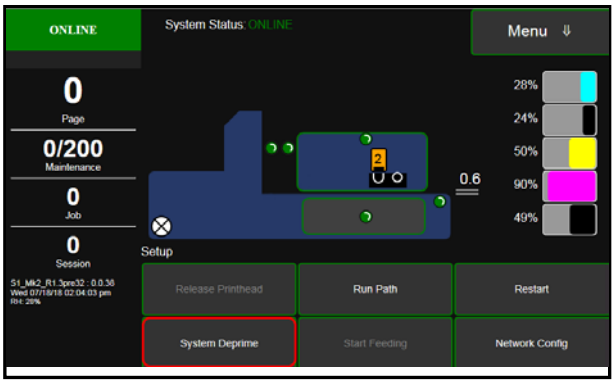
1. **Open Top Cover.** From the Touchscreen, tap **"Setup"** in the **Menu** drop-down, then tap **"System Deprime"**. The Printer pumps any ink in system back into Tanks. Then the Printhead Latch pops open.



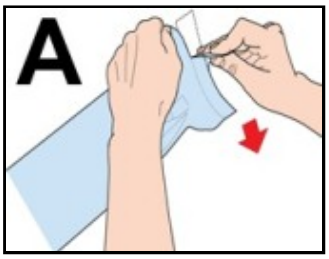
CAUTION

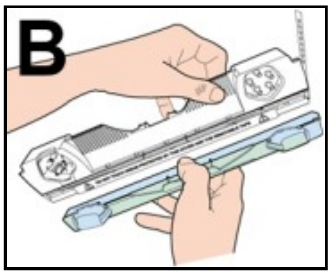
DO NOT PRY OR MANUALLY LIFT PRINTHEAD LATCH OR LATCH MAY BREAK. ONLY OPEN LATCH USING THE RELEASE PRINTHEAD BUTTON ON THE TOUCHSCREEN OR IN THE PRINTER TOOLBOX.

3. Make sure the Printhead Latch is fully opened to retract ink lines. Remove the used Printhead Cartridge by tilting it toward ink lines, then carefully lifting it out of Printhead Compartment.



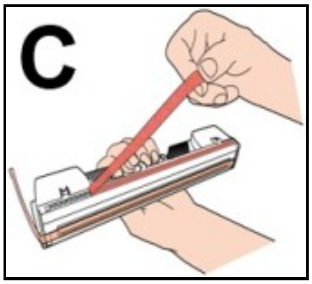
4. **[A] Carefully remove Printhead Cartridge from foil packaging**. Tear foil at notch or cut the end with scissors.

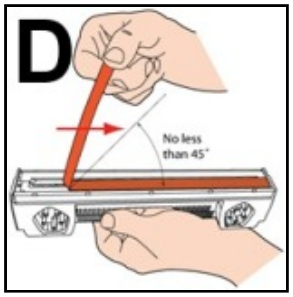




[B] Remove protective plastic cover. Hold Printhead by handle and unclip cover from Printhead.

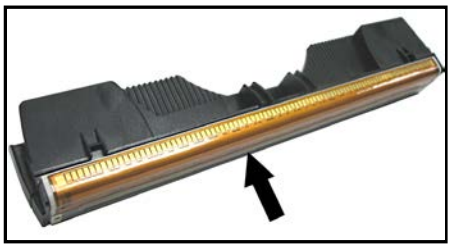
[C] Remove protective strip from Printhead electrical contacts.
Once removed, DO NOT allow strip to touch electrical contacts.



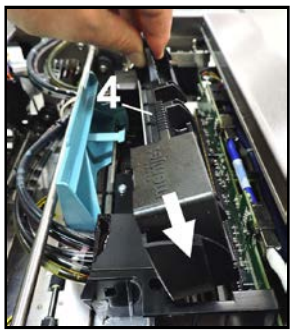


[D] Remove protective strip from Printhead Nozzles. Hold Printhead by handle. Pull strip tab and slowly peel strip from Printhead.
DO NOT pull strip at less than a 45° angle from Printhead surface.
DO NOT allow removed strip to touch Printhead Nozzles.
NOTE: Keep foil packaging to store/dispose of old Printhead Cartridge.

5. **Wet Printhead Surface. (*Ensures that Printhead will prime correctly*.)** Moisten Printhead nozzles using distilled water and a damp, lint-free cloth, wiping end to end. (*Gray strip located below orange strip*.) **Take care not to damage copper contacts, metal plate, or gold Printhead surface.**



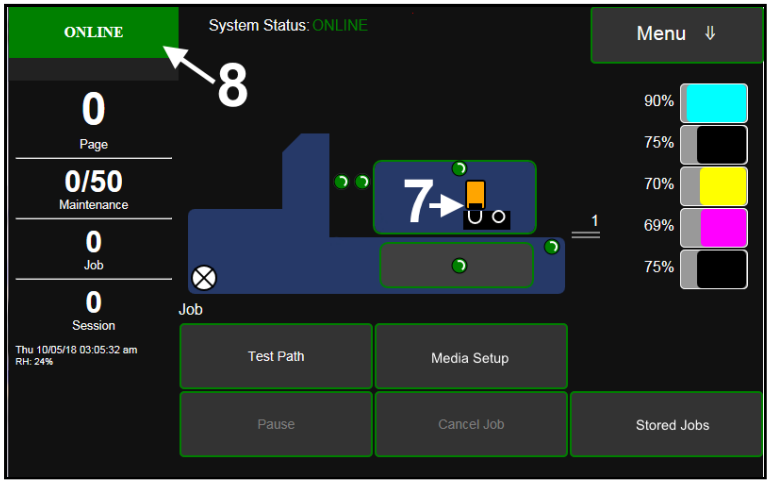
6. Carefully insert Cartridge into compartment at an angle **[4]**, with Printhead surface facing down and Ink Nozzles facing Ink Hoses. Once seated, gently tilt Cartridge back until it snaps into an upright position **[5]**. **DO NOT FORCE Printhead Cartridge into position.**



7. **Close Printhead Latch [6]**. Printer starts up and primes ink into Printhead. (*This may take a few minutes*.) Make sure ink is flowing through hoses. If air bubbles appear, tap lines or click **"Circulate Ink"** on Touchscreen to clear them.

8. **Watch Control Panel Touchscreen.** Check that Printhead icon **[7]** in Printer image is primed (*solid color*).

9. When **ONLINE [8]** appears, the Printer is ready for use. Close the Top Cover.
NOTE: If the Printhead icon continues to display an outline or a question mark (?) try the following procedures:



[1] Printhead icon shows an outline (*Printhead unprimed)*: Click **"Circulate Ink"** under **"Maintenance"** drop-down in Printer Toolbox. If issue persists, try the **"Install Printhead"** procedure again. If this does not clear up the issue, call for technical support.

[2] Printhead icon displays a question mark (*Printhead not recognized*): Try the **"Install Printhead"** procedure again. If the issue continues, call for technical support.

NOTE: Printer may take up to 12 minutes to set itself up during initial startup. This is normal.

IMPORTANT!
CHECK INK TANKS. PRINTER MAY NOT FULLY REPRIME IF INK TANKS ARE LESS THAN 1/3 FULL.

Printhead Storage

Printhead storage should take place, in the original/sealed packaging, under the following conditions:

Storage Temperature Range:	**Long Term:** 41°F to 113°F (5°C to 45°C) **Short Term:** -13°F to 140°F (-25°C to 60°C) **NOTE:** Cumulative storage duration below 41°F (5°C) or above 113°F (45° C) must not exceed 72 hours.
Humidity Range:	5% to 95% Relative Humidity, non-condensing
Atmospheric Pressure Range:	70 kPa to 106 kPa
Electrostatic Discharge:	8 kV air discharges or 4 kV contact discharges* ***When tested in accordance with IEC 61000-4-2**

- Store the printhead with the printhead nozzles facing down. This helps to ensure that the shipping fluid, within the printhead, keeps the nozzles hydrated during printhead storage.
- Exposure to conditions that are not permissible may lead to damage which is not externally visible.

Once the vacuum sealed packaging has been opened, the printhead should be immediately installed and it should remain in the printer until it is determined that printhead replacement is required.
If you find it necessary to remove the printhead from the printer, it must be properly protected and sealed to help reduce damage, nozzle dehydration and clogging.

