



DURAFLEX™

Service and Repair Guide

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Revision History

Doc. Version	SW/HW Release	Date	Details
2.00	R5.2.2	12-May-23	<ul style="list-style-type: none"> • Extensively edited to reduce document size. • Added cable routing for PCA Data cables. • Added Section 3.3 on Aerosol Inspection and Servicing • Updated Section 5.1 with new shipping plate • Updated Section 9.4 with I2C Data cable routing, including Figure 94 to Figure 98 • Removed all references to the Demo GUI • PassThrough updated to PassThru as per name on PCA • All chapters edited to improve readability
1.02	R4.2.3	17-Sep-21	<ul style="list-style-type: none"> • Updated 4.1 Estimated Time for Replacement Tasks – deleted these rows from Table 4: <ul style="list-style-type: none"> • BIDS PassThrough PCA • BIDS PassThrough PCA Cable • IR Tank • Refill Pump • Refill Pump Cable • Updated 4.4.1 Initialize the System – added a step to change directory when starting PES interface • Deleted the previous sections: <ul style="list-style-type: none"> • 29 BIDS PassThrough PCA Replacement • 30 BIDS PassThrough PCA Cable Replacement • 31 IR Tank Replacement • 32 Refill Pump Replacement • 33 Refill Pump Cable Replacement • Updated 29.2 Wiper Cartridge Replacement to include the MICROFIBRE_OUT condition • Updated 29.3 Bulk Ink Supply Replacement – deleted a step to deprime the system in the Removal procedure • Added 30 Shipping – moved Print Module shipping and printhead shipping into this section • Minor editorial updates
1.01	R4.2.3	09-Jul-21	<ul style="list-style-type: none"> • Updated Table 1 – Component Life Estimation – corrected values for Circulation Pumps and Pinch Valve
1.00	R4.2.3	05-Jul-21	Initial release

12-May-23

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1 Introduction

This document is part of the OEM-facing documentation suite for Memjet DuraFlex® module-based printing systems. It references, and therefore requires access to, additional documentation available for download from your Memjet Partner Site.

1.1 Aim and Audience

This guide is intended for engineers and technicians at Original Equipment Manufacturers (OEMs) who are responsible for maintenance and servicing of DuraFlex components in a DuraFlex-based printing system.

1.2 Prerequisites and Scope

The reader is expected to be familiar with DuraFlex-based printing systems.

This document contains inspection and maintenance tasks, detailed replacement procedures for parts and consumables, and shipping instructions.

A general list of required Personal Protective Equipment (PPE) is provided in [2.3 Personal Protective Equipment \(PPE\)](#). Additional PPE, if required for specific tasks, is listed at the beginning of each replacement procedure.

Refer to [Table 3 – Estimated Time to Complete Replacement Tasks](#) to estimate the length of time needed to perform various tasks and then skip to the appropriate replacement section(s) to complete the task(s). Each replacement section includes a list of tools and supplies specific to that task so OEMs can gather the necessary items before starting a procedure. At the end of each replacement procedure, a testing section helps to verify successful replacement. Since many replacement procedures use similar verification checks, detailed steps are provided in section [4.4 Frequently Used System Commands](#) and linked to the appropriate procedure(s) instead of repeated for each task.

This document does not include operations information or troubleshooting content.

1.3 Typographic Conventions

Throughout this document, the following typographic conventions are used:

Code Character	<code>Courier</code> font is used to identify HTTP GET and POST commands with associated arguments, as well as references to source code, job states, registry settings, directory/file names, XCI commands, and XML settings.
Bold	Text that appears on-screen in the user interface is shown in bold font . This includes UI buttons, engine states, warning codes, and fault codes.
Yellow Highlighting	Yellow highlighting indicates sections that are new or updates in this version of the document, compared to the previous version.

1.4 Related Documentation

Other documents, besides this guide, provide further details for specific readers:

- *System Overview* – For OEM managers and non-technical personnel charged with evaluating the DuraFlex components for use within their products. This document describes the DuraFlex concept and Memjet-supplied DuraFlex components and gives an overview of the operational



considerations. It introduces the components an OEM is required to design and manufacture to ensure the DuraFlex Modules function as designed in a DuraFlex-based print engine.

- *Mechanical and Fluidic Databook and Design Guide* – For mechanical design engineers and developers, providing details of the Memjet hardware modules and components (including printhead and maintenance system) and specifications of the ink delivery system fluidics.
- *Electrical Databook and Design Guide* – For electrical design engineers and developers, providing details of the Memjet power requirements, electronic assemblies, and connections.
- *Software Databook and Design Guide* – For software and firmware engineers who need to understand the software interfaces, commands, scripts, and reference software applications.
- *Installation and Commissioning Guide* – For OEM personnel who are installing and commissioning a new printing system.
- *Operations Guide* – For OEM engineers and operators to perform operational tasks.
- *Troubleshooting Guide* – For OEM engineers and technicians to identify symptoms and resolve issues.
- *Service and Repair Guide* – For OEM engineers and technicians to perform DuraFlex inspection and maintenance tasks and component and consumable replacement.
- *Job Submission Library Guide* – For OEM software engineers to incorporate the Job Submission Library (JSL) into their chosen Raster Image Processor (RIP).
- *Technical Bulletins* – For various audiences to announce product or process update or to provide specifics on single-subject technical topics.
- *CAD and Schematics* – For various audiences to provide detailed dimensions related to specific areas.

Note: All technical documentation is available on your Memjet Partner Site.

1.5 Glossary

For terms, acronyms, and abbreviations used in this guide and some product-specific terms, see the [DuraFlex Glossary](#).

Note: This document is hyperlinked to the glossary. For offline reading, download the DuraFlex Glossary file from your Memjet Partner Site.

1.6 Additional Documentation or Access

For additional product-related technical documents, go to your Memjet Partner Site.

If you need Partner Site access, enter a case in Service Desk (<https://OEMsupport.memjet.com>), send an email to Memjet Customer Support (customer.support@memjet.com), or contact your Technical Account Manager.



2 Safety

This section identifies design considerations and practices for working safely with the DuraFlex print engine.

2.1 Electrical

2.1.1 System Power Supply Unit

The DuraFlex print engine requires a single 24 VDC power source capable of delivering at least 2A.

2.2 ESD Guidelines

CAUTION: Follow these precautions to avoid immediate or latent catastrophic failure of semiconductor devices in the print components.

As supplied, the print components are well protected against electro-static discharge (ESD). However, precautions must be taken to minimize the potential for ESD when working around harness interconnects and exposed interface connectors.

- Use static-free workstations for procedures when protective covers are removed.
- Wear grounded wrist straps when touching any exposed circuit assemblies.
- Transport electronic subassemblies in sealed, static-shielding packaging (metalized mylar).

WARNING: The printing system is powered by a 24-volt DC supply, and there is sufficient current to cause serious injury. Always power down the printing system before any cable connections or harness interconnects are connected or disconnected. Failure to turn the power off prior to removing cables will result in permanent damage to the printed circuit assemblies.

2.3 Personal Protective Equipment (PPE)

WARNING: In order to avoid personal injury, always use appropriate PPE when performing maintenance, servicing, and replacement tasks. Remove all jewelry and watches before working with the printing system. Serious burns may result from contact with energized components.

All technicians should wear personal protective equipment (PPE) when servicing the printing system, such as:

- Safety glasses
- Powder-free, nitrile gloves
- Clothing protection (smock, jacket, etc.)

Note: Details of additional required PPE, specific to the given task, are listed at the beginning of each procedure.

Technicians shall use proper lifting equipment and techniques when handling heavy components and media rolls or stacks.

2.4 Required Tools and Supplies

Details of the required tools and supplies are listed at the beginning of each procedure in this guide.



Refer to Section [3.2.2 Surface Cleaning](#) for details regarding cleaning materials for ink removal.

2.5 Waste Disposal

Discard all maintenance waste, including soiled gloves and wipes, electrical waste, and ink disposal, according to local regulations.



3 Maintenance

3.1 Component Life Expectancy

The life of a DuraFlex printing system is approximately 5 years. The estimated component life varies for specific applications. More frequent usage may lead to the replacement of individual components within 5 years.

The table below lists the expected life of the DuraFlex modules based on intensive testing.

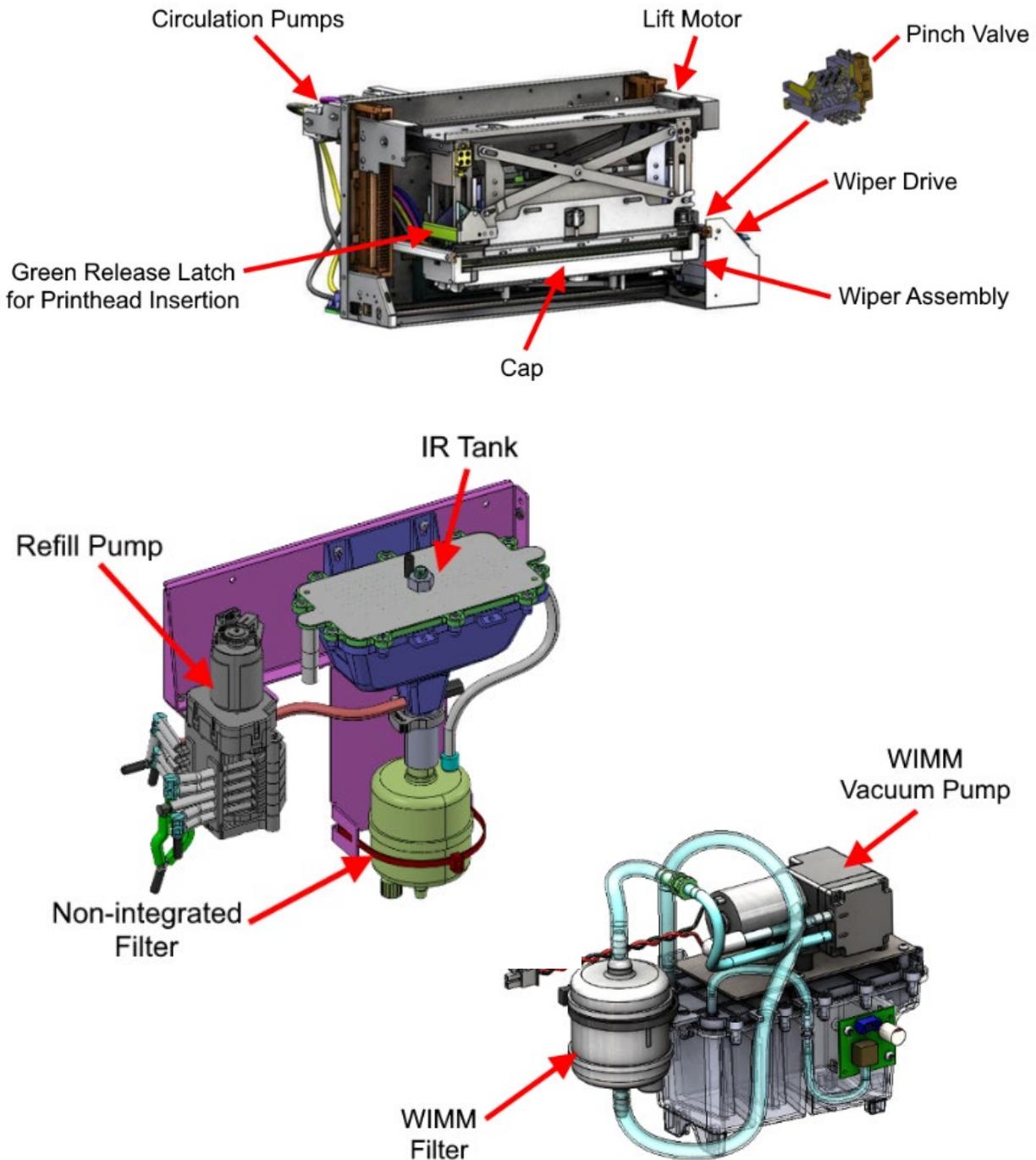
Table 1 – Component Life Estimation

DuraFlex Module	Replaceable Component	Approximate Component Life
Ink Delivery System (IDS)	Circulation Pumps	600 hours
	Refill Pump	750 hours
	Ink Filter Assembly (incorporated into the IR Tank)	442 Liters
	Pinch Valve	38,400 cycles
Waste Ink Management Module (WIMM)	WIMM Vacuum Pump	750 hours
	WIMM Filter	442 Liters
Maintenance Module	Wiper Assembly, including Cap, Wiper Drive, Belt, and Cap Solenoid	135k cycles
	Wiper Cartridge	6,300 wipes
Printhead Cradle Assembly	Lift Mechanism, including motor	300k cycles
	Printhead	50 insertions



The picture below shows each replaceable component in the printing system. These are also known as Field Replaceable Units or FRUs.

Figure 1 – DuraFlex Replaceable Components



3.2 Inspection Tasks and Frequency

Perform the following inspection and replacement tasks at the time interval specified in the table below.

Note: All items in the table are dependent on system usage and application.

Table 2 – Inspection and Replacement Tasks

Task	Check Daily	Check Monthly	Check Every 750 hours	Check Every 5 Years	Replace As Needed
Area/Surface Cleaning	x				N/A
System Inspection:					
• Bulk Ink Supply Connection	x				N/A
• Printhead (any ink drooling or leaking)					
Fittings and Tubing					
Wiper Cartridge	x				x
Fan Filter		x			x
Maintenance Module		x			x
Kinematic Mounts		x			x
Refill Pump			x		x
Circulation Pumps			x		x
Wiper Assembly				x	x
WIMM				x	x
Printhead Cradle Lift Mechanism					x

3.2.1 System Inspection

1. Walk around the printing system and visually inspect for issues such as:
 - Drips, leaks, puddles on the floor
 - Kinked or damaged tubing
 - Disconnected or loose tubing/cables
2. Pay special attention to the areas highlighted in the following figures.



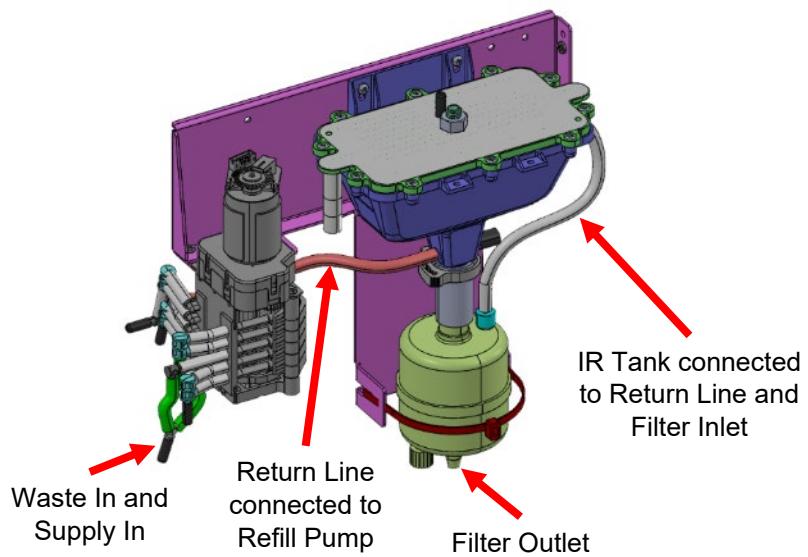
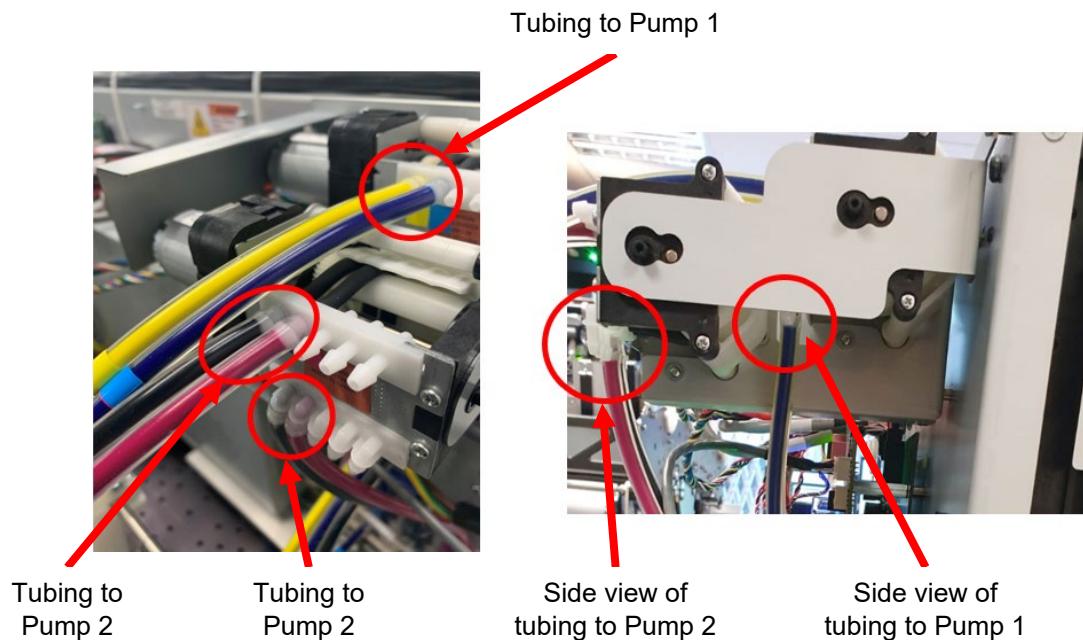
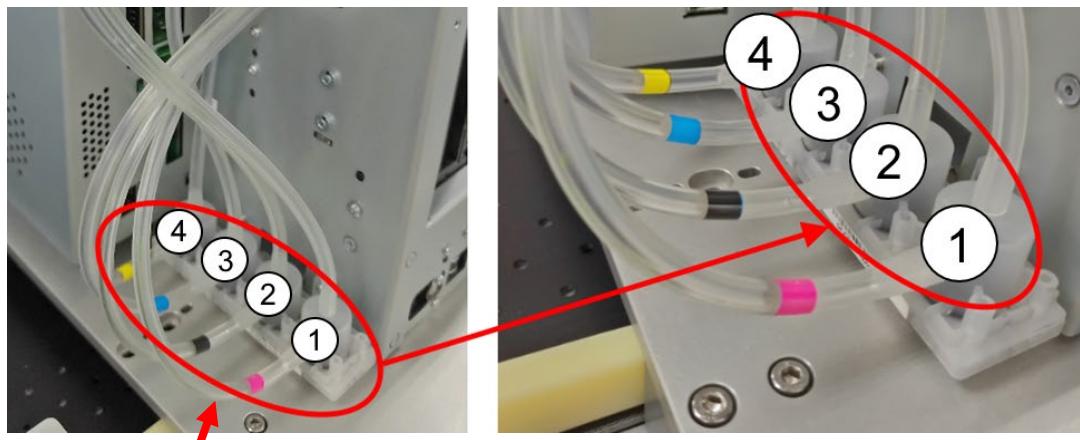
Figure 2 – IDS Blade with Non-Integrated Filter**Figure 3 – Circulation Pump Area**

Figure 4 – Compliance Chamber Area



Tubing connected to Compliance Chamber

Figure 5 – Pinch Valve Area

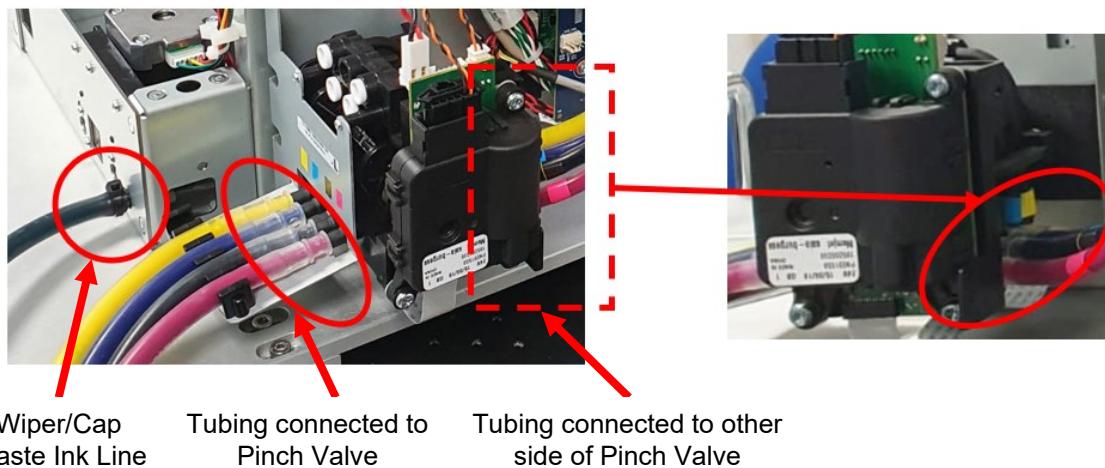
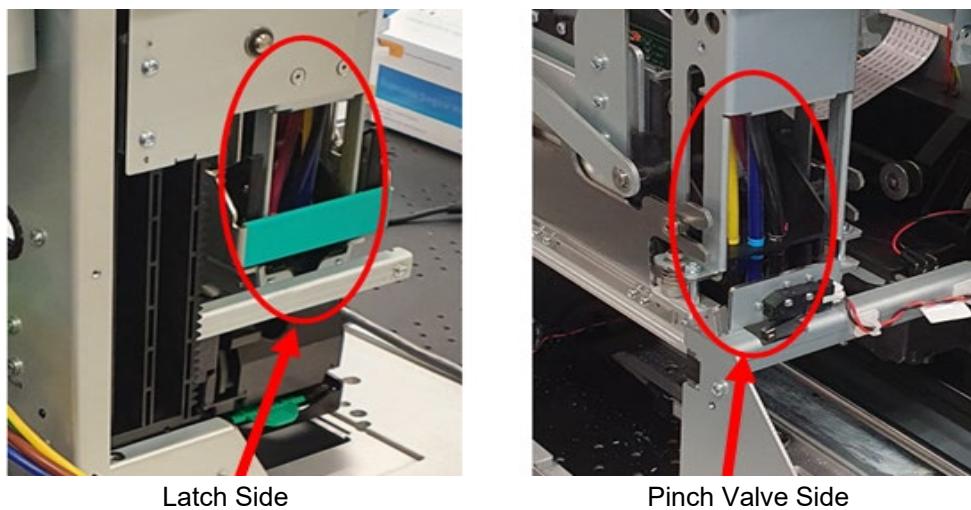


Figure 6 – Printhead Fluidic Couplings



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DURAFLEX™

3. Resolve any issues found, including:

- cleaning up spills (refer to Section [3.2.2 Surface Cleaning](#))
- unkink tubing, replace any damaged tubing (refer to Section [4.2 Contamination Prevention Guidelines](#))
- disconnect and reconnect tubing or cables that are not properly attached.

3.2.2 Surface Cleaning

To reduce system contamination, remove ink residue and debris from horizontal surfaces at the beginning of each shift.

CAUTION: Do not manually clean the printhead!

Wear powder-free, nitrile gloves and use **only** the following supplies to clean printing system surfaces:

1. De-ionized (DI) water or electronics grade distilled water
2. Lint-free cloth wipes (clean and fragrance-free)
 - Berkshire Choice 700, 800, 900 cleanroom wipes
 - Texwipe TechniCloth TX600 series
 - Texwipe TX300 series

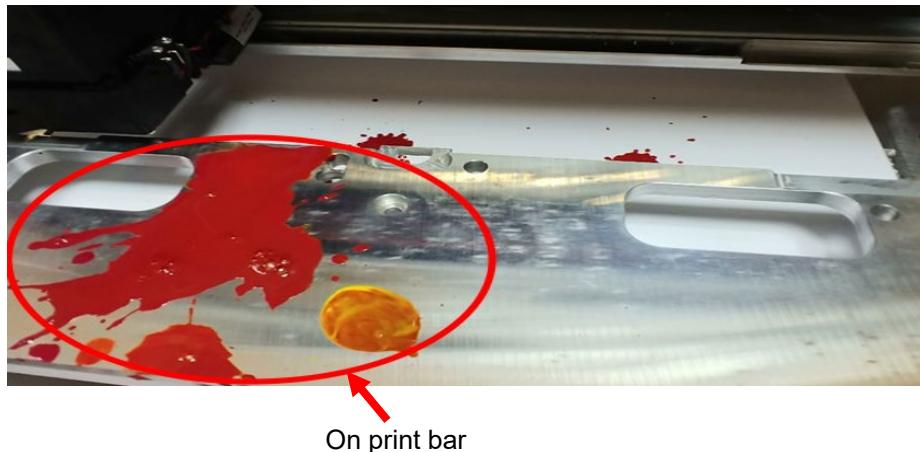
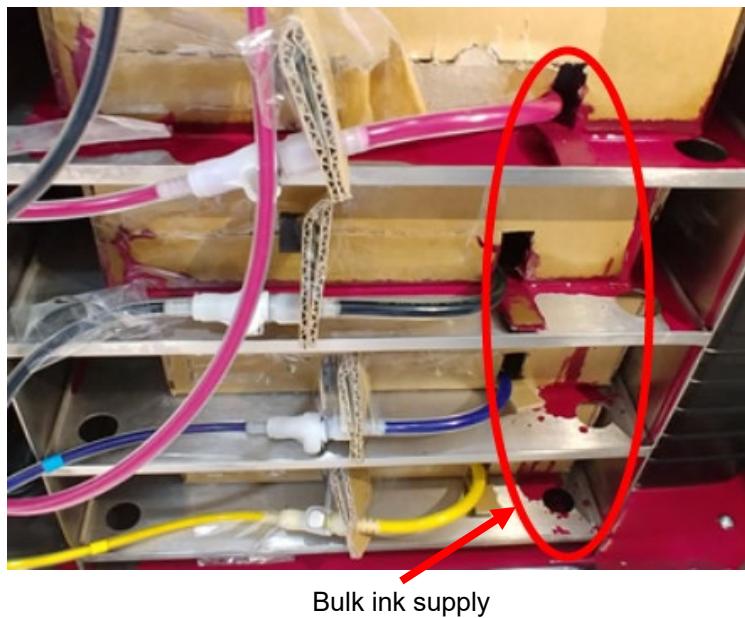
CAUTION: Do not reuse ink-soiled gloves or cloths. Discard used gloves or cloths according to local regulations.

Figure 7 – Ink Drops on Printhead Cap



On printhead cap



Figure 8 – Ink Puddles on Print Bar**Figure 9 – Ink Puddles at Bulk Ink Supply**

3.3 Aerosol Extraction System (AES) Inspection and Servicing

Ink aerosol will collect inside the AES manifold during printing. As the ink accumulates it must be cleaned to ensure good print quality and to prevent ink spots from appearing on the media, see Section [3.3.1](#).

The AES manifold should be inspected regularly to ink from building up in the front slit, or in the lower sump. [Figure 11](#) shows a manifold that has been in use for 3 months and requires cleaning. The lower sump is designed to accommodate relatively large amount of ink, so it should be kept level while being handled to prevent any spillages.

Any ink that accumulates on the outside of the manifold housing, should be removed, or cleaned, especially on the nozzle ramps on the upper housing and anywhere on the lower housing where it may drip onto the media.



3.3.1 AES Cleaning Procedure

To remove and clean the AES Manifold ([Figure 10](#)):

1. Remove the calibration port fittings from the manifold
2. Unscrew and detach the connector tubes from the manifold
3. Unscrew and detach the AES manifold from the print bar/print engine
4. Unscrew and detach the folded gap seal
5. Unscrew the aerosol manifold to separate upper and lower housing
6. Clean the inside of the manifold using a lint-free soft wipe that has been dampened with DI water.
7. Once the manifold has been cleaned, reassemble it.
8. Reattach the cleaned manifold to the printer, reattach the tubes and pressure check fittings

Figure 10 – AES Assembly

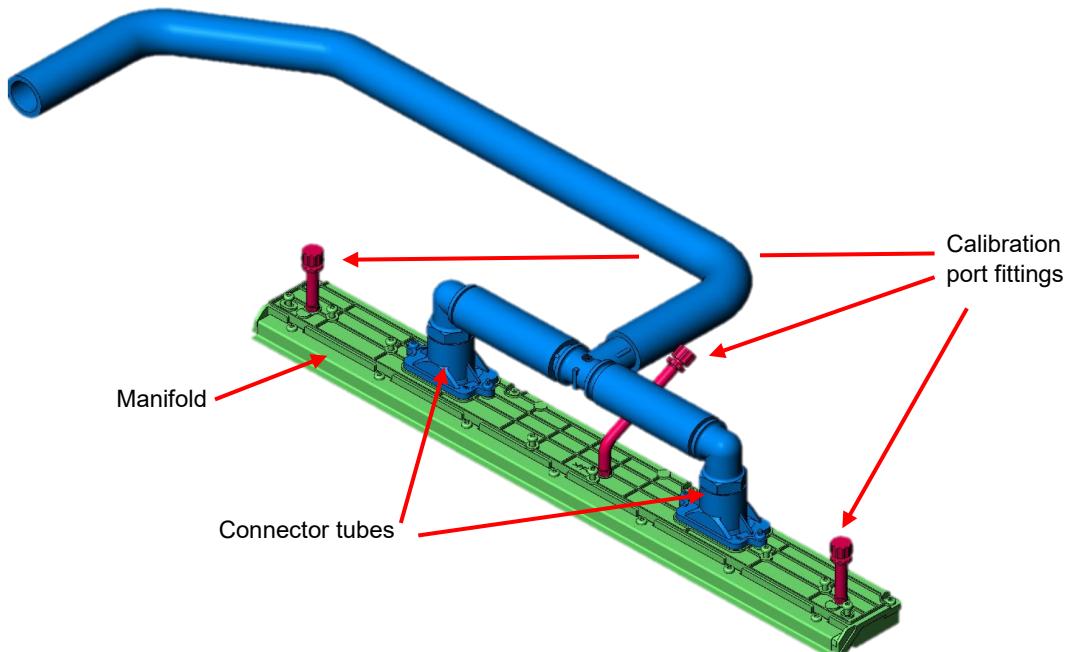


Figure 11 – AES Manifold After 3 Months of Operation



3.4 Printhead Cleaning and Storage

This section provides cleaning and storage procedures for the DuraFlex printhead. For shipping instructions, refer to Section [30.2 Printhead Shipping](#).

The printhead does not require periodic cleaning but must be cleaned before storing.

3.4.1 Required Tools and Supplies

Gather the items listed below before beginning this procedure.

Figure 12 – Printhead Cleaning Supplies

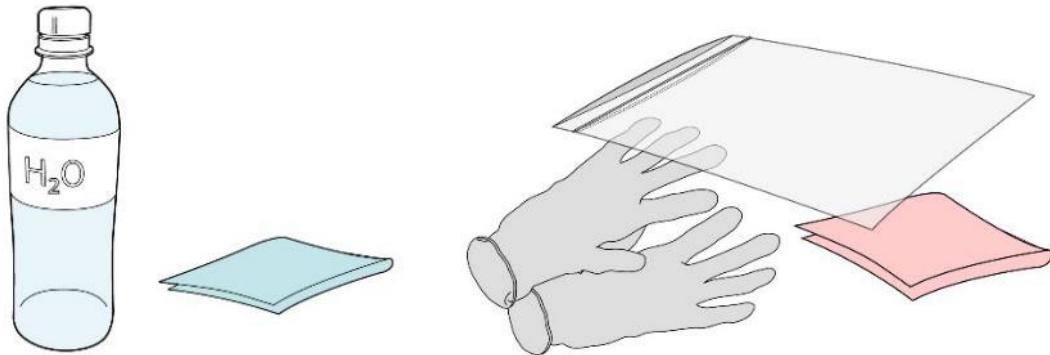


Table 3 – Required Tools and Supplies

	Description	Quantity	Type
Filtered or DI water	<p>Water used to clean any surface of the printhead must be:</p> <ul style="list-style-type: none"> • Colorless • Odorless • Free of any obvious impurities <p>Clean, room-temperature tap water and non-carbonated, non-mineral drinking water are suitable.</p> <p>Never use mineral water, soap, cleaning fluids, solvents, or hot water to clean the printhead.</p>	As needed	Supply
Lint-free cloths	<ul style="list-style-type: none"> • Must be clean and free of any contaminants including lint, chemicals, cleaning fluids or scents. Examples include: <ul style="list-style-type: none"> • Clean, lint-free cloth • Microfiber cloth such as spectacle/glasses cloth • Clean sponge (new) • The cloth used to wipe the printhead will likely become stained with ink and should be discarded appropriately, after use. • The following must not be used for cleaning printheads: <ul style="list-style-type: none"> • Tissue paper, paper towels or newspaper • Any wipes that may contain lint, chemicals, cleaning fluids or scent 	As needed	Supply
Powder-free, nitrile gloves	N/A	As needed	Supply
Resealable plastic bag	Should be large enough for the printhead and cover.	1	Supply
DuraFlex printhead protective case	Shipped with every DuraFlex printhead (Figure 14)	1	Supply
Ink port covers	Shipped with every DuraFlex printhead (Figure 14)	2	Supply



3.4.2 Cleaning

Note: Read these instructions carefully before removing a printhead from the printer. Ensure all tools and equipment are ready for use and are nearby. A printhead must not remain outside of the printer or its packaging for longer than 30 minutes.

1. Wearing a pair of powder-free, nitrile gloves moisten a cleaning cloth with clean water. The cloth should be damp but not dripping wet.
2. Remove the printhead from the printer. See the [Removal](#) steps in section [29.1 Printhead Replacement](#).

Note: After removal from the printer, some residual ink may leak from the printhead. Ink will stain clothes or furnishings and can be difficult to wash off the skin.

3. Keep the ink couplings in an upright position to minimize any leakage.

CAUTION: Avoid touching the unprotected ink couplings, nozzle surface or electrical contacts. Avoid wetting the electrical contacts with ink.

4. Carefully wipe any ink from top of the contact pads area, if visible, with the damp cloth. Make sure there is no more ink dripping from the ink coupling after wiping.

Figure 13 – Remove Excess Ink with Damp Cloth



3.4.3 Preparing for Storage

CAUTION: All DuraFlex printheads ship with a protective case. If a protective case is not available, skip this step and proceed to the next one. However, there is a very high chance of damaging the printhead nozzles. There will likely be ink stains on clothing, skin, or surrounding areas.

1. Install the ink port covers on both ends of the printhead as shown in [Figure 14](#). There should be no ink dripping outside the protective cover or ink stains on the electrical contacts.

Figure 14 – Printhead in Protective Case with Ink Port Covers Installed



2. Place the printhead into the protective case and close it.
3. To maintain printhead hydration during storage, moisten a clean cloth, fold it, and place it into the zip bag with the printhead in the protective case as shown in [Figure 15](#). The cloth only needs to be damp, there should be no excess water in the bag. Remove air from the bag and seal the zip bag.

Figure 15 – Printhead Prepared for Storage or Shipping



4. Ensure that the printhead is stored with the nozzles facing down. Do not store in direct sunlight. Store at room temperature (5°C to 30°C).

Note:	This storage method is dependent on ensuring the cloth stays wet and remains free of biological growth. Memjet recommends that printheads only be stored for up to 30 days using this technique. Storing a printhead for longer than 30 days may cause non-recoverable issues and render the printhead unusable for production printing. Ensure shipped printheads will arrive at their destination within 30 days or earlier to ensure RMA testing can be performed on functioning printheads.
-------	--



4 Replacement Task Preparation

4.1 Estimated Time for Replacement Tasks

Use the following table to determine the length of time required to complete a specific replacement task in this guide. It is assumed that the task is being completed by a technician using the tools from the required tools list provided.

Table 4 – Estimated Time to Complete Replacement Tasks

Component (or Consumable)	Approximate Task Time (mins)
Print Module	35
Print Module Cable	10
Print Module PassThru PCA	30
Print Module Lift Motor	30
Printhead Cradle Assembly	65
EASM Lift Raise Switch	25
EASM Lift Cap Switch	25
EASM Lift Print Switch	25
Datapath PCA – 1GB	30
Mechanical Controller PCA	40
10G Card (on Datapath PCA)	25
Fan Assembly	25
FFCs – 2 per Printhead Cradle, 1 per Pinch Valve	15 per cable
Cap	15
Wiper Carrier	40
WIMM	25
WIMM Cable	10
WIMM Pressure Sensor PCA	15
Circulation Pump Assy	25
Circulation Pumps Cable	10
Compliance Chamber	25
Pinch Valve Assembly	25
Pinch Valve Cable	10
IDS Blade	30
Printhead	10
Wiper Cartridge	10
Bulk Ink Supply	10

4.2 Contamination Prevention Guidelines

CAUTION: The printhead is a precision instrument. Clean assembly practices are critical to avoid permanent printhead contamination from particles entering the ink tubing.

Follow all the contamination prevention guidelines in this section:

1. Always install ink tubing in a clean, dust-free environment.
2. Wear nitrile, powder-free gloves and use lint-free cloths and clean water to wipe down all work surfaces before beginning ink tubing assembly. After cleaning, discard soiled gloves and cloths/wipes according to local regulations.
3. Plan to finish tubing assembly within one session without interruption. If a delay is unavoidable, provide approximately 2 cm extra length at the end of each unconnected tube and install a clean cap on the open tube end. When installation resumes, use a tubing cutter to remove the excess length from the exposed ends before connecting.



4. Wear a clean lab coat to avoid contamination from clothing.
5. Wear new, powder-free nitrile gloves when handling and inserting tubing. Fit gloves only when preparation is complete so that the gloves are not contaminated by handling fibrous or dusty surfaces, hair, skin, clothing, or tissue paper during tube assembly.
6. Store tubing in its original packaging. Only remove as much tubing as needed for each connection and reseal the package after the required tubing is removed.
7. Do not leave tubing ends open to the environment. Cap or plug open ends of tubing, fittings, and connectors to avoid exposure to contaminants.
8. To ensure precise, straight tubing ends, cut tubing with a tubing cutter only! Do not use scissors or razor blades to cut tubing! Store tubing cutters in clean packaging when not in use.
9. Do not touch critical ink surfaces (barb fittings and tubing ends) with bare hands. Do not leave critical ink tubing or connector exposed for longer than necessary to remove them from packaging, apply lubricant, and connect tube to fitting.
10. Use only new, clean CPC connectors. Memjet-supplied connectors are provided clean. Any replacement connectors must undergo ultrasonic cleaning before use. Refer to the DuraFlex Service and Repair Guide for ultrasonic cleaning instructions.
11. To ease connection of tubing to barbed fittings ([Figure 16](#)), apply a small amount of lubricant to the barb and tubing end. To apply this fluid, extract a small amount of fluid using a syringe ([Figure 16](#)), attach a new 0.8 µm syringe filter to the syringe, and apply sparingly to the coupling surfaces.
 - Approved lubricants and syringes are provided in the *DuraFlex Installation and Commissioning Guide*.
 - Apply one 2-3 drops to fittings, no more.
 - Keep the tip of the syringe clean and do not touch it to any surface.
 - Cap the syringe tip and lubricant container when not in use.

CAUTION: The lubricant syringe should only be uncapped for as short a time as possible to prevent contamination inside of the cap or wet tip of the syringe from dust in the air.

Figure 16 – Tube Fittings and Assembly Lubricant



Barbed Fitting



Lubricant in Syringe

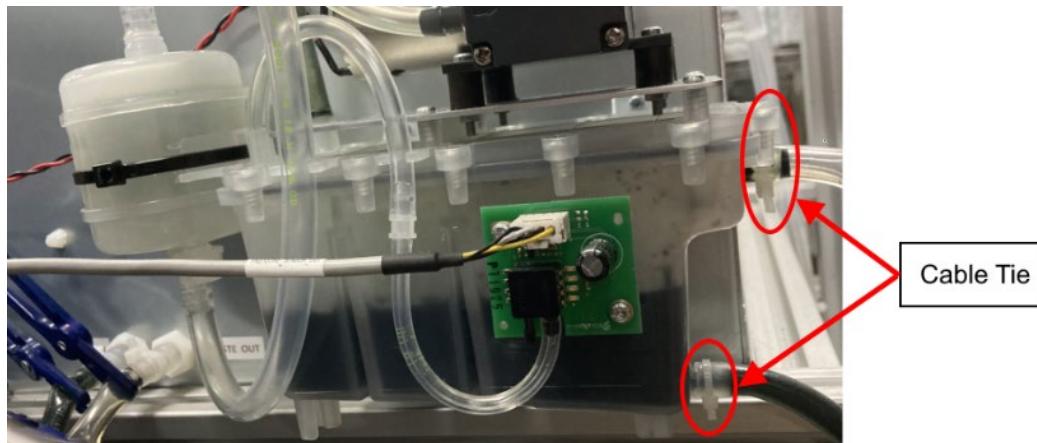


Non-Barbed Fitting



12. When connecting tubing, press each tube completely onto all fittings to ensure full connection. This is especially important for non-barbed fittings ([Figure 16](#)) molded into components such as the WIMM. For the most secure attachment, apply a constrictive device such as a cable tie ([Figure 17](#)) or hose clamp after the tube is connected and cut off the excess tail.

Figure 17 – Cable Tie Securing Tube to Non-Barbed Fitting



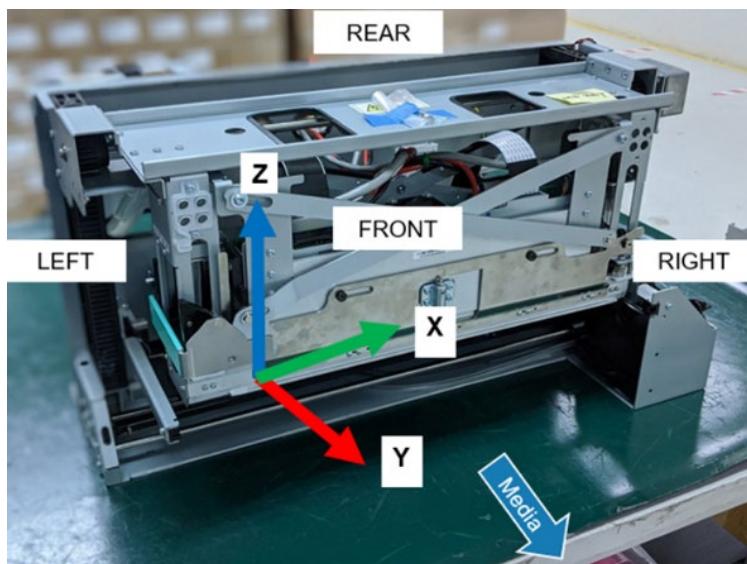
13. Ink tubing is either numbered or color coded at both ends of each tube. Ensure that the correct connections are made.
14. During tube routing, position ink tubing away from sharp edges to avoid cutting the tubing. If a sharp edge cannot be avoided, apply tape to the sharp edge to protect the tube from being cut.
15. Ensure tubes do not have kinks or any restriction of fluid or airflow.

4.3 Module Orientation

The Print Module and Printhead use the same coordinates and orientation (left, right, front, and rear):

- X-axis is across the media, parallel to the printhead, considered “page width”
- Y-axis is the media travel direction, considered “page length”
- Z-axis is perpendicular to the plane of the media and is the direction of PPS

Figure 18 – Print Module Coordinates



The figures below show the orientation of IDS Blade, WIMM, and Compliance Chamber.