- Follow the “Replacing the Printhead Cartridge” procedure to remove the Printhead Cartridge.
- Install the protective cover on the Printhead. Be careful to avoid ink spills (drips) and stains during this process.
- Store Printhead Cartridge in a sealed plastic bag, along with a small lint-free cloth that has been lightly dampened with distilled water. This will create a humid atmosphere to help prevent nozzle dehydration.
- Reinstall the “Cap Protectors” onto the Ink Revolver Couplings to protect the ink system from dust and debris.
- The Printhead should be re-installed as soon as possible.
  Please see the section titled “Install Printhead Cartridge”.
  CAUTION: Make sure the cartridges electrical contacts are dry before re-installing Printhead.

Printhead Service Life

The Memjet printhead contains 70,400 nozzles.

The following projected value can be used to estimate how long you may expect printhead nozzles to last.

- **A single nozzle can print ~125,000 linear inches of continuous printing**

For example, if printing a #10 envelope (9.5" W x 4.13"H), feeding long-edge first, at best print quality, with 100% ink coverage (each nozzle firing at 1600 dpi down length of media), the printer is depositing 4.13 liner inches of print per piece. At this rate, you can expect a yield of approximately 30,000 envelopes before head replacement may be needed.
If printing a typical logo (1" high) you can expect a yield of approximately 125,000 envelopes before head replacement may be needed.

NOTICE: **Individual results will vary.**
The estimations, provided above, are NOT an expression of Warranty. This information is being provided for informational purposes only. The decision on when a Printhead is no longer producing acceptable output varies greatly from customer to customer, since this decision is based upon the customer's expectations (what they consider to be acceptable output).
Printhead degradation will depend on the make-up of the images printed, the operating environment, servicing, media characteristics (*including cleanliness*) and other factors. The Printhead has a total of 70,400 nozzles (14,080 per color channel, 5 color channels). Since every print job is different, most do not use the entire width of the Printhead, nor do they require that every nozzle be fired. Therefore, some nozzles do not fire as often as others. The most frequently used nozzles will begin to fail (nozzle "end-of-life") before nozzles that are used less often. Noticing the effects of failing nozzles depends partly on the relative position of those nozzles to each other.

Printhead Disposal

The Printhead Cartridge should be disposed of in a safe manner in accordance with local/national regulation. To help avoid ink spills, place the Printhead Cartridge back into its original packaging, before disposal. Clean up spills with soap and water. Abrasive soap is effective in cleaning ink off your hands.

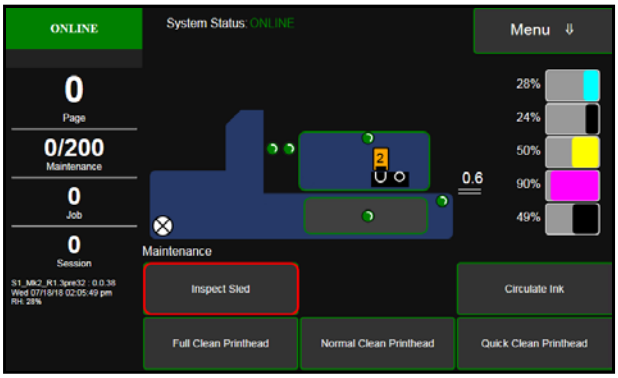
Inspect/Clean Service Station

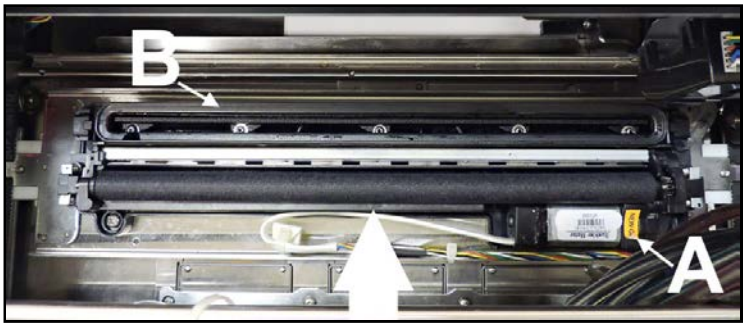
The Service Station (*located directly under the Printhead Assembly*) cleans Printhead Cartridge of excess ink and debris, keeps Printhead hydrated and protected when not in use, captures and removes ink used to keep nozzles clear. It moves out of the way of the Printhead during printing. It is designed to provide a long service life.

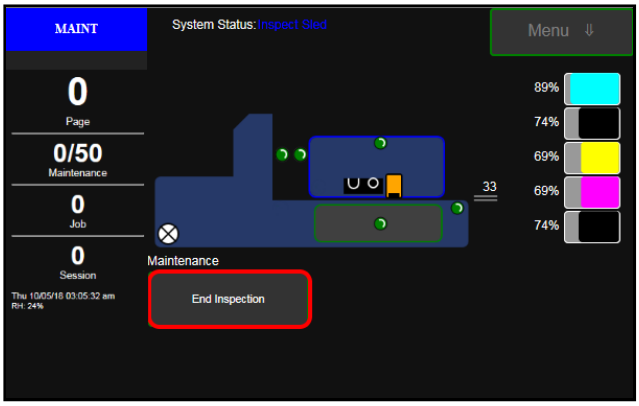
Inspect the Service Station

To access the Service Station for inspection and cleaning:

1. Using the **Touchscreen**, select **"Menu,"** and tap **"Maintenance"** from the drop-down menu. Tap **"Inspect Sled"**. The Service Station **[A]** moves out from under the Printhead Assembly.
2. Open the Top Cover.
3. Visually inspect the Service Station for cleaning or service.
   Use a dry, lint-free cloth to soak up any excess ink from the Cap Station **[B]**.
4. Tap **"End Inspection"** on the Touchscreen to move the Service Station back under the Printhead Assembly.
5. Close the Top Cover.







TURN PRINTER POWER OFF.

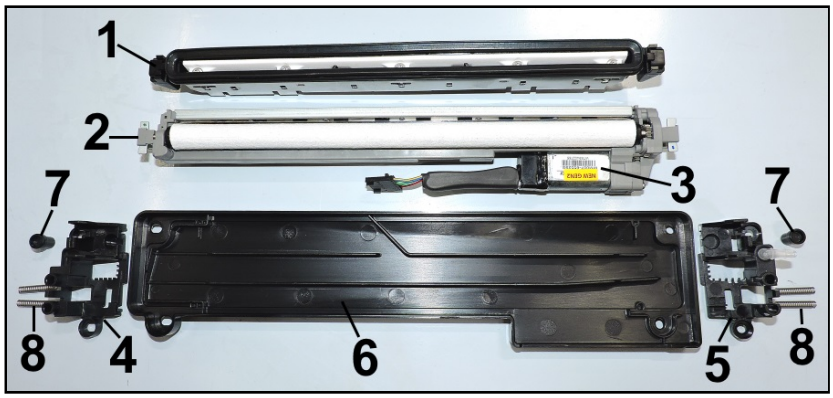
CAUTION

WHENEVER POWERING DOWN UNIT, ALWAYS:

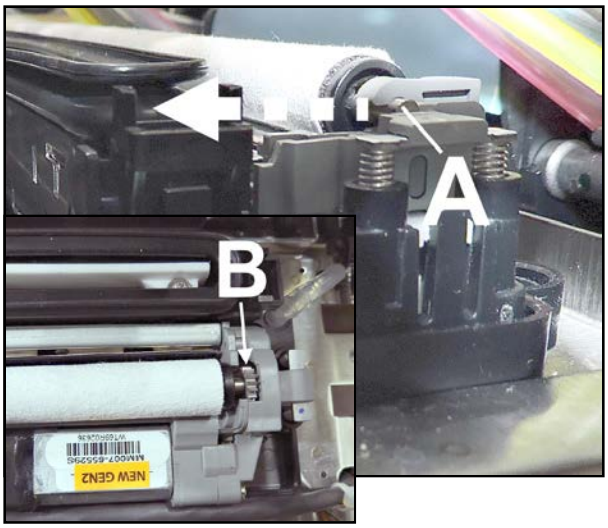
1. **PRESS POWER BUTTON ON CONTROL PANEL.**
2. **WAIT FOR PRINTER TO STOP PROCESSING.**
3. **THEN PRESS MAIN POWER SWITCH ON REAR PANEL.**