Figure 19 – IDS Blade Directions

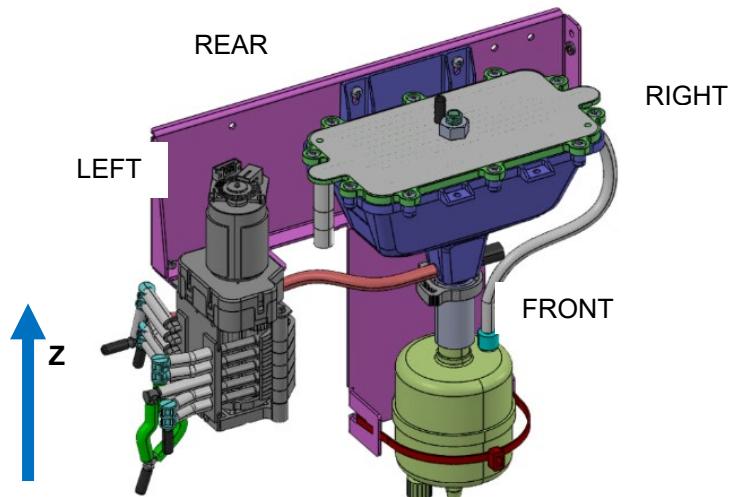


Figure 20 – WIMM Directions

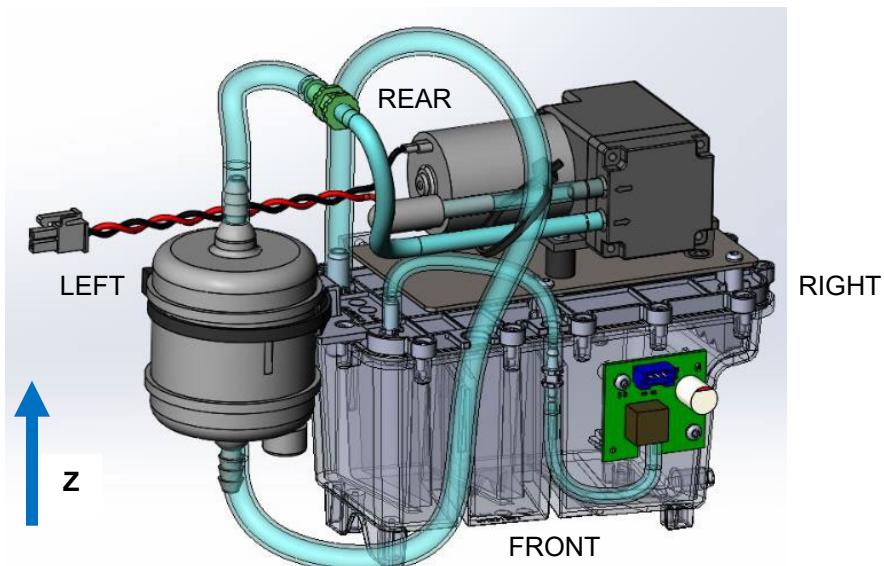
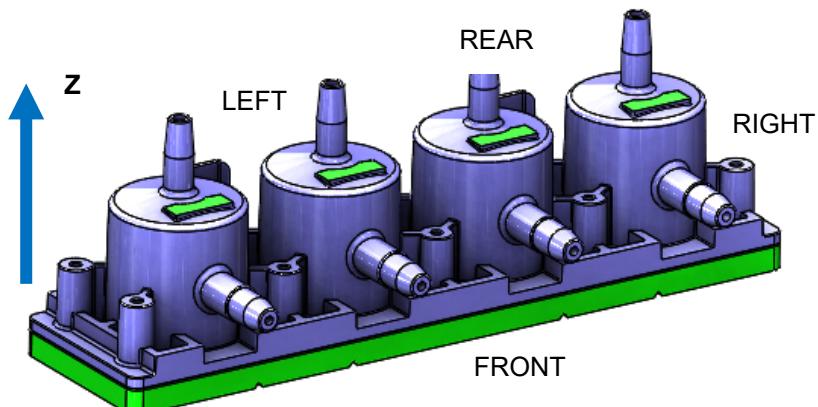


Figure 21 – Compliance Chamber Directions



4.4 Frequently Used System Commands

These software commands are required throughout the replacement and testing procedures in this document. To perform any of the tasks listed, use the OEM printer control software or PES commands (in this section):

- [Initialize the System](#)
- [Enable External RIP Mode](#)
- [Enable Internal RIP Mode](#)
- [Deprime the System](#)
- [Prime the System](#)
- [Perform a Light Service](#)
- [Perform a Medium Service](#)
- [Move the Printhead Cradle](#)
- [Move the Pinch Valve](#)
- [Move the Cap](#)
- [Circulate Ink Through the System](#)
- [Run the Circulation Pumps \(Custom Flush\)](#)

4.4.1 Initialize the System

1. On the Client PC, log in to DuraFlex using PuTTY with username `duraflex`
2. Open a Terminal window to start the PES interface:

```
cd /opt/memjet/PDL/test_rigs/latest/bin/  
python start.py --mode=frontend
```

3. Shut down the print engine:

```
pes.shutdownEngine()
```

4. Check the print engine status:

```
pes.getStatus()
```

5. When the print engine status is `OFF`, run the following command:

```
printing.initialise()
```

6. Initializing the print engine may take a few minutes.

7. Check the print engine status again:

```
pes.getStatus()
```

If initialization is successful, the status will become `PRIMED_IDLE` or `DEPRIMED_IDLE`.

4.4.2 Enable External RIP Mode

1. On the Client PC, log in to DuraFlex using PuTTY with username `duraflex`
2. Open a Terminal window to disable the current print mode:

```
dtpStop
```

3. Run the following command:

```
dtpUseExternalRip
```



4.4.3 Enable Internal RIP Mode

1. On the Client PC, log in to DuraFlex using PuTTY with username `duraflex`
2. Open a Terminal window to disable the current print mode:
`dtpStop`
3. Run the following command:
`dtpUseInternalRip`

4.4.4 Deprime the System

1. Initialize the system.
2. Run the following PES command:
`pes.startDepriming([])`
3. Wait a minute and check the print engine status:
`pes.getStatus()`

The status should be `DEPRIMED_IDLE`.

4.4.5 Prime the System

1. Initialize the system.
2. Run the following PES command:
`pes.startPriming([])`
3. Wait a minute and check the print engine status:
`pes.getStatus()`

The status should be `PRIMED_IDLE`.

4.4.6 Perform a Light Service

1. Ensure that the system is powered on and the printhead is capped.
2. Run the following PES command:
`pes.startServicing([], ServiceType.LIGHT)`

4.4.7 Perform a Medium Service

1. Ensure that the system is powered on and the printhead is capped.
2. Run the following PES command:
`pes.startServicing([], ServiceType.MEDIUM)`

4.4.8 Move the Printhead Cradle

1. Run the following PES commands to move the printhead cradle to RAISE, CAP, and PRINT positions:



```
pes.startMovingPrintheads([], Position.MAINT)
pes.startMovingPrintheads([], Position.CAP)
pes.startMovingPrintheads([], Position.PRINT)
```

4.4.9 Move the Pinch Valve

Note: This procedure can only be performed with commands.

Enter combined mode and use commands to:

1. Change directory:

```
cd /opt/memjet/PDL/test_rigs/latest/bin
```

2. Stop the delegation service:

```
sudo systemctl stop delegation
```

3. Start the Python app in combined mode:

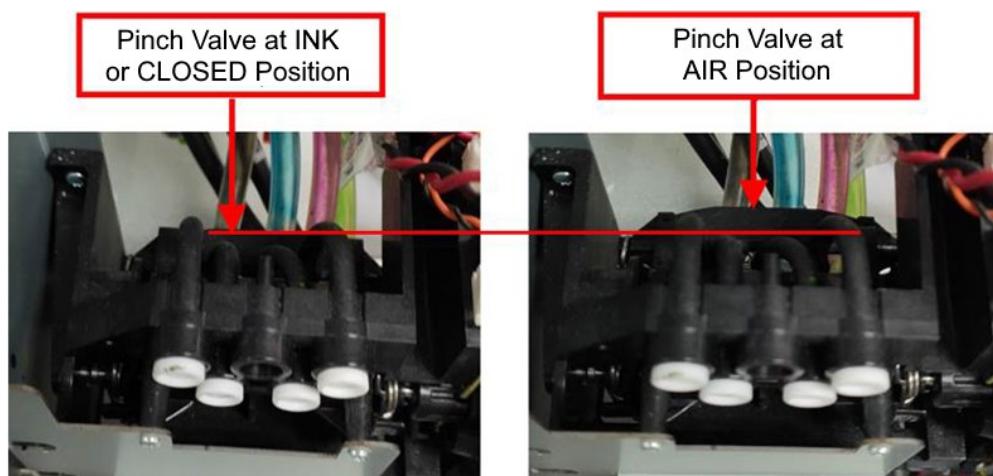
```
python start.py --mode=combined
```

4. Run the following `dtp` commands to move the pinch valve to INK, AIR, and CLOSED positions:

```
dtp.ids.valve.go_ink()
dtp.ids.valve.go_air()
dtp.ids.valve.go_closed()
```

5. Observe the pinch valve to see that it moved after each command as shown in the figure below.

Figure 22 – Pinch Valve Positions



6. In the PuTTY terminal, exit combined mode and return the system to a safe state:

```
sudo systemctl start delegation
```



4.4.10 Move the Cap

Note: This procedure can only be performed with commands.

Enter combined mode and use commands to:

1. Change directory:

```
cd /opt/memjet/PDL/test_rigs/latest/bin
```

2. Stop the delegation service:

```
sudo systemctl stop delegation
```

3. Start the Python app in combined mode:

```
python start.py --mode=combined
```

4. Run the following `dtp` commands to move the cap to CAP and HOME positions:

```
dtp.ss.go_cap()  
dtp.ss.go_home()
```

4.4.11 Circulate Ink Through the System

Note: This procedure can only be performed with commands.

The following procedure provides steps to circulate two (2) liters of ink.

CAUTION: Wait 24 hours after successful initial printing and priming before circulating ink.

To circulate ink through all IDS blades:

1. Open SSH or PuTTY and execute the following commands:

```
cd /opt/memjet/PDL/test_rigs/latest/bin  
sudo systemctl stop delegation
```

2. With the printer status in `PRIMED_IDLE`, run the following command to enter the combined mode:

```
python start.py --mode=combined
```

3. From within combined mode, run:

```
dtp.ids.do_custom_flush(volume=2000, speed=52, wait=False)
```

4. Wait for the circulation process to complete. The complete circulation process will take approximately 40 minutes.

If needed, the circulation process can be stopped with the following command:

```
dtp.ids.circ_pump.stop()
```

Note: Before pausing, keep track of how much of the 40 minutes total circulation time has elapsed. Then, restart the circulation by executing the commands above and allow ink to circulate for the remaining time.

5. When the circulation process is complete, the pump will stop running. Run the following commands to exit combined mode and return the system to a safe state:

```
quit()  
sudo systemctl start delegation  
printing.initialise()
```



4.4.12 Run the Circulation Pumps (Custom Flush)

Note: This procedure can only be performed with commands.

Enter the combined mode and run the circulation pumps for four (4) minutes.

1. Open a PuTTY terminal, log in to DuraFlex, and stop delegation service using these commands:

```
cd /opt/memjet/PDL/test_rigs/latest/bin  
sudo systemctl stop delegation
```

2. Run the following command to start the combined mode:

```
python start.py --mode=combined
```

3. From within the combined mode, run the following command ([240](#) means 240 seconds):

```
dtp.ids.do_custom_flush(240, 60)
```

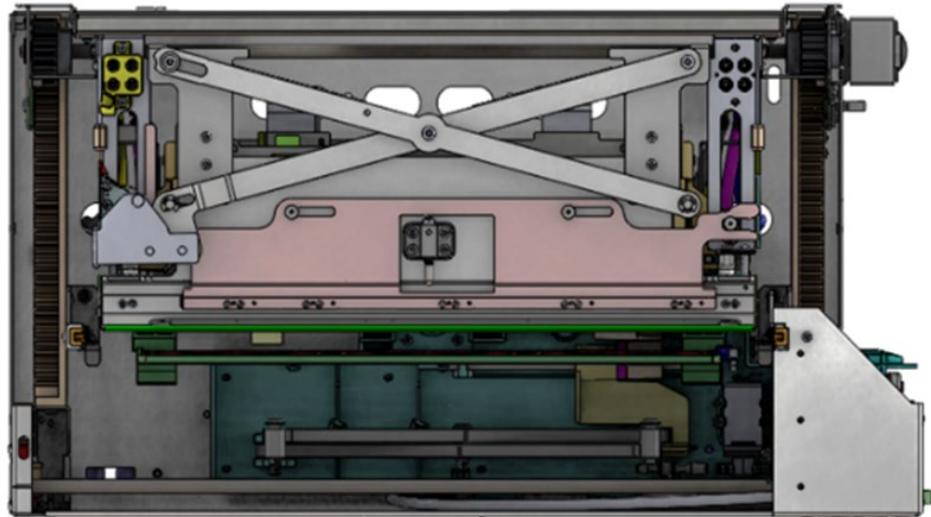
This will pull all the ink from IR Tank into the waste ink container through the disconnected Return Line.



5 Print Module Replacement

This section provides replacement instructions for the Print Module. The part number for this item is OEM-specific. Contact your Memjet representative for details.

Figure 23 – Print Module



5.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

5.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 5 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
Print Module – part number is OEM-specific	1	Part
Lint-free cloth	As needed	Supply
Allen key set	1	Tool
Diagonal cutter	1	Tool
Tubing cutter	1	Tool
Scissors	1 pair	Tool
Hemostat	4	Tool
Cap – Vinyl, ID 1/4", length 1/2"	4	Supply
Cap – Vinyl, ID 1/8", length 1/2"	4	Supply
Large ziploc-type plastic bag	As needed	Supply
Fluidic coupling covers (Figure 24)	2	Supply
Printhead Ink port covers (Figure 25)	2	Supply
Printhead protective case (Figure 25)	1	Supply



Figure 24 – Green Fluidic Coupling Cover

5.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

This section provides the removal procedures for the Print Module. For shipping instructions, refer to Section [30.1 Print Module Shipping](#).

5.3.1 Prerequisites

- Copy the `hwparamstore.json` and save the file in a USB drive.

5.3.2 Procedure

To remove the Print Module:

- Deprime the DuraFlex printing system.
- Use the OEM printer control software to move the Printhead Cradle to RAISE position and the Cap to HOME position.
- Remove the printhead according to the [Removal](#) steps in Section [29.1 Printhead Replacement](#).
- Store the printhead temporarily until the new Print Module is installed and the printhead can be reinserted.
 - Install the ink port covers on both ends of the printhead to prevent ink dripping outside the protective cover.

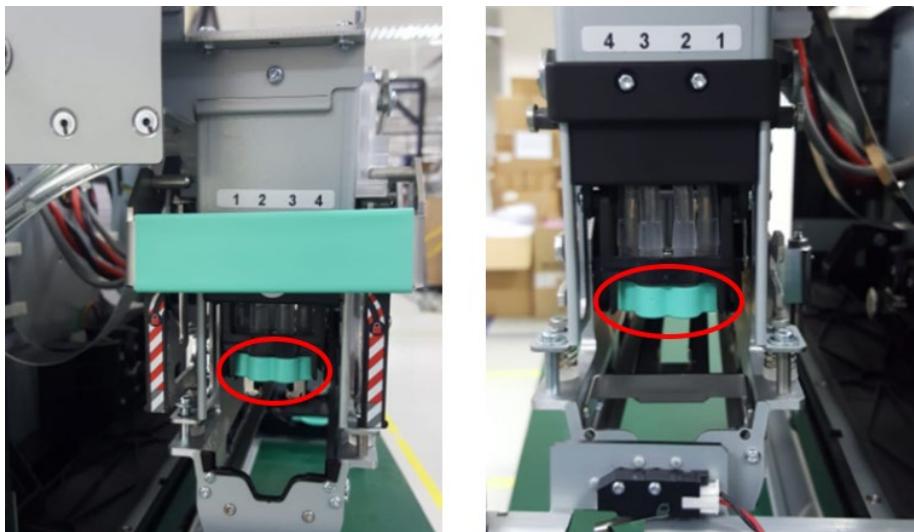
Figure 25 – Printhead in Protective Case with Ink Port Covers Installed

- Place the printhead into the protective case and close the case.
- Ensure that the protective case stays oriented with the printhead nozzles facing down. Do not store in direct sunlight and keep at room temperature (5°C to 30°C).



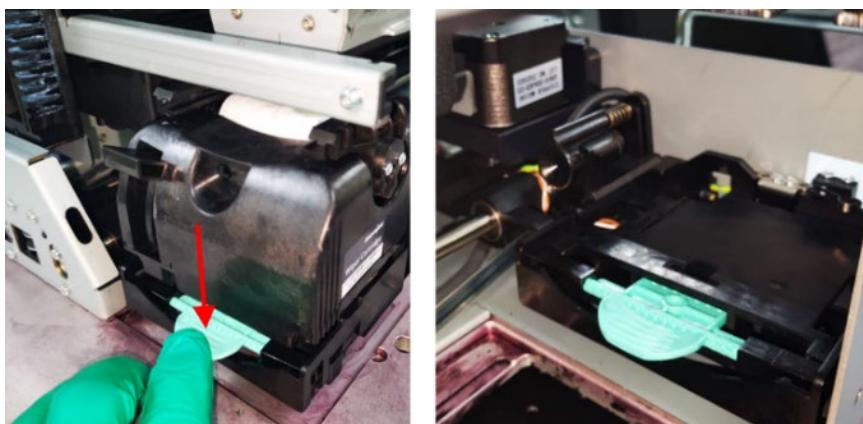
5. Install the fluidic coupling covers (one on each side) to protect the fluidic couplings from contamination.

Figure 26 – Fluidic Coupling Covers Installed



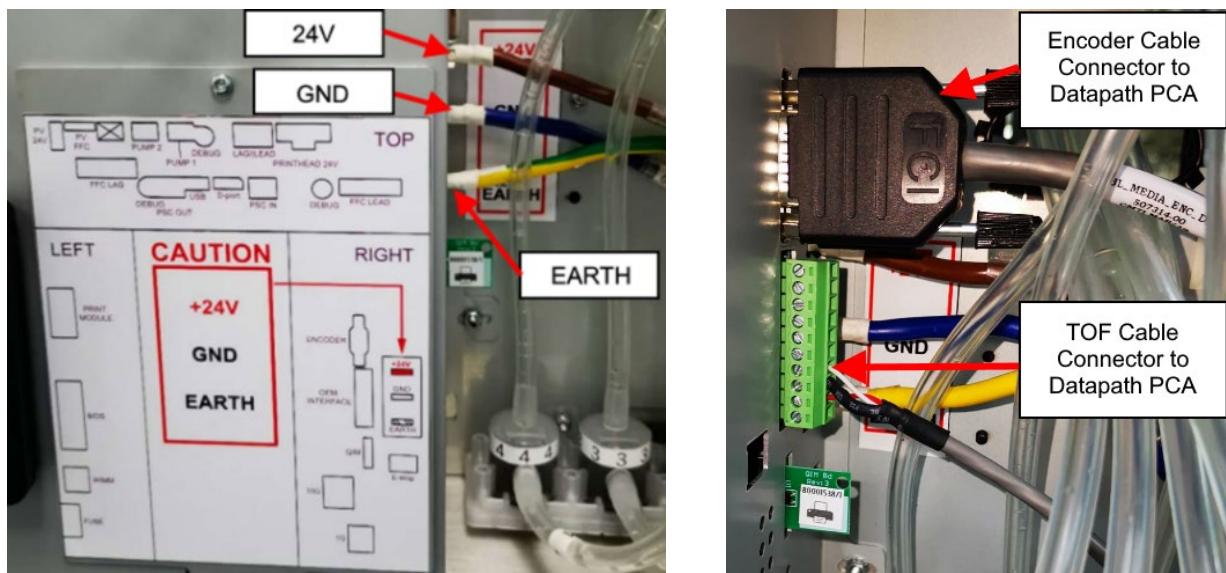
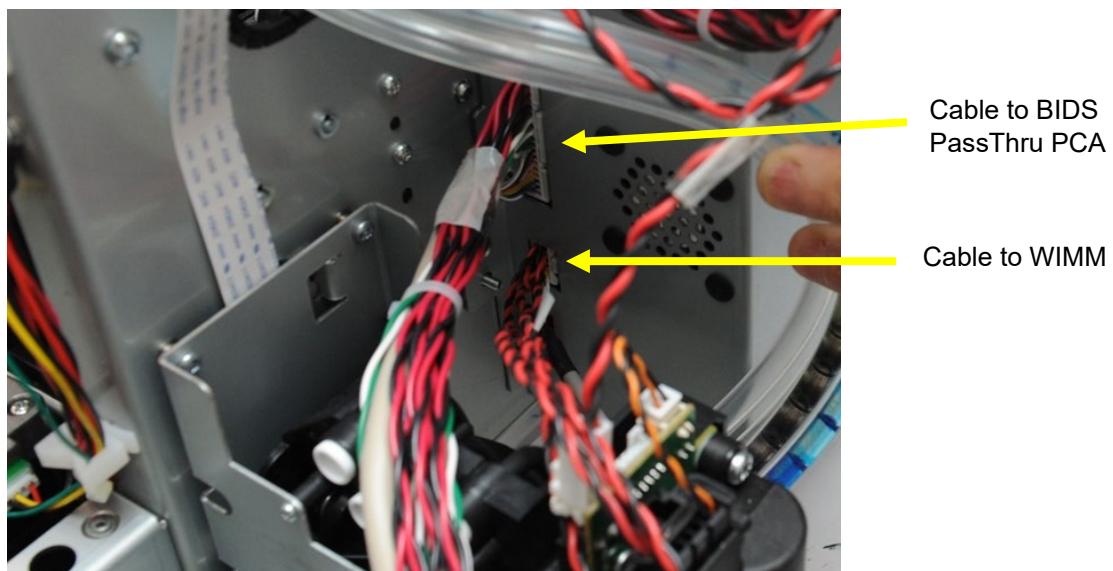
6. Power down the DuraFlex printing system.
7. Push down on the green tab to release the wiper cartridge from the wiper carrier.

Figure 27 – Wiper Cartridge Release



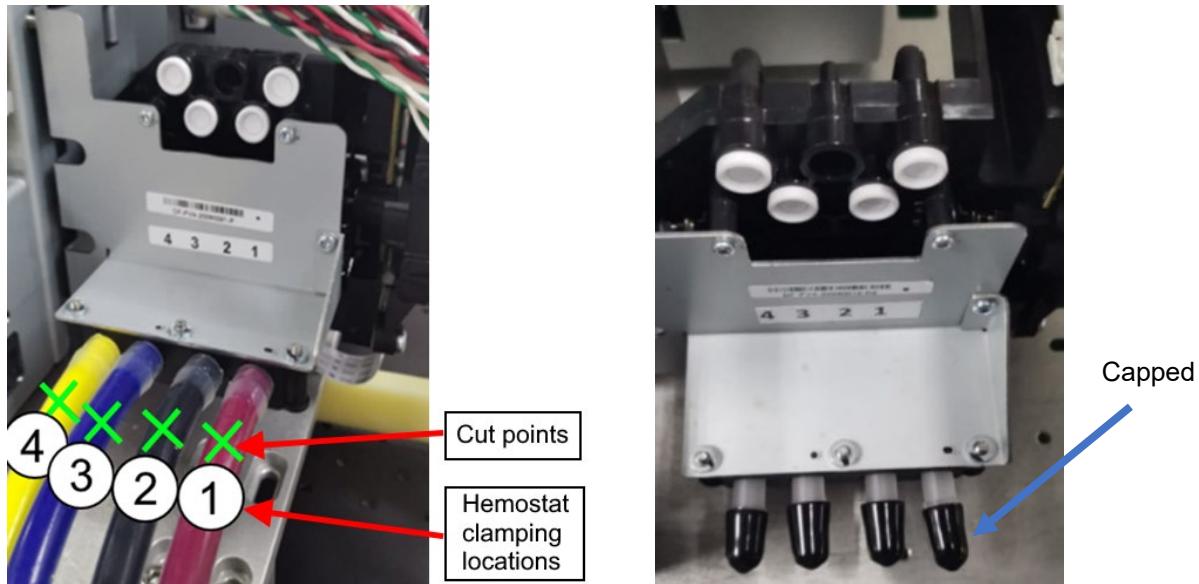
8. Store the wiper cartridge in its original packaging or a clean plastic bag at room temperature (5°C to 30°C) until it can be reinserted.
9. Disconnect all external cables that are connected to the Print Module, including:
 - Power Supply Unit (PSU) cable (x1)
 - Encoder cable (x1)
 - TOF sensor cable (x1)
 - 1 GbE Ethernet cable (x1)
 - 10 GbE Ethernet cable (if present) (x1)
 - BIDS PassThru PCA cable (x1)
 - WIMM cable (x1)
 - WIMM Pressure Sensor PCA cable (x1)



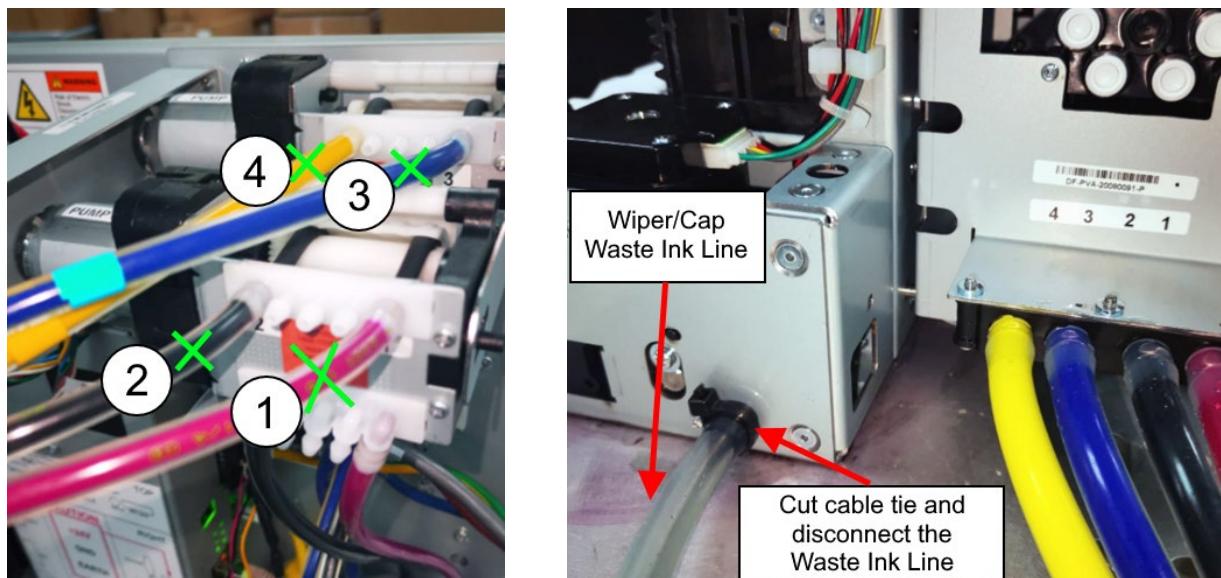
Figure 28 – Power Supply (PSU) Cable, Encoder Cable and TOF Cable**Figure 29 – Cable to BIDS and Cable to WIMM**

10. Use four (4) hemostats to clamp all the Feed Line tubes the Pinch Valve inlet, labeled 1-4 in [Figure 30](#).
11. Use tubing cutter to cut the four (4) tubes at the locations shown in [Figure 30](#).
12. Immediately install a clean cap (vinyl, ID 1/4", length 1/2") onto each of the cut feed line tubes to prevent contamination from entering the Pinch Valve [Figure 30](#).

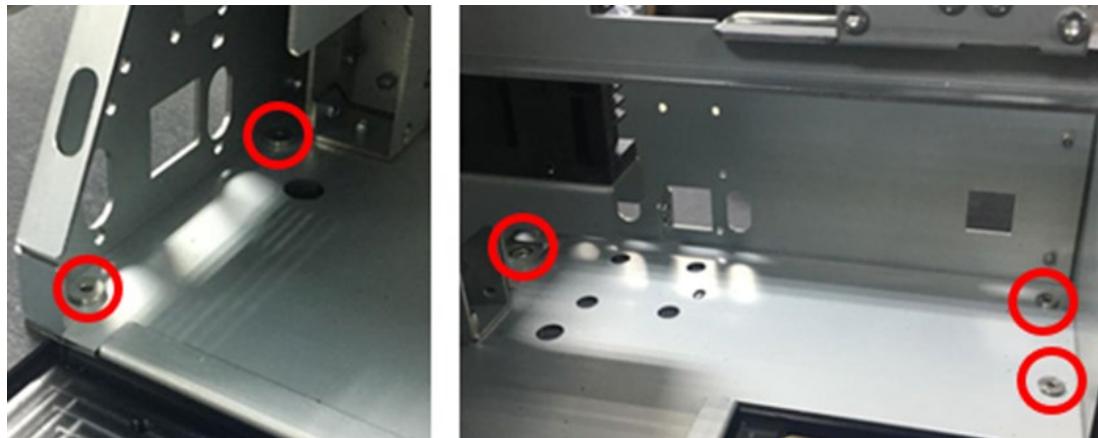


Figure 30 – Feed Line Tubing Clamp Locations and Capped After Cutting

13. Use a clean tubing cutter to cut the four (4) Return Line tubes near the outlets of the Circulation Pumps. The cutting points are shown as "X" in [Figure 31](#).

Figure 31 – Return Line Tubes Cut Locations

14. Immediately install a clean cap (vinyl, ID 1/8", length 1/2") onto each of the Circulation Pump outlet barbs to prevent contamination from entering the Circulation Pumps.
15. Locate the Waste Ink Line on the right side of the Print Module and carefully cut the cable tie and disconnect the Waste Line tube from the Print Module.
16. Remove the five (5) ultra-flathead mounting screws that mount the Print Module to the print bar. Keep all the original hardware, do not discard.

Figure 32 – Print Module Mounting Screws

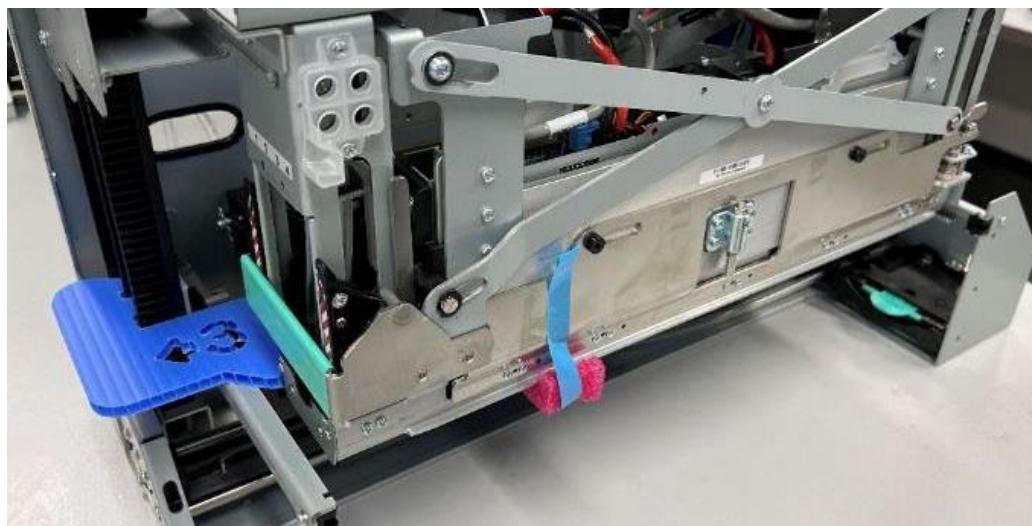
17. Discard the Print Module according to local disposal recommendations.

5.4 Installation

5.4.1 Removing Shipping Plate

The Print Module ships with a protective plate installed. The grooves on the shipping plate secure it between the Printhead Cradle and the Print Module's lift mechanism. Remove the shipping plate before installing the Print Module.

1. Unpack the Print Module, remove all packing material and inspect the Print Module for any damage. If damage is found enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).
2. From the **right** side of the Print Module, locate the shipping plate which is protruding from the edge of the Print Module. With a finger below the flat surface of the Printhead Cradle (Figure 33), slightly push it towards the **front** of the Print Module.

Figure 33 – Printhead Cradle Shipping Plate Installed

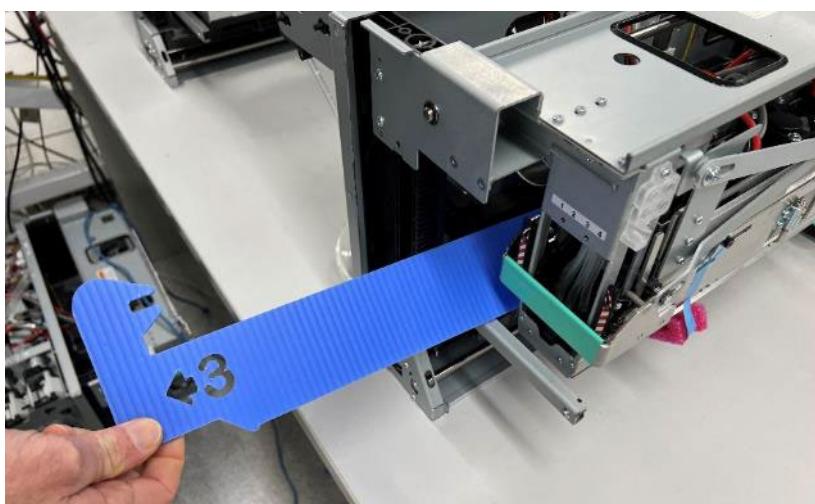
3. The shipping plate is numbered with the unlocking steps ([Figure 34](#)). To remove the shipping plate, twist it free at position #1. Then push the shipping plate in the direction indicated by #2, then pull it free in the direction indicated by #3.

Figure 34 – Shipping Plate and Instructions



4. Finally pull the plate free of the Print Module in the direction indicated by #3 ([Figure 35](#)).

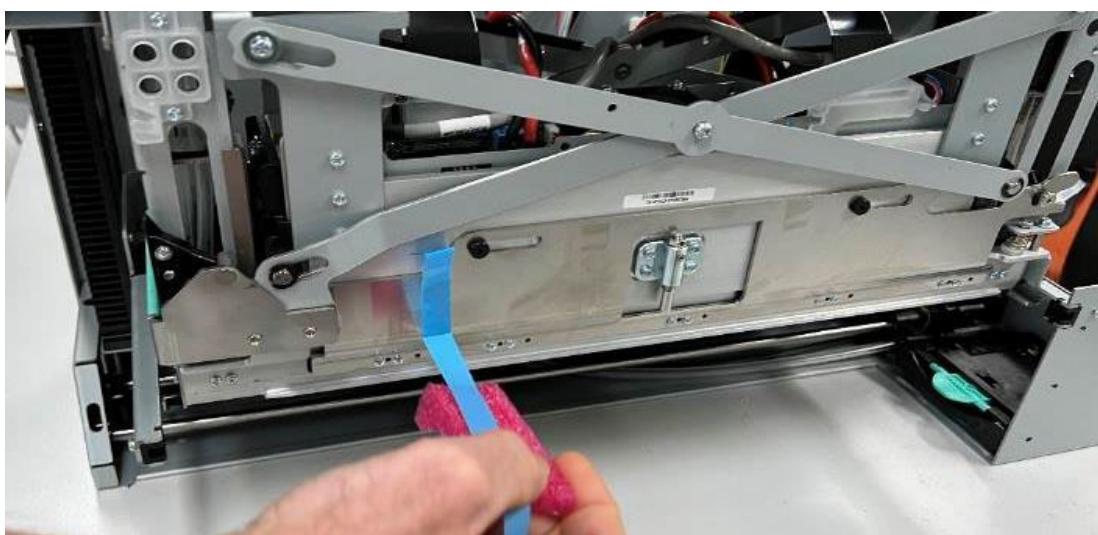
Figure 35 – Remove Shipping Plate



5. Keep the shipping plate with the Print Module packaging and shipping box for future shipping.

6. Remove the tape and foam. Keep the foam for future shipping. Discard the tape.

Figure 36 – Remove Tape and Foam



5.4.2 Mount Print Module to Print Bar

This section lists the main steps that the OEM needs to perform after replacing the Print Module.

Note: For more information about mounting the print module to the print bar, refer to the *DuraFlex Installation and Commissioning Guide*.

To mount the DuraFlex Print Module onto the Print Bar:

1. Align the Print Module in XY axis with two locating pins on the Print Bar and two locating holes/slots on the Print Module frame base.
2. Secure the Print Module with five (5) M4 × 8 ultra-low head mounting screws (CBSTS4-8). Move the wiper cradle from its HOME position as needed to access the mounting holes underneath.

5.4.3 Connect Modules, Cables, and Tubing

This section lists the main steps that the OEM needs to perform after replacing the Print Module. For complete details of each step, see the *DuraFlex Installation and Commissioning Guide*.

1. Maintain the correct relative height between the datum tab of each IDS blade and the bottom surface of the Print Module.
2. Connect all the cables to the new Print Module, including:
 - Power Supply Unit (PSU) cable (×1)
 - Encoder cable (×1)
 - TOF sensor cable (×1)
 - 1 GbE Ethernet cable (×1)
 - 10 GbE Ethernet cable (if present) (×1)
 - BIDS PassThru PCA cable (×1)
 - WIMM cable (×1)
 - WIMM Pressure Sensor PCA cable (×1)
3. To reapply the configuration settings, paste the previously copied `hwparamstore.json` file from USB drive to the following folder on Client PC:

`/opt/memjet/kareela/data/`

Note: This step can only be performed if the old/new PHMs have the same software version installed, if not a software upgrade may be required

4. Remove the fluidic coupling covers and insert the setup printhead.
5. Verify the Printhead nozzle-to-Paper Spacing (PPS) after replacing the Print Module.

5.5 Testing

5.5.1 Test Print After Replacement

Follow these steps to confirm the Print Module replacement is successful:

1. Power on DuraFlex.
2. Install the setup printhead and install the wiper cartridge.
3. Initialize the print engine.



4. Prime the printing system.
5. Print a test file.

Note: This is a quick check to confirm print module replacement is successful. Perform the Contamination Control procedure (below) any time the Print Module is replaced.

5.5.2 Contamination Control Procedure

To minimize contamination, perform this procedure any time the print module is replaced.

CAUTION: The system can be used at this point, but the OEM must wait for at least 24 hours before proceeding with the following steps.

1. Confirm that the setup printhead is installed.
2. Deprime the printing system.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Re-prime the printing system.
4. Circulate two (2) liters of ink through the system.
5. Deprime the printing system.
6. Re-prime the printing system.
7. Deprime the printing system.
8. Replace the setup printhead with the printing printhead.
9. Re-prime the printing system.

System is ready for use.

10. Select a desired test chart, perform printing, label as "final printhead, first print".

If there are no print quality defects (streaks) observed, the Print Module replacement is successful.



6 Print Module Cable Replacement

This section provides replacement instructions for the Electronics Print Module Cable (PN 10005292).

Figure 37 – Print Module Cable



6.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

6.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

6.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 6 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Print Module Cable – PN 10005292	1	Part
Anti-static wrist strap	As needed	Supply

6.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

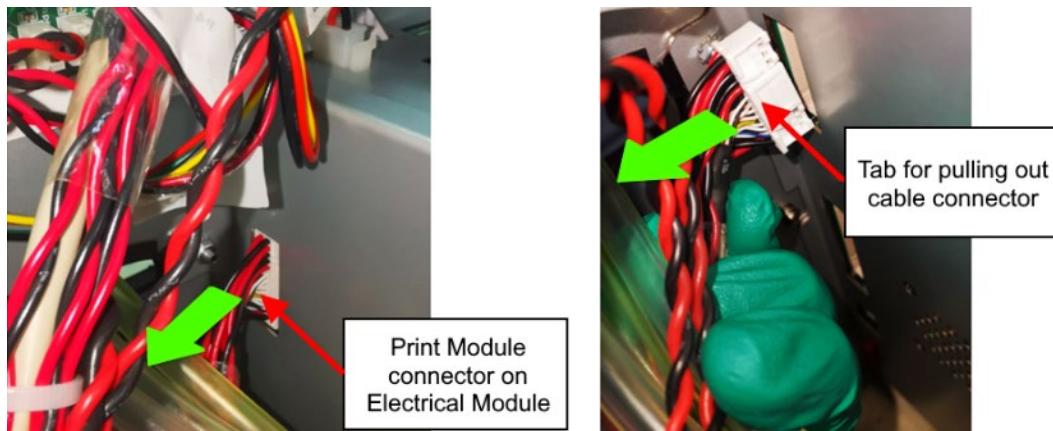
Note: Unless otherwise noted, keep all original hardware for installation.

1. Remove any covers or panels to expose top of the DuraFlex components and create sufficient access to the components.
2. Wear an anti-static wrist strap when performing this procedure.



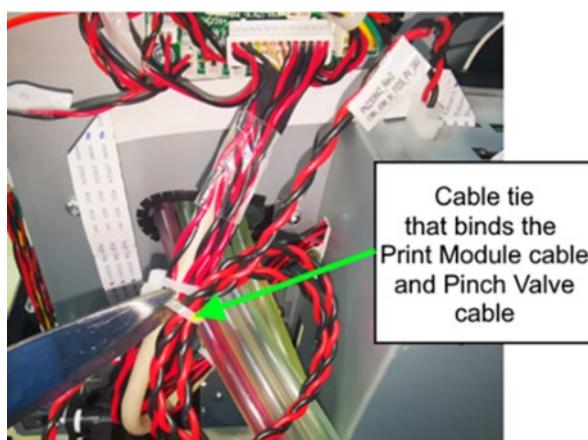
3. Power down the DuraFlex system.
4. Disconnect the Print Module cable from the Electrical Module. Press the tab on the cable connector to disengage it.

Figure 38 – Print Module Cable Disconnected from Electrical Module



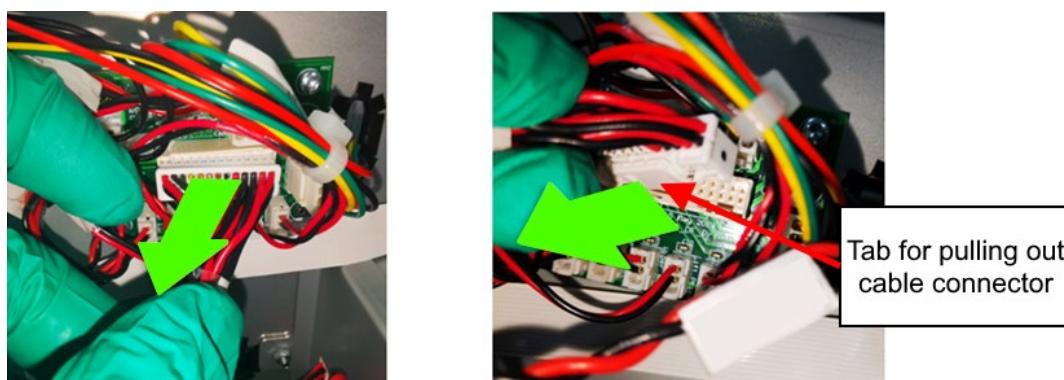
5. Cut the cable tie securing the Print Module cable and the Pinch Valve cable.

Figure 39 – Remove Cable Tie



6. Disconnect the Print Module cable from the Print Module PassThru PCA. Press the tab on the cable connector to disengage it.

Figure 40 – Print Module Cable Disconnected from Print Module PassThru PCA



7. Discard the Print Module Cable according to local disposal recommendations.

6.5 Installation

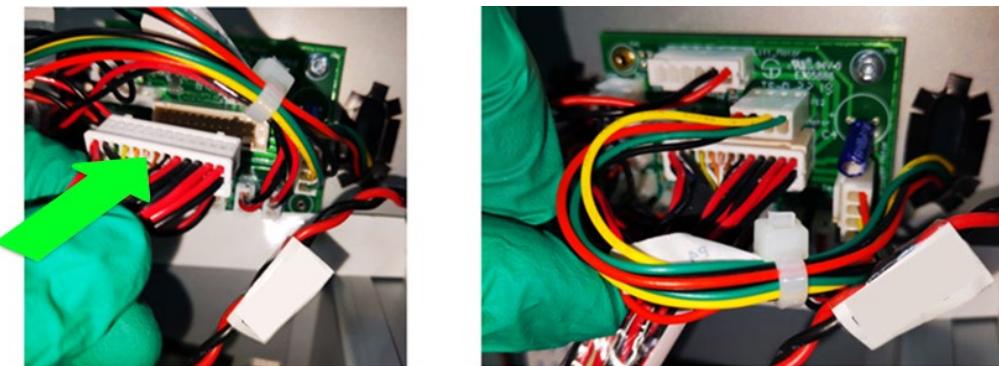
1. Inspect the new Print Module cable. If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).
2. Connect the Print Module cable to the Electrical Module.

Figure 41 – Print Module Cable Connected to Electrical Module



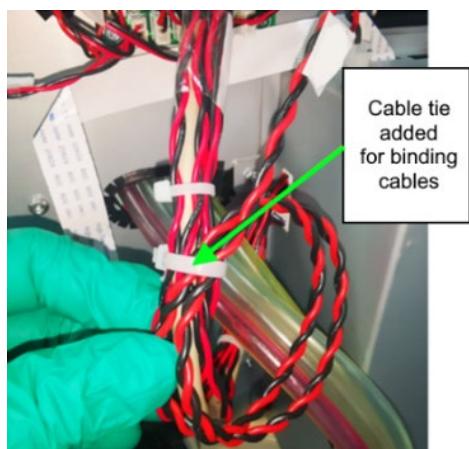
3. Connect the Print Module cable to the Print Module PassThru PCA.

Figure 42 – Print Module Cable Connected to PCA Connector



4. Secure the Pinch Valve and Print Module cable with a cable tie and cut off the cable tie tail.

Figure 43 – Print Module Cable and Pinch Valve Cable Bundled with Cable Tie



6.6 Testing

1. Power up the DuraFlex system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. If there are no errors, the Print Module cable replacement has been successful.



7 Print Module PassThru PCA Replacement

This section provides replacement instructions for the Electronics Print Module PassThru PCA (PN 10005291).

Figure 44 – Print Module PassThru PCA



7.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

7.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

7.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 7 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Print Module PassThru PCA – PN 10005291	1	Part
T10 – M3 screwdriver (with ~200 mm extension)	1	Tool



7.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

To remove the Print Module PassThru PCA from the Print Module:

1. Ensure the printhead is capped and the system is in **PRIMED_IDLE** state (shown in OEM printer control software).
2. Power down the printing system.
3. Locate the Print Module PassThru PCA on the back of the Print Module.
4. Confirm that all cables attached to the PassThru PCA are labelled, add if necessary ([Figure 45](#)).
5. Disconnect all the cables from the PassThru PCA.

Figure 45 – Print Module PassThru PCA with and Without Cables Connected



6. Use a T10 screwdriver to loosen the two (2) screws that secure the PassThru PCA to the back of Print Module ([Figure 46](#)).

Figure 46 – Loosen Screws that Secure the Print Module PassThru PCA

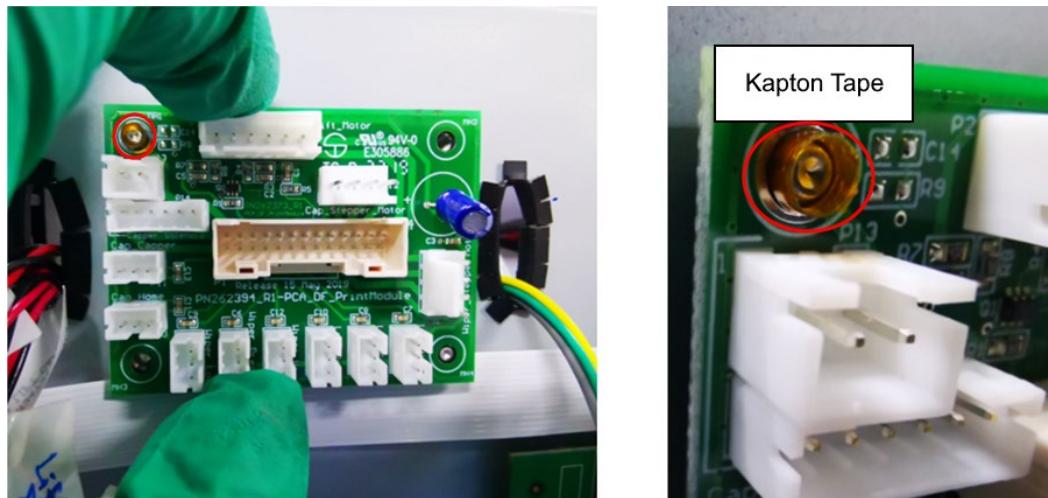


7. Locate the Kapton Tape on the top left corner ([Figure 46](#)).



8. Carefully remove the PassThru PCA and ensure that the Kapton Tape on the top left corner locating pin does not drop ([Figure 47](#)).

Figure 47 – Locating Pin and Kapton Tape on Top Left Corner



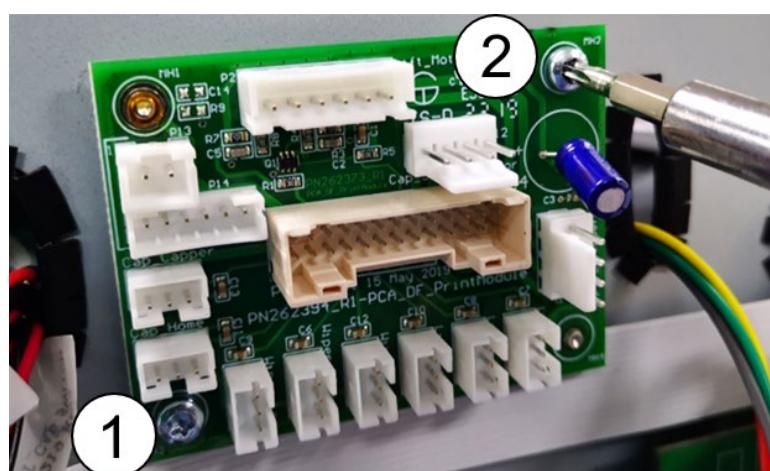
9. Discard the PassThru PCA according to local disposal recommendations.

7.5 Installation

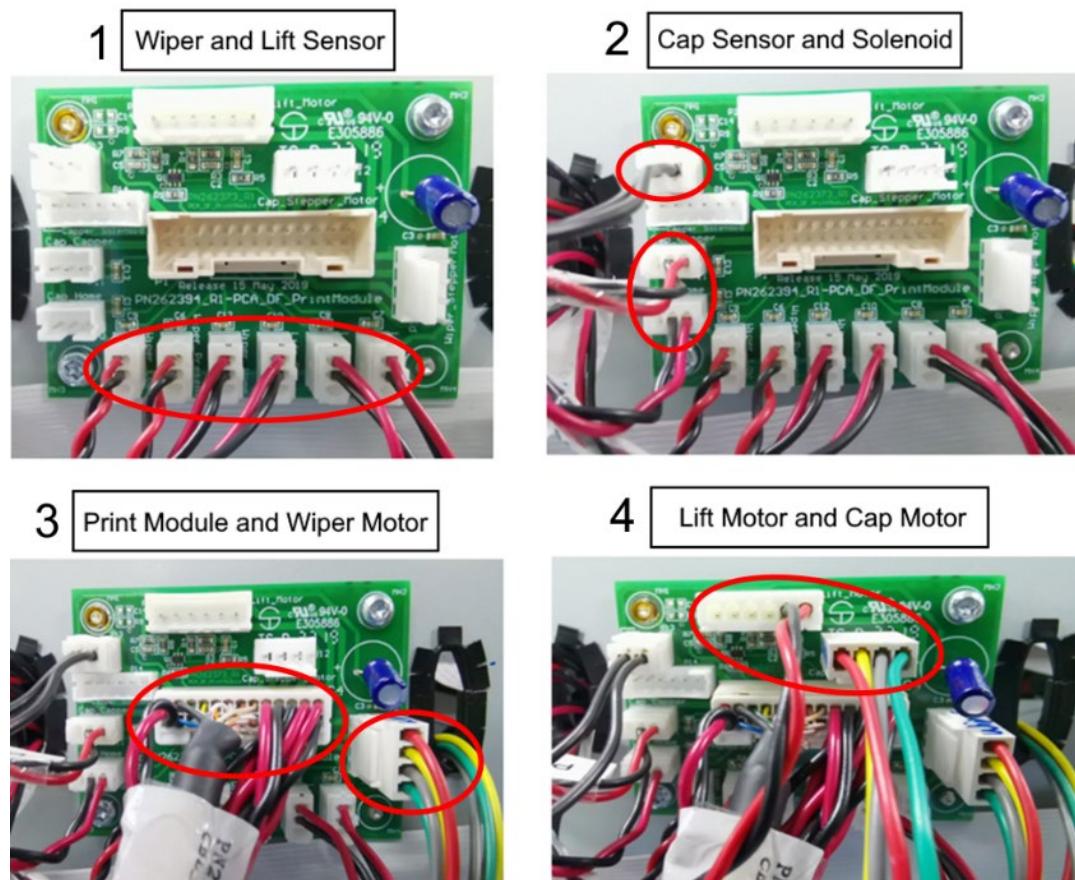
1. Inspect the new Print Module PassThru PCA to ensure that all components are attached without any damage. If any damage is found, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).
2. Align PassThru PCA with the locating pins and install the two (2) screws to secure it ([Figure 48](#)).

Note: Ensure that the Kapton Tape is attached to the top left corner locating pin.

Figure 48 – Print Module PassThru PCA Mounting Screws



3. Connect all the cables in the recommended sequence shown in [Figure 49](#).

Figure 49 – Print Module PassThru PCA Cable Connections

7.6 Testing

To test the new Print Module PassThru PCA:

1. Power on the DuraFlex printing system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

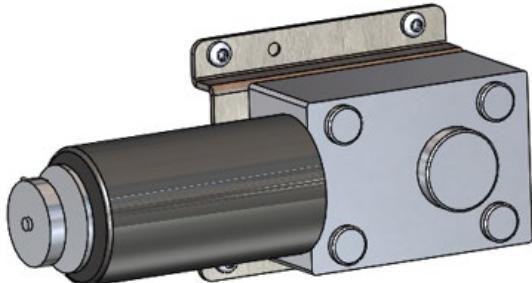
3. Move the Printhead to the RAISE, CAP, and PRINT positions and observe to confirm that the mechanism moves to the correct locations.
4. Prime the system.



8 Print Module Lift Motor Replacement

This section provides replacement instructions for Print Module Lift Motor (PHLM Motor Lift – PN 10005283).

Figure 50 – Lift Motor Assembly



8.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

8.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 8 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lift Motor – PN 10005283	1	Part
T10 – M3 Screwdriver (with ~200 mm extension)	1	Tool
1.5-bit Hexagon Screwdriver	1	Tool
Loctite 290 thread locking adhesive	As needed	Supply

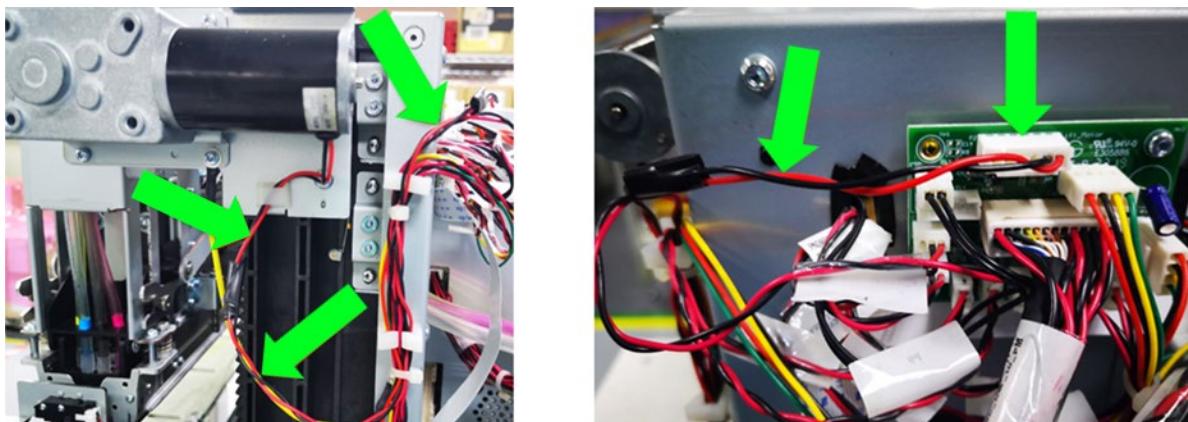
8.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

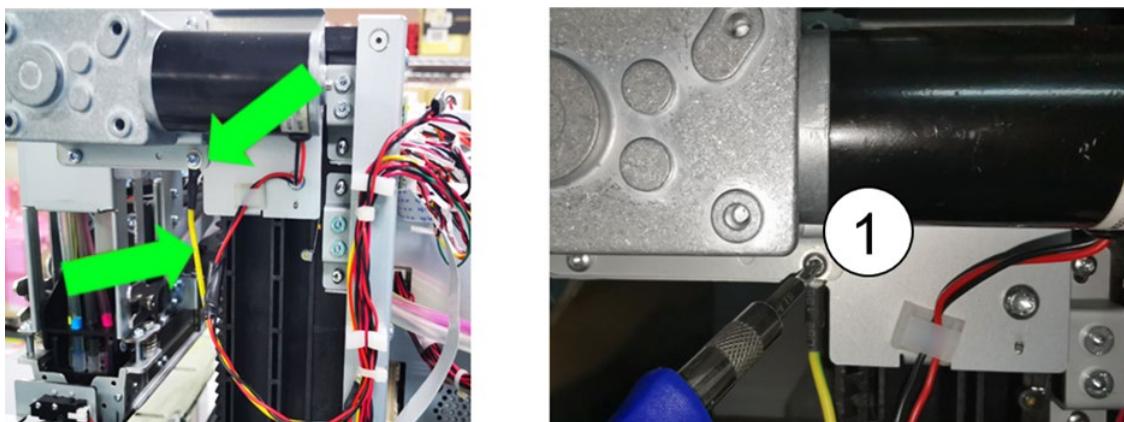
Note: Unless otherwise noted, keep all original hardware for installation.

1. Move the printhead cradle to the RAISE Position.
2. Power down the system.
3. Locate the lift motor and disconnect the lift motor cable from the Print Module PassThru PCA at the back of the print module frame ([Figure 51](#)).

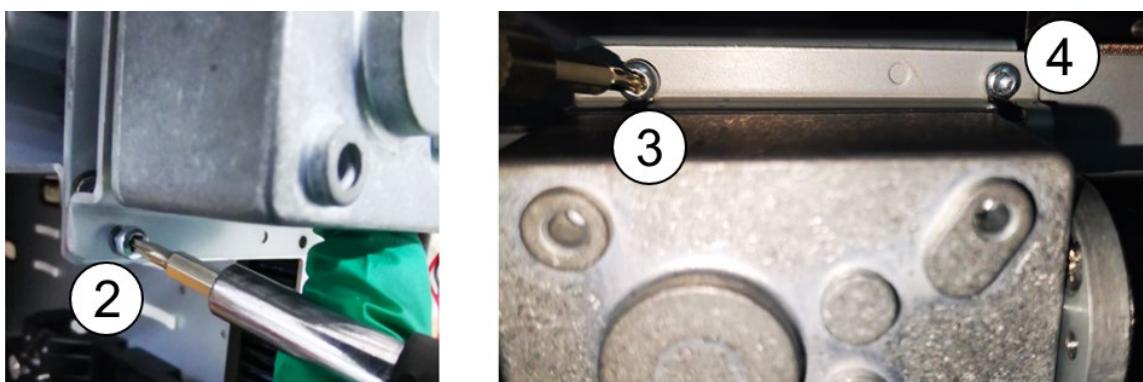


Figure 51 – Lift Motor Cable

4. Loosen the bottom right screw to remove the ground cable, labelled 1 in [Figure 53](#).

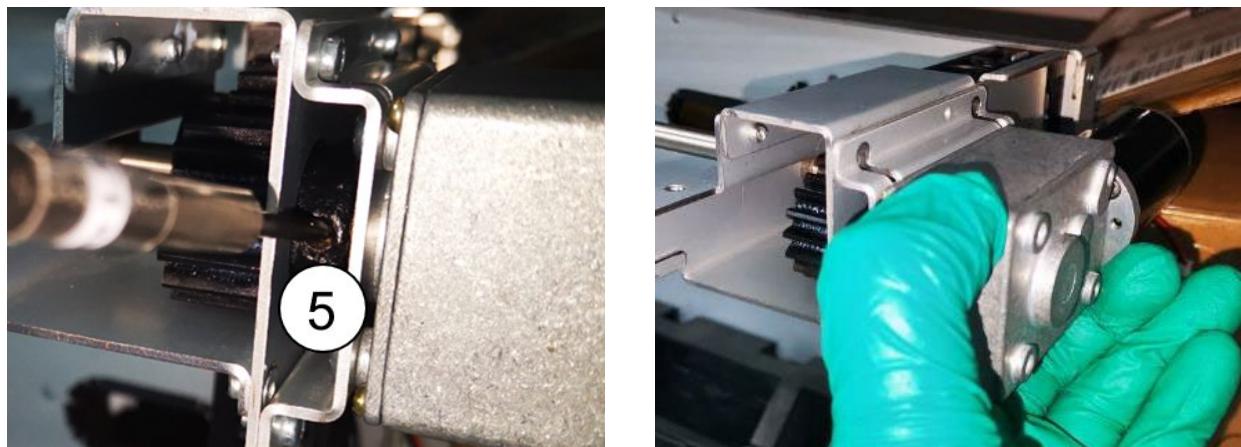
Figure 52 – Ground Cable Mounting Screw

5. Loosen the three (3) screws that mount the Lift Motor Bracket. The screws are shown as 2, 3, and 4 in [Figure 53](#).

Figure 53 – Lift Motor Bracket Mounting Screws

6. Use a 1.5mm hex driver to loosen the set screw (labelled 5) inside the pulley gear as shown in [Figure 54](#). Grasp the lift motor assembly and pull it out of the lift mechanism.
7. Discard the lift motor according to local disposal recommendations.



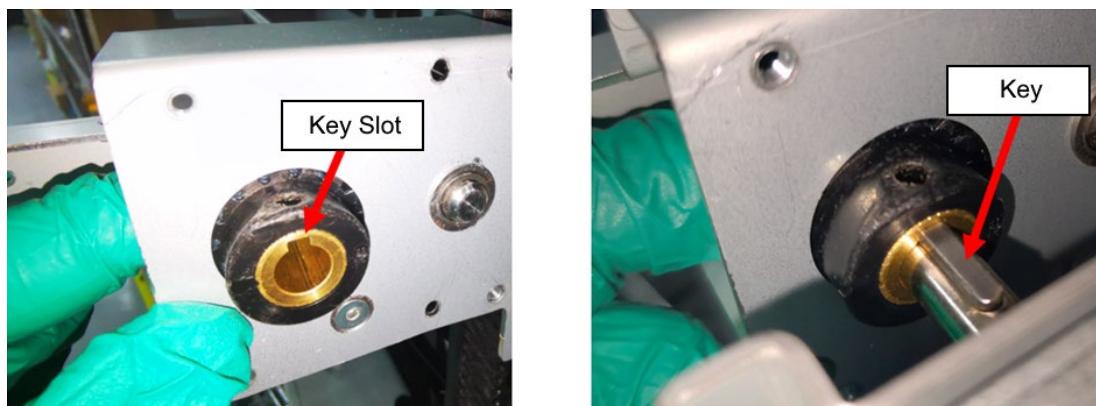
Figure 54 – Removing the Pulley Gear and Lift Motor

8.4 Installation

1. Inspect the new lift motor assembly to confirm that the cable is attached, the positioning key is installed on the lift motor shaft, and there is no damage. If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

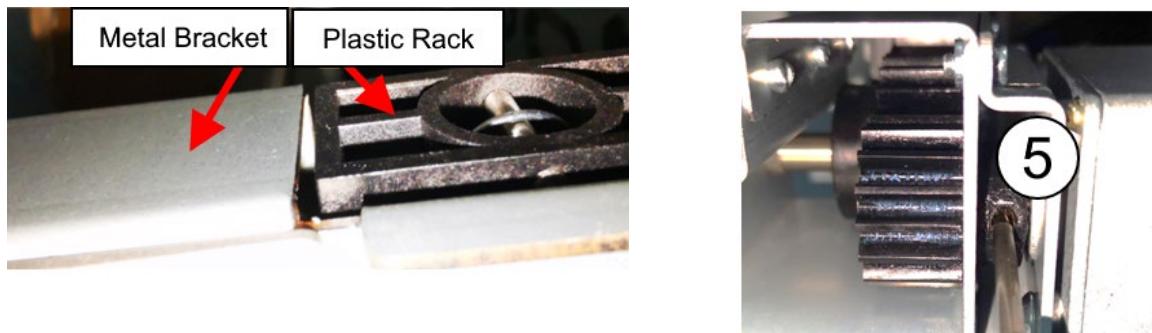
Figure 55 – Lift Motor Cable and Shaft Key

2. Align the key on the lift motor shaft with the key slot on the lift gear nut and slide it into the lift mechanism until fully seated ([Figure 56](#)).

Figure 56 – Key Aligned in Key Slot

3. Align the top surface of the metal bracket to the surface of the plastic rack, then hold the lift motor and tighten the set screw. Ensure that the set screw is fully tightened until flush with the bracket, labelled 5 in [Figure 57](#).

Figure 57 – Lift Motor Bracket and Plastic Rack



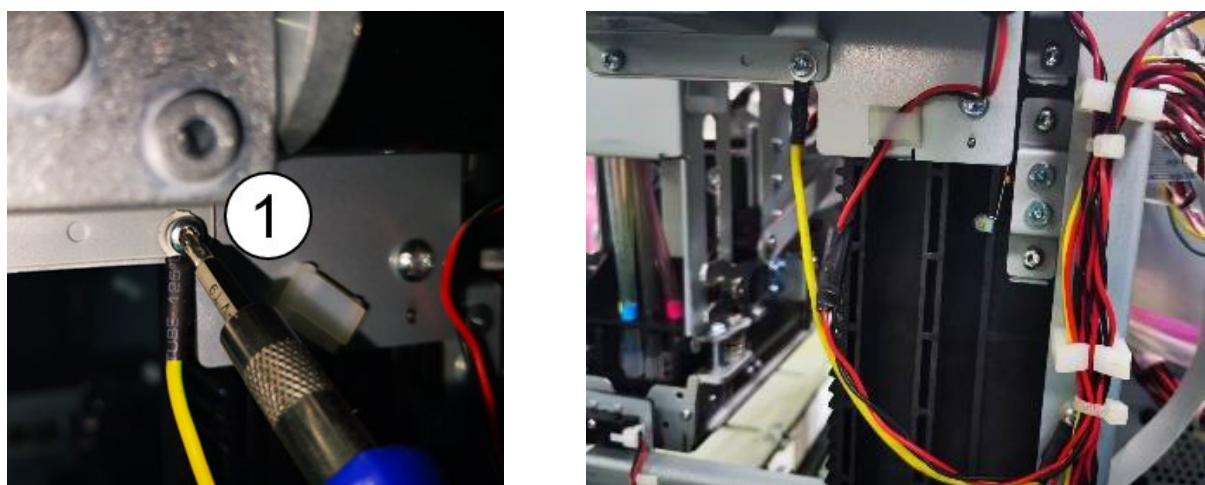
4. Apply Loctite 290 thread locking adhesive to the set screw after it is fully tightened.
5. While holding the lift motor in position, tighten the screws that secure the lift motor to the lift mechanism. The screws are labelled 2, 3, and 4 in the next figure.

Figure 58 – Lift Motor Mounting Screws



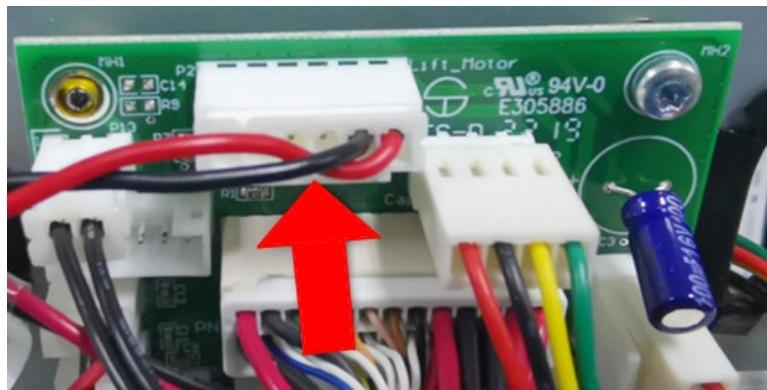
6. Route both the ground cable and lift motor cable through the cable clips and reinstall the ground cable by securing using the screw shown in [Figure 59](#).

Figure 59 – Ground Cable Lug Screw and Cable Routing



7. Attach the lift motor cable connector into the P2 connector on the Print Module PassThru PCA as shown in [Figure 60](#).

Figure 60 – Lift Motor Cable



8.5 Testing

1. Power on the DuraFlex system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Move the Lift Mechanism to RAISE, CAP, and PRINT positions. Repeat ten (10) times for each position.
4. Perform light service five (5) times.
5. If there is no error observed during testing, the replacement is successful.



9 Printhead Cradle Assembly Replacement

This section provides replacement instructions for the Printhead Cradle Assembly (PHCL PH Cradle Module – PN 10005287).

Figure 61 – Printhead Cradle



9.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

9.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 9 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
Printhead Cradle Assembly – PN 10005287	1	Part
Flat-head tweezer	1	Tool
T10 – M3 screwdriver (with ~200 mm extension)	1	Tool
2.5mm Allen/Hex driver suitable for M3 socket head screws	1	Tool
Diagonal cutter	1	Tool
Tubing cutter	1	Tool
Flat-blade or slotted screwdriver (3/16")	1	Tool

9.3 Removal

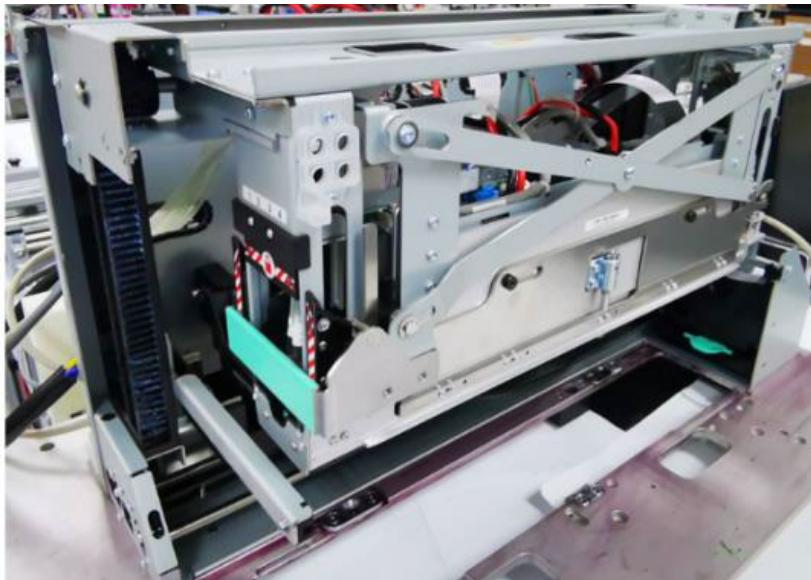
CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.



1. To remove the Printhead Cradle from the Print Module first deprime the system.
2. Command the Printhead Cradle to RAISE position and Cap to HOME position ([Figure 62](#)).

Figure 62 – Printhead Cradle and Cap



3. Remove the printhead and store it in the protective printhead case temporarily while this procedure is being performed.

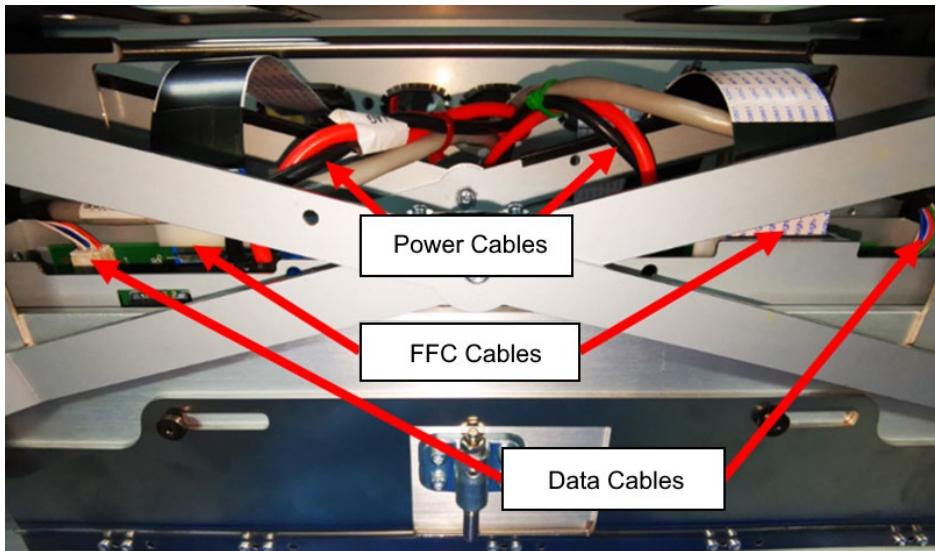
Figure 63 – Printhead in Protective Case



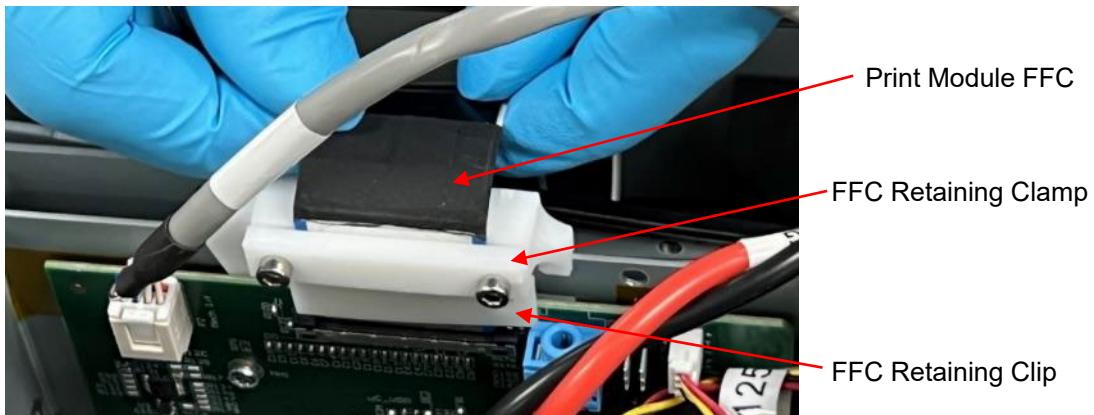
4. Power down the system.
5. [Figure 64](#) shows all the cables connected to the Printhead Power PCA. Disconnect the following:
 - Printhead Power PCA power cable (x2)
 - Printhead Power PCA data (I2C) cable (x2). Ensure you release the locking tab on the data cables before removing them.
 - Print Module Flat Flexible Cable (FFC) (x2) - connects the Print Module to the Ross Board

CAUTION: The Print Modules FFCs are very fragile, and the ends can be easily damaged. Follow these instructions carefully when connecting or disconnecting them.



Figure 64 – Print Module Cables

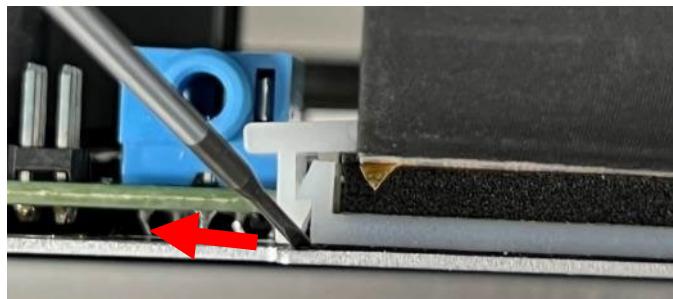
6. The Print Module FFC is secured by a white retaining clamp shown in [Figure 65](#). Remove the 2 socket head caps screws and the retaining clamp.

Figure 65 – Print Module FFC Retaining Clamp

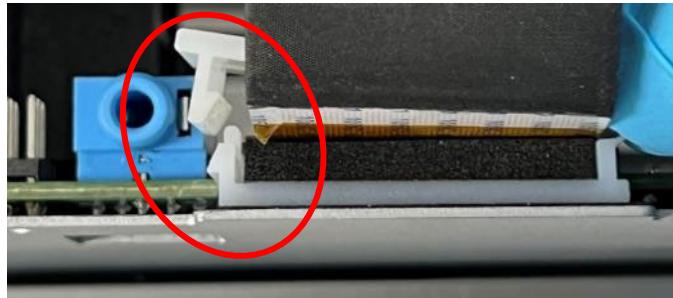
7. With the clamp removed, you will be able to see the FFC retaining clip. Use a blunt tool to unclip it as shown in [Figure 66](#).

Figure 66 – Separating the Print Module FFC Clip

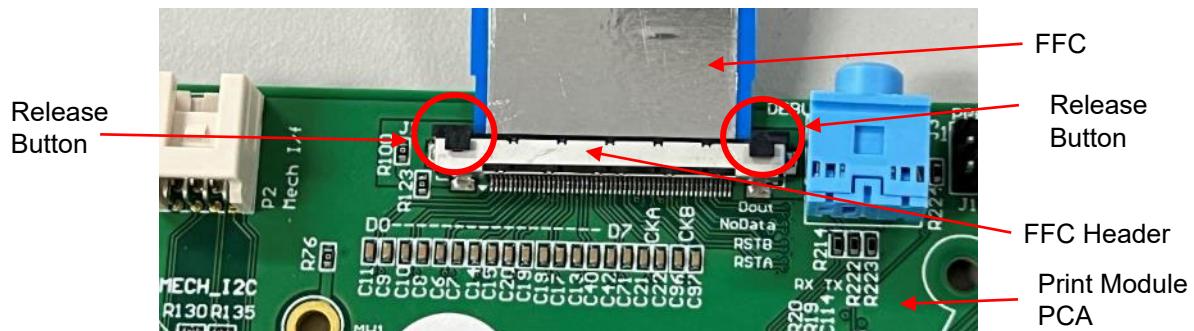
1. Insert the tool between the two halves of the FFC clip



2. Gently twist the tool or lever the two halves apart to unclip them

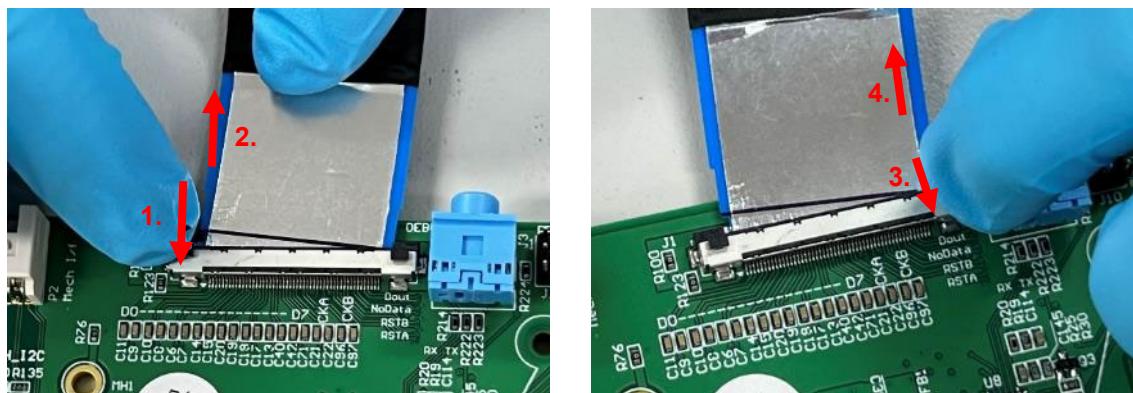


8. Once the FFC clip has been opened, you will be able to locate the FFC release buttons on the FFC header as shown in [Figure 67](#). The release buttons will not be visible on the PCA installed in the printer; you will need to find them by feel. The buttons are slightly raised and square shaped.

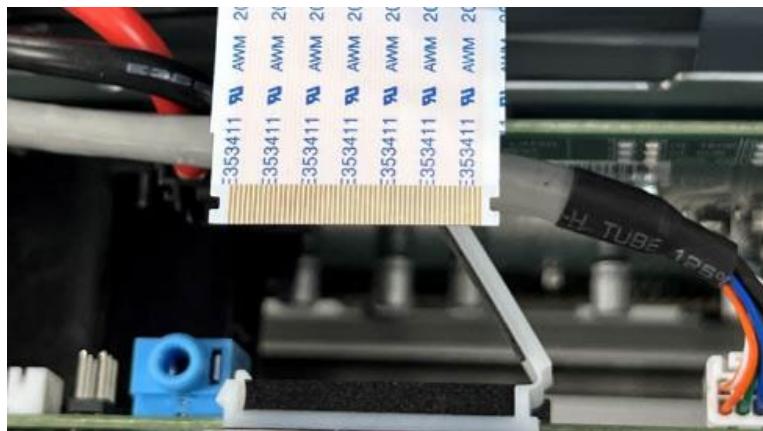
Figure 67 – Print Module FFC Release Button Locations on PCA

9. To release the FFC, press the release button on one side and gently pull on the FFC until one side of the cable pops out. Steps 1 and 2 in [Figure 68](#).
10. Then press the other button and gently pull the FFC out of the header. Steps 3 and 4 shown in [Figure 68](#).



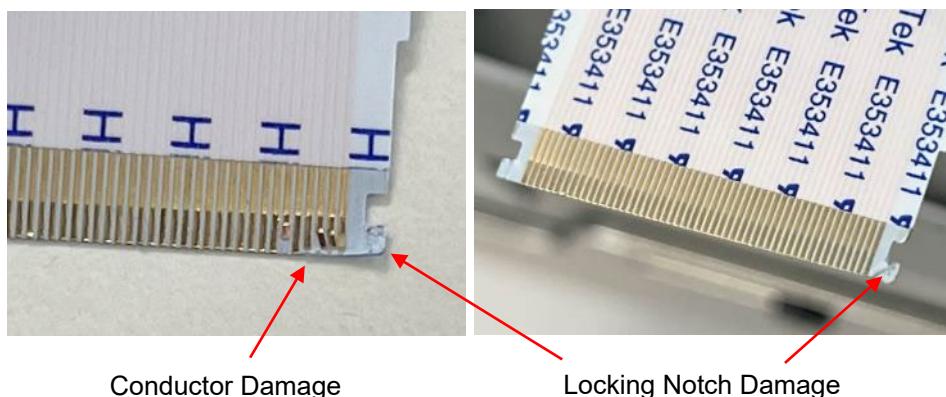
Figure 68 – Print Module FFC Release Button Steps

11. Ease the Print Module FFC away from the header so the cable contacts can be inspected.

Figure 69 – Released Print Module FFC

12. Inspect the end of the cable for any damage to the locking notches and the electrical conductors at the end of the cable. Examples are shown in [Figure 70](#).

Note: If cable damage is found, the FFC will need to be replaced otherwise the printhead electrical connection may be unreliable.

Figure 70 – Examples of Damaged Print Module FFCs

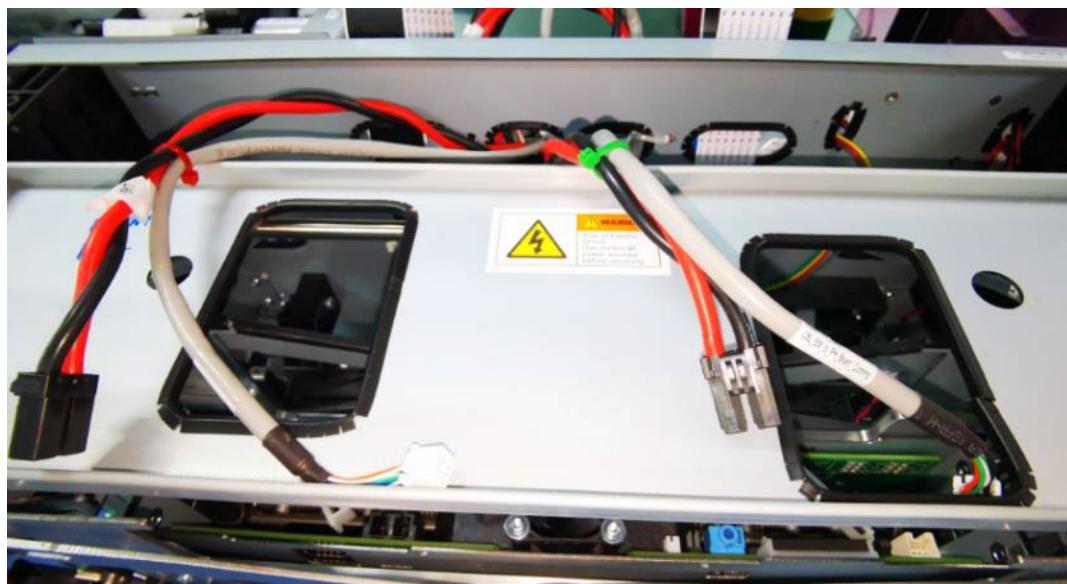
13. Remove and inspect the other Print Module FFC using the same method.

14. You should not need to release the Ross Board end of the Print Module FFC from its connector unless you are replacing the FFC cable. If the cable does need replacing undo the FFC from the Ross board using the same method shown in [Figure 68](#).