Clean Service Station

1. Capping Station
2. Wiper Roller Assembly
3. Wiper Motor Assembly
4. Operator Side Bracket
5. Non-Operator Side Bracket
6. Service Station Base
7. Capping Station Inserts (2)
8. Wiper Roller Assembly Springs (4)



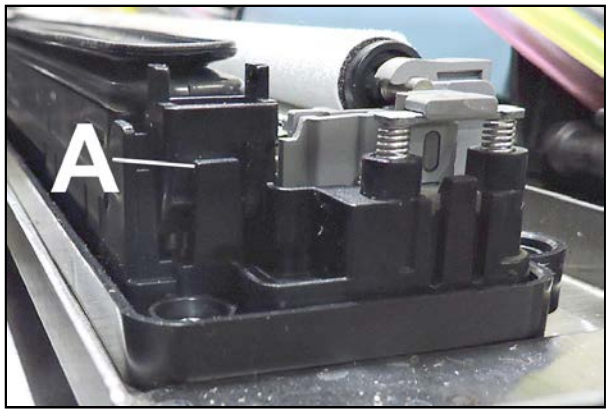
Wiper Roller:



1. Using the **Touchscreen**, select **"Menu,"** and tap **"Wiper"** from the drop-down menu. Tap **"New Wiper"**. The Service Station moves out from under the Printhead Assembly. **NOTE:** This will reset the roller service life count to **"0"**. If you wish to preserve the count, perform a **"System Deprime"**, then open the **"Maintenance"** screen and tap **"Inspect Sled"**.
2. Open the Top Cover.
3. Release the Roller by pushing the non-geared end toward the Capping Station **[A]**. This will unsnap it out of the bracket. Then lift the Wiper Roller out of the Wiper Roller Assembly.
4. **Cleaning:** Wipe or rinse with distilled water and pat dry with absorbent towel.
   Replace Roller: Make sure gear on Roller engages gear in Wiper Roller Assembly. Carefully snap Roller back in place.
5. **Install in reverse order. Be sure to insert the gear end of the Roller first and check that the gear teeth mesh with the other gears. NOTE: Any time the Wiper Roller is cleaned or replaced, apply a small amount of waterproof plumber's faucet and valve grease to the gear [B]. DO NOT get any grease on the Wiper Roller.**

   If using "New Wiper" button, the Printer will automatically reprime the system. If using "Inspect Sled", tap "End Inspection". Then open the "Maintenance" screen and tap "Circulate Ink".

Capping Station:



1. Using the **Touchscreen**, select **"Menu,"** and tap **"Maintenance"** from the drop-down menu. Tap **"Inspect Sled"**. The Service Station moves out from under the Printhead Assembly.
2. Open the Top Cover.
3. Gently release the tabs **[A]** (*one located at each end*) securing the Assembly to the Service Station Base.
4. Lift the Capping Station **[B]** out of the Printer. **NOTE: Be careful, watch for dripping ink. Do not lose the (2) inserts the Capping Station rests on (*located behind the release tabs*).**

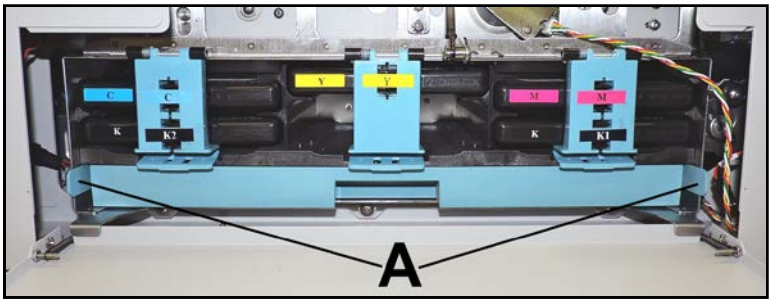
5. **Cleaning:** Clean off ink buildup and debris with distilled water and replace in the Service Station Tray.
6. **Install in reverse order.**

Service Station Tray:

1. Remove Wiper Roller Assembly and Capping Station.
2. **Cleaning:** Wipe Tray with a clean, damp, lint-free cloth. **NOTE: Be careful not to get any nearby electrical connections or PC Boards wet.**

Replace Ink Waste Tray

Ink Tray soaks up any excess ink that may drip from Print Engine during operation. After a period of time, it may become saturated and need replacement.



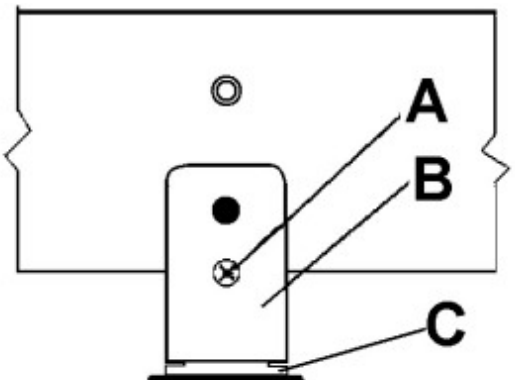
1. Open Ink Tank Door.
2. Pull on tabs to slide Ink Waste Tray **[A]** out of Printer.
3. Replace with a new Ink Waste Tray.

Replace Sheet Separators

Sheet Separators ensure separation of pieces as they are fed. If experiencing double sheet feeding and cannot adjust Separators to prevent it, replace them.

To replace Sheet Separators:

1. Turn Printer OFF and unplug it from power source.
2. Release Separator-by loosening Locking Knob and moving Media Side Guides to maximum opened position.
3. Lower Separators so they touch Feed Roller.
4. Remove screw **[A]** and Separator Cover **[B]**. Remove Separator **[C]** by prying it out of Holder.
5. Install a new Separator and reinstall Separator Support and screw.
   DO NOT overtighten screw to prevent distorting or damaging Separator.



Cleaning

WARNING!

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

DO NOT REMOVE SIDE COVERS! HIGH VOLTAGES PRESENT.

Clean Printer regularly to remove accumulated paper dust and ink. Depending on types of media run, paper dust may accumulate inside Printer and on Transport.

1. Turn Printer OFF and unplug it from power receptacle. Then open or remove Covers.
2. **Interior:** Use a vacuum with a soft brush attachment or a can of compressed air to help loosen dust particles. **NOTE: Be careful around ink tray and capping station** in Print Engine area as accumulated ink may splash onto other parts of Printer. Take care not to damage PC Boards or electrical wiring.
3. **Exterior:** Wipe clean with a lint-free cloth using any standard nonabrasive 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.
DAMPEN A LINT-FREE CLOTH WITH CLEANER TO CLEAN PARTS.**

Feed Rollers and Forwarding Rollers

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

NOTE: Avoid using solvents on Rubber Rollers.

Print Engine

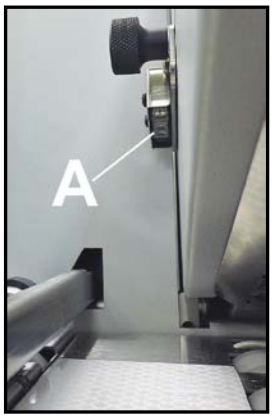
Areas in Print Engine can become glazed with a buildup of dust, paper lint and accumulated ink and have to be cleaned regularly. Open Top Cover. Use a vacuum to pick up any loose debris.

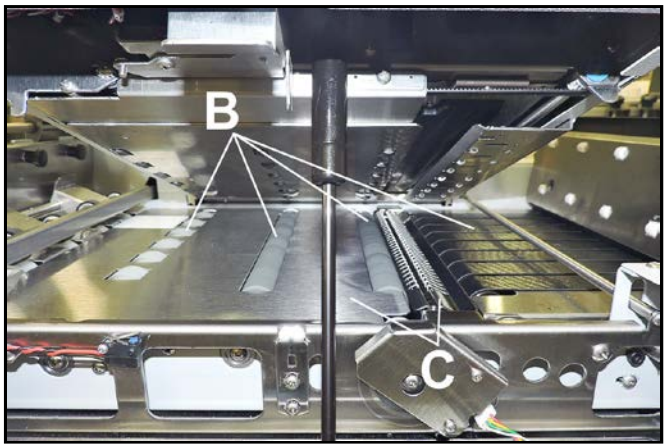
NOTE: Be careful around Ink Tray and Capping Station in Print Engine area as accumulated ink may splash onto other parts of Printer. Take care not to damage PC Boards or electrical wiring.