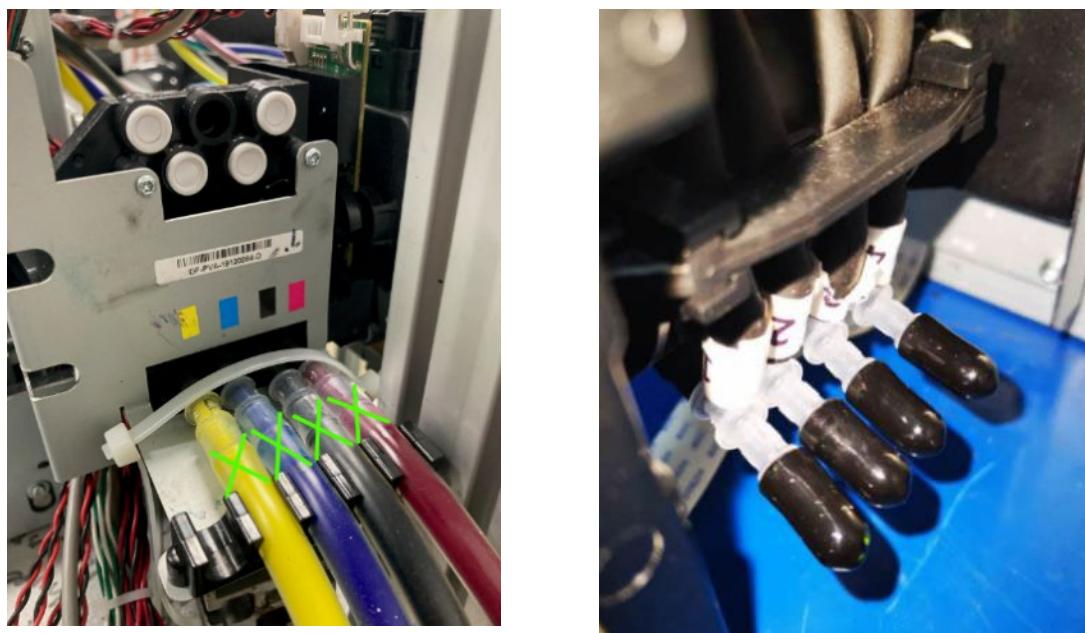
Figure 71 – Remove Ross Board End of the Print Module FFC



Figure 72 – FFCs Removed from Printhead Power PCA



15. On the right side of the Print Module, locate the four (4) ink tubes between the Pinch Valve and the Printhead Cradle.
16. Position a tubing cutter 50-60 mm from the Pinch Valve barb and cut one ink tube at where the green "X" shows in the figure below.

Figure 73 – Pinch Valve Ink Tubing Cut Locations and Cap Installed

17. Remove the short piece of cut tubing from the Pinch Valve barb and install a vinyl cap on the barb. Repeat steps [16](#) and [17](#) for the remaining ink tubes.
18. Discard the cut tubing pieces.
19. At the rear of the Print Module, locate the four (4) ink tubes between the Printhead Cradle and the Compliance Chamber ([Figure 74](#)).
20. Position a tubing cutter 50-60 mm from the Compliance Chamber barb and cut one ink tube. The cut locations are shown in "X" in [Figure 74](#). Remove the left-over pieces of tubing from the Compliance Chamber barbs and install vinyl caps.

Figure 74 – Compliance Chamber Ink Tubing Cut Location and Capped Barbs

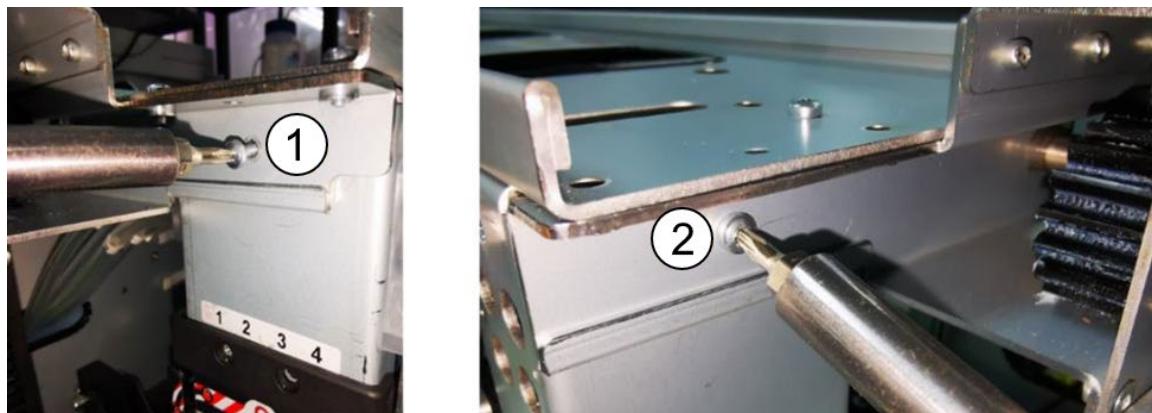
21. Remove the 14 screws that mount the Printhead Cradle to the Print Module Lift Mechanism. ([Figure 75](#)).

Figure 75 – Printhead Cradle Mounting Screws



22. Remove two (2) screws (one from each side) of the Printhead Cradle ([Figure 76](#)).

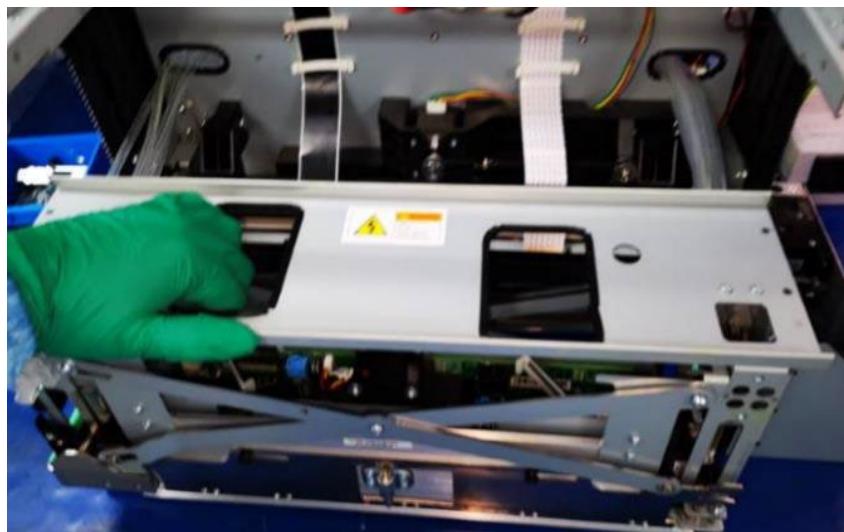
Figure 76 – Screws on Both Sides of Printhead Cradle



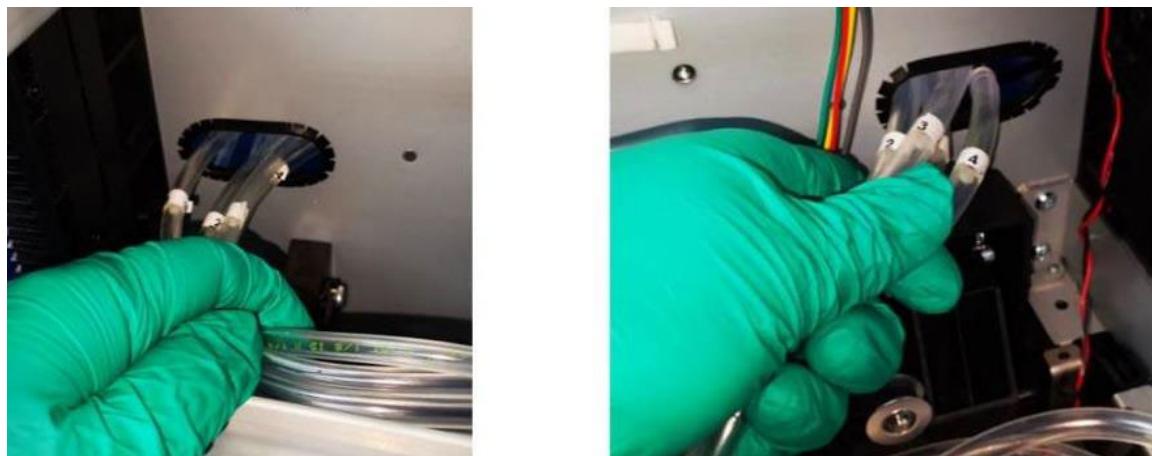
23. Place two hands in the openings in the top plate of the Printhead Cradle, and slowly lift it up and set it gently on the surface in front of the Print Module.

Figure 77 – Lift Printhead Cradle by the Top Plate

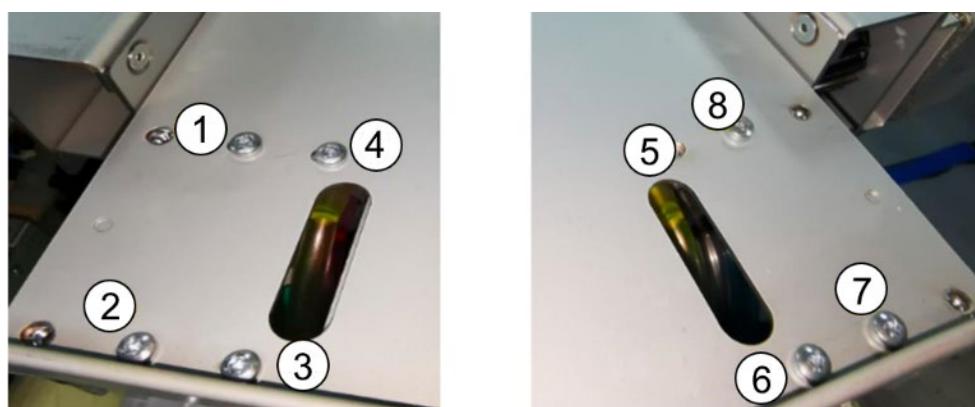


Figure 78 – Place Printhead Cradle in Front of Print Module

24. Pull the tubing through the holes in the Print Module frame on both left and right sides ([Figure 79](#)).

Figure 79 – Thread Tubing Through Frame

25. Remove the eight (8) screws that secure the Top Plate to the Printhead Cradle.

Figure 80 – Printhead Cradle Top Plate Mounting Screws

26. Discard the Printhead Cradle Assembly according to local disposal recommendations.

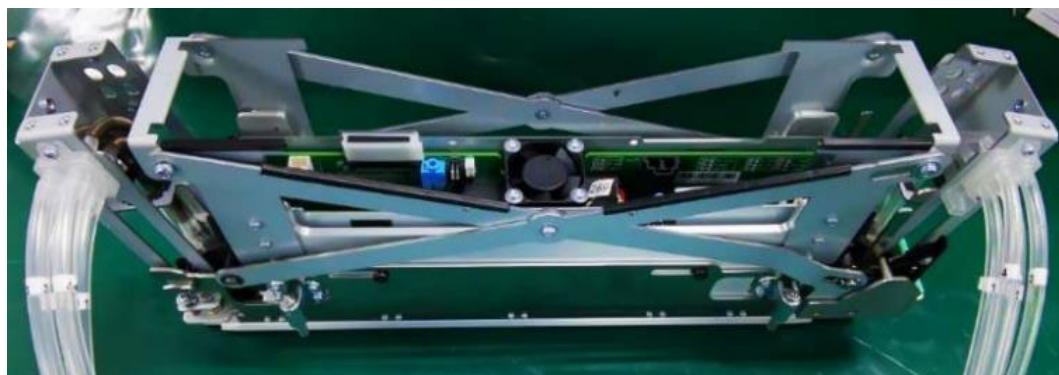
9.4 Installation

1. Inspect the new Printhead Cradle to verify there is no damage to it:

- Tubing is not kinked or cut
- Components are intact with no loose or missing parts

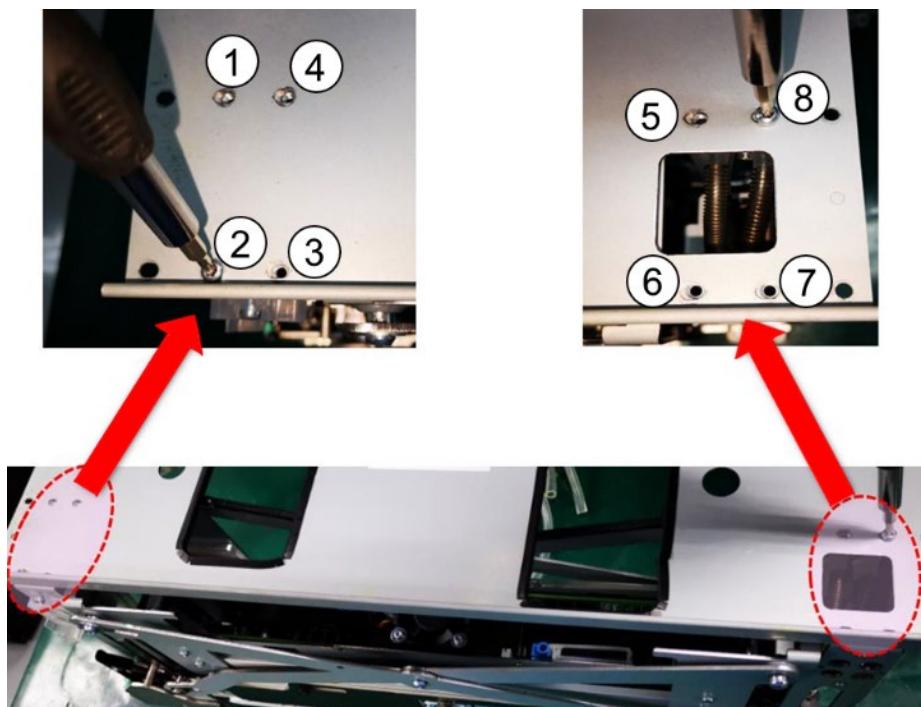
If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 81 – Printhead Cradle



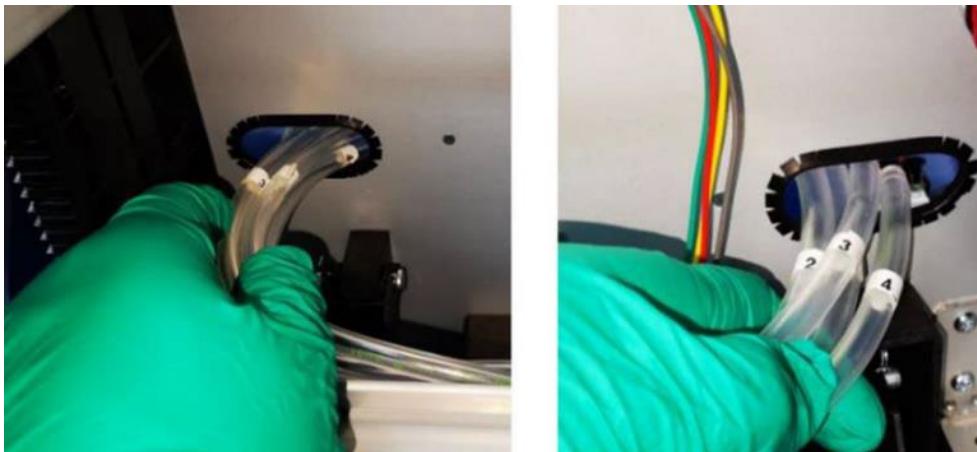
2. Align and secure the Top Plate with the eight (8) screws shown in the next figure ([Figure 82](#)).

Figure 82 – Install Top Plate



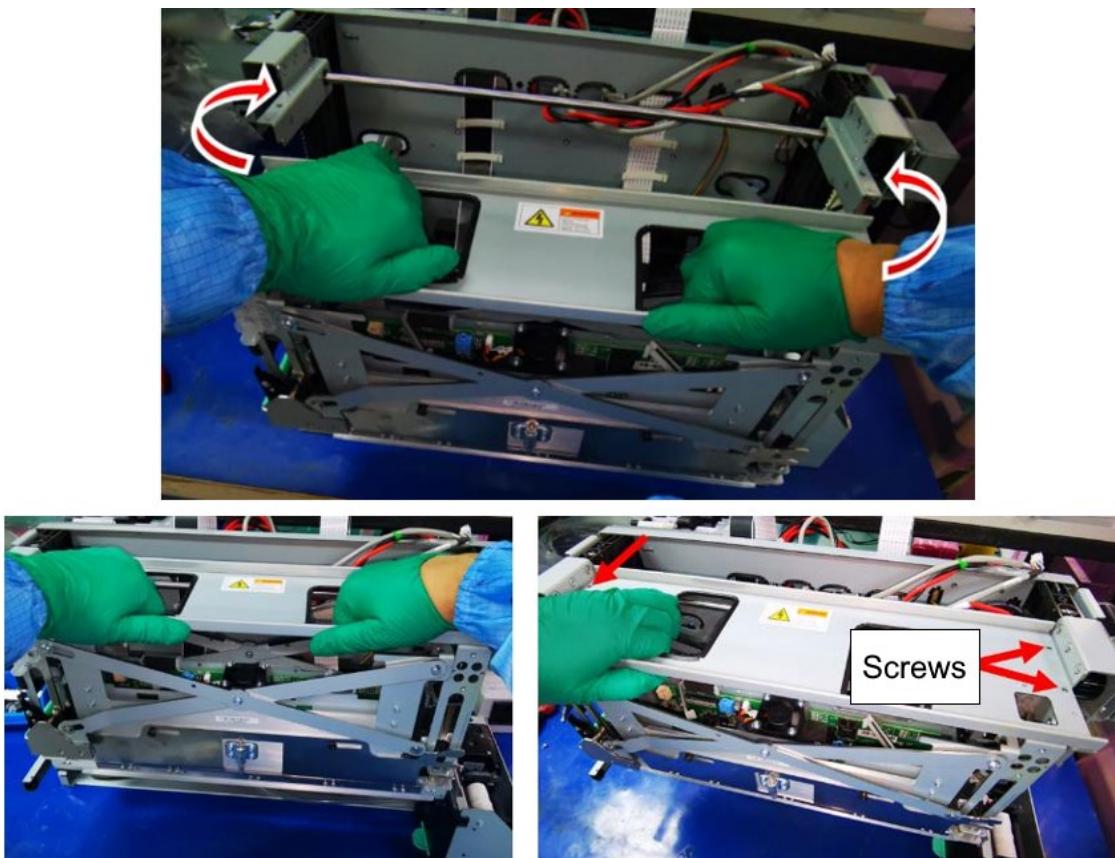
3. Route the corresponding tubes and cables through the holes in the Print Module frame.

Figure 83 – Route Tubes and Cables

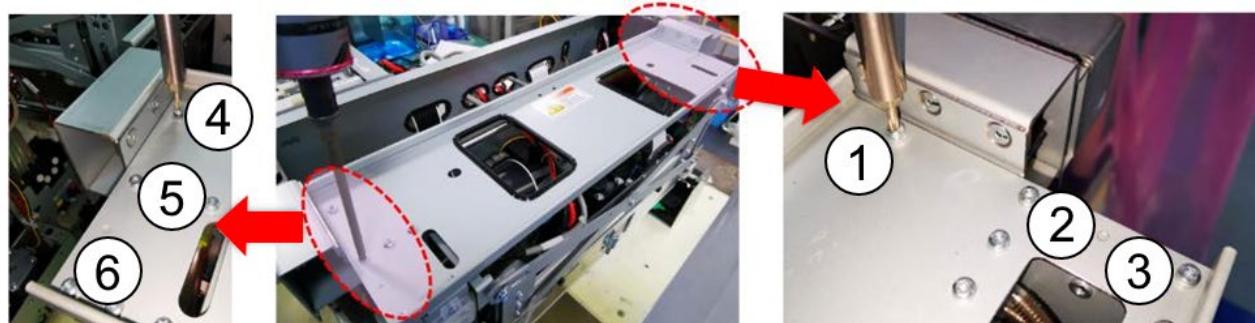


4. Hold the top plate of the Printhead Cradle with two hands, lift it, and carefully place it on both ends of the Print Module lift arm (left and right). Adjust the position until the screw holes are aligned.

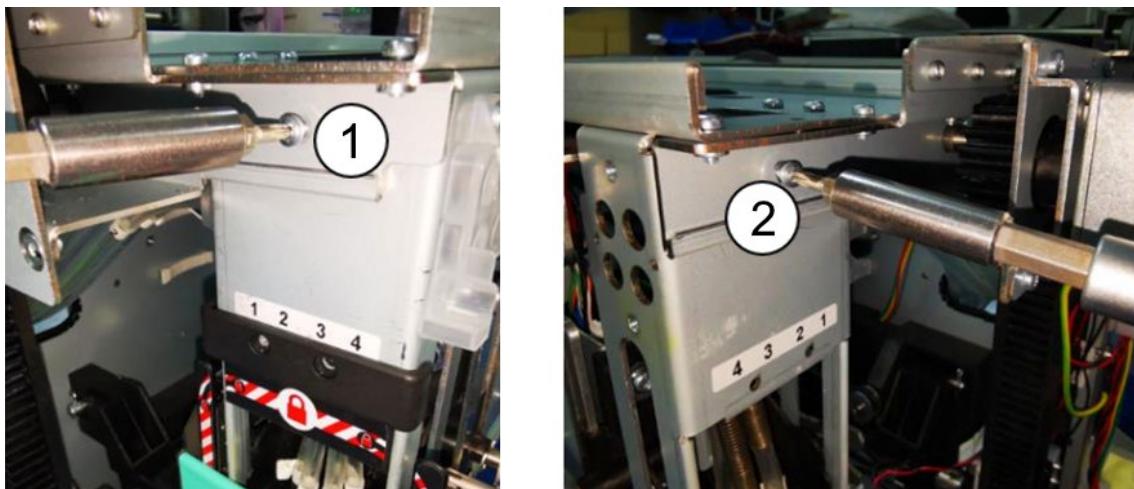
Figure 84 – Top Plate Alignment



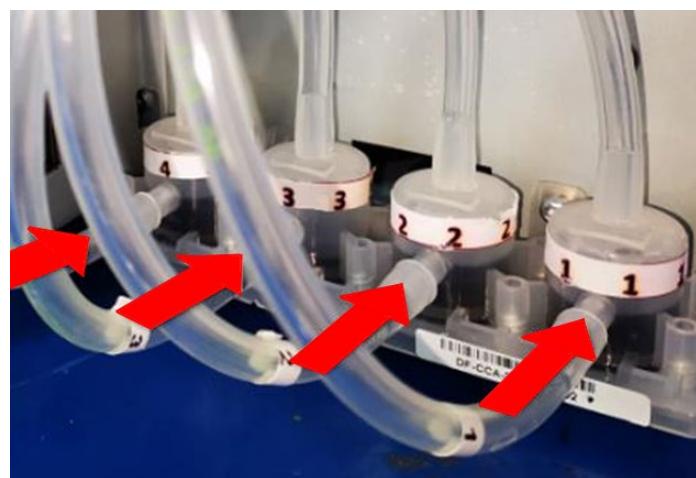
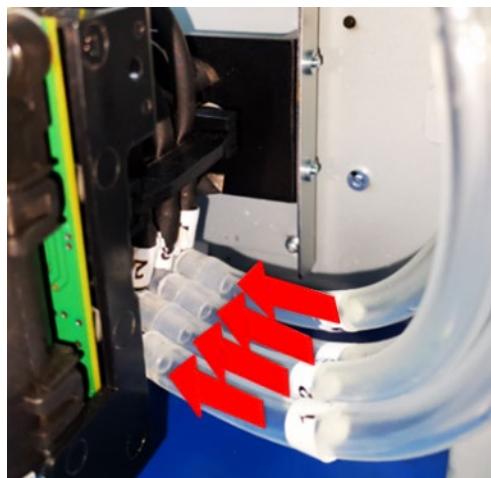
5. Tighten the six (6) screws mounting screws to secure the Printhead Cradle to the Print Module Lift mechanism.

Figure 85 – Printhead Cradle Mounting Screws

6. Tighten two (2) screws; one on each side of the Printhead Cradle.

Figure 86 – Screws on Two Sides of Printhead Cradle

7. Remove the vinyl cap from one (1) Pinch Valve barb. Connect one (1) tube from the new Printhead Cradle to the Pinch Valve barb.
 - Remove 1 vinyl cap at a time, and immediately install the tube onto the Pinch Valve barb to minimize any possibility of contamination.
 - Apply LEG-1 on the inner side of the tubes before inserting it into Pinch Valve.
 - Repeat until all four (4) tubes are connected.
 - Make sure the correct color tubes are inserted to the Pinch Valve barbs.
 - Ensure no twisting of Pinch Valve tubes (black tubes underneath the Pinch Valve).
8. Remove the vinyl cap from one of the Compliance Chamber barbs.
9. Immediately connect the tube from the new Printhead Cradle to the Compliance Chamber barbs ([Figure 87](#)) and repeat this process on tube at a time until all four (4) tubes are connected.

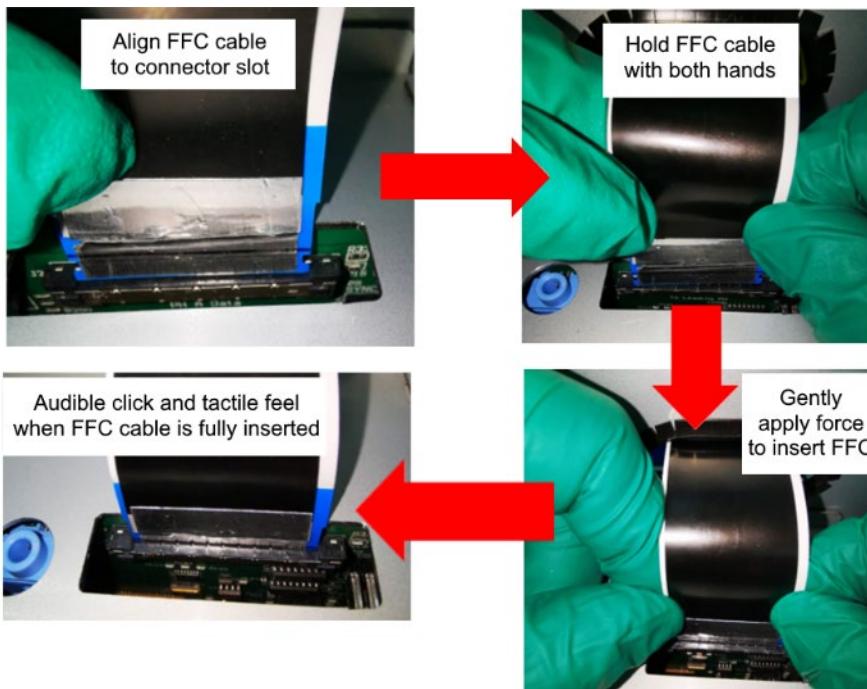
Figure 87 – Tubing Installed on Pinch Valve Barbs and Compliance Chamber Barbs

10. Connect all the cables (Power, Data and FFC) from the Datapath PCA and Mechanical Controller Board to the new Printhead Cradle.

CAUTION: To avoid damaging the FFCs during installation see [Figure 88](#).

11. To install the Leading FFC:

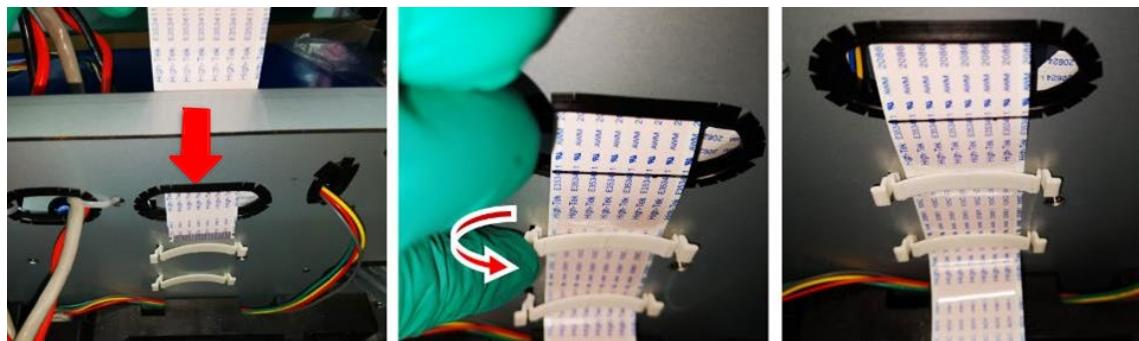
- Carefully align the end of the FFC with the open slot of the connector. For proper connection and to avoid damage, ensure that the edge of the FFC is parallel to the connector and not tilted to one side or at an angle.
- Hold the end of the FFC with both hands and gradually apply gentle force to insert the FFC into the connector. You will be able to feel a click when the FFC is correctly inserted.
- Repeat the process for the other FFC.

Figure 88 – Inserting the FFC

12. At the right side, attach the Lagging FFC to the connector on the Printhead Power PCA:

- Insert the cable into the hole in the rear of the Print Module frame.
- Secure it with the FFC holders.

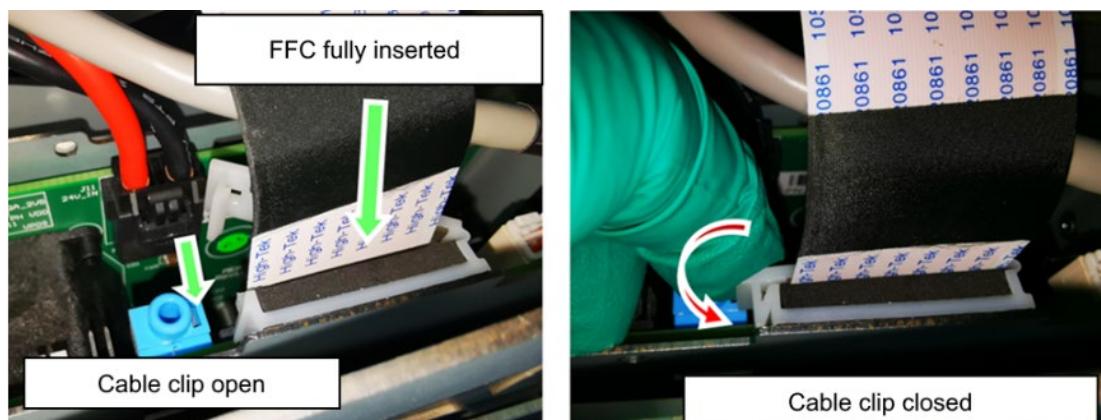
Figure 89 – Lagging FFC (Right Side of Print Module)



13. Insert the FFC into the connectors on the Printhead Power PCA, by following the FFC insertion steps in [Figure 88](#).

14. Close the cable clip around the FFC ([Figure 90](#)).

Figure 90 – Lagging FFC Inserted (Right Side)



15. On the left Side, attach the leading FFC to the connector on the Printhead Power PCA ([Figure 91](#)). Insert the cable into the hole in the rear of the Print Module frame and secure it with the FFC holder.

Figure 91 – Leading FFC Installed (Left Side of Print Module)



16. Insert the FFC into the connectors on Printhead Power PCA according to the steps in [Figure 88](#).
17. Snap the cable clip together ([Figure 92](#)).

Figure 92 – Leading FFC Clipped in Place (Left Side)

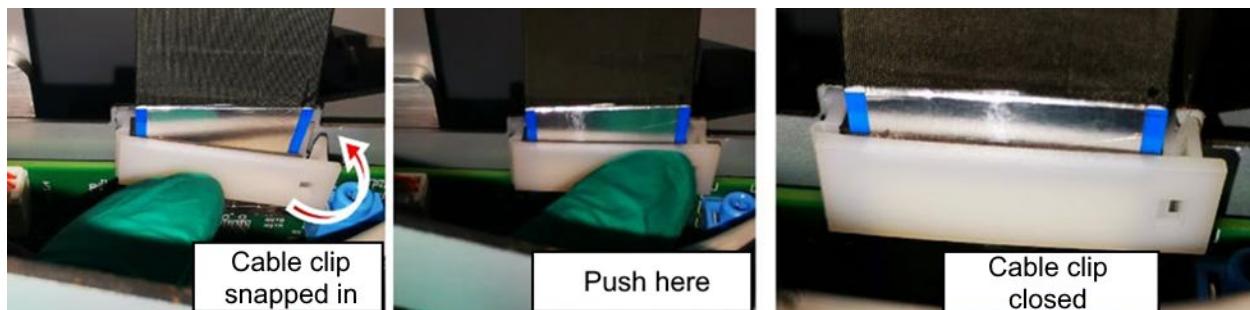
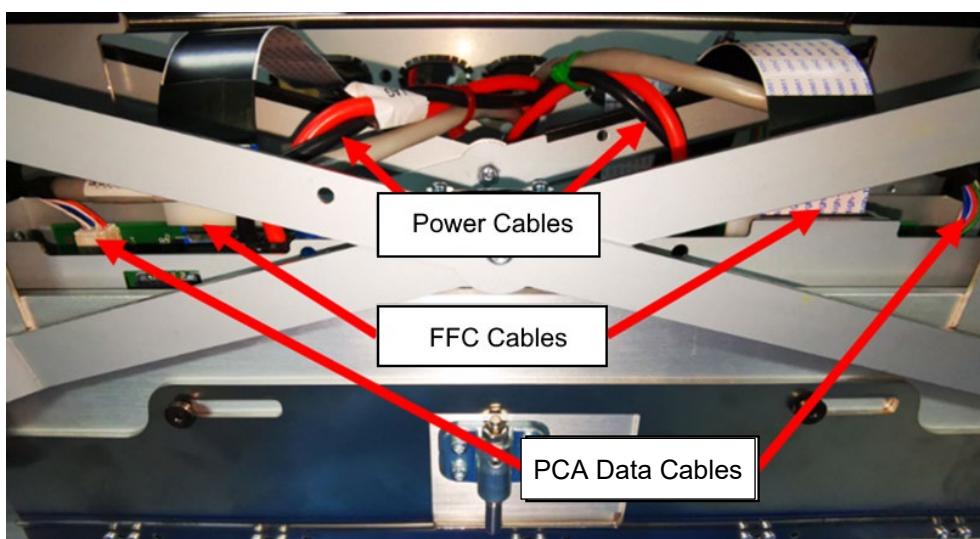


Figure 93 – Cables to the Printhead Cradle



18. The PCA data cables will also need to be routed through specific areas and secured with cable ties to ensure they do not interfere with any of the moving parts of the printhead+ cradle. The cable routing is shown in the following figures.

Figure 94 – PCA Data (I2C) Cable Routing (First Cable Tie),



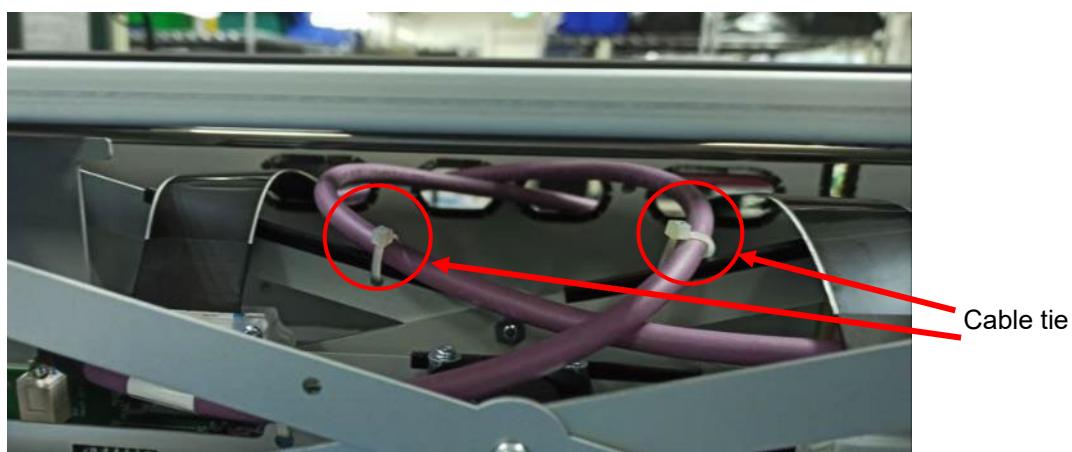
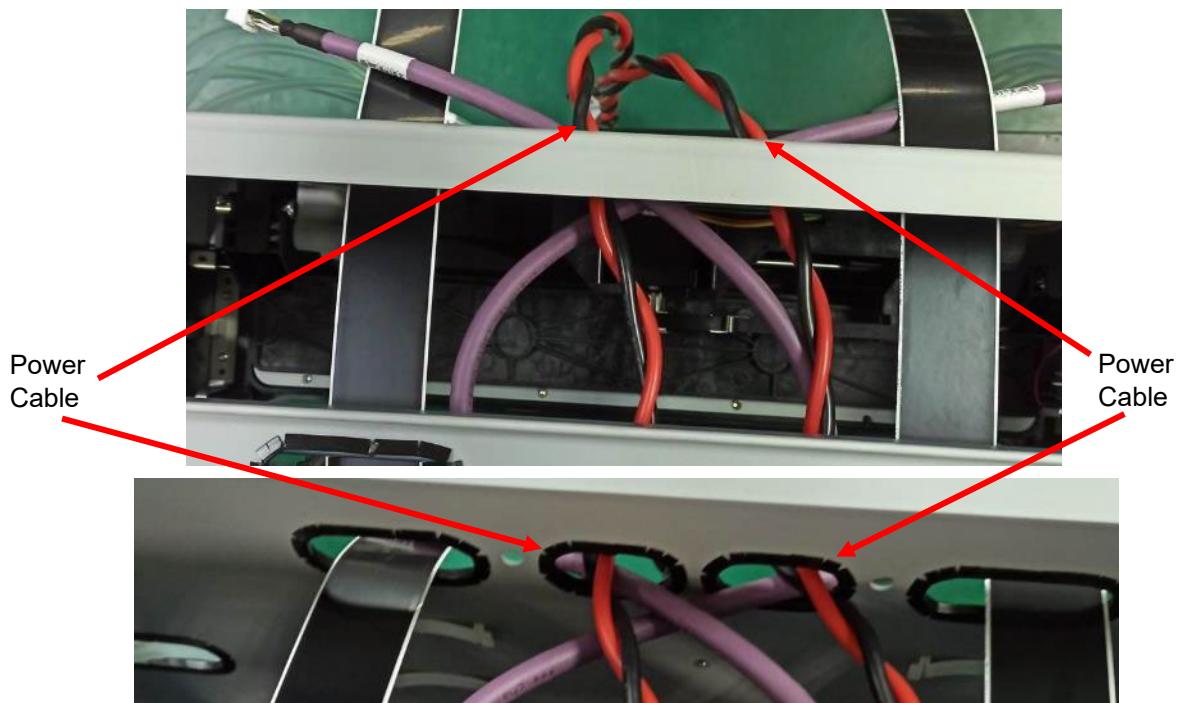
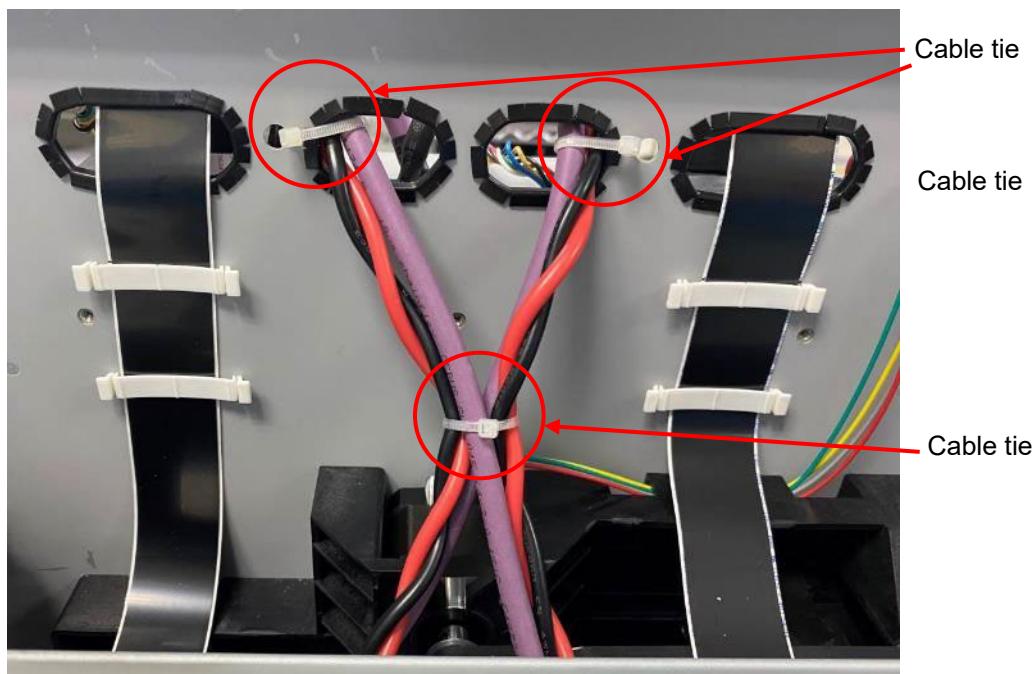
Figure 95 – PCA Data (I2C) Cable Routing**Figure 96 – PCA Data (I2C) Cable Routing and Cable Ties****Figure 97 – Power Cable Routing**

Figure 98 – PCA Data (I2C) Cable Routing (Seventh and Eight Cable Ties)

9.5 Testing

1. Install the Setup Printhead into the DuraFlex system.
2. Power on the system.
3. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

4. Check that the Printhead Lift Mechanism is working properly by moving it to RAISE, CAP, and PRINT positions. Repeat 5 times for each.
5. Check that the Pinch Valve is working properly, and it can move to the INK, CLOSED, and AIR positions.
6. With the Setup Printhead in the system, prime the system and observe if the priming is successful and all ink tubes are filled with ink.
7. Check for any leakage of ink at all barbs of the Pinch Valve and the Compliance Chamber.
8. Deprime the system.
9. Remove the Setup Printhead. Place the Printhead into the storage case properly.
10. Insert the original Printhead that is used before the Printhead Cradle replacement and prime it.

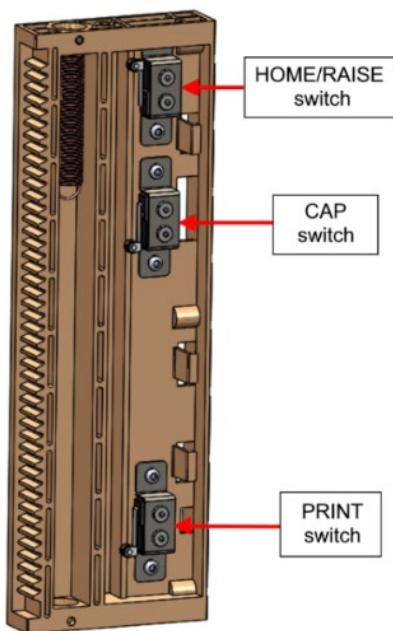


10 EASM Lift Home Switch Replacement

This section provides replacement instructions for the PHLM EASM Lift Home switch (PN 10005284).