CAUTION

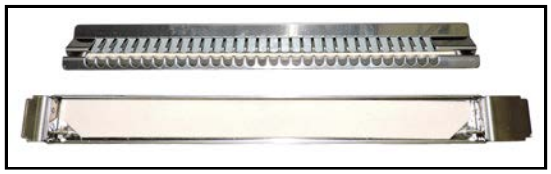
USE ONLY DEIONIZED/DISTILLED WATER TO CLEAN PRINT ENGINE COMPONENTS. AVOID CONTAMINATING PRINTHEAD WITH CLEANERS, LUBRICANTS OR OTHER CHEMICALS.

[A] Media Sensors: Paper lint and dust may build up on Media Sensors. Use a can of compressed air or a damp (*not wet*) foam or lint-free cotton swab to gently swab Sensors. Take care not to drip water into Circuit Boards. Use a clean, dry swab to dab surfaces dry.





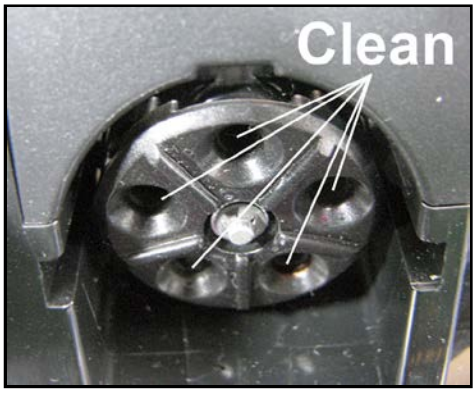
[B]. Rubber Rollers and Conveyor Belts. Clean as needed using distilled water with a damp, lint-free cloth.
NOTE: Be careful not to splash or drip ink on other parts of Printer.



[C] Printing Surfaces, Ink Drip Cover and Tray. Wipe using distilled water and a damp, lint-free cloth. Pat dry with a lint-free cloth. **Ink Drip Tray:** Carefully remove Ink Drip Tray Cover and Ink Drip Tray. **DO NOT tip the Tray or ink may spill.** Wipe off excess ink then clean using distilled water and a damp, lint-free cloth.

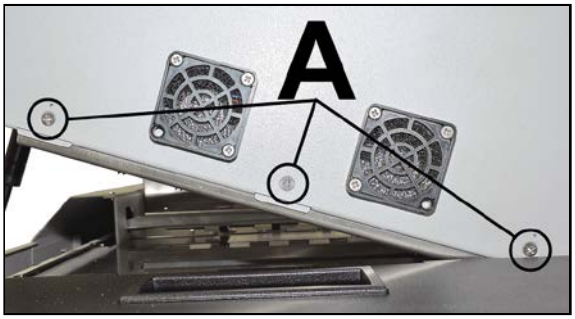
Clean Ink Revolver Couplings

1. **First Deprime the system and remove the Printhead Cartridge.**
2. Moisten a foam swab in distilled water.
3. Insert the swab into one of the ink channels and rotate swab to clean chamber.
4. Use a new swab for each of remaining ink channels until all 10 openings are clean. (*5 on each side.*)

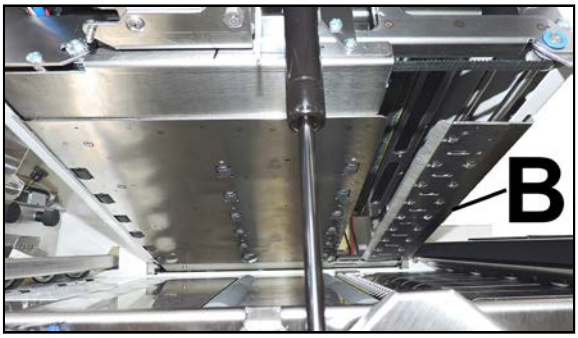


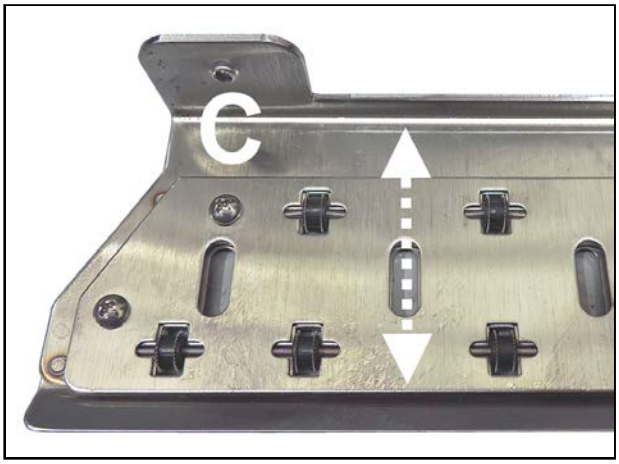
Clean Star Wheels

NOTE: This procedure may have to be performed weekly to remove ink residue, depending on printer use. For easier access when cleaning the Star Wheel Assemblies:



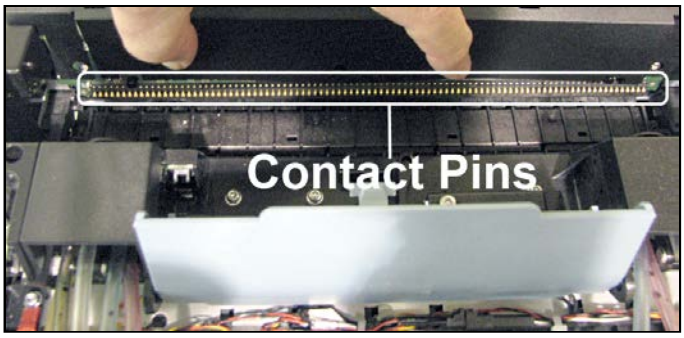
1. Remove 3 screws **[A]** securing the Star Wheel Assembly to the Clamshell.
2. Remove Star Wheel Assembly **[B]**.
3. Soak the Assembly for 20 minutes in clean, warm water. Rinse off with clean water.
4. Thoroughly wipe and dry the Star Wheels with a clean, lint-free cloth**.**
   IMPORTANT: Only wipe Wheels in the direction they roll **[C]**, never across the Wheels.
5. **Install in reverse order.**



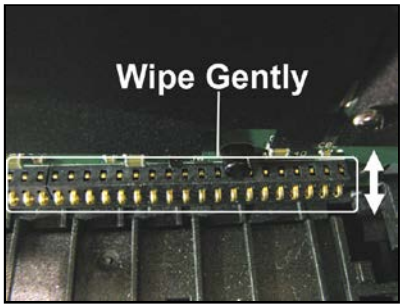


Clean Pen Driver Printed Circuit Board Contacts

Clean the Printed Circuit Board contact pins that connect with the Printhead Cartridge.



1. **Remove Printhead Cartridge.** Locate contact pins along base of Pen Driver Printed Circuit Board. (*Positioned opposite Ink Revolvers.*)
2. Dampen a new, lint-free cloth in deionized/distilled water.
3. Use a very gentle up and down motion to clean the contact pins.
   NOTE: Hold down plastic cover to keep moisture away from the rest of the Circuit Board.



CAUTION

CONTACT PINS ARE EASILY BENT OR DAMAGED! USE ONLY A VERY GENTLE UP AND DOWN MOTION FOR CLEANING. BENT PINS CAN DAMAGE PRINTHEAD AND CIRCUIT BOARD.

Preparing Printer for Transport

Please use this procedure if you ever need to transport the printer to a new location or ship the printer. Please refer to the appropriate sections in the manual for details on installing/removing items from the printer.