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions on how to input software commands where required.

Figure 99 – EASM Lift Home/Raise Switch



10.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

10.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 10 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
EASM Lift Home Switch with cable and metal bracket – PN 10005284	1	Part
T10 – M3 screwdriver (with ~200 mm extension)	1	Tool
Diagonal cutter	1	Tool
Cable tie	2	Supply
Permanent marker, silver	1	Supply



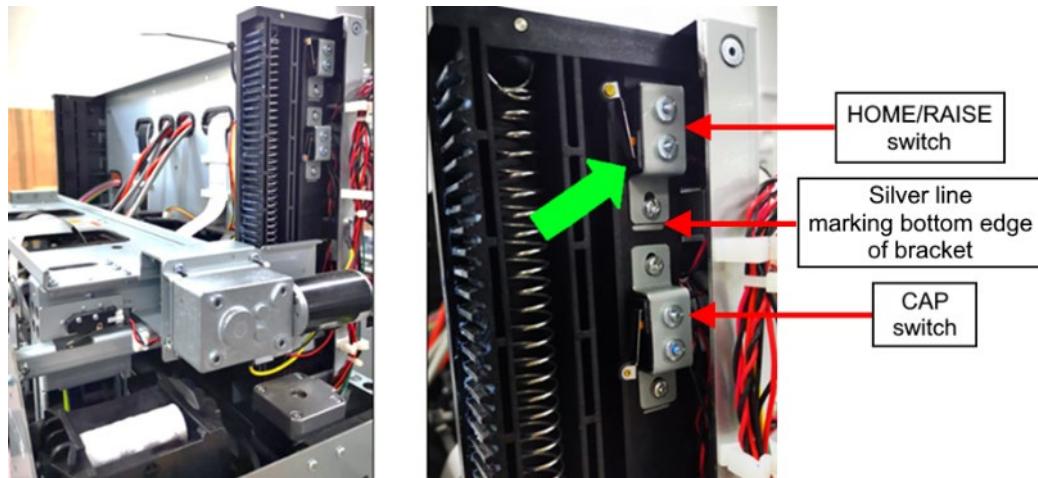
10.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

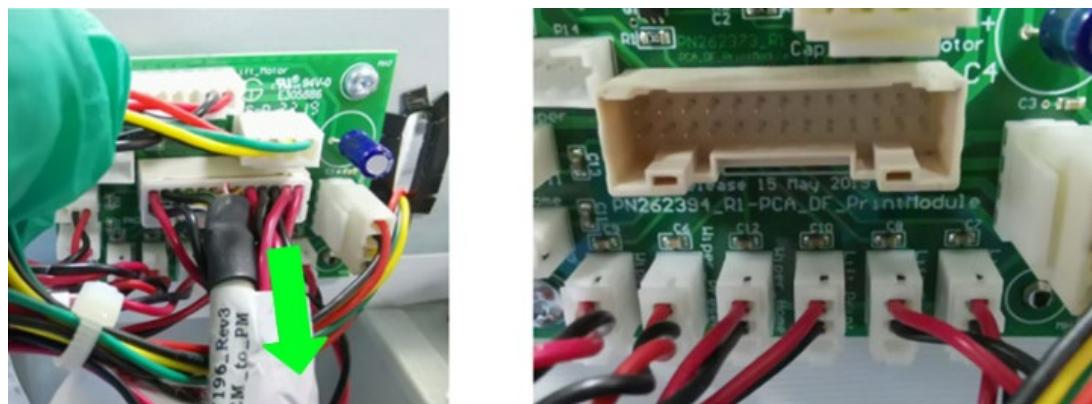
1. Remove any covers or panels to expose the top of the Print Module and create sufficient access to the components.
2. Move the Printhead Cradle to PRINT position, then power down the system.

Figure 100 – Lift Home Switch



3. Use a silver permanent marker to draw a line along the bottom edge of the Home Switch bracket. This will be used for alignment when installing the switch later.
4. Disconnect the Electrical Module to Print Module cable from the Print Module PassThru PCA to expose the Lift Home Switch connector for easier cable removal ([Figure 101](#)).

Figure 101 – Remove Electrical Module to Print Module Cable for Access



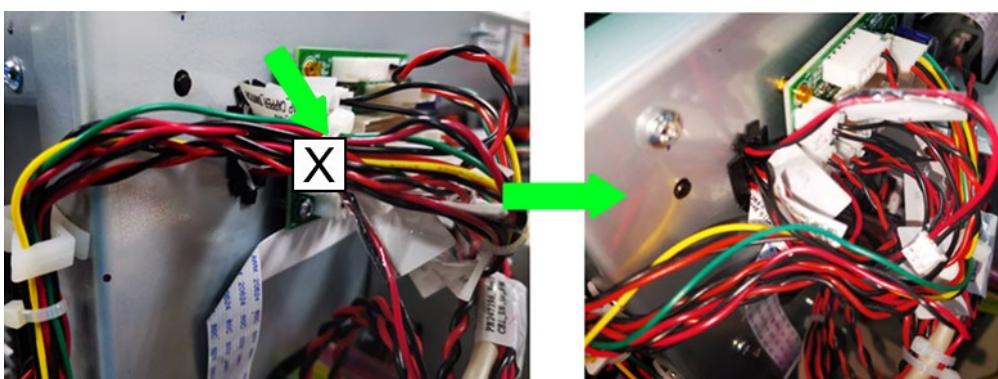
5. Disconnect the Lift Home Switch connector from the Print Module PassThru PCA ([Figure 102](#)).

Figure 102 – Lift Home Switch Connector



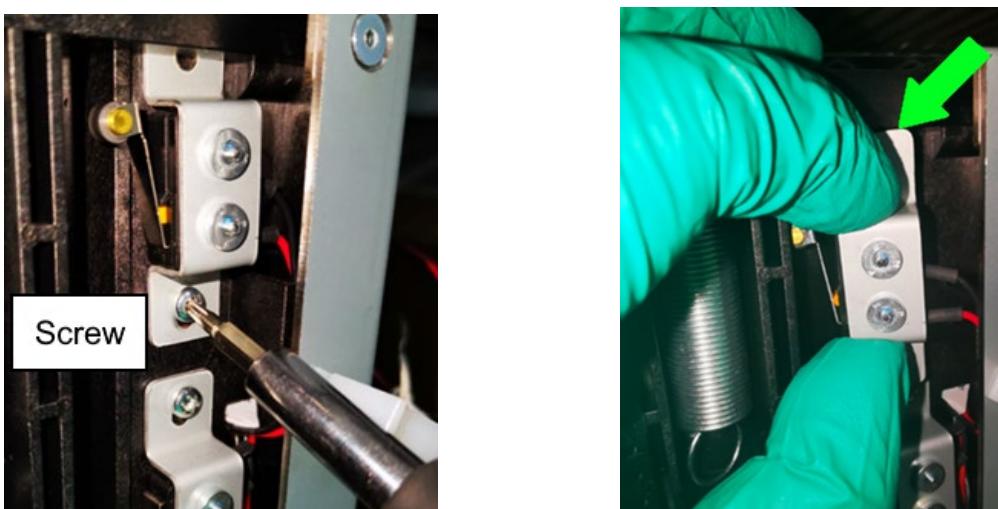
6. Use diagonal cutters to carefully cut and remove the cable tie to release the switch cables. The cut location is shown in "X" in [Figure 103](#). Be careful not to cut the wire insulation.

Figure 103 – Cable Tie Cut Location



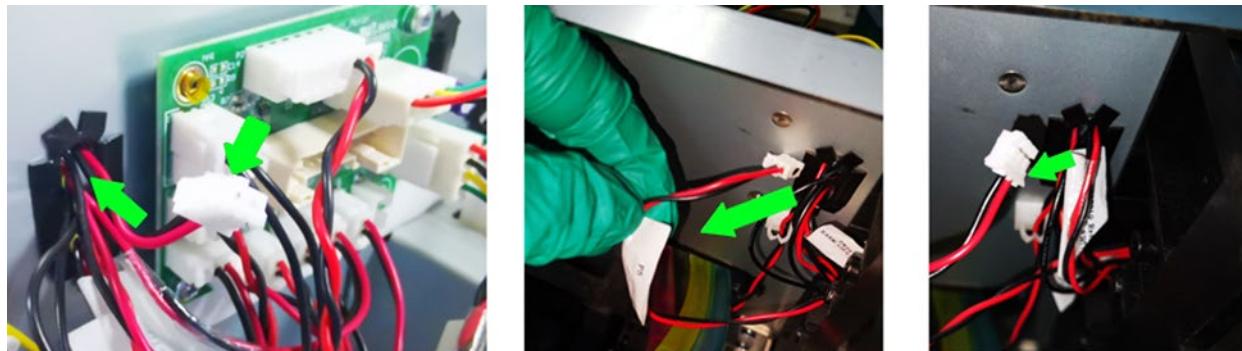
7. Loosen the screw securing the Lift Home Switch and metal bracket ([Figure 104](#)).

Figure 104 – Lift Home Switch Bracket Mounting Screw and Bracket

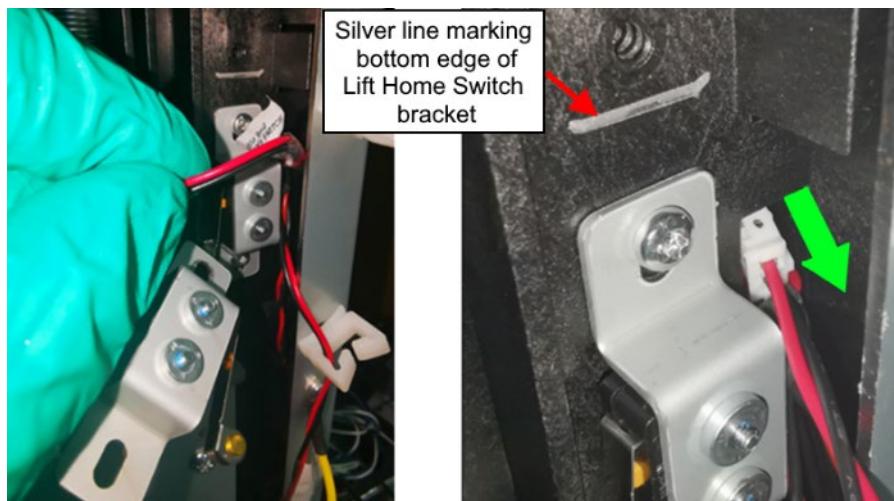


8. Carefully remove the Lift Home Switch and bracket assembly.
9. From the top of the Print Module, locate the Lift Home Switch cable, and carefully pull it through the hole in the Print Module metal frame ([Figure 105](#)).



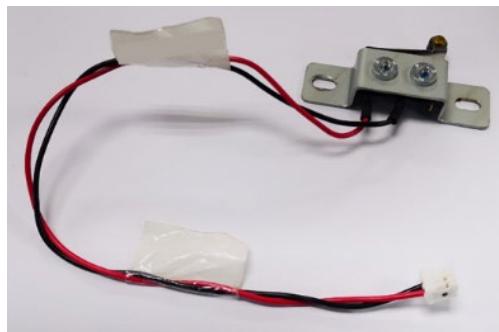
Figure 105 – Pull the Lift Home Switch Cable

10. Pull the cable out from the gap between the lift plastic rack and Print Module metal frame. Discard the faulty switch according to local disposal recommendations ([Figure 106](#)).

Figure 106 – Pull Cable Out of Gap

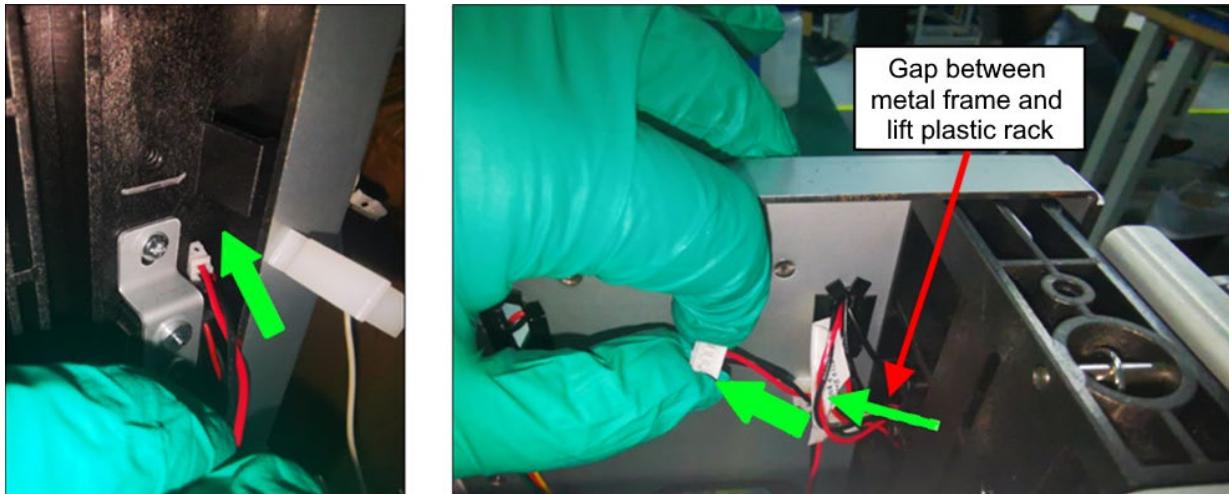
10.4 Installation

1. Visually inspect the new Lift Home Switch assembly to confirm there is no damage to the switch or cable. Ensure that the switch lever is not deformed or bent. If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 107 – Lift Home Switch Assembly

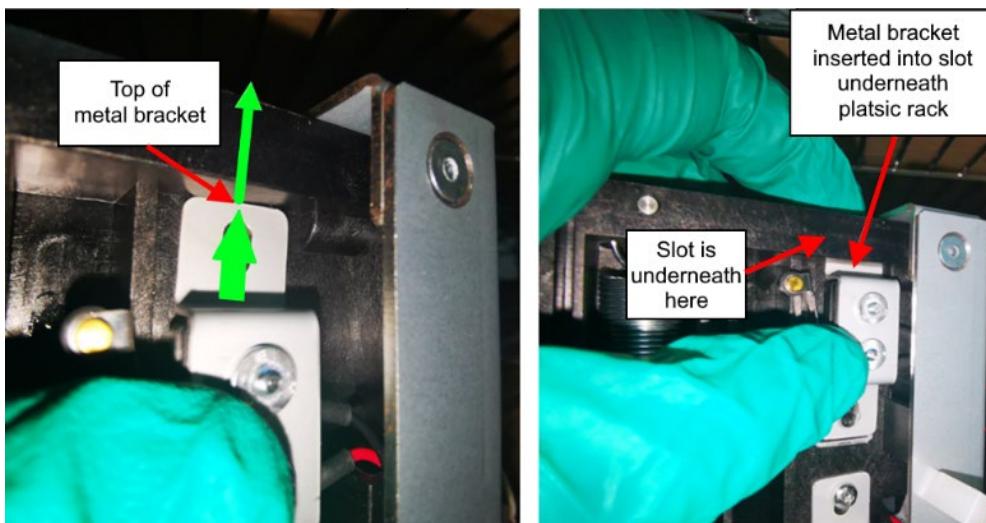
2. Route the Lift Home Switch cable to the back of the Print Module following the path of the original cable. Insert the cable connector into the gap between Print Module metal frame and the lift plastic rack.
3. From the top of the Print Module, gently pull the connector out of the gap.

Figure 108 – Lift Home Switch Cable Routing



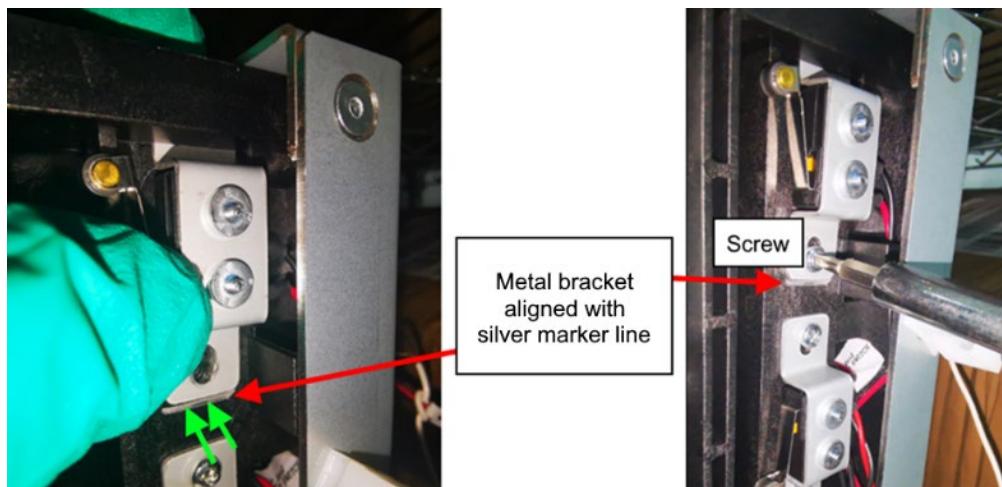
4. Insert the top of the metal switch bracket into the slot.

Figure 109 – Switch Bracket in Slot



5. Align the bottom edge of the bracket with the silver marker line on the lift rack ([Figure 110](#)).
6. Hold the switch bracket in place while tightening the mounting screw.

Figure 110 – Switch Bracket Alignment



7. Insert the cable connector into the hole in the Print Module and gently pull it out from the rear of the Print Module metal frame.

Figure 111 – Cable Connector Routed Through Print Module Frame



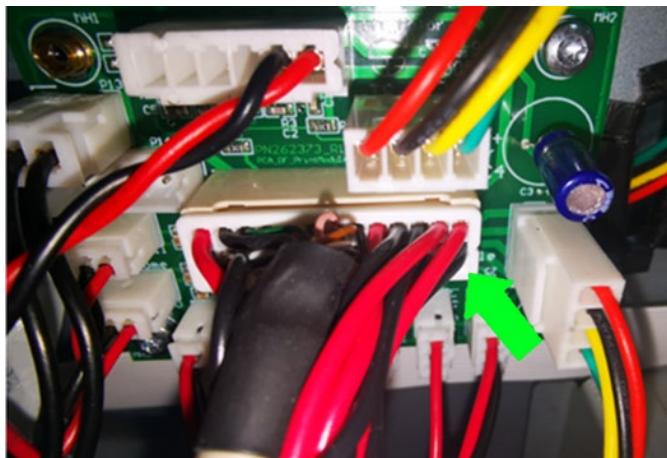
8. Connect the Lift Home Switch cable to the connector on the Print Module PassThru PCA.

Figure 112 – Lift Home Switch Cable Connected



9. Connect the Electrical Module to Print Module cable to the connector on the Print Module PassThru PCA.

Figure 113 – Electrical Module to Print Module Cable Connected



10. Bundle the cables together, secure with a cable tie, and cut off the excess tail.

10.5 Testing

1. Power up the DuraFlex system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

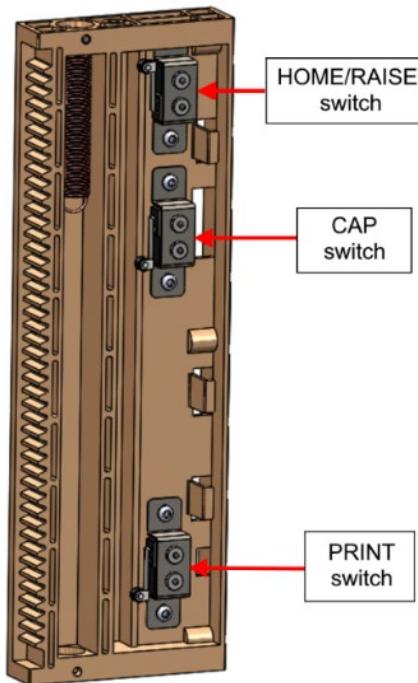
3. Move the Printhead Cradle to RAISE, CAP, and PRINT positions.
4. If there is no error, the replacement is successful.



11 EASM Lift Cap Switch Replacement

This section provides replacement instructions for the PHLM EASM Lift Cap Switch (PN 10005285).

Figure 114 – EASM Lift CAP Switch



11.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

11.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 11 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
EASM Lift Cap Switch with cable and metal bracket – PN 10005285	1	Part
T10 – M3 screwdriver (with ~200 mm extension)	1	Tool
Diagonal cutter	1	Tool
Cable tie	2	Supply
Permanent marker, silver	1	Supply



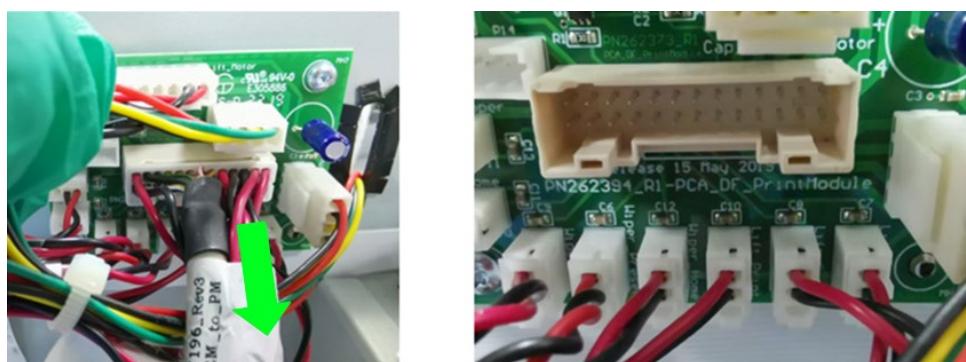
11.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

1. Remove any covers or panels to expose the top of the Print Module and create sufficient access to the components.
2. Move the Printhead Cradle to the RAISE Position, then power down the system.
3. Use a silver permanent marker to draw a line along the bottom edge of the Cap Switch bracket. This will be used for alignment when installing the switch later.
4. Disconnect the Electrical Module to Print Module cable from the Print Module PassThru PCA to expose the Lift Cap Switch connector for easier cable removal.

Figure 115 – Disconnect Electrical Module to Print Module Cable



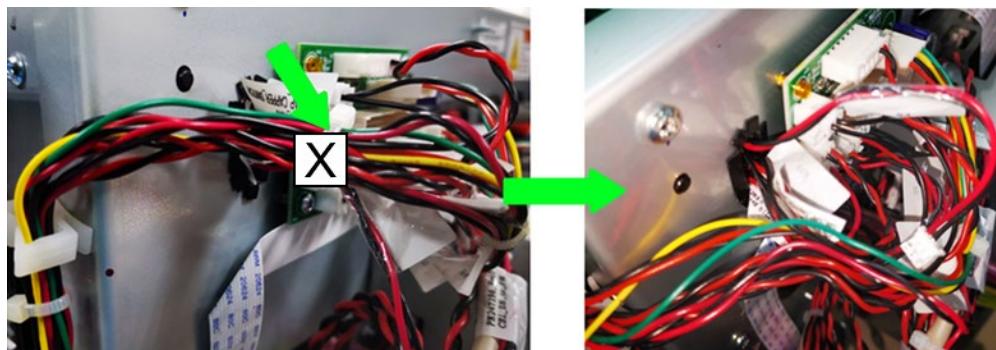
5. Disconnect the Lift Cap Switch connector from the Print Module PassThru PCA.

Figure 116 – Lift Cap Switch Connector

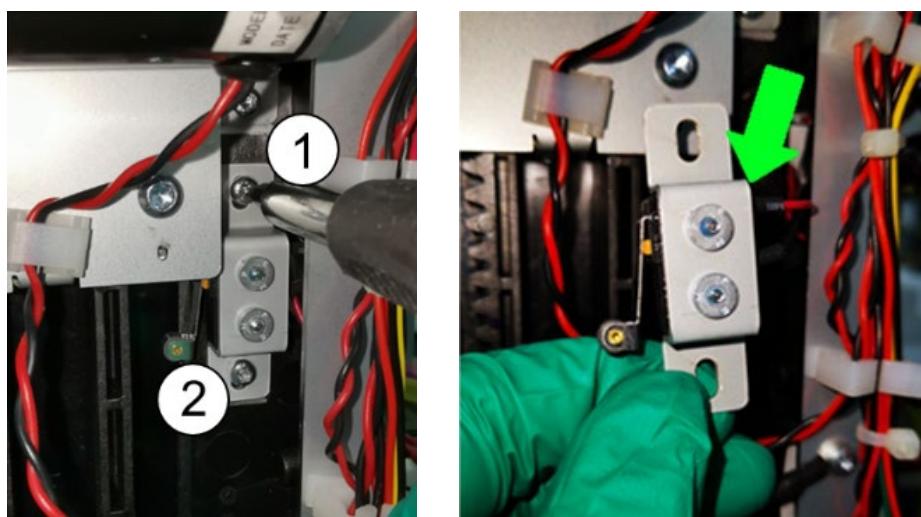


6. Use diagonal cutters to carefully cut and remove the cable tie to release the switch cables. The cut location is shown in "X" in the figure below. Be careful not to cut the wire insulation.

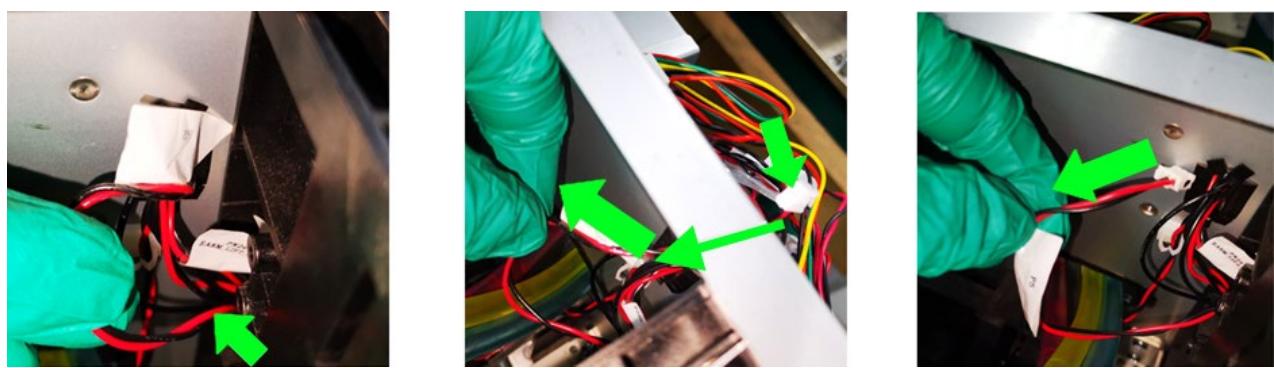


Figure 117 – Cut Cable Tie

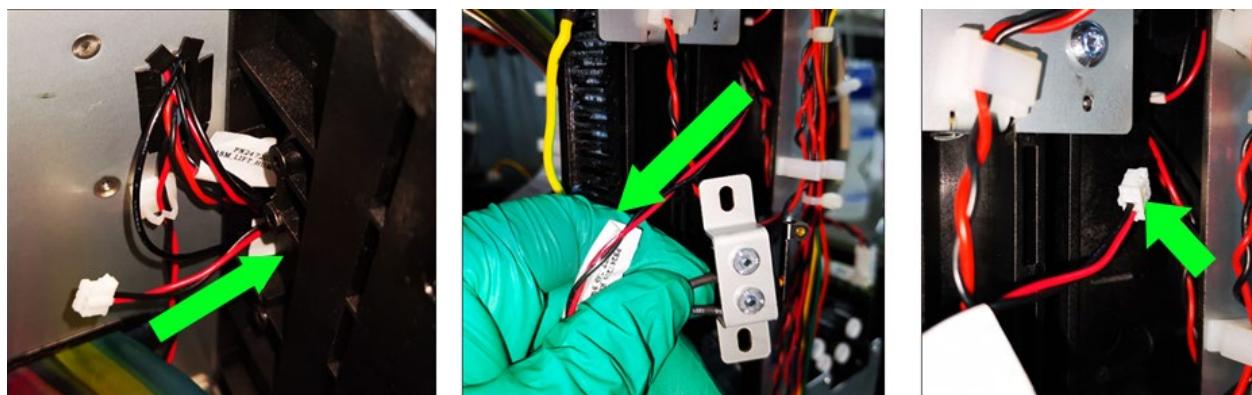
7. Loosen the two (2) screws securing the Lift Cap Switch metal bracket and carefully remove the Lift Cap Switch and bracket assembly ([Figure 118](#)).

Figure 118 – Lift Cap Switch Bracket Mounting Screws and Metal Bracket

8. From the top of the Print Module, carefully pull the Lift Cap Switch cable, through the hole in the Print Module frame ([Figure 119](#)).

Figure 119 – Route the Lift Cap Switch Cable

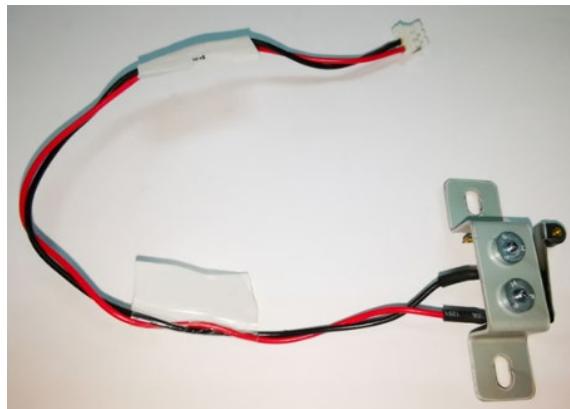
9. Pull the cable out from the gap between lift rack and Print Module frame ([Figure 120](#)).

Figure 120 – Pull Cable Out of Gap

10. Discard the faulty switch assembly according to local disposal recommendations.

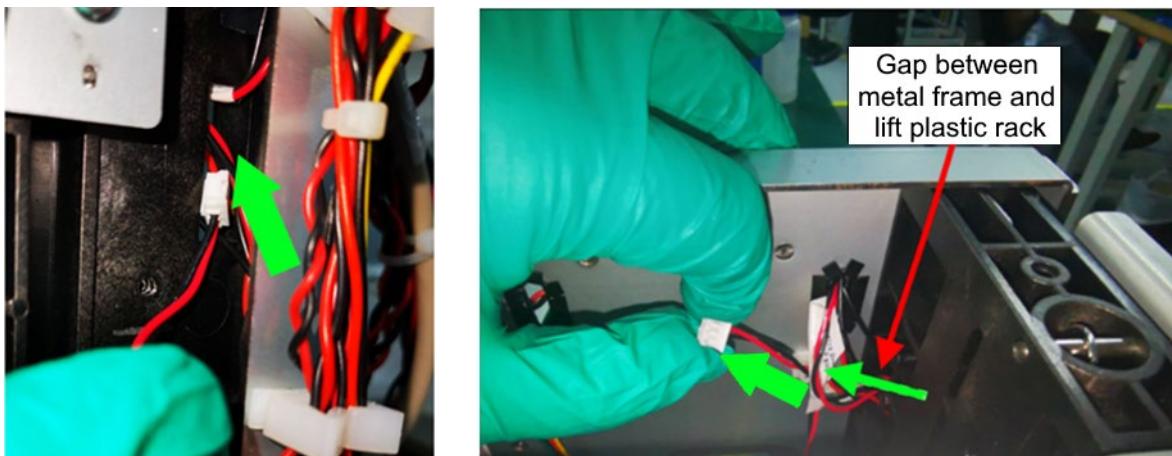
11.4 Installation

1. Visually inspect the new Lift Cap Switch assembly to confirm there is no damage to the switch or cable. Ensure that the switch lever is not deformed or bent. If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

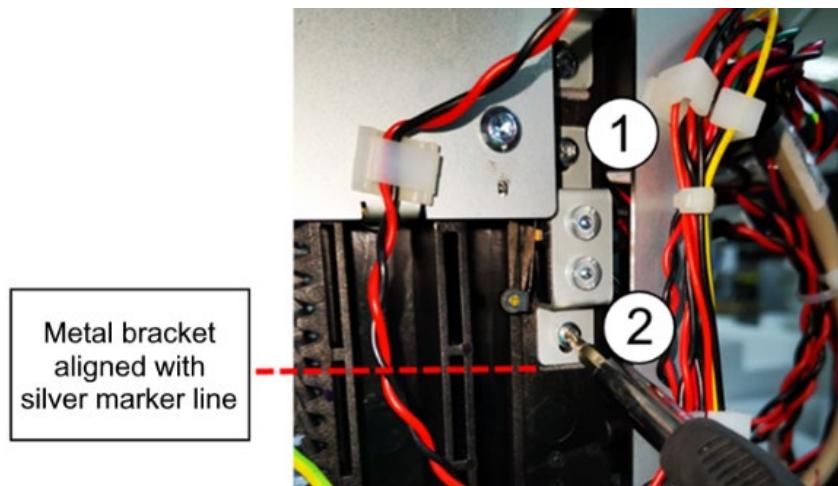
Figure 121 – Lift Cap Switch

2. Route the Lift Cap Switch cable to the rear of the Print Module following the path of the original cable. Insert the cable connector into the gap between Print Module metal frame and the lift plastic rack ([Figure 122](#)). From the top of the Print Module, ease the connector out of the gap.

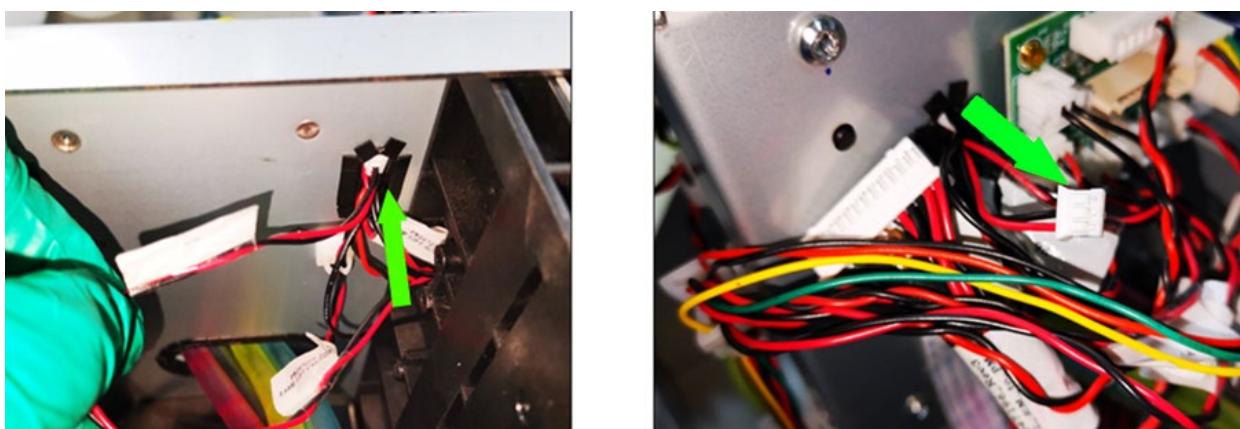


Figure 122 – Lift Cap Switch Cable Routing

3. Align the bottom edge of the metal bracket with the silver marker line on the lift plastic rack.
4. Hold the switch bracket in place while tightening the two (2) mounting screws.

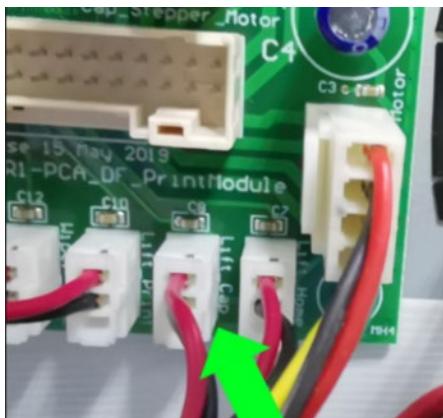
Figure 123 – Lift Cap Switch Mounting Screws

5. Insert the cable connector into the hole in the Print Module and gently pull it out from the rear of the Print Module metal frame.

Figure 124 – Cable Connector Routed Through Print Module Frame

6. Connect the Lift Cap Switch cable to the connector on the Print Module PassThru PCA ([Figure 125](#)). Connect the cable between Electrical Module and Print Module back to the connector on the Print Module PassThru PCA.

Figure 125 – Lift Cap Switch Connector on PCA



7. Bundle the cables together and secure them with a cable tie, cutting off any excess cable tie.

11.5 Testing

1. Power up the DuraFlex system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

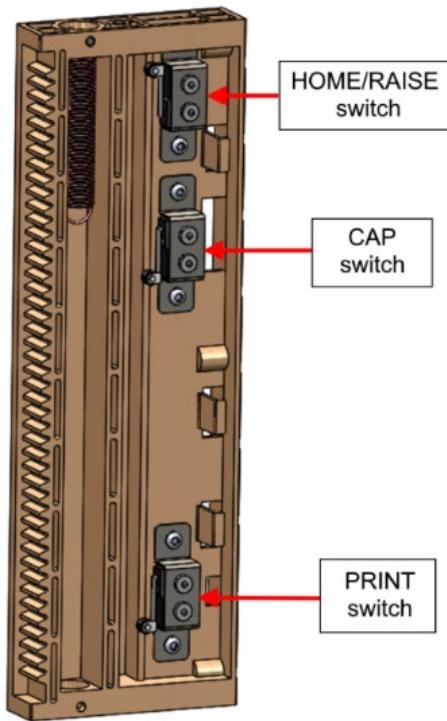
3. Move the Printhead Cradle to RAISE, CAP, and PRINT positions.
4. If there is no error, the replacement is successful.



12 EASM Lift Print Switch Replacement

This section provides replacement instructions for the PHLM EASM Lift Print Switch (PN 10005286).

Figure 126 – EASM Lift Print Switch



12.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

12.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 12 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
EASM Lift PRINT Switch with cable and metal bracket – PN 10005286	1	Part
T10 – M3 screwdriver (with ~200 mm extension)	1	Tool
Diagonal cutter	1	Tool
Cable tie	2	Supply
Permanent marker, silver	1	Supply



12.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

1. Remove any covers or panels to expose the top of the Print Module and create sufficient access to the components.
2. Move the Printhead Cradle to RAISE Position, then power down the system.
3. Use a silver permanent marker to draw a line along the bottom edge of the Print Switch bracket. This will be used for alignment when installing the switch later.
4. Disconnect the Electrical Module to Print Module cable from the Print Module PassThru PCA to expose the Lift Print Switch connector for easier cable removal.

Figure 127 – Disconnect Electrical Module to Print Module Cable



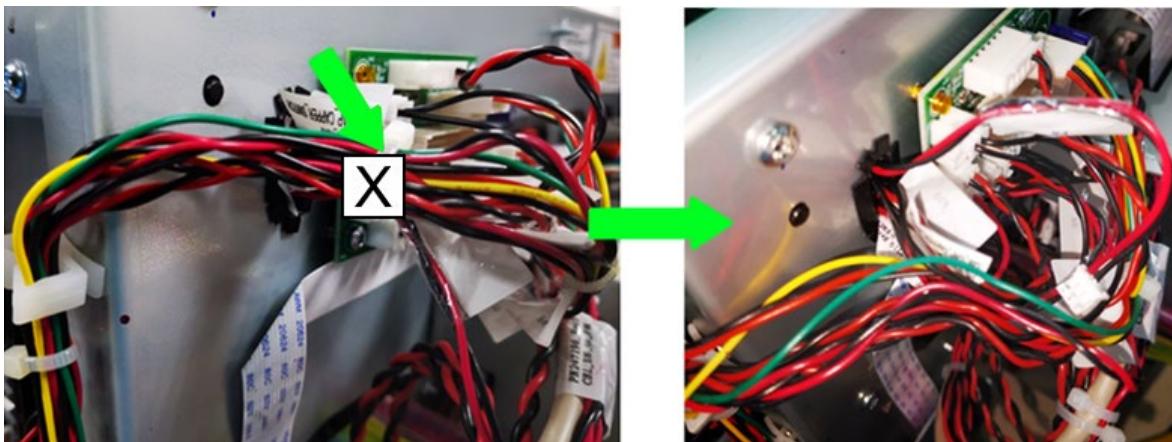
5. Disconnect the Lift Print Switch connector from the Print Module PassThru PCA.

Figure 128 – Lift Print Switch Connector



6. Use diagonal cutters to carefully cut and remove the cable tie to release the switch cables. The cut location is shown in "X" in the figure below. Be careful not to cut the wire insulation.

Figure 129 – Cut Cable Tie



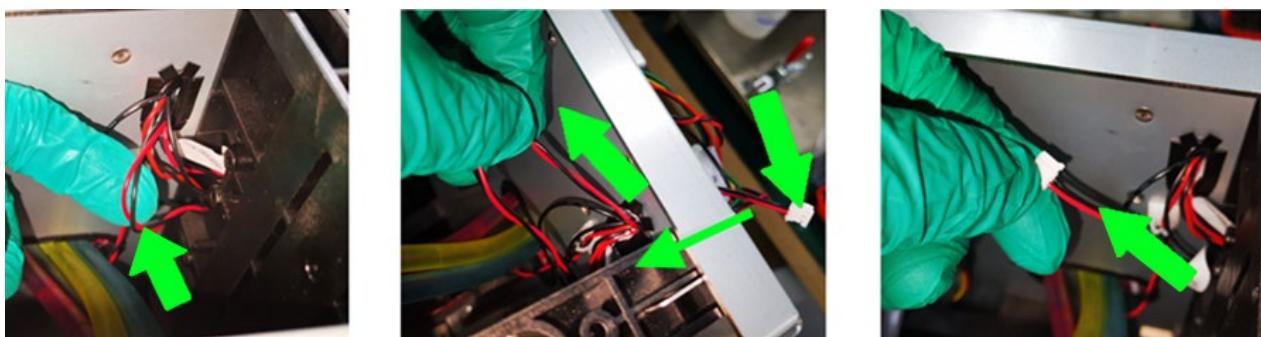
7. Loosen the two (2) screws securing the Lift Print Switch metal bracket.
8. Carefully remove the Lift Print Switch and bracket assembly.

Figure 130 – Lift Print Switch Mounting Screws and Removal



9. From the top of the Print Module, carefully pull the Lift Print Switch cable through the hole in the Print Module frame ([Figure 131](#)).

Figure 131 – Pull the Lift Print Switch Cable



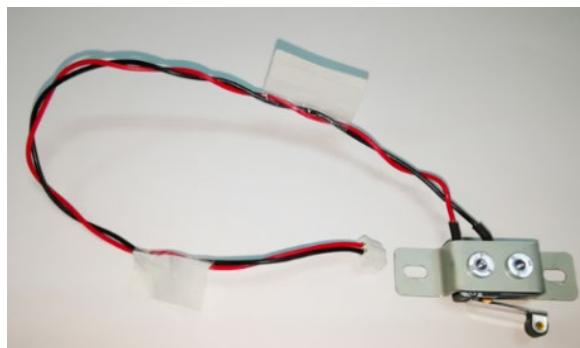
10. Pull the cable out from the gap between lift plastic rack and Print Module metal frame.

Figure 132 – Pull Cable Out of Gap

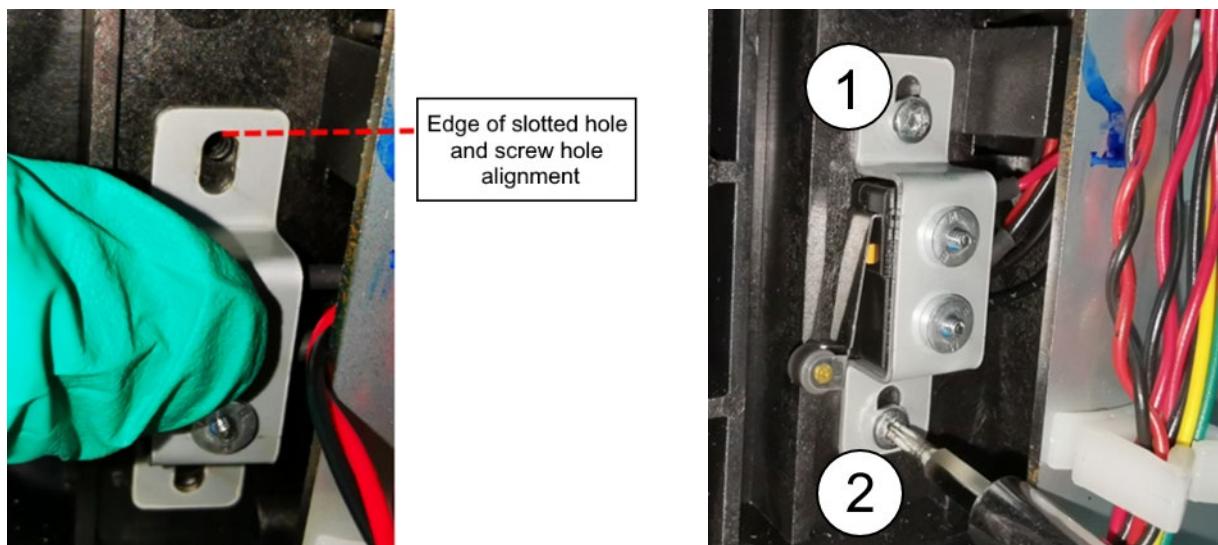
11. Discard the faulty EASM Lift Print Switch according to local disposal recommendations.

12.4 Installation

1. Visually inspect the new Lift Print Switch assembly to confirm there is no damage to the switch or cable. Ensure that the Sensor Lever is not deformed or bent. If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

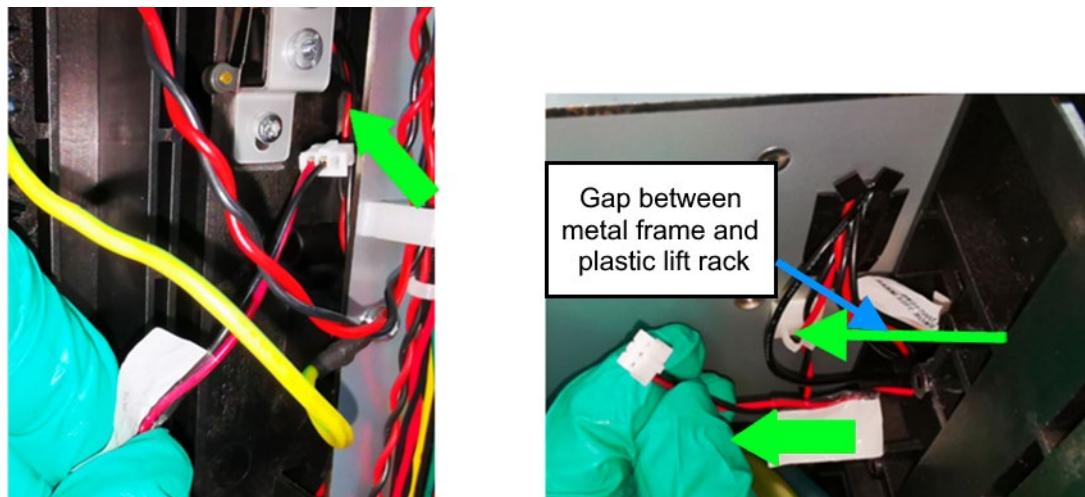
Figure 133 – Lift Print Switch Assembly

2. Align the edge of the slotted hole on the Lift Print Switch bracket with the screw hole edge.

Figure 134 – Metal Bracket Aligned Alignment and Installation

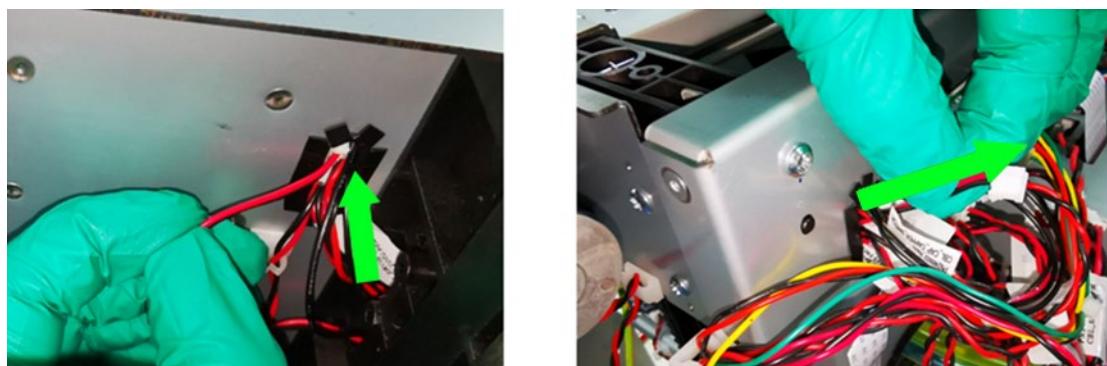
3. Hold the switch bracket in place while tightening the two (2) mounting screws.
4. Route the Lift Print Switch cable to the rear of the Print Module following the path of the original cable ([Figure 135](#)):
 - a. Insert the cable connector between Print Module metal frame and the lift plastic rack.
 - b. From the top of the Print Module, gently pull the connector out of the gap.

Figure 135 – Lift Print Switch Cable Routing



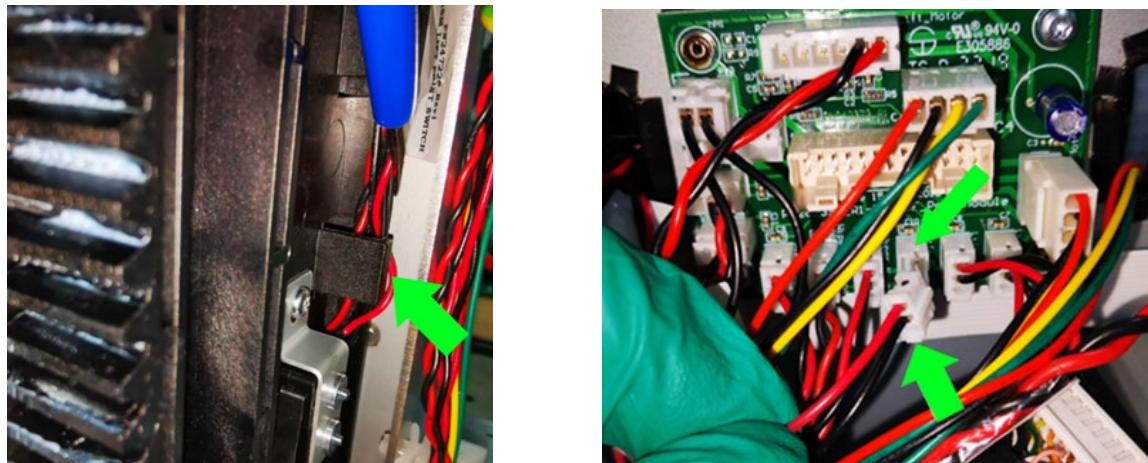
5. Insert the cable connector into the hole in the Print Module and gently pull it out from the rear of the Print Module metal frame ([Figure 136](#)).

Figure 136 – Cable Connector Routed Through Print Module Frame



6. On the inside of the Lift Rack, dress the cable into the cable holder on the rack.



Figure 137 – Cable Tucked into Holder and Lift Print Switch Connector

7. Connect the Lift Print Switch to the connector on the Print Module PassThru PCA.
8. Connect the cable between the Electrical Module and the Print Module to the connector on the Print Module PassThru PCA.

Figure 138 – Electrical Module and Print Module Cable Connected

12.5 Testing

1. Power up the DuraFlex system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Move the Printhead Cradle to RAISE, CAP, and PRINT positions.
4. If there is no error, the replacement is successful.



13 Datapath PCA Replacement

This section provides replacement instructions for the Electronics Ross Board, also known as the Datapath PCA. The part number for this item is OEM-specific. Contact your Memjet representative for details.

Figure 139 – Datapath PCA



13.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

13.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

13.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 13 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
Datapath PCA – part number is OEM-specific	1	Part
Flat-head tweezer	1	Tool
T10 – M3 screwdriver (with 150-200 mm extension)	1	Tool
M3 nut driver (with 200-300 mm extension)	1	Tool
M6 standoff driver	1	Tool



13.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

1. Power down the system.
2. Wear an anti-static wrist strap when performing this procedure.
3. Disconnect the following cables.

Note: Some cable connectors are secured with a tab. If needed, press the tab to disengage it.

- 24V power cable (24V, ground and earth) (x3)
- 1G Ethernet cable (x1)
- 10G Ethernet cable (x1 if present)
- TOF sensor cable (x1 if present)
- Encoder cable (x1)
- Pinch Valve power cable (x1)
- Pinch Valve Flat Flexible Cable (FFC) (x1)
- Circulation Pump cables (x2)
- Printhead Power PCA power cables (x2)
- Printhead Power PCA data (I2C) cable (x2)
- Print Module Flat Flexible Cable (FFC) (x2)
- Print Module Passthru (x1)
- BIDS PassThru PCA cable (x1)
- Main board cable (x1)
- Fuse (x1)
- QIM (x1)

Figure 140 – Cables on the Left Side and Right Side

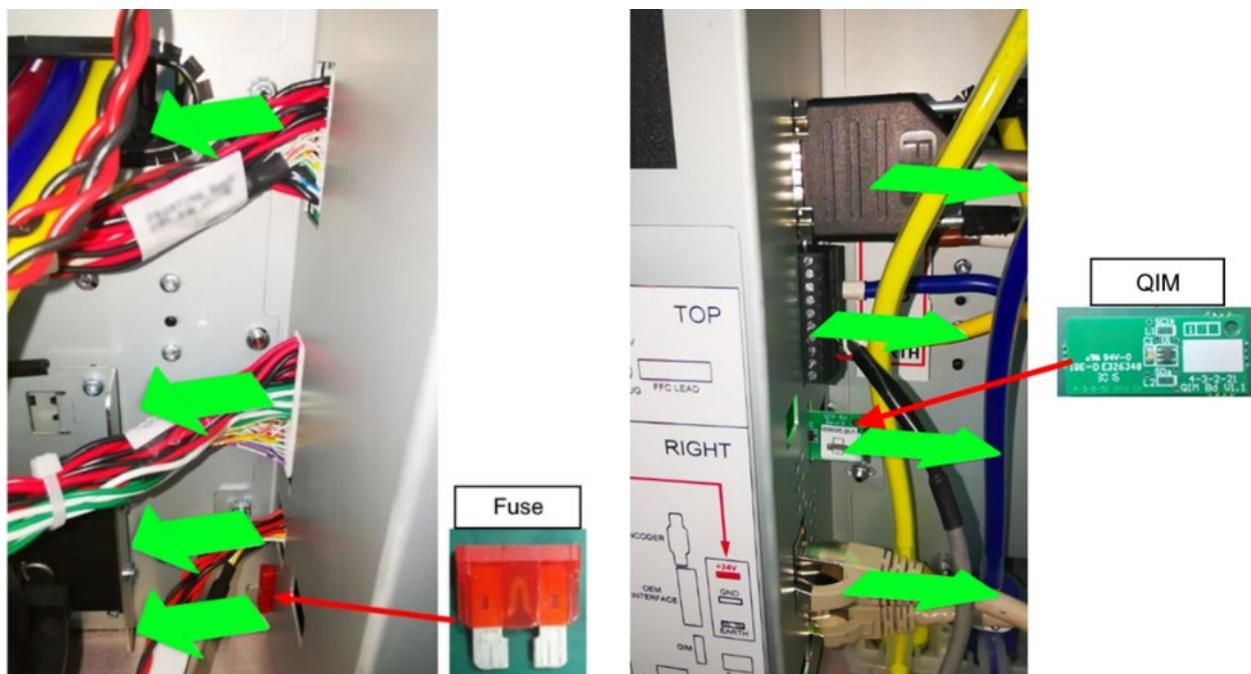


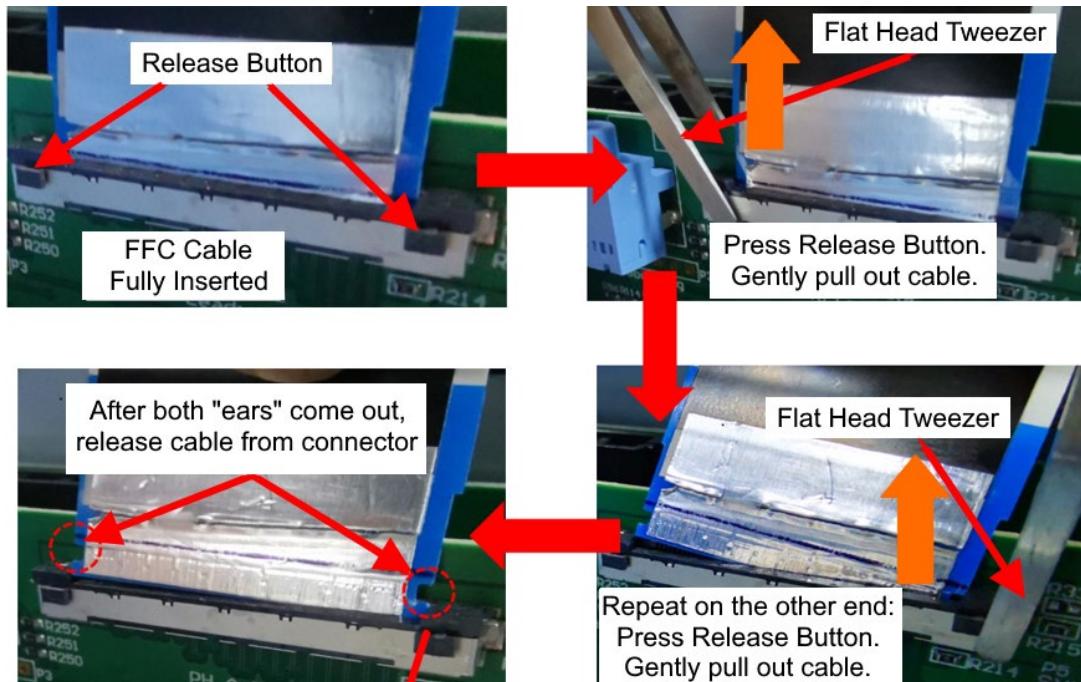
Figure 141 – Cables on Top of Electrical Module Enclosure

CAUTION: To avoid cutting wires or cables or damaging hardware, use appropriate tools that are not sharp for the next steps. Do not use a knife, razor blade, or scissors!

4. Disconnect the ends of both Electronics FFCs (leading and lagging) from the Electrical Module.

CAUTION: To avoid damaging the flat, flexible cables (FFCs), strictly follow the steps below ([Figure 142](#)).

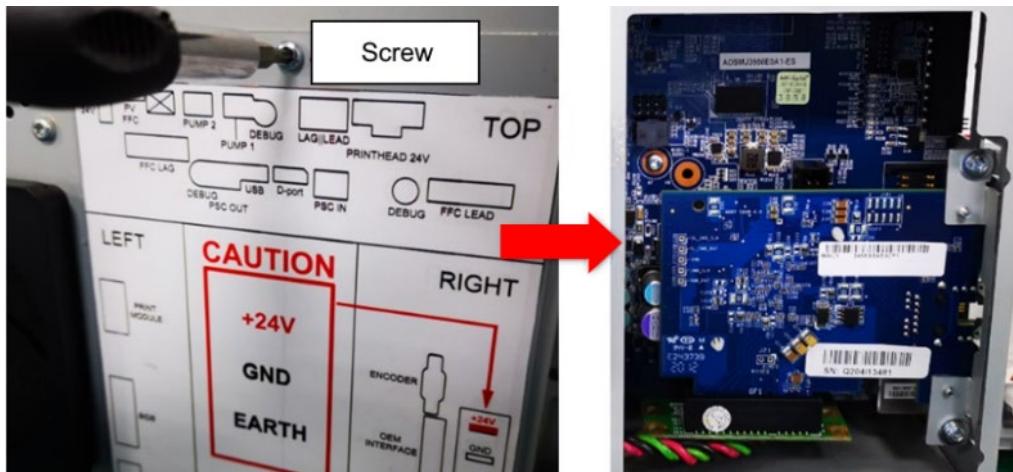
5. To disconnect the Print Module FFC. Use a flat-head tweezer (or similar tool) to release the FFC connectors.
6. Use tweezers to press down one of the release buttons on the FFC connector.
7. Apply slight force on the pressed side and gently pull on the FFC to disconnect it.
8. Repeat these steps to disconnect the other FFC.

Figure 142 – Remove Print Module FFC

9. If the Datapath PCA has a 10G card installed, perform the following steps:

- Loosen the screw to remove the Electronics Module Cover over the 10G card ([Figure 143](#)).

Figure 143 – Remove Cover over 10G Card



- Loosen the two (2) screws to remove the 10G card ([Figure 144](#)) and remove the card from the enclosure.

Figure 144 – 10G Card Mounting Screws

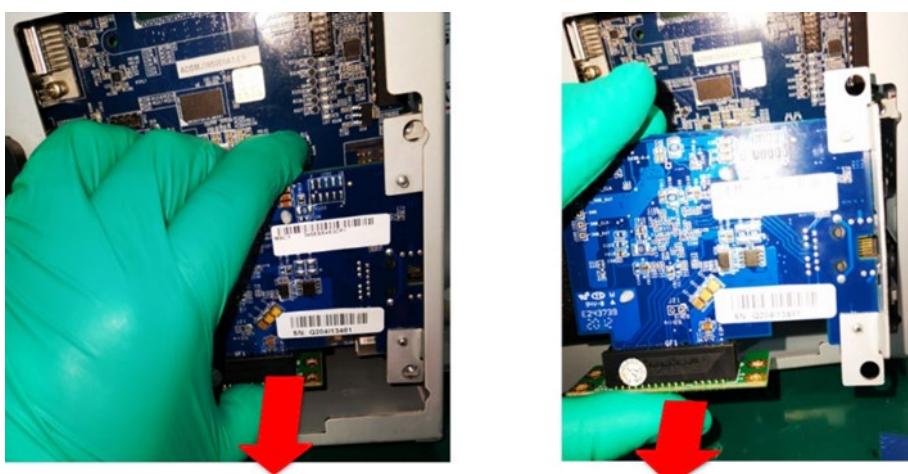
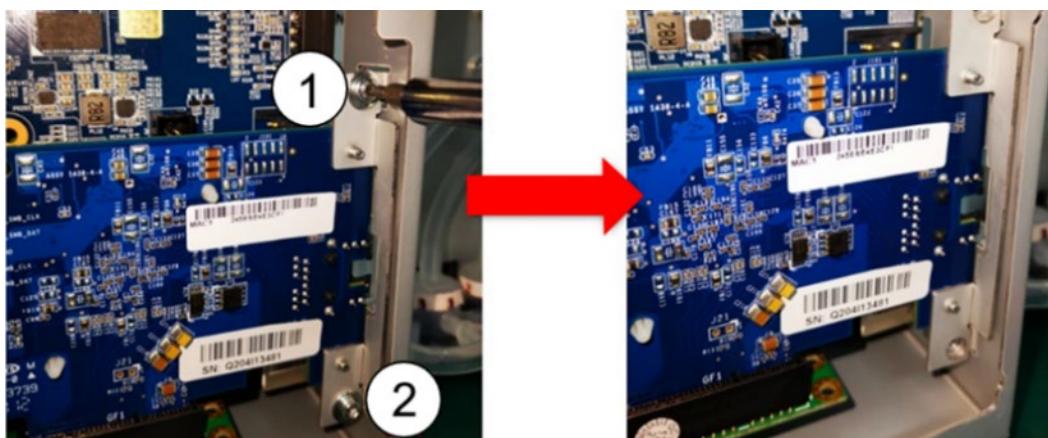
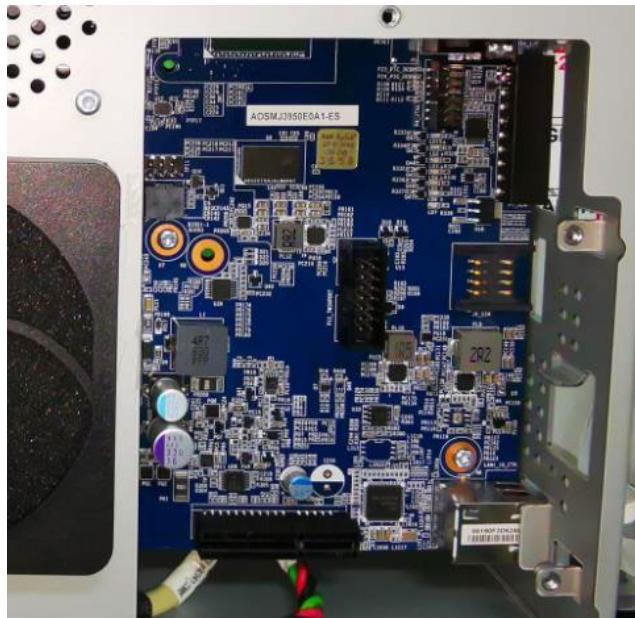
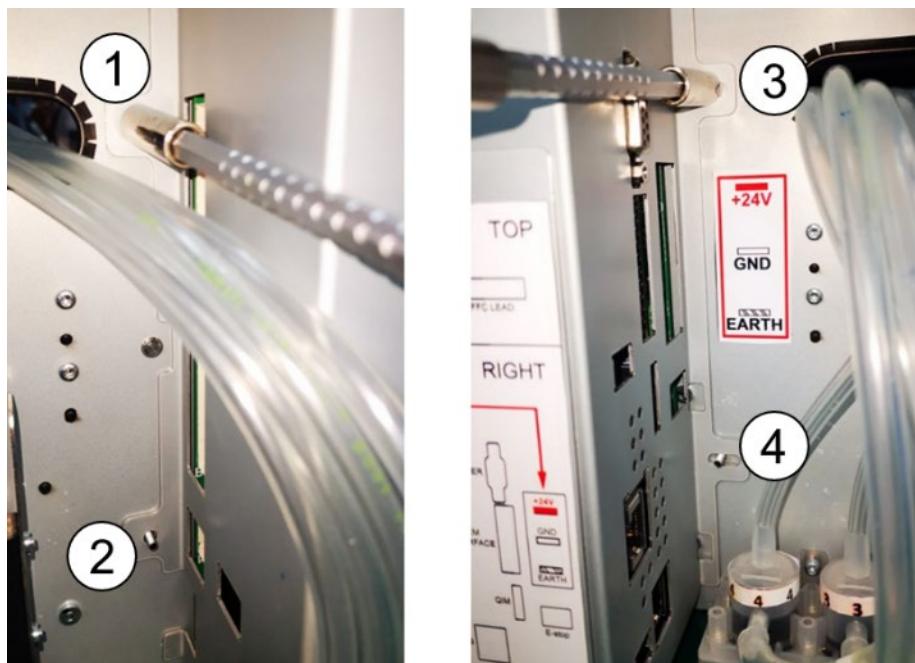


Figure 145 – 10G Card Removed

10. Loosen the four (4) nuts to remove the Electrical Module enclosure.

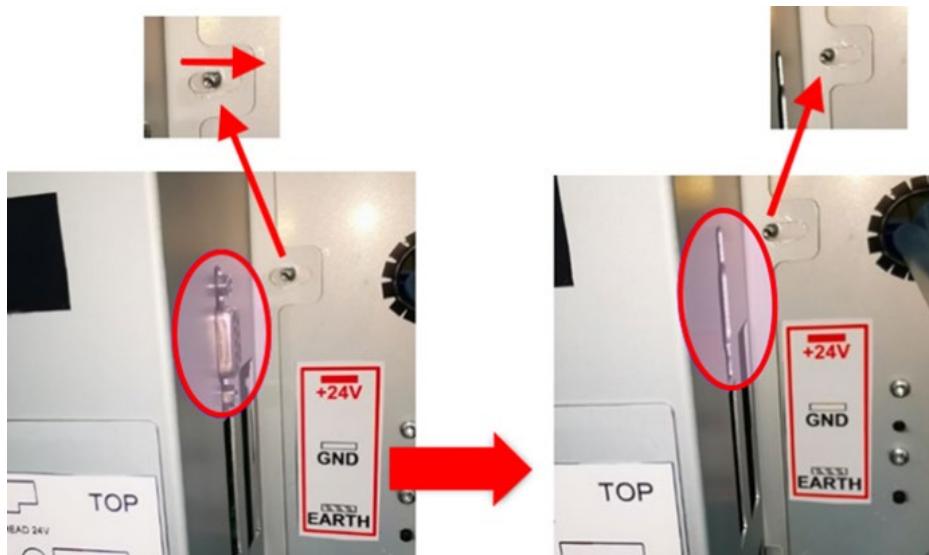
Figure 146 – Electrical Module Enclosure Nuts

11. Lift the RIGHT side of the Electrical Module enclosure, until the metal screw locating pin is fully released.



Figure 147 – Metal Screw Pin Released

12. Three (3) of the electrical module enclosure mounting screws have slotted holes. Refer to 1, 3, and 4 in [Figure 146](#).
13. To free the bracket, with one hand holding the RIGHT side of Electrical Module enclosure, use the other hand to push the enclosure towards the LEFT and release the DB9 connector ([Figure 148](#)).

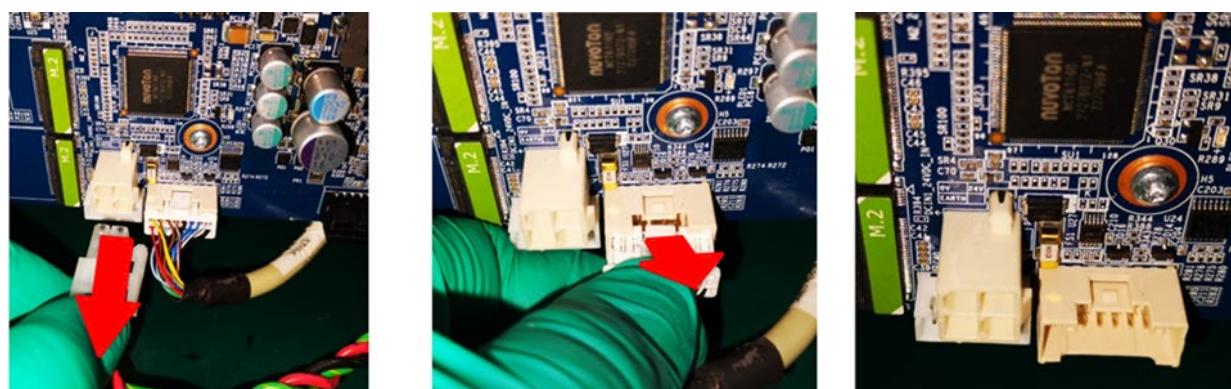
Figure 148 – Push Electrical Module Cover

14. While holding the loosened Electrical Module enclosure on an angle, press the tab on the fan connector to disconnect it from the Datapath PCA ([Figure 149](#)).

Figure 149 – Fan Connector

Figure 150 – Electrical Module with Cover Removed**Figure 151 – Electrical Module Cover (inside view)**

15. Press the tabs on the cable connectors to disconnect the PSU cable and data cable from the Datapath PCA.

Figure 152 – PSU and Data Cable Connectors Disconnected

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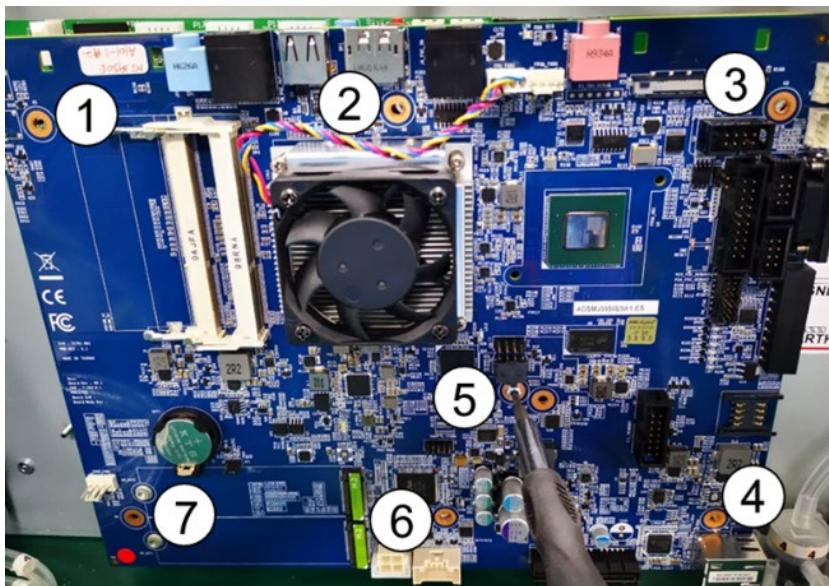
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16. Loosen and remove the seven (7) screws that secure the Datapath PCA to the Mechanical Controller PCA.

Figure 153 – Datapath PCA Mounting Screws



17. Lift the Datapath PCA off the standoffs to uninstall it.

Figure 154 – Datapath PCA Removed



18. Discard the Datapath PCA according to local disposal recommendations.



13.5 Installation

1. Visually inspect the new Datapath PCA to ensure that all components are installed and there is no damage. If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 155 – Front of Datapath PCA

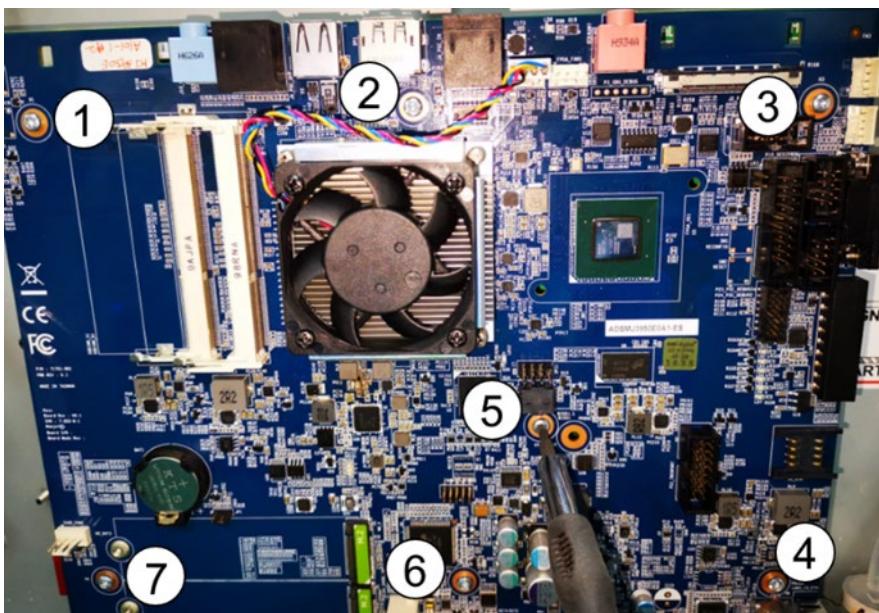


Figure 156 – Back of Datapath PCA



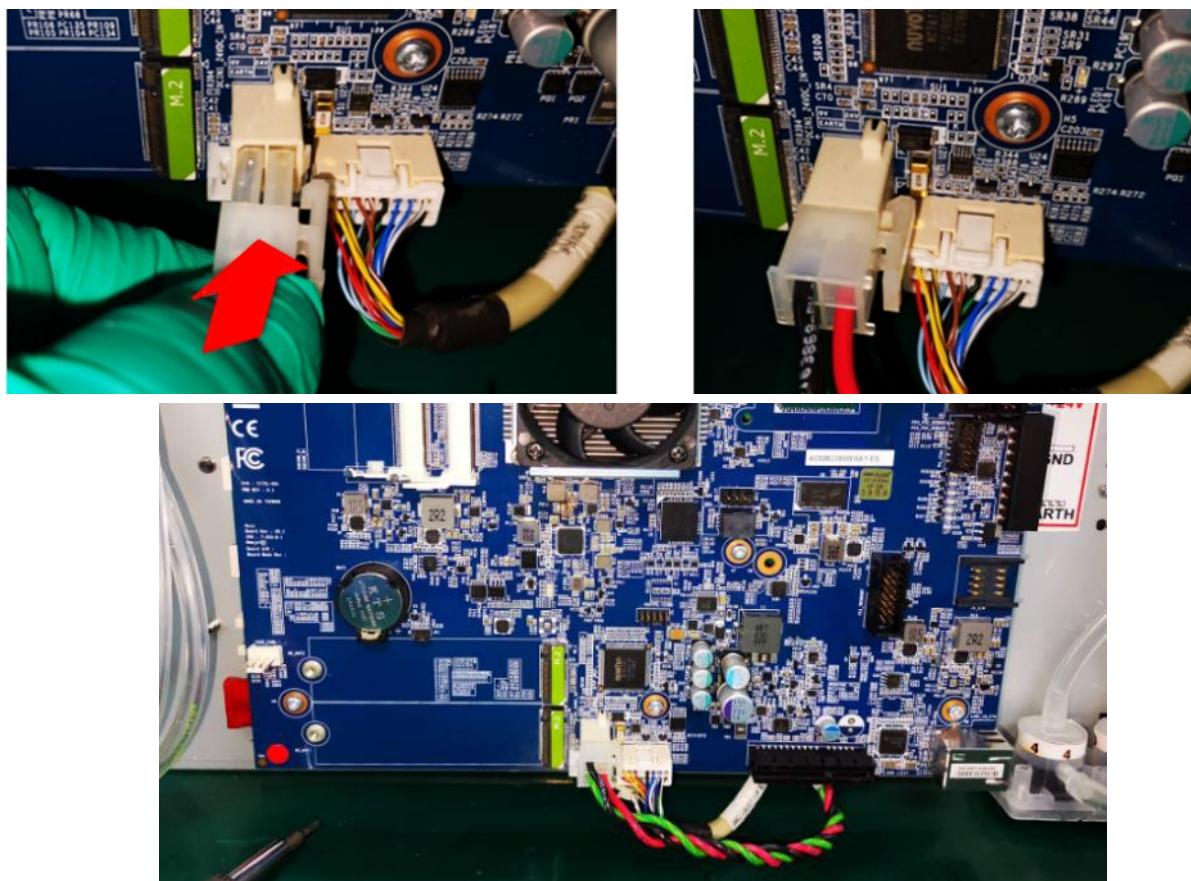
2. Align the Datapath PCA screw holes with the standoffs on the Mechanical Controller PCA.
3. Tighten the seven (7) screws that secure the Datapath PCA to the Mechanical Controller PCA.

Figure 157 – Datapath PCA Mounting Screw Locations



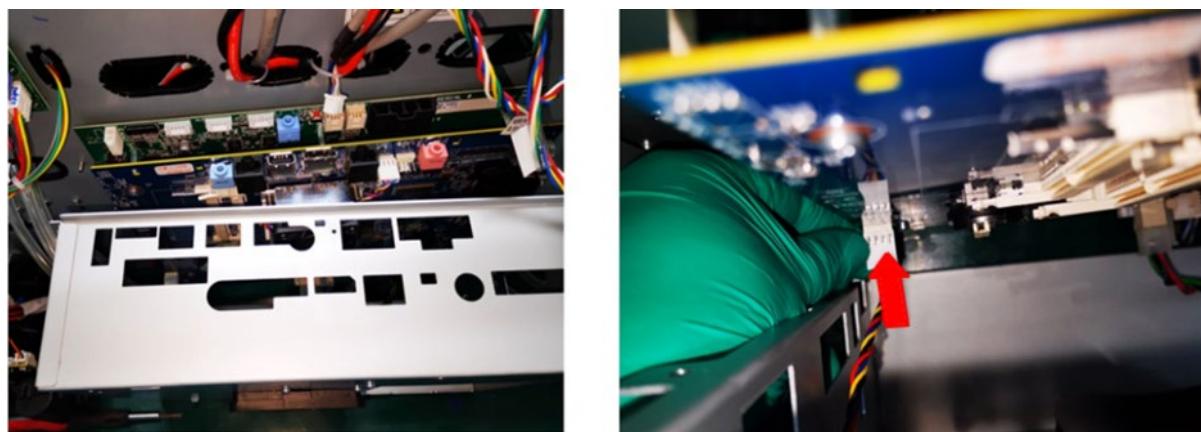
4. Connect the 24V power cable and data cable to the Datapath PCA.

Figure 158 – Connect PSU Cable and Data Cable



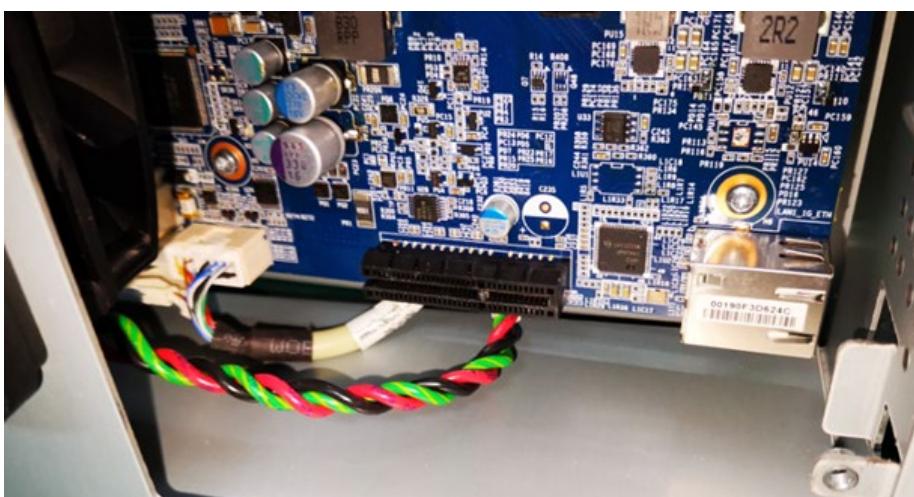
5. While holding Electrical Module enclosure with one hand, use the other hand to plug the Fan Connector into the Datapath PCA ([Figure 159](#)).

Figure 159 – Fan Connector



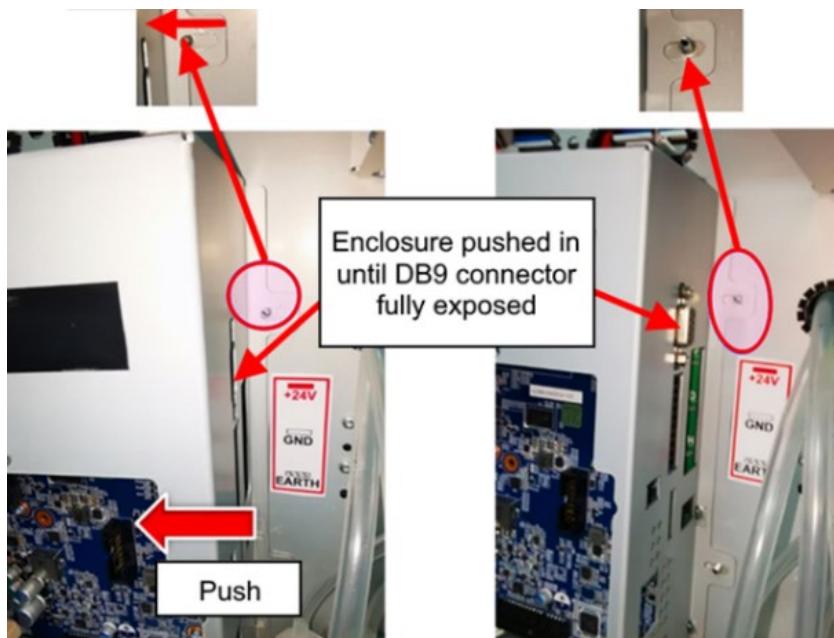
6. Push in the Electrical Module enclosure. Ensure that the bottom of the enclosure is not pinching the 24V PSU cable or data cable ([Figure 160](#)).

Figure 160 – Electrical Module Enclosure Pushed In

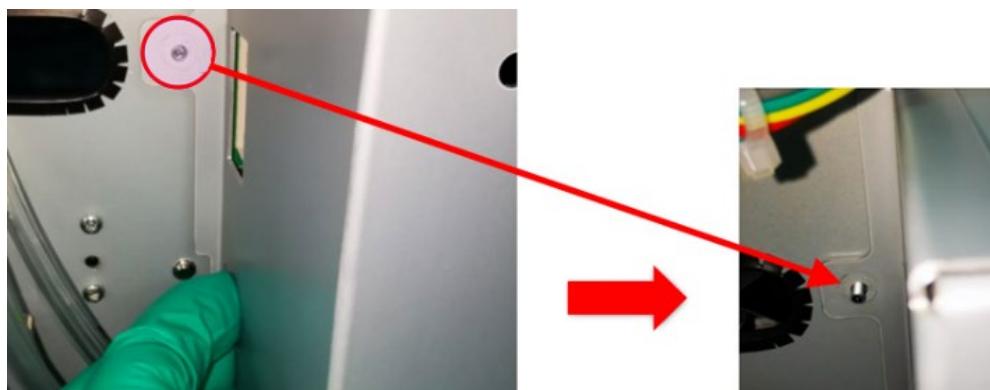


7. With one hand holding the RIGHT side of Electrical Module enclosure, align and push the holes into the screw locating pins on the LEFT side (at Encoder DB9 connector side).
8. Push the Electrical Module Enclosure toward the RIGHT side so that the Encoder DB9 connector is fully exposed.



Figure 161 – DB9 Connector Exposed

9. Install the RIGHT side of the Electrical Module enclosure by aligning and pushing the holes into the screw locating pins on the Print Module metal frame.