Local relocation

Transporting the printer from one room to another in the same building is considered a local relocation.
Local relocation does not normally require that the printer be repackaged before transportation.
To move your printer locally:

1. Switch the printer off using the ON/OFF button and wait until all lights turn off.
2. Turn off the Main Power Switch. Then disconnect the power cable from the printer and wall outlet. *IMPORTANT!* Do NOT switch off the power at the power outlet or remove the power cable until all lights are off. Failure to do so may damage your printer.
3. Disconnect the USB or Ethernet cable from your printer.
4. Two people are required to lift the printer; keeping it as level as possible during this process. *IMPORTANT!* The printer should remain semi-level at all times during transportation and storage. Failure to do so may cause the printer to leak ink.
5. Take care to avoid sharp bumps and strong vibrations during the relocation process.
6. Be sure to select an appropriate location as described in the “Choosing the Location” section**.**

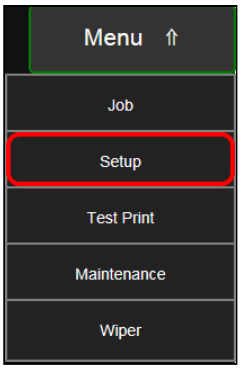
Remote relocation or shipping

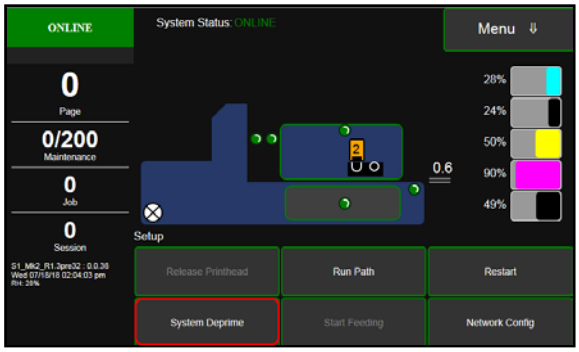
If you need to ship or transport the Printer to a different building, you will need to be prepare the printer as described below.
Once Printer is prepared, carefully package Printer, Printhead Cartridge, Service Station and Ink Tanks in original packaging.

When transporting your printer to a remote location, your printer will need to be disassembled and repackaged, as set out below:
NOTE: This procedure should be performed by a qualified technician. We suggest the use of protective gloves during this process.

Remove Printhead Cartridge

1. **Deprime System.**
   On the **Touchscreen**, tap **Menu** then tap **Setup** from dropdown list.
   Then tap **System Deprime** from the choices provided at the bottom of the Touchscreen.
   The Printer pumps any ink in Printhead and Ink System back into Ink Tanks. Then Printhead Latch **[1]** will release so it can be opened.
   This process may take a few minutes.





2. Open the **Printhead Door.**

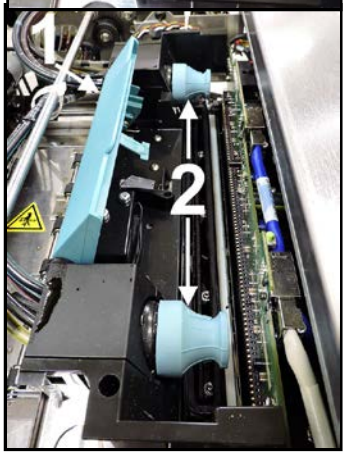
3. **Fully Open** released **Printhead Latch.** This will fully retract the Ink Revolver Couplings.

CAUTION

IF PRINTHEAD LATCH IS NOT RELEASED, DO NOT PRY OR MANUALLY LIFT LATCH OR LATCH WILL BREAK. USE "SYSTEM DEPRIME" or "RELEASE PRINTHEAD" BUTTONS, FROM THE TOUCHSCREEN OR TOOLBOX, TO RELEASE PRINTHEAD LATCH.

4. **Carefully remove Printhead.**
Rock the Printhead back to detach it from the electrical contacts. Then lift the Printhead up, at a slight angle, to remove it.

5. **Carefully repack Printhead Cartridge.**
Place Printhead into original protective packaging (orange, plastic clip). Then place Printhead into re-sealable plastic bag, along with a lint free cloth dampened with distilled water.



Empty and Clean Print Platen & Drip Tray

1. **Install Ink Revolver Caps [2]** to protect the ink system.

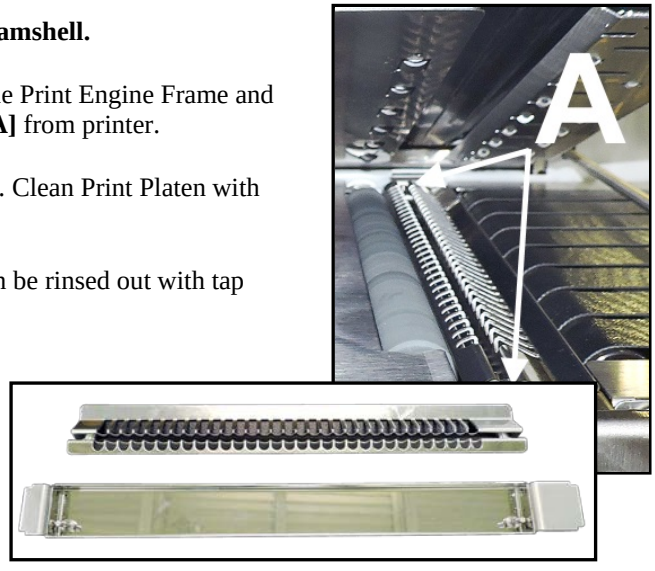
2. **Open Ink Tank Door and release (open) Clamshell.**

3. Carefully lift the two tabs out of the slots in the Print Engine Frame and remove Print Platen & Drip Tray Assembly **[A]** from printer.

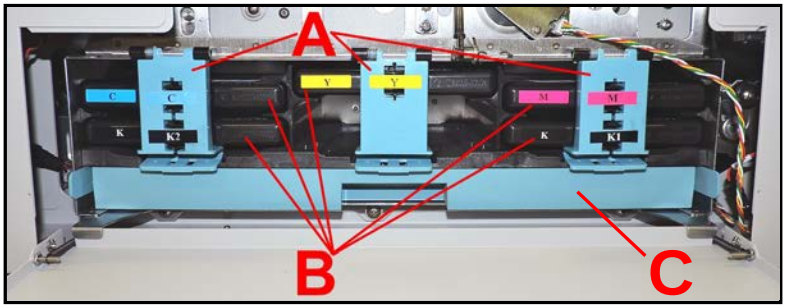
4. Carefully remove Print Platen from Drip Tray. Clean Print Platen with damp cloth and distilled water, then pat dry.

5. Empty ink from Drip Tray. Drip Tray can then be rinsed out with tap water. Pat dry with cloth.

6. Wrap **Print Platen & Drip Tray** in paper towels and store in re-sealable plastic bag then place in accessories box for shipping. If moving just a short distance **Print Platen & Drip Tray** may be placed back into the printer. See "Installing Print Platen and Drip Tray Assembly" for details.



Remove Ink Tanks and Check/Replace Waste Ink Tray



1. Open **Ink Tank Door** (*hinged at bottom*). Open the **Ink Tank Latches [A]** and pull Ink Tank(s) **[B]** out of Printer.
2. Carefully package Ink Tanks. Place into individual, re-sealable plastic bags and then place into original foam packaging.
   IMPORTANT: Make sure ink septum's (seals) on Ink Tanks face up to prevent leakage.
3. Pack Ink Tank bays with absorbent towels to catch any ink drips or spills.
4. Remove, inspect and re-install **Waste Ink Tray [C]**. If full of ink, replace it.

Power-Down Printer and Disconnect Cables (Power cord, USB, Network).

CAUTION

WHENEVER POWERING-DOWN PRINTER, ALWAYS:

1. **PRESS SOFT-POWER BUTTON.**
2. **WAIT FOR PRINTER TO STOP PROCESSING. TOUCHSCREEN AND SOFT-POWER LIGHT WILL GO OUT.**
3. **THEN TURN OFF MAIN POWER SWITCH ON REAR PANEL.**

Appendix A – Printer Specifications

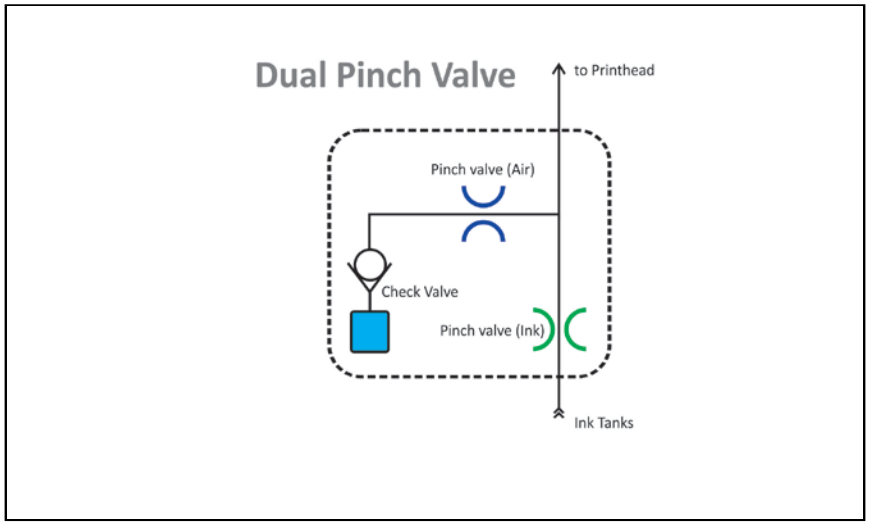
Please see ColorMax 8 User Guide

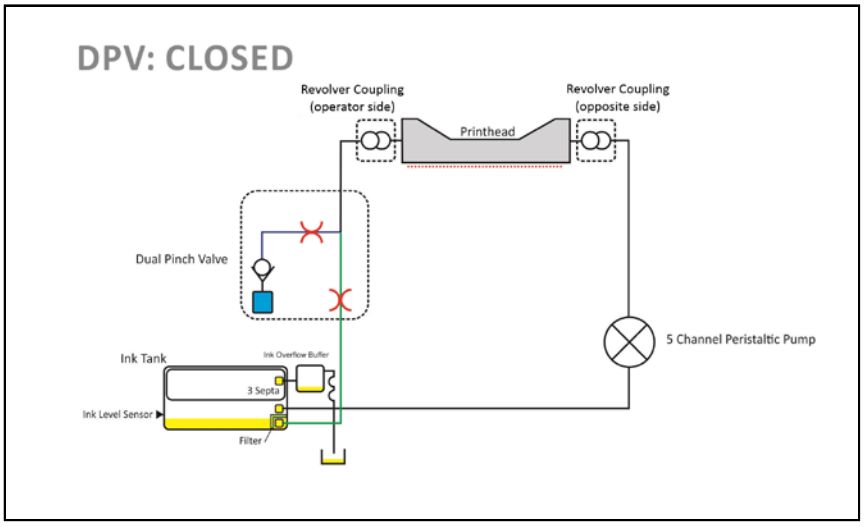
Appendix B – Supplies and Optional Hardware

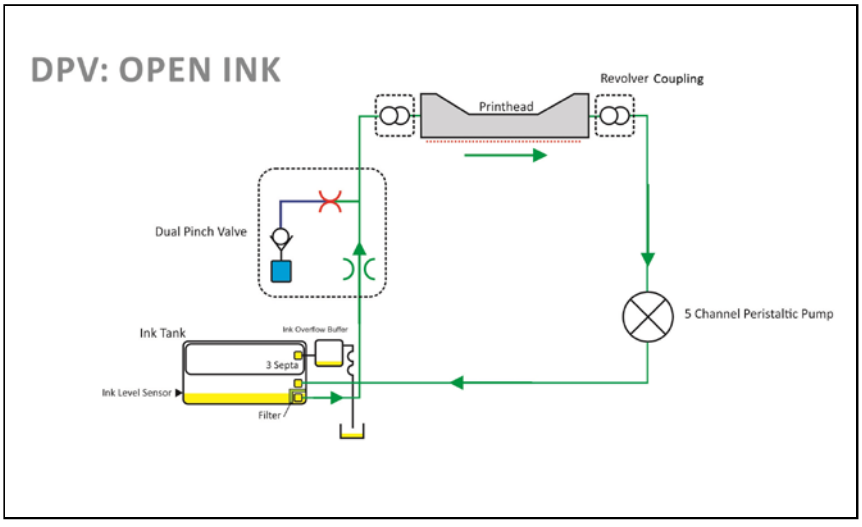
The following supply items and optional hardware are available from your Distributor:

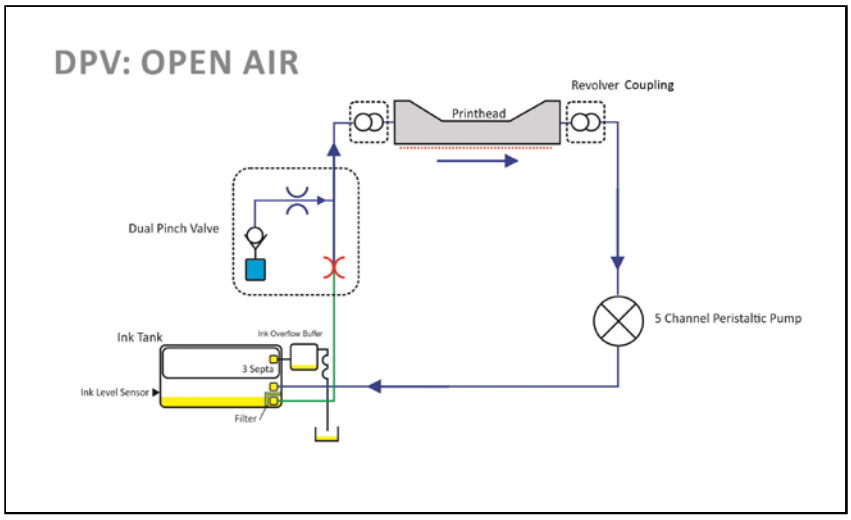
SUPPLIES	
Printhead Cartridge	CJ-20
Wiper Roller	123-2924
Black Ink Tank (printer requires 2)	CJ-24
Cyan Ink Tank	CJ-21
Magenta Ink Tank	CJ-23
Yellow Ink Tank	CJ-22
Waste Ink Tray Assembly (Tray with absorbent pad material)	123-2487
Waste Ink Tray Pad (Pad material only)	123-2491
OPTIONAL HARDWARE	
Conveyor /Stacker with Drop Tray	CJ-10
Extended Rear Media Support Guide (Increases max. media length up to 19” for stiff media and up to 22” for flexible media)	47-116-06
Magnetic Media Support Assembly (Allows additional options for feeding envelopes)	47-116-25
Small Media Guide Kit (Reduces min. media size to 2” W x 3.5” L*) * 3.75” is minimum media length for positive roller to roller contact	47-900-05
Adjustable Exit Wheel Assembly Kit (Replaces existing Exit Cover and Exit Wheel Assembly)	47-900-10
Media Retainer Guide Kit (Holds down uneven or wavy media to prevent binding and media jams)	47-900-15