Figure 162 – Screw Locating Pin on Print Module Metal Frame

10. Tighten the four (4) nuts to secure the Electrical Module enclosure.

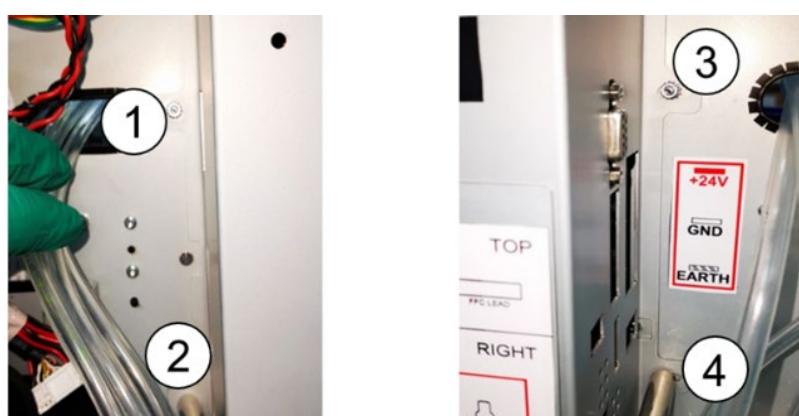
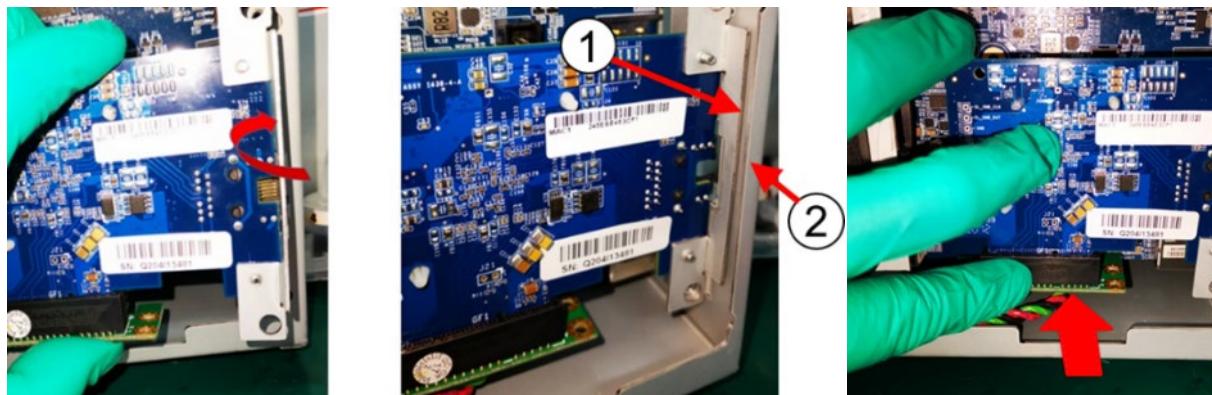
Figure 163 – Electrical Module Nuts

Figure 164 – Electrical Module Enclosure Mounted

11. Skip this step if there is no 10G card.

- a. Install 10G card. Position the bracket of the 10G Card (#1 in [Figure 165](#)) within the Electrical Module enclosure (#2).
- b. Align it with the holes on the tabs on the inside of the enclosure.
- c. Gently push the contact pin into the corresponding connector slot.

Figure 165 – Install 10G Card

- d. Install the two (2) mounting screws and tighten them to secure the 10G Card ([Figure 166](#)).
- e. confirm that the 10G Ethernet connector spring is touching the Electrical Module enclosure.

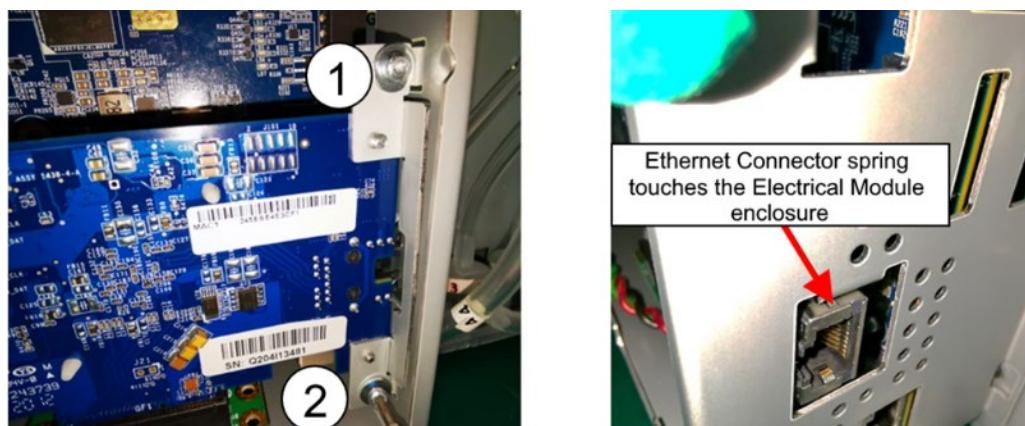
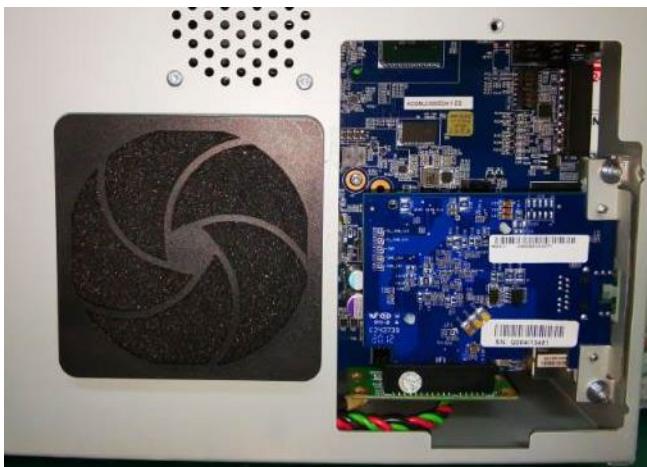
Figure 166 – 10G Card Mounting Screws

Figure 167 – 10G Card Installed

f. Install the Electrical Module cover over the 10G card, secure with one (1) screw ([Figure 168](#)).

Figure 168 – Electrical Module Cover Mounting Screw

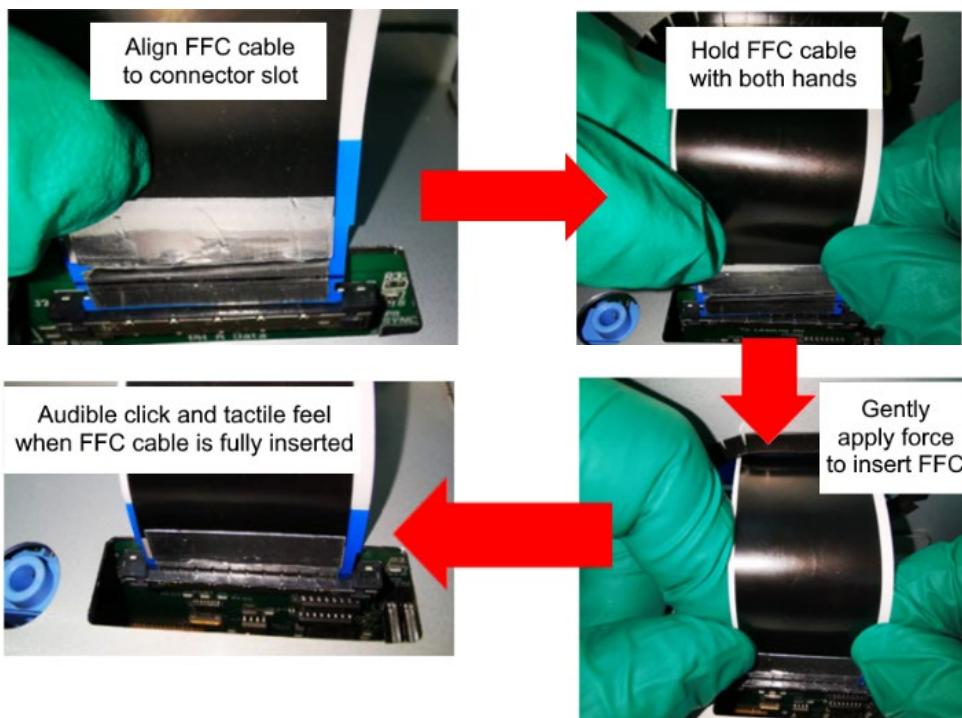
12. Connect all the cables, QIM, and fuse.

Figure 169 – Mechanical Controller PCA Cables – Both Sides

CAUTION: To avoid damaging the flat, flexible cables (FFCs), review [Figure 170](#) and strictly follow the steps below.

13. To install the Electronics FFCs, carefully align the end of the FFC with the open slot of the connector. For proper connection and to avoid damage, ensure that the edge of the FFC is parallel to the connector and not tilted to one side.
14. Hold the end of the FFC with both hands and gradually apply gentle force to insert the FFC into the connector. You will be able to feel the when the FFC is fully inserted and will hear a click to indicate the proper mating and positive locking of the FFC with the connector.
15. Repeat the process for the other Electronics FFC.

Figure 170 – Inserting FFC



16. Check that all cables are fully connected.

13.6 Testing

1. Power on the system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Check that the Printhead Cradle Lift Mechanism is working properly by moving it to RAISE, CAP and PRINT positions. Repeat for 5 times.
4. Check that the Pinch Valve is working properly by moving it to INK, CLOSED, and AIR position.
5. Check the functionality of the Circulation Pumps by priming the system two (2) times.
6. Check the functionality of the Wiper and WIMM by performing light service three (3) times and medium service two (2) times.
7. Print the desired test chart to verify that the system can print properly.



14 Mechanical Controller PCA Replacement

This section provides replacement instructions for the Mechanical Controller PCA (Electronics Ultron Board – PN 10005279).

Figure 171 – Mechanical Controller PCA



14.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

14.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section 2.2 ESD Guidelines for details.

14.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 14 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
Mechanical Controller PCA – PN 10005279	1	Part
Flat-head tweezers	1	Tool
T10 – M3 screwdriver (with ~200 mm extension)	1	Tool
M3 nut driver (with ~200 mm extension)	1	Tool
M6 standoff driver	1	Tool



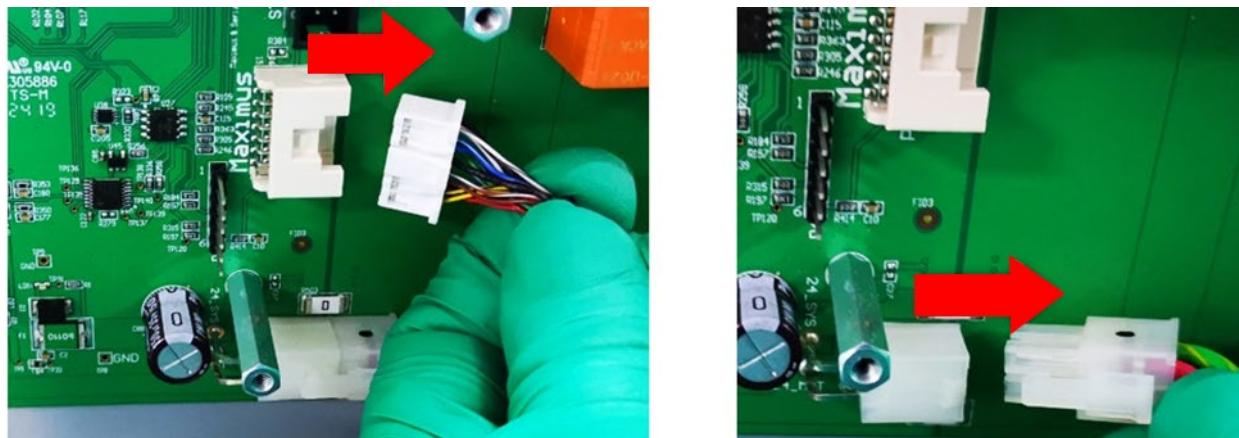
14.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

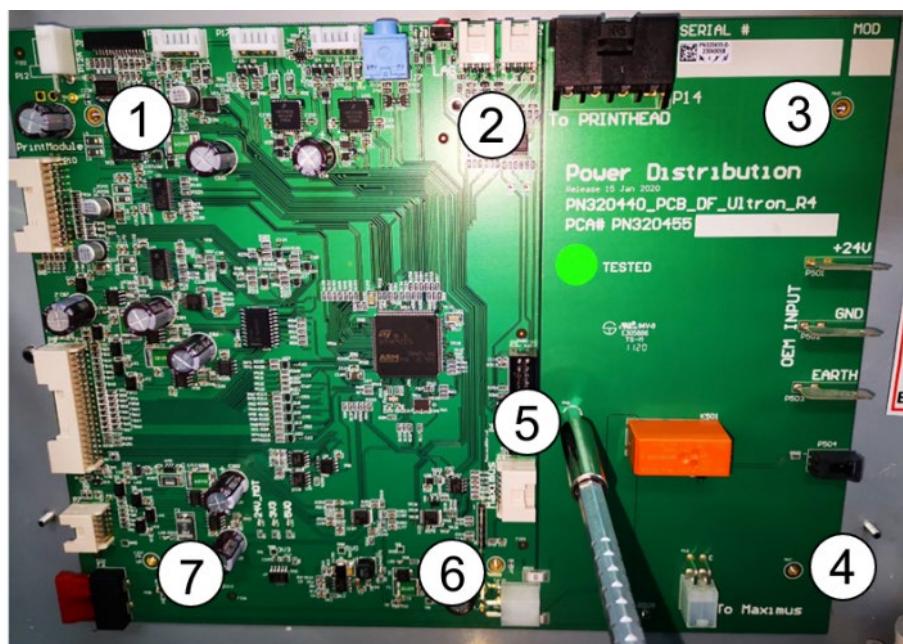
1. Wear an anti-static wrist strap while performing this procedure.
2. Follow the steps in Section [13.4 Removal](#) to disconnect cables and remove the Datapath PCA.
3. Disconnect the PSU and data cables from the Mechanical Control PCA ([Figure 172](#)).

Figure 172 – PSU and Data Cables Disconnected



4. Loosen the seven (7) standoffs that secure the Mechanical Controller PCA to the Print Module metal frame ([Figure 173](#)). Remove the PCA and dispose of according to local regulations.

Figure 173 – Mechanical Controller PCA Standoffs



14.5 Installation

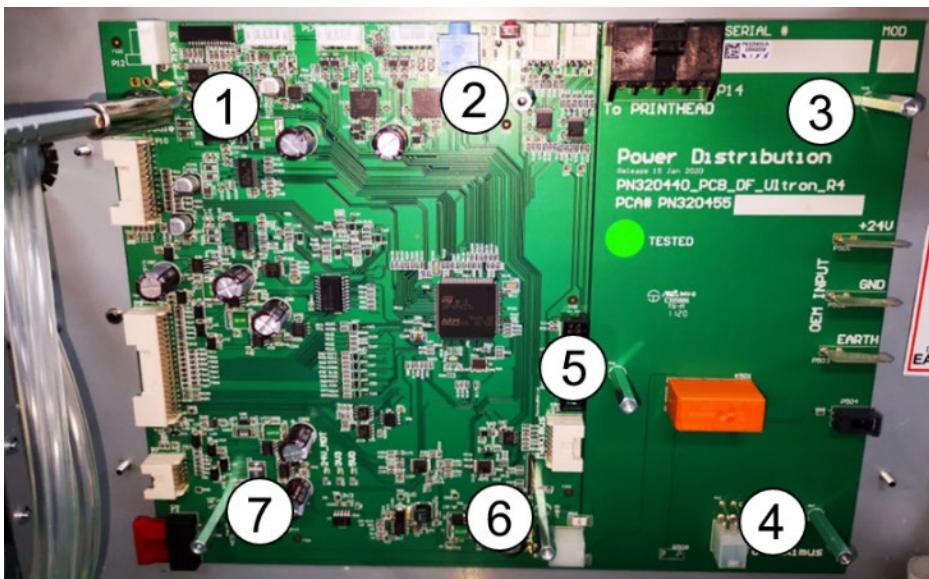
1. Inspect the new Mechanical Controller PCA to ensure that there is no damage. If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 174 – Front and Rear of Mechanical Controller PCA



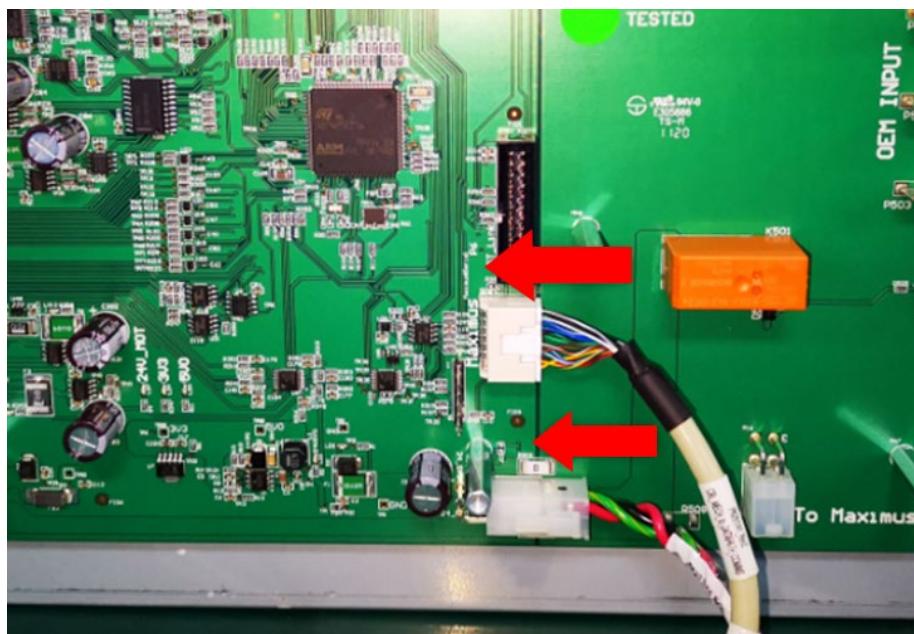
Install the seven (7) standoffs and tighten them to secure the Mechanical Controller PCA to the Print Module metal frame (Figure 175).

Figure 175 – Standoffs Reattached



2. Connect the PSU cable and data cable to the connectors on the Mechanical Controller PCA ([Figure 176](#)).

Figure 176 – Connect PSU and Data Cable Connectors



3. Perform all the steps in Section [13.5 Installation](#) to install the Datapath PCA and connect cables.

14.6 Testing

1. Power on the system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instruction.

3. Check that the Printhead Cradle Lift Mechanism is working properly by moving it to RAISE, CAP and PRINT position. Repeat for 5 times.
4. Check that the Pinch Valve is working properly by moving it to INK, CLOSED, and AIR positions.
5. Check the functionality of the Circulation Pumps by priming the system for two (2) times.
6. Check the functionality of the Wiper and WIMM by performing light service three (3) times and medium service two (2) times.
7. Print the desired test chart to verify that the system can print properly.



15 10G Card Replacement

This section provides replacement instructions for the 10G card (Electronics Ross Board 10G Upgrade Kit – PN 10005281).

Figure 177 – 10G Card



15.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

15.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

15.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 15 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
10G Card – PN 10005281	1	Part
T10 – M3 screwdriver	1	Tool

15.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

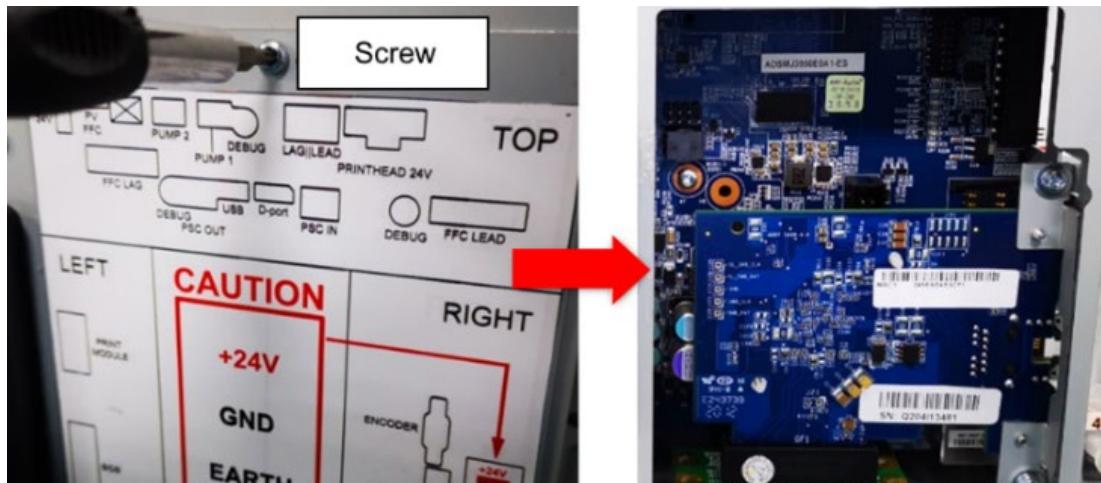
Note: Unless otherwise noted, keep all original hardware for installation.

1. Power down the system.



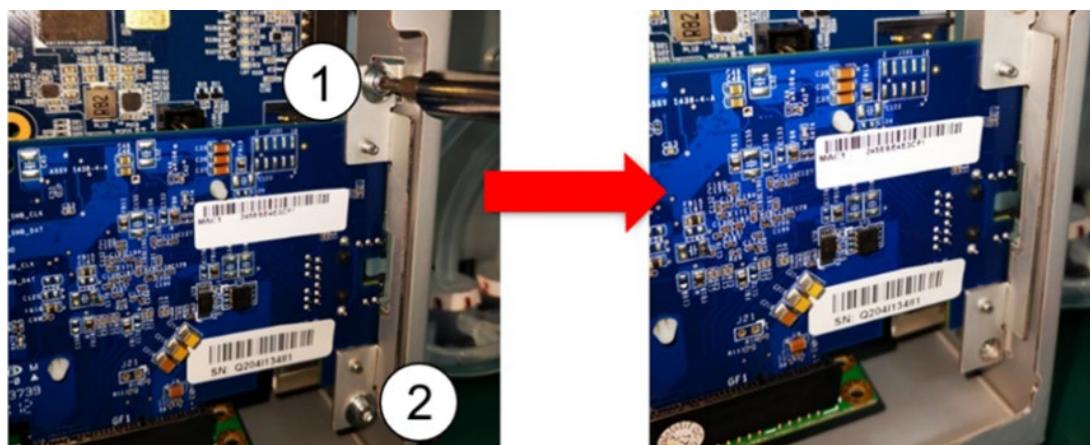
2. Wear an anti-static wrist strap when performing this procedure.
3. Loosen the screw to remove the 10G card cover.

Figure 178 – 10G Card Cover Mounting Screw



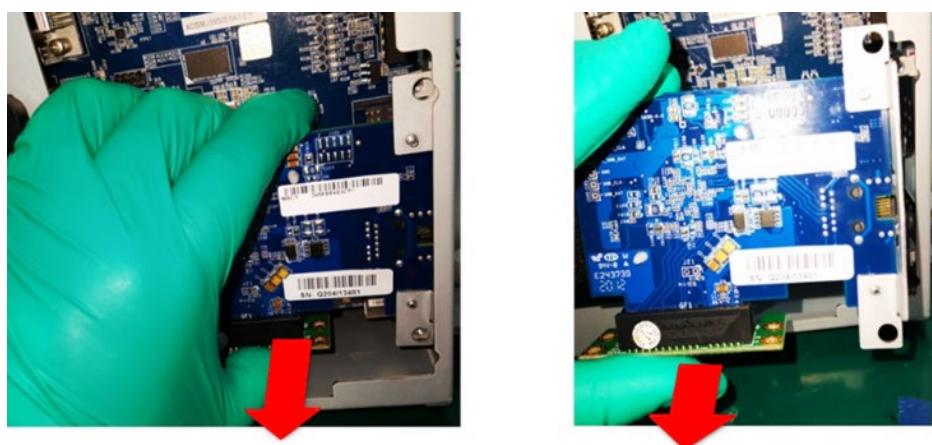
4. Loosen two (2) screws to remove the 10G Card.

Figure 179 – Screws for 10G Card



5. Carefully remove the 10G card and discard according to local regulations.

Figure 180 – Removing the 10G Card



15.5 Installation

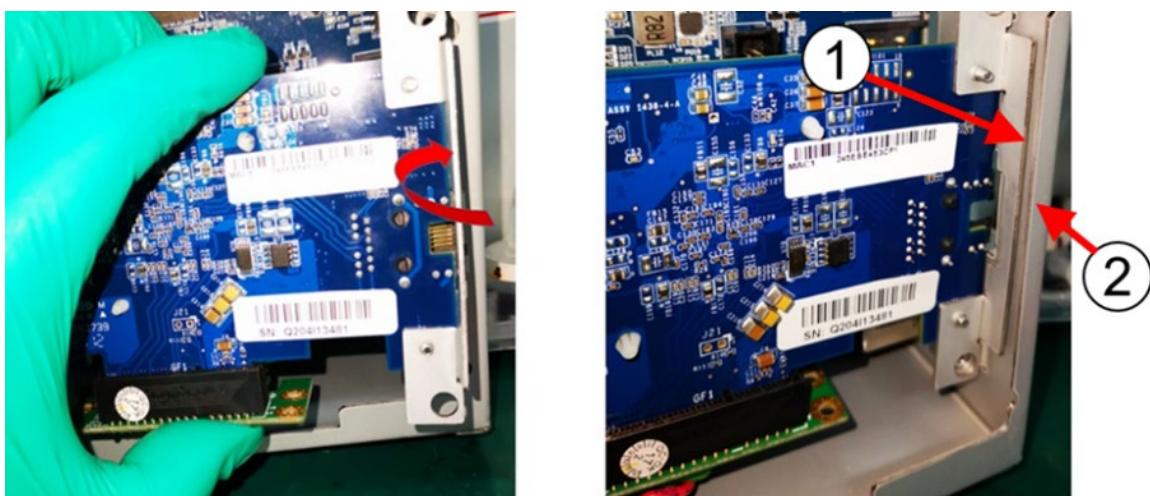
1. Inspect that new 10G Card to ensure that there is no damage.

Figure 181 – 10G Card



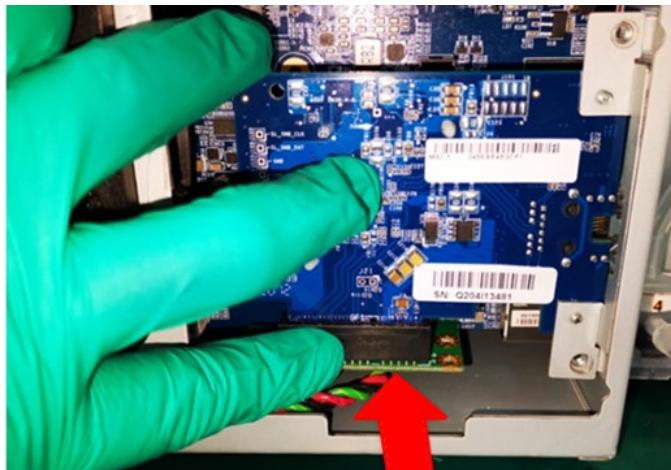
2. Position the bracket of the 10G Card (#1 in [Figure 182](#)) within the Electrical Module enclosure (#2).
3. Align it with the holes on the tabs on the inside of the enclosure.

Figure 182 – Install 10G Card



4. Gently push the contact pin into the corresponding connector slot.

Figure 183 – 10G Card Contact Pin Areas



5. Install the two (2) mounting screws and tighten to secure the 10G Card and confirm that the 10G Ethernet connector spring is touching the Electrical Module enclosure ([Figure 184](#)).

Figure 184 – 10G Card Mounting Screws

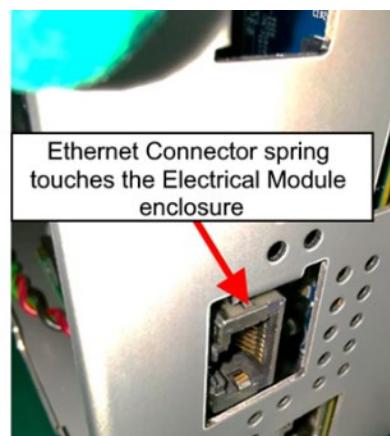


Figure 185 – 10G Card Secured



6. Tighten the screw to secure the 10G card cover to the Electrical Module enclosure.
7. Check that all cables are fully connected.

15.6 Testing

1. Power on the DuraFlex system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

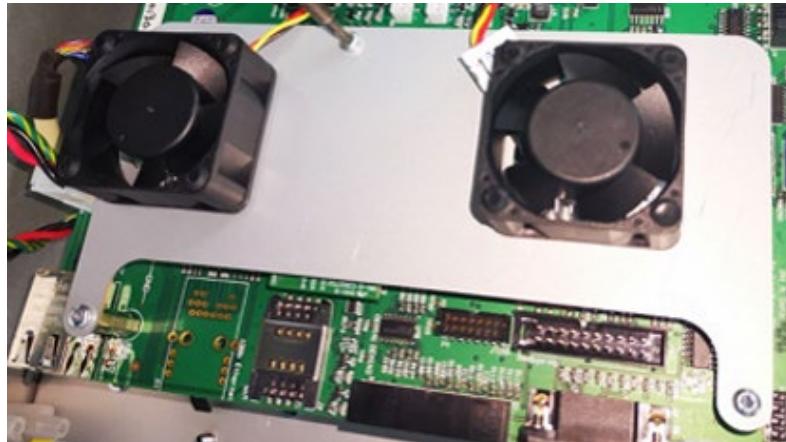
3. Enable the External RIP mode.
4. Print a desired test chart (in GBOR format) to verify the system can print properly using the new 10G card.



16 Fan Assembly Replacement

This section provides replacement instructions for the Electronics Fan Assembly for Ross 10G (PN 10005282), which is provided for the Datapath PCA with 10G card.

Figure 186 – Fan Assembly



16.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

16.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

16.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 16 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
Fan Assembly – PN 10005282	1	Part
T10 – M3 screwdriver	1	Tool
M3 nut driver (extra-long, ~300 mm extension)	1	Tool
Philips head screwdriver	1	Tool



16.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

1. Power down the system.
2. Wear an anti-static wrist strap when performing this procedure.
3. Disconnect the following cables.

Note: Some cable connectors are secured with a tab, press the tab to disengage it.

- 24V power cable (x1)
- 1G Ethernet cable (x1)
- 10G Ethernet cable (x1 if present)
- TOF sensor cable (x1 if present)
- Encoder cable (x1)
- Pinch Valve power cable (x1)
- Pinch Valve FFC (x1)
- Circulation Pump cables (x2)
- Printhead Power PCA power cables (x2)
- Printhead Power PCA data cable (x2)
- Electronics FFC (x2)
- BIDS PassThru PCA cable (x1)
- Main board cable (x1)
- Print Module Passthru (x1)
- Fuse (x1)
- QIM (x1)

Figure 187 – Left and Right Side of Electrical Module Enclosure

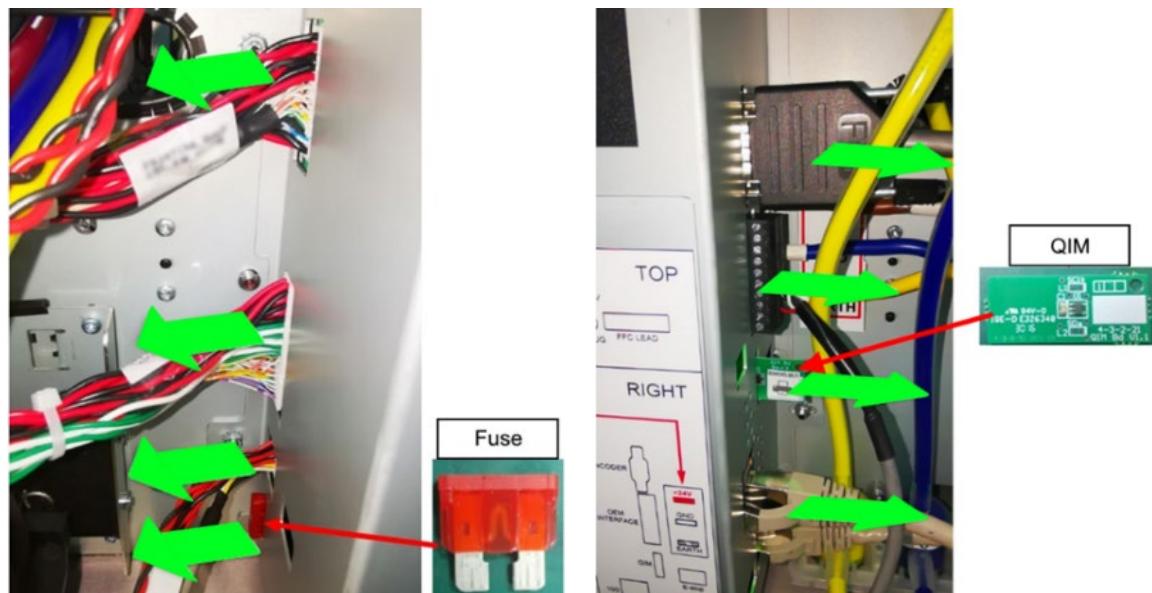
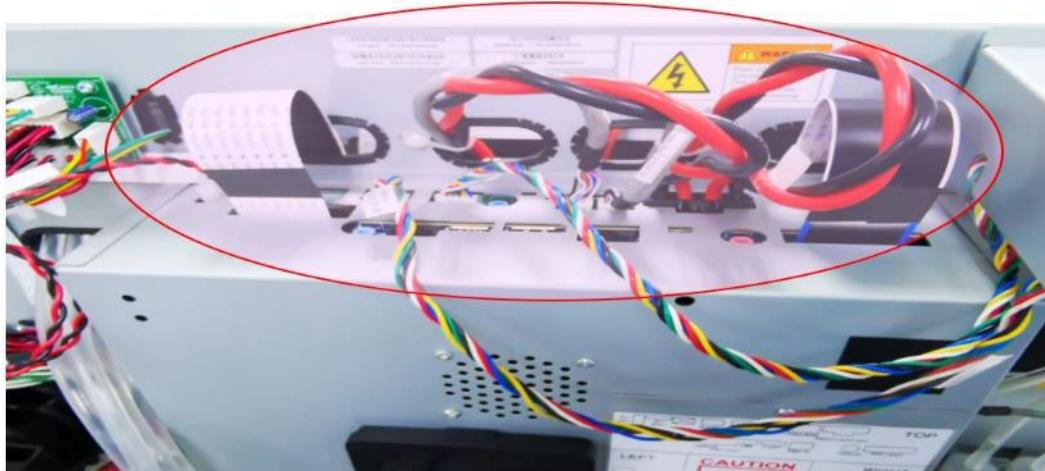


Figure 188 – Cables on Top of Electrical Module Enclosure

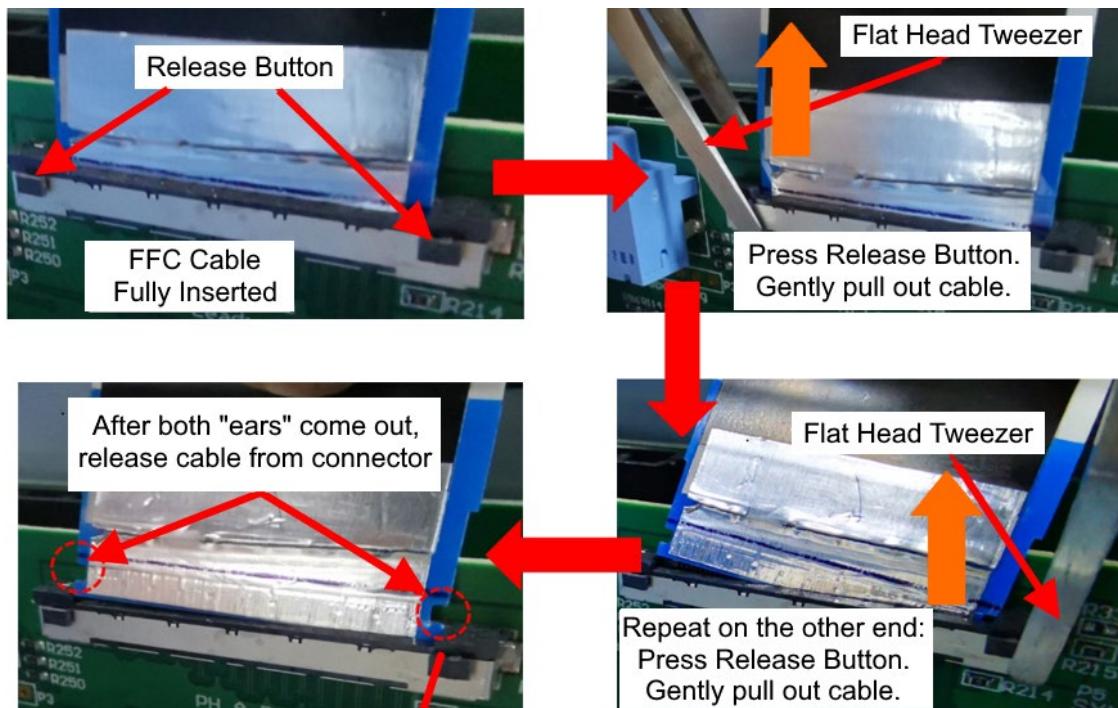
CAUTION: To avoid cutting wires or cables or damaging hardware, use appropriate tools that are not sharp for the next steps. Do not use a knife, razor blade, or scissors!

4. Disconnect the ends of both Electronics FFCs (leading and lagging) from the Electrical Module ([Figure 189](#)).

CAUTION: To avoid damaging the flat, flexible cables (FFCs), strictly follow the steps below.

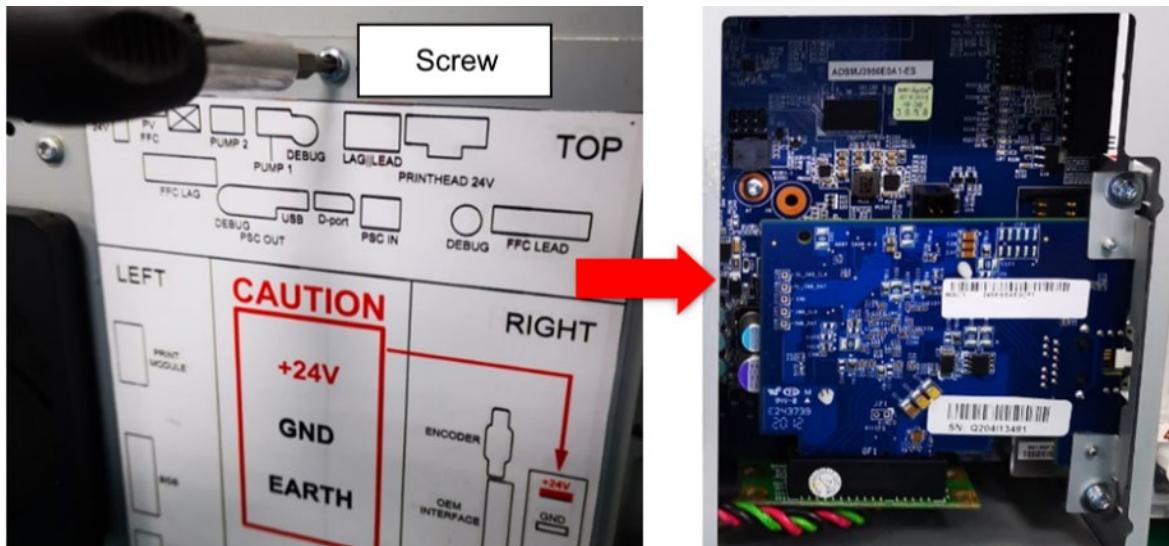
To disconnect the Electronics FFC:

- a. Use a flat-head tweezer (or similar tool) to release the FFC connectors.
- b. Use tweezers to press down one of the release buttons on the FFC connector.
- c. Apply slight force on the pressed side and gently pull on the FFC to disconnect it.
- d. Repeat these steps to disconnect the other FFC.

Figure 189 – Remove FFC

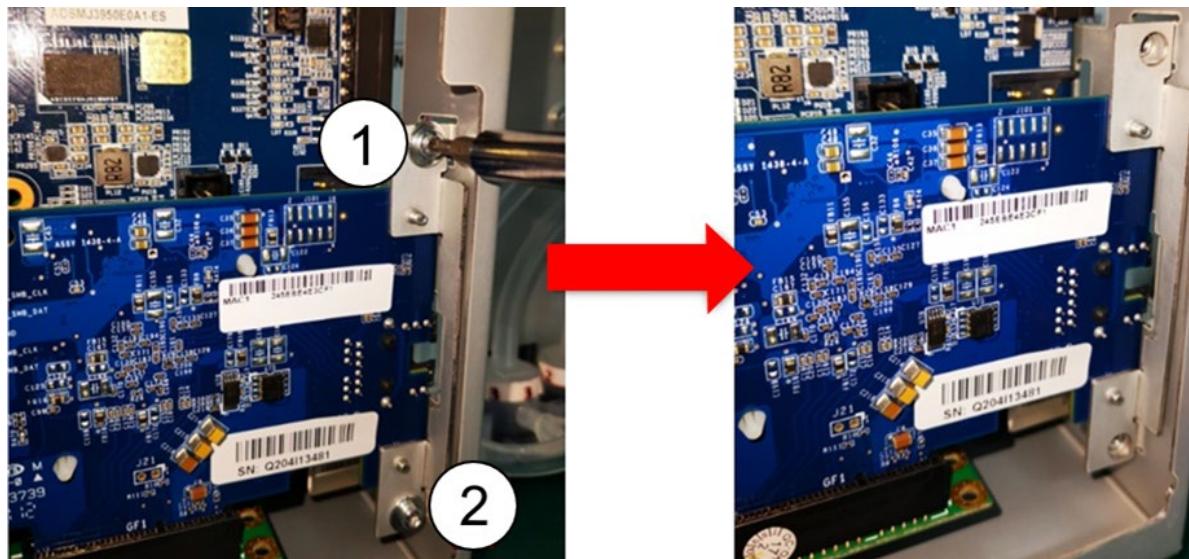
5. Loosen the screw on the Electronics Module cover over the 10G card.
6. Remove the cover and set it aside.

Figure 190 – Electronics Module Cover



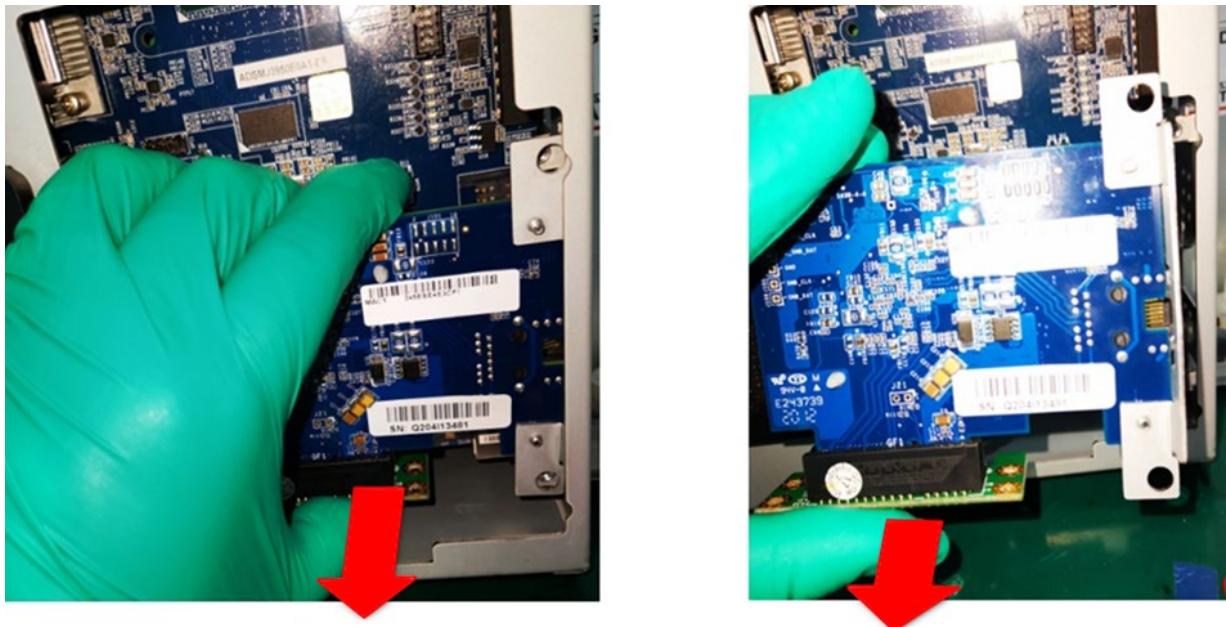
7. Loosen the two (2) screws that secure the 10G card to the enclosure.

Figure 191 – 10G Card Mounting Screws



8. Carefully remove the 10G card.

Figure 192 – Removing the 10G Card



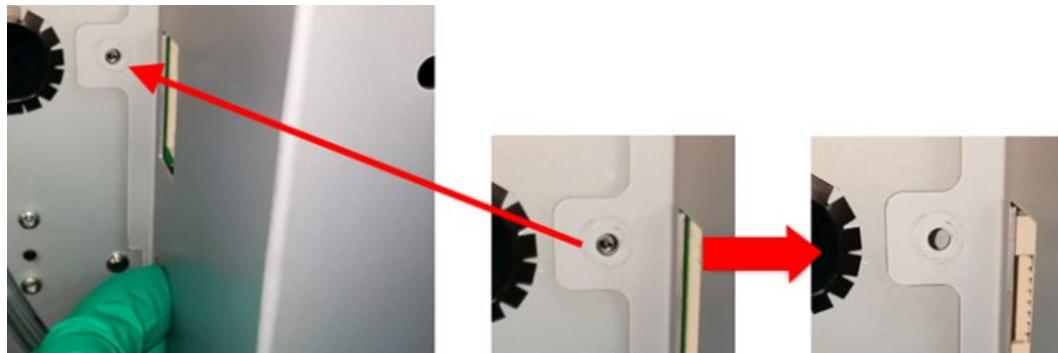
9. Loosen the four (4) nuts to remove the Electrical Module enclosure ([Figure 193](#)).

Figure 193 – Nuts on Electrical Module Enclosure

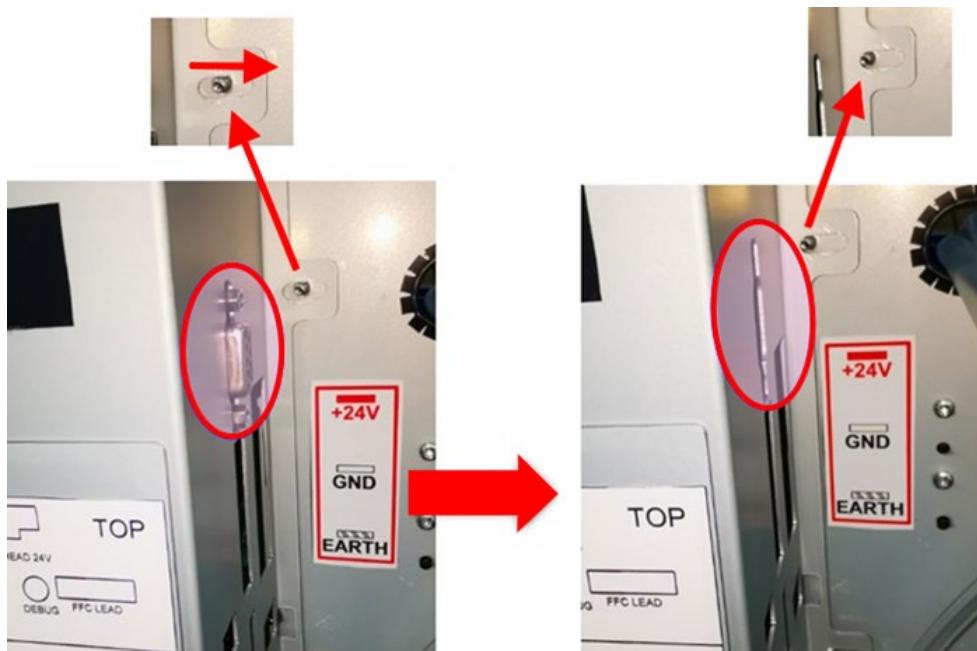


10. Lift the right side of the Electrical Module enclosure, until the metal screw locating pin is fully released.



Figure 194 – Metal Screw Locating Pin Released

11. With one hand holding the right side of Electrical Module enclosure, use your other hand to push the enclosure to the left to release the DB9 connector ([Figure 195](#)).

Figure 195 – Push Electrical Module Enclosure

12. While holding the loosened Electrical Module enclosure at an angle, press the tab to disconnect the fan connector from the Datapath PCA.

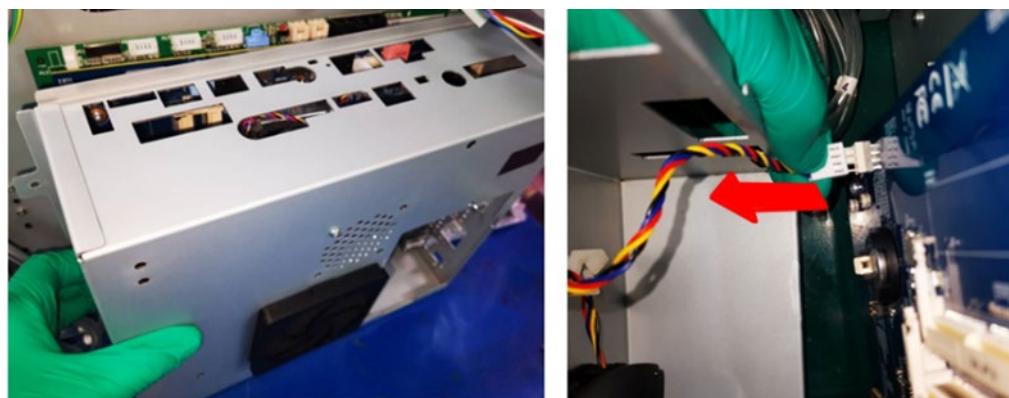
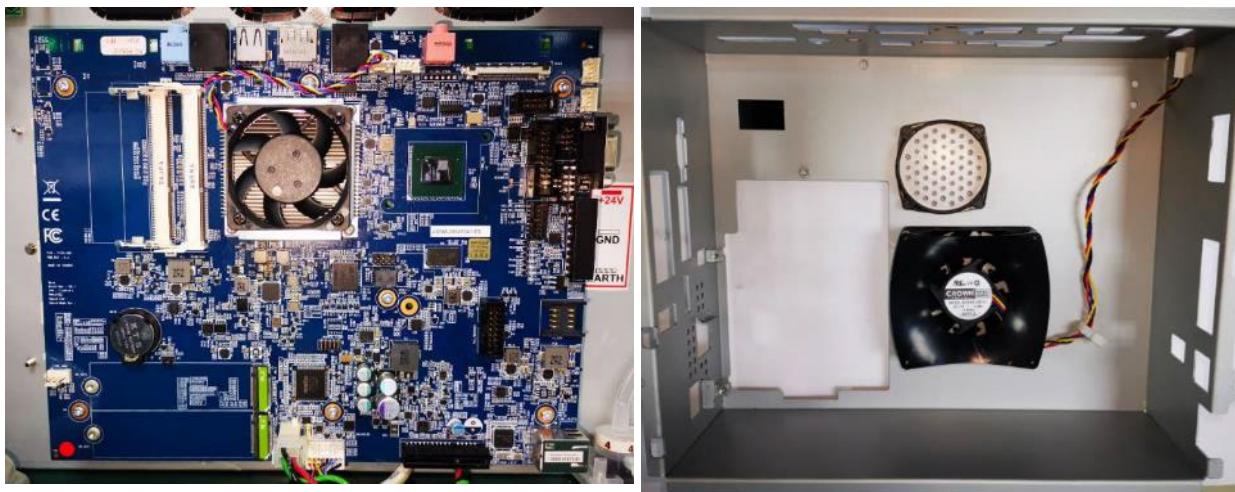
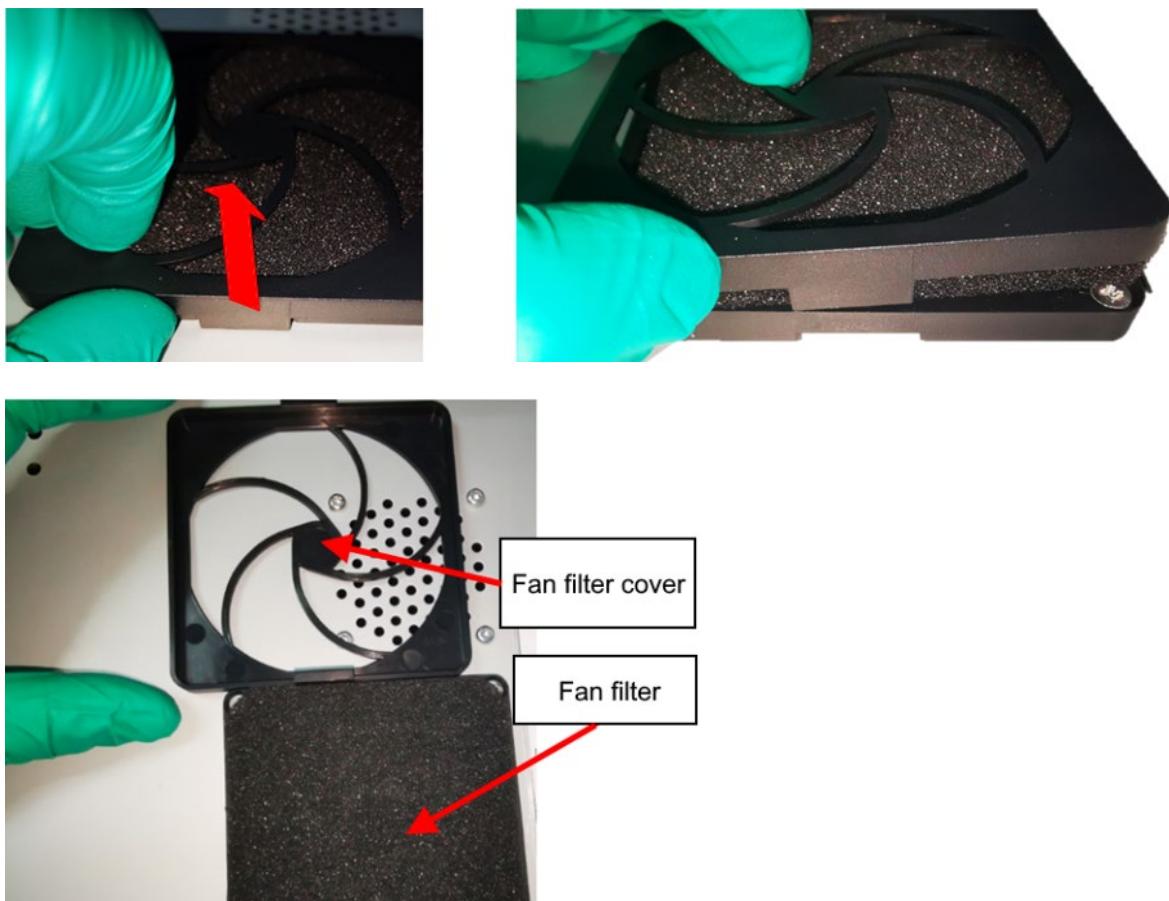
Figure 196 – Disconnect the Fan

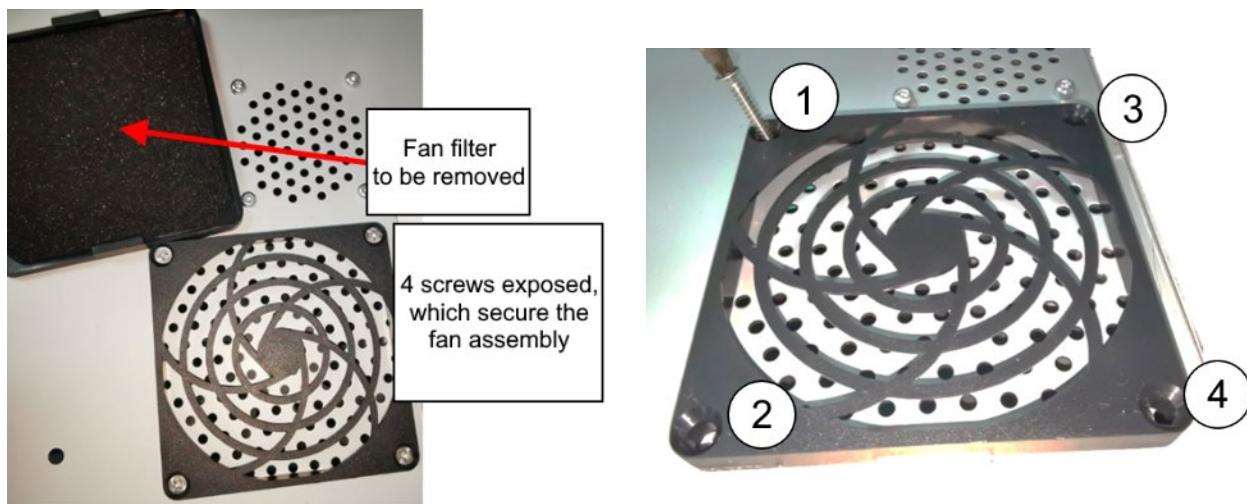
Figure 197 – Electrical Module Enclosure Removed and Enclosure Cover Inside

13. Remove the fan filter cover by releasing the two (2) hooks ([Figure 198](#)).

Figure 198 – Separating the Fan Filter Cover

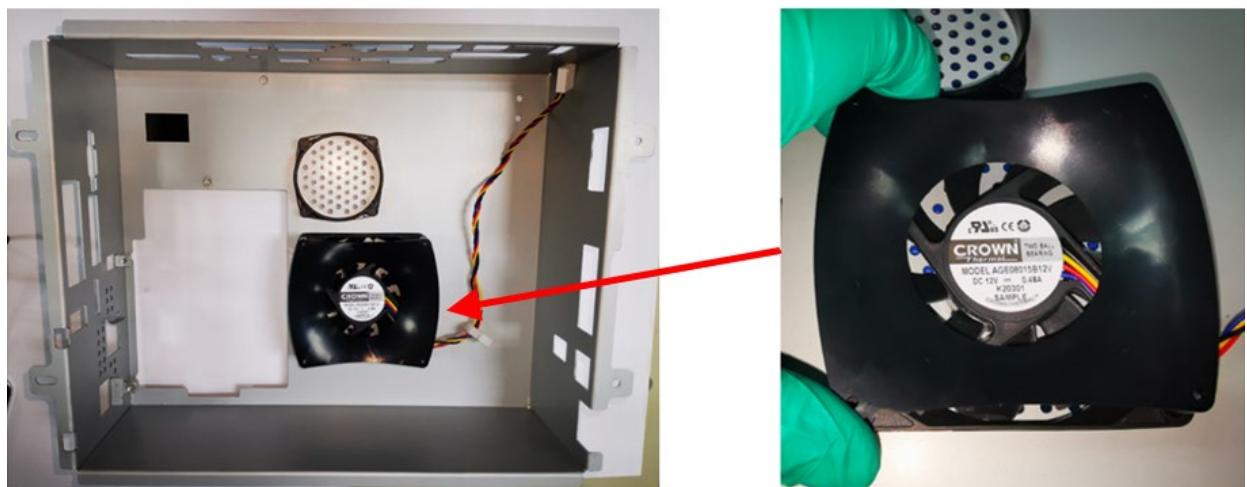
14. Remove the fan filter to expose the four (4) screws that mount the fan assembly to the Electrical Module enclosure and undo the four (4) screws ([Figure 199](#)).

Figure 199 – Screws Exposed on Fan Filter and Screw Numbering



15. Remove the fan cable from the cable holder.
16. Remove the fan assembly from inside of the Electrical Module enclosure and discard the Fan Assembly according to local disposal recommendations.

Figure 200 – Fan Assembly Inside Electrical Module

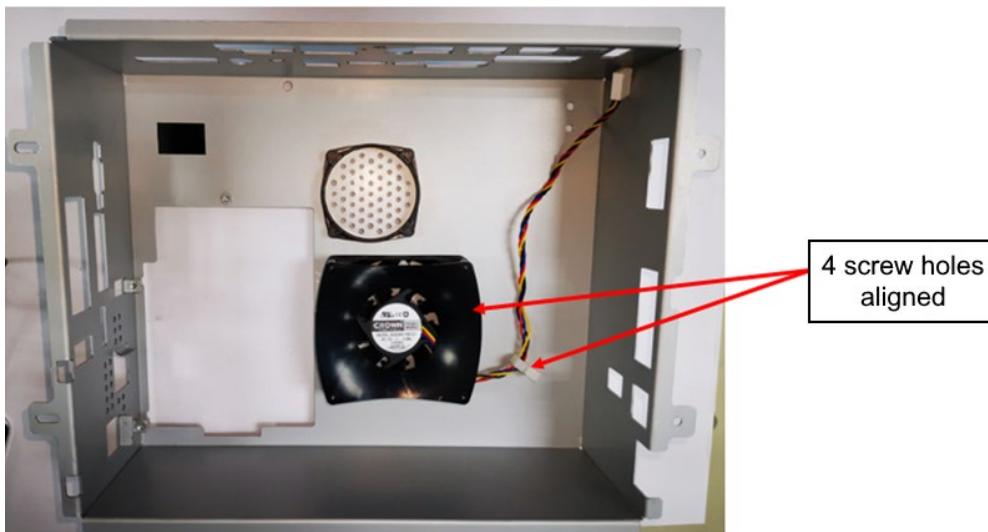


16.5 Installation

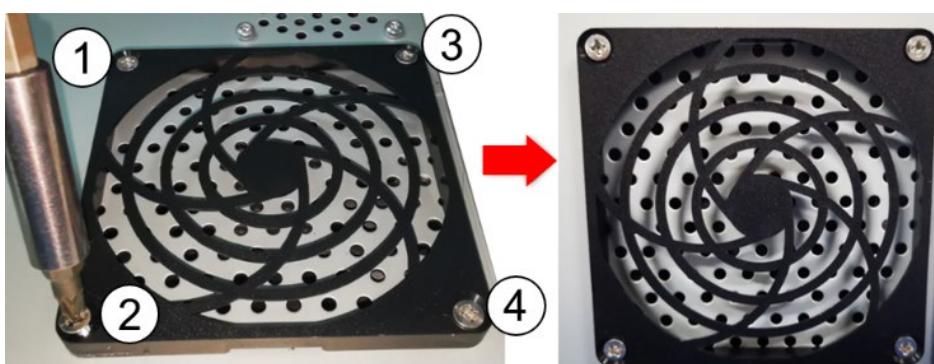
1. Visually inspect that new fan assembly to ensure that it has no damage. If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 201 – Fan Assembly

2. Route the fan assembly cable into the cable holder.
3. Align the four (4) screw holes on the new fan assembly to the holes on the Electrical Module enclosure.

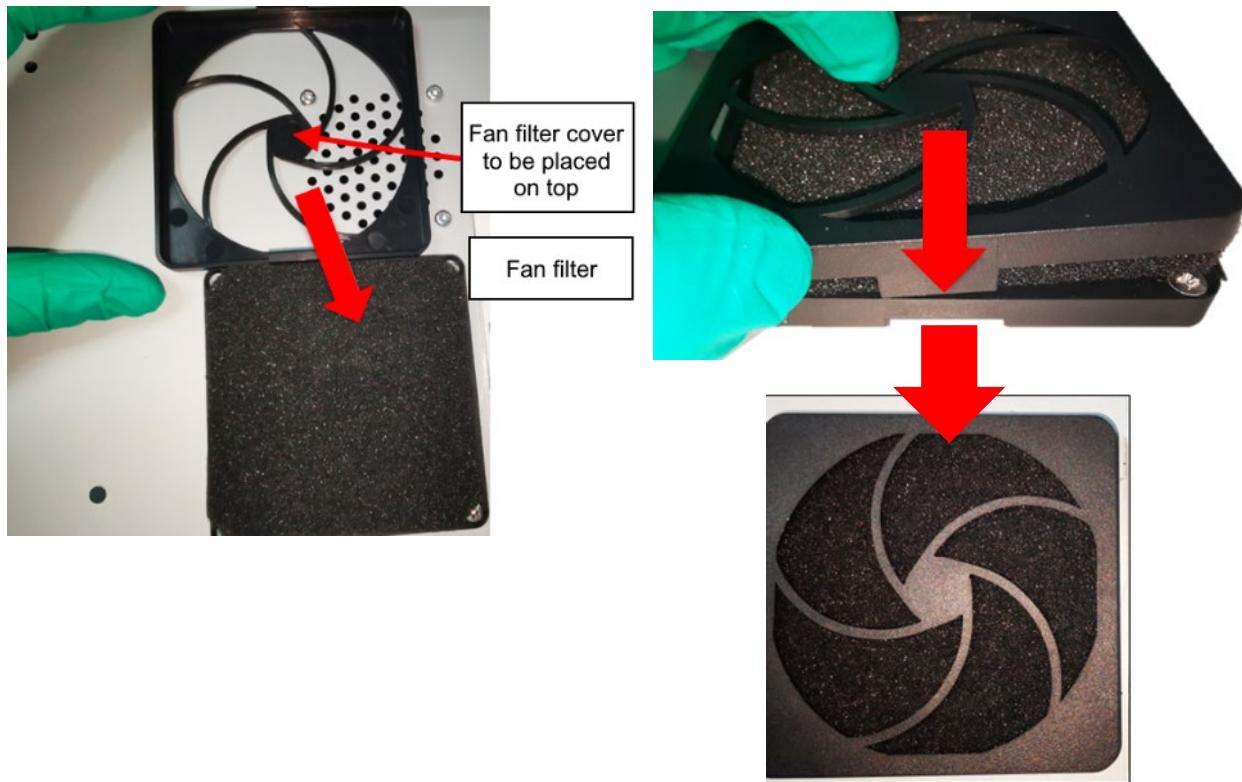
Figure 202 – Fan Cable Installed and Fan Assembly Aligned

4. From the outside of the Electrical Module enclosure, tighten the 4 screws to secure the fan assembly ([Figure 203](#)).

Figure 203 – Screws Tightened

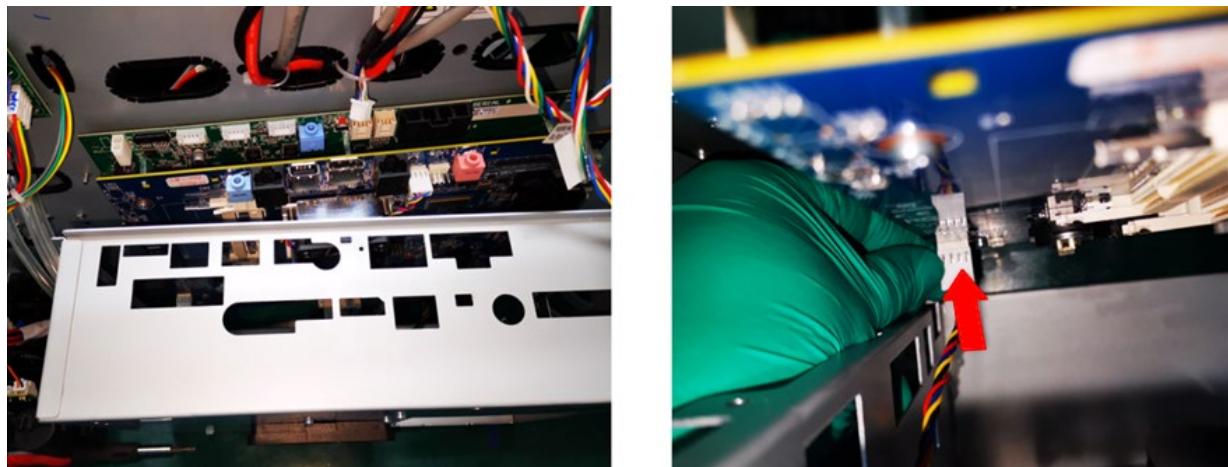
5. Place the fan filter cover on top of the fan filter ([Figure 204](#)).
6. Snap in the fan filter cover.

Figure 204 – Fan Filter Cover Assembly



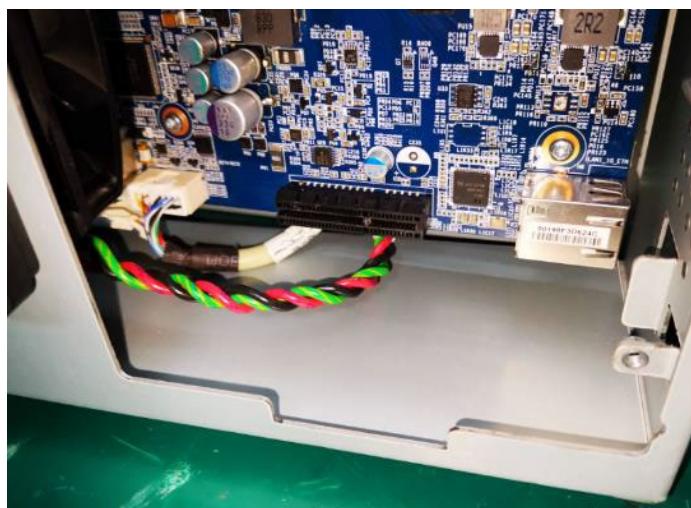
7. While holding the Electrical Module enclosure with one hand, use your other hand to connect the fan assembly cable to the fan connector on the Datapath PCA ([Figure 205](#)).

Figure 205 – Fan Assembly Cable Connected



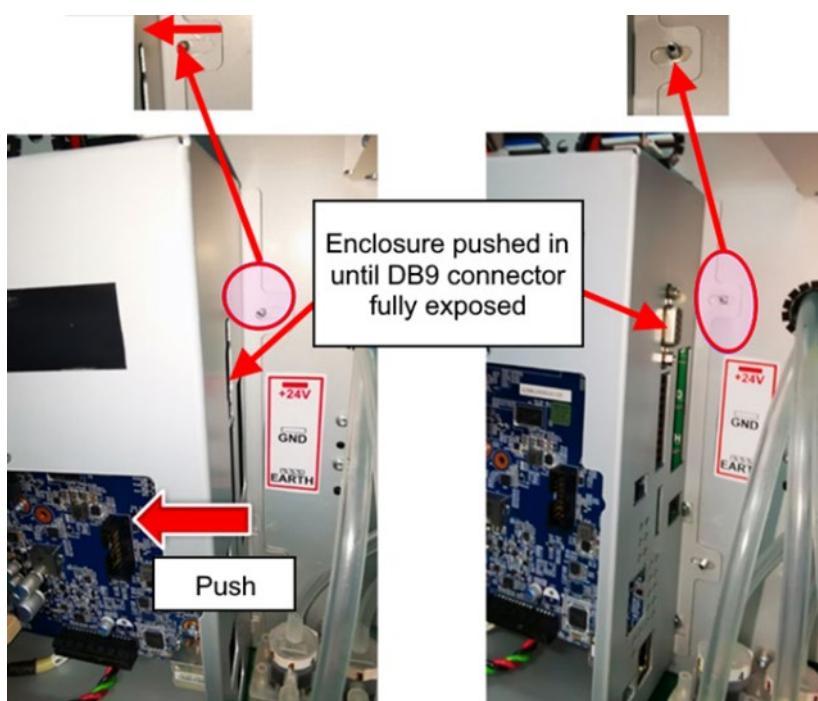
8. Adjust and manage the 24V PSU cable and data cable, so that they will not be cut by the sharp edge of Electrical Module enclosure.

Figure 206 – Adjust PSU Cable and Data Cable



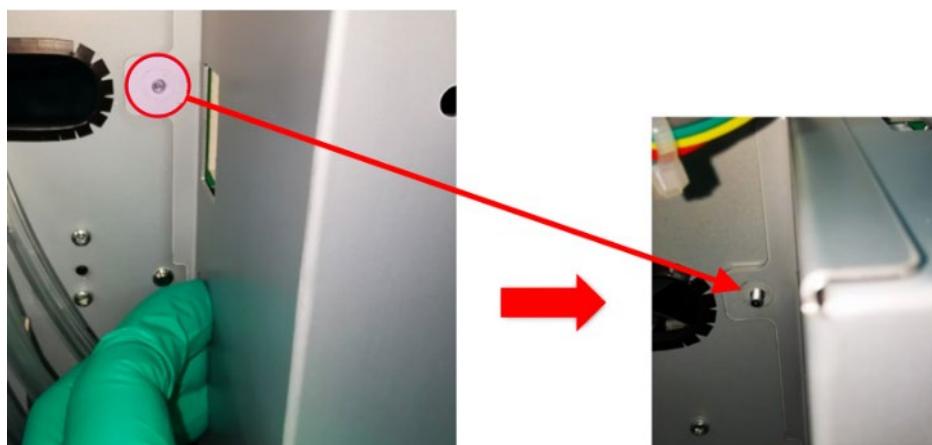
9. With one hand holding the RIGHT side of the Electrical Module enclosure, use your other hand to align the holes to the screw locating pins on the LEFT side (at the encoder DB9 connector side).
10. Push the Electrical Module enclosure towards the RIGHT side to fully expose the encoder DB9 connector.

Figure 207 – DB9 Connector Exposed



11. Attach the RIGHT side of the Electrical Module by aligning and pushing the holes into the screw locating pins on the Print Module metal frame.

Figure 208 – Screw Locating Pin on Print Module Metal Frame



12. Tighten the four (4) nuts to secure the Electrical Module enclosure.

Figure 209 – Nuts Tightened

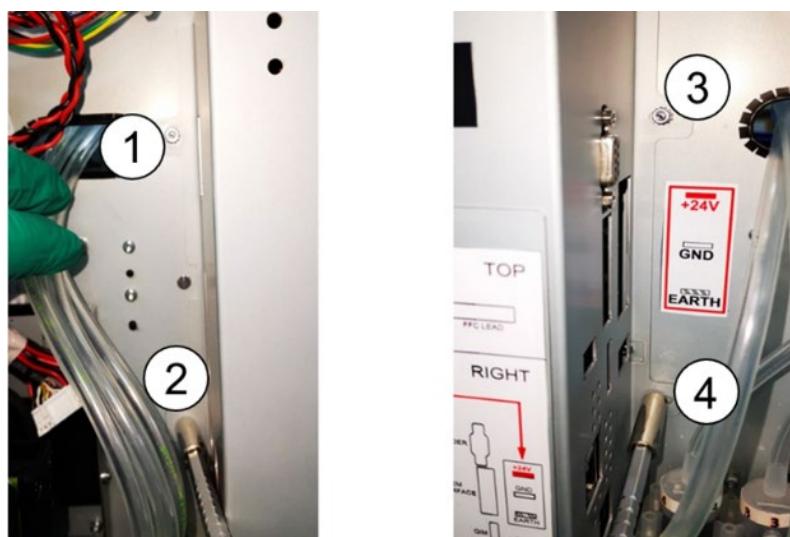


Figure 210 – Electrical Module Enclosure Installed



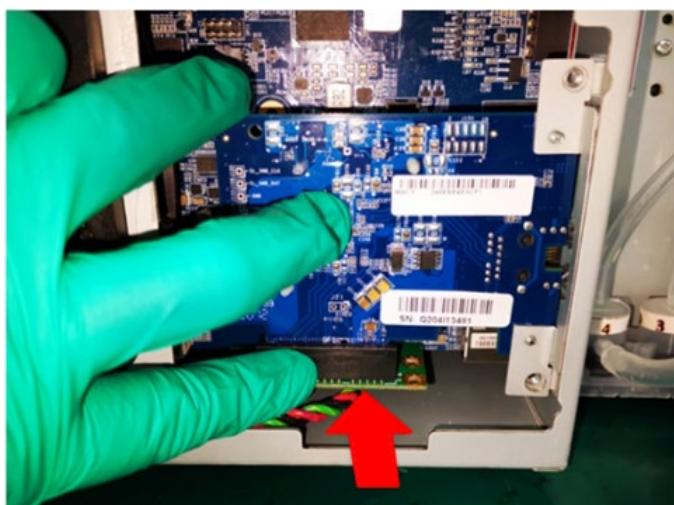
13. To install the 10G card, position the bracket of the 10G Card (#1 in [Figure 211](#)) within the Electrical Module enclosure (#2).
14. Align it with the holes on the tabs on the inside of the enclosure.

Figure 211 – Install 10G Card



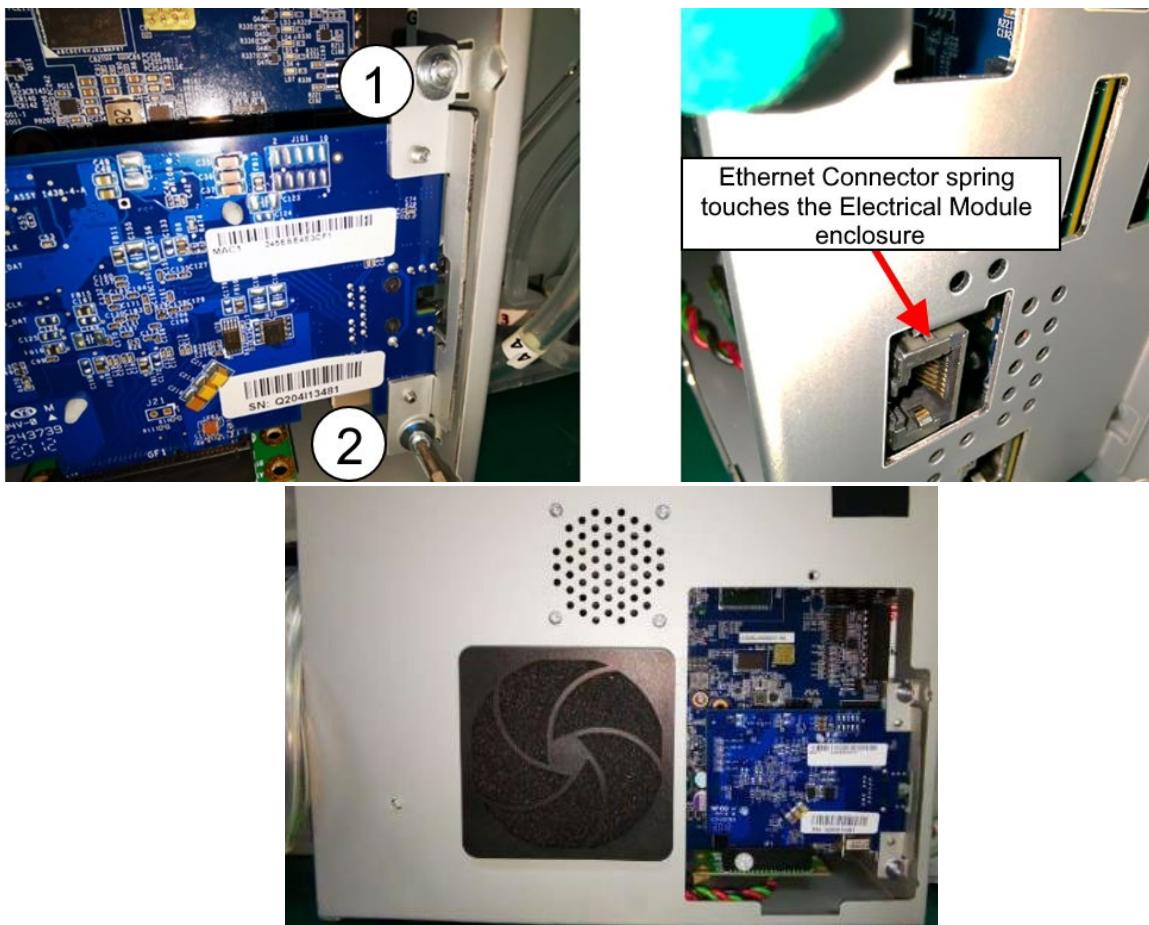
15. Gently push the contact pin into the corresponding connector slot.

Figure 212 – 10G Card Contact Pin Areas



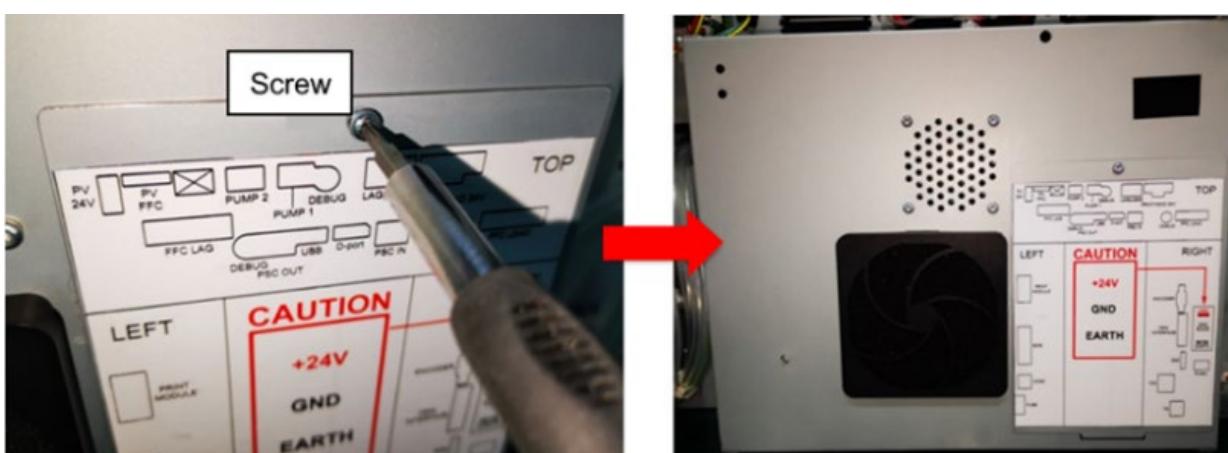
16. Install the two (2) mounting screws and tighten to secure the 10G Card.
17. Confirm that the 10G Ethernet connector spring is touching the Electrical Module enclosure.

Figure 213 – 10G Card Mounting Screws



18. Tighten the screw to secure the 10G card cover to the Electrical Module enclosure [Figure 214](#).

Figure 214 – Screw that Secures the 10G Card Cover



19. Connect all the cables, QIM, and Fuse.

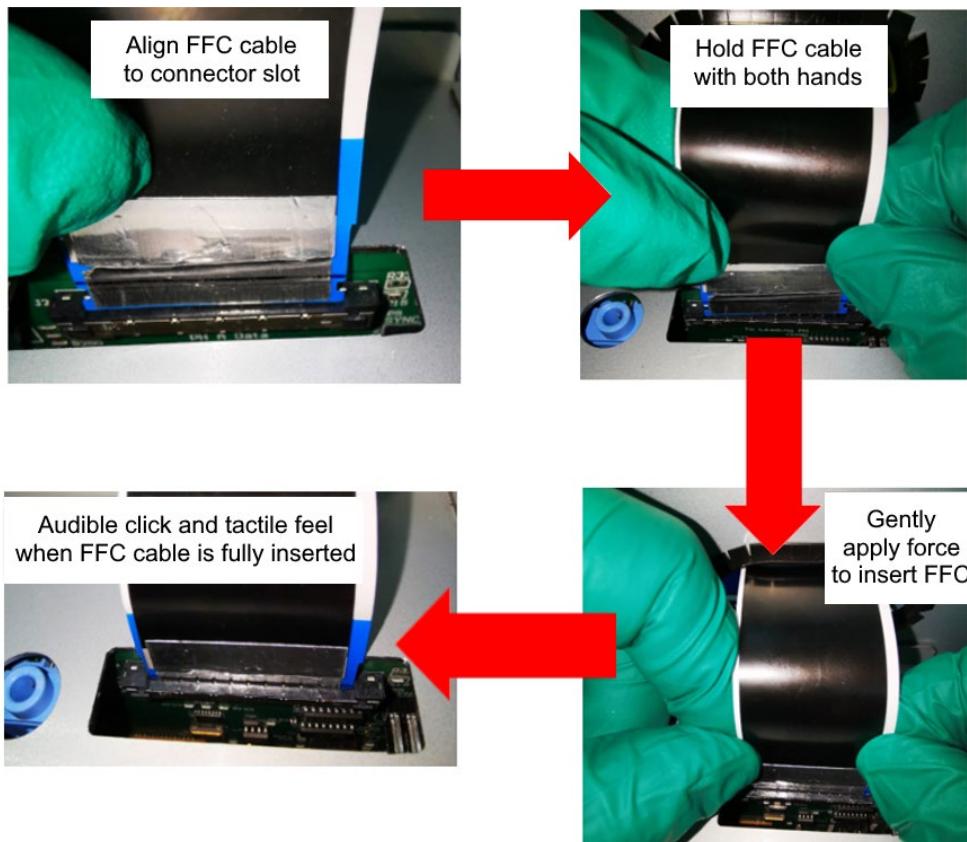


Figure 215 – Cables Connected**Figure 216 – Cables Connected to Both Sides of Mechanical Controller PCA**

CAUTION: To avoid damaging the flat, flexible cables (FFCs), review [Figure 217](#) and strictly follow the steps below.

20. To install the Electronics FFCs, carefully align the end of the FFC with the open slot of the connector ([Figure 217](#)). For proper connection and to avoid damage, ensure that the edge of the FFC is parallel to the connector and not tilted to one side or at an angle.
21. Hold the end of the FFC with both hands and gradually apply gentle force to insert the FFC into the connector. You will be able to feel the when the FFC is fully inserted and will hear a click to indicate the proper mating and positive locking of the FFC with the connector.



Figure 217 – Insert FFC

22. Check that all cables are fully connected.

16.6 Testing

1. Power on the system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Check that the Printhead Cradle Lift Mechanism is working properly by moving it to RAISE, CAP and PRINT positions. Repeat for five (5) times each.
4. Check that the Pinch Valve is working properly by moving it to INK, CLOSED, and AIR positions.
5. Check the functionality of the Circulation Pumps by priming two (2) times.
6. Check the functionality of the Wiper and WIMM by performing light service three (3) times and medium service two (2) times.
7. Print the desired test chart to verify that the system can print properly.



17 Electronics FFC Replacement

This section provides replacement instructions for the Electronics FFC (PN 10005293). There are two (2) cables used in the DuraFlex system; one leading and one lagging. The instructions cover replacement steps for both cables.

Figure 218 – Electronics FFC (Flat Flexible Cable)



17.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

17.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

17.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 17 – Required Tools and Supplies

Description	Type	Quantity
Safety glasses	PPE	1 pair
Powder-free, nitrile gloves	Supply	As needed
Anti-static wrist strap	Tool	As needed
Electronics FFC – PN 10005293	Part	1
Slotted (flat blade) screwdriver (3/16")	Tool	1
Flat-head tweezer	Tool	1

17.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.



1. Remove any covers or panels to expose