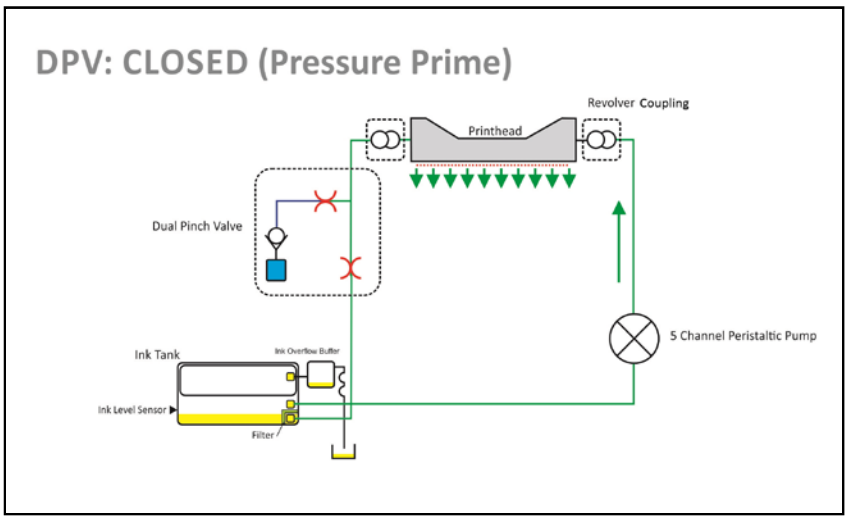
Appendix C – Ink Flow Diagrams





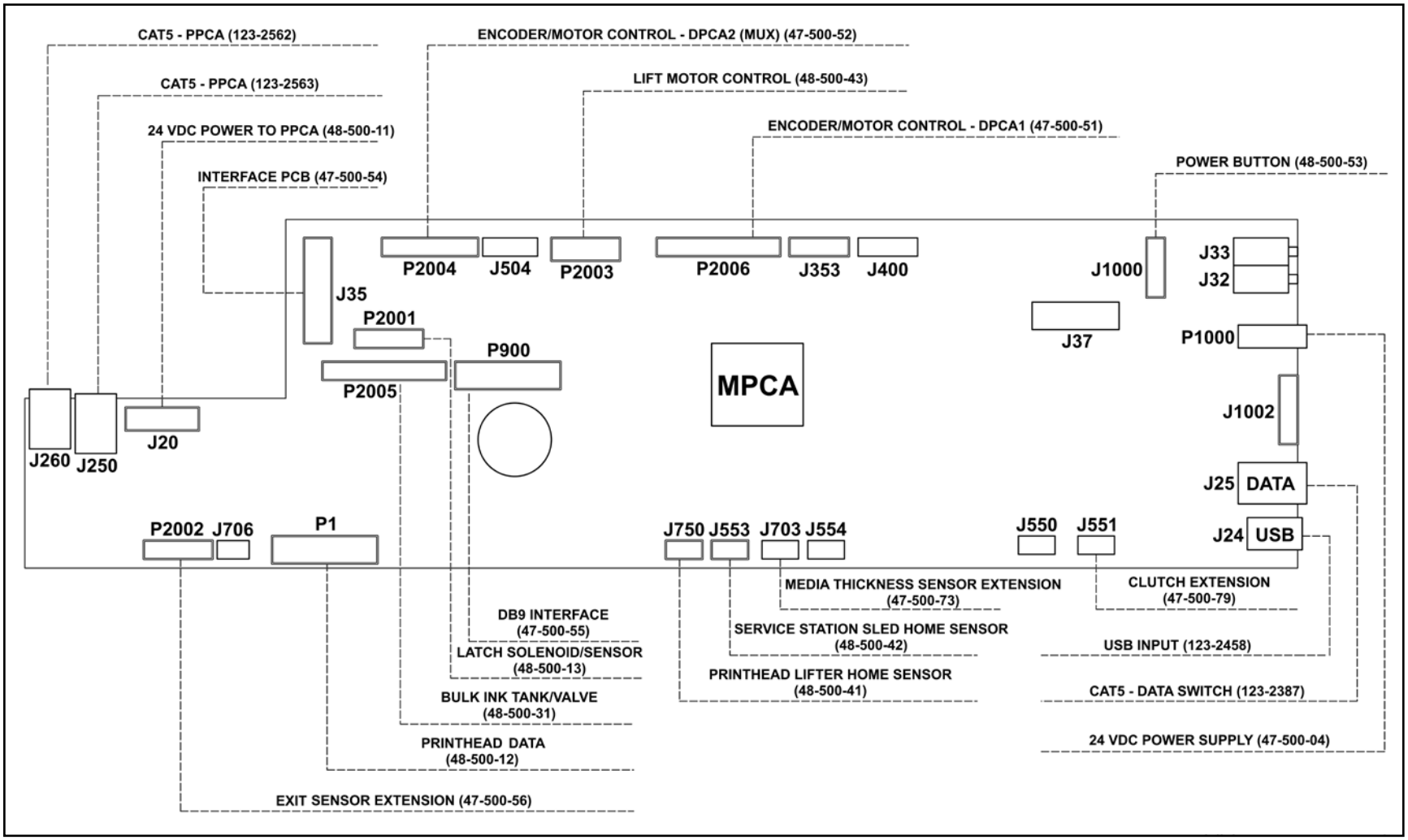



DPV: OPEN AIR
Revolver Coupling
Printhead
Dual Pinch Valve
5 Channel Peristaltic Pump
Ink Tank
Ink Overflow Buffer
3 Septa
Ink Level Sensor
Filter

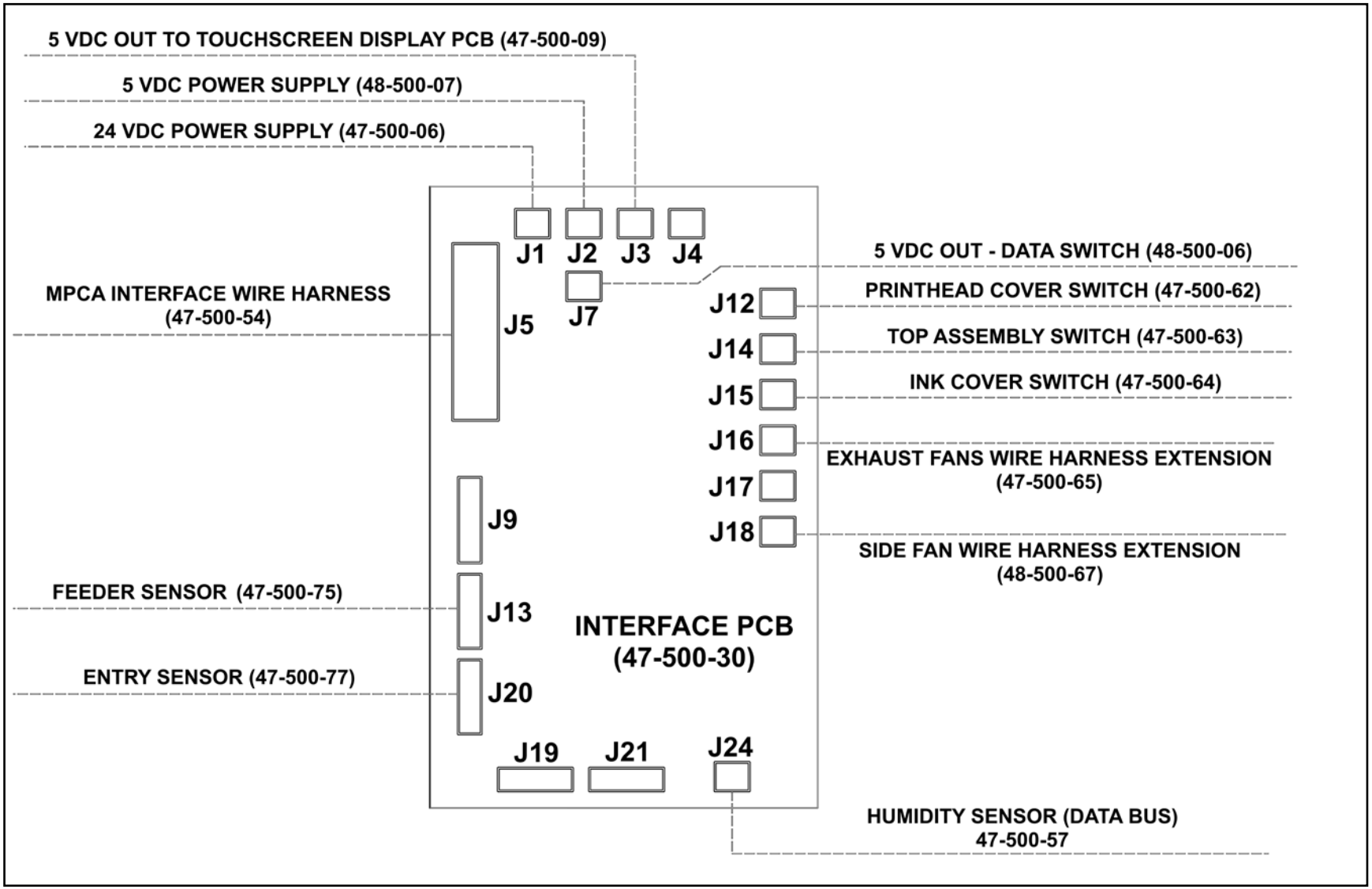

DPV: CLOSED (Pressure Prime)
Revolver Coupling
Printhead
Dual Pinch Valve
5 Channel Peristaltic Pump
Ink Tank
Ink Overflow Buffer
Ink Level Sensor
Filter

Appendix D – Wiring Diagrams

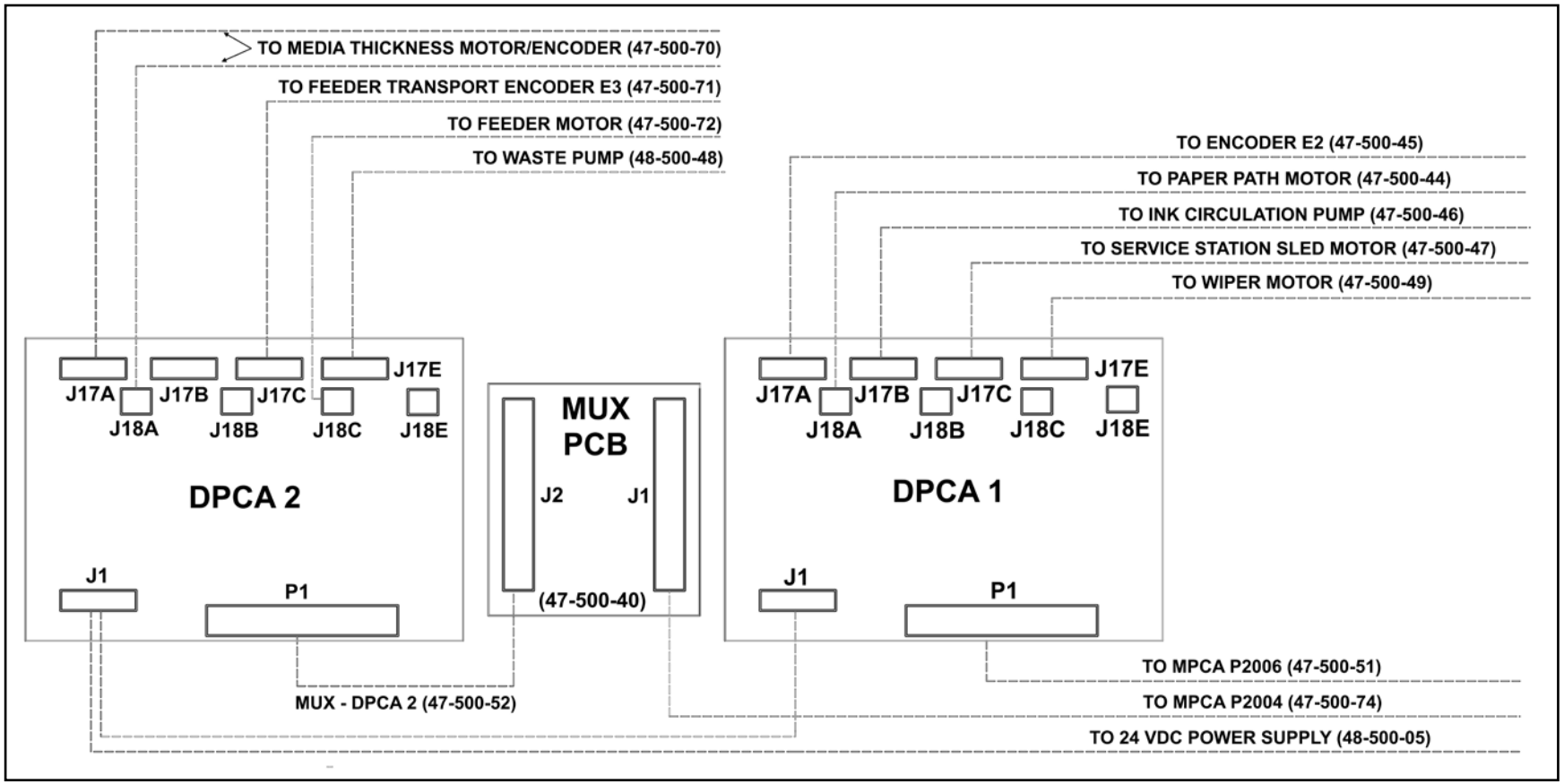
Memjet Print Engine Main Printed Circuit Assembly (MPCA)



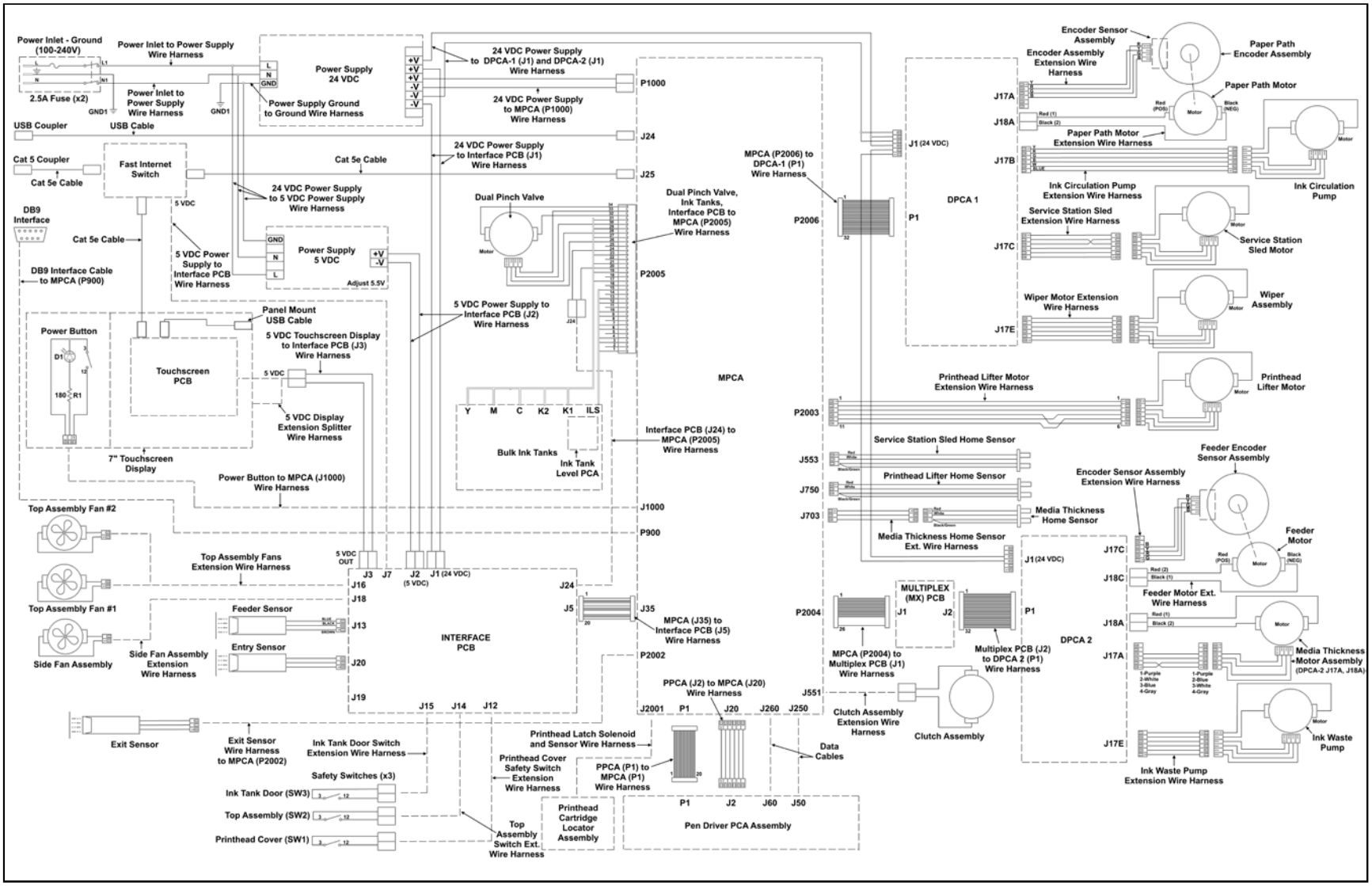
Printer Interface PC Board Wiring Diagram



Print Engine DPCA-1, DPCA-2 and Multiplex (MUX) PCB Wiring Diagram



Printer Wiring Diagram



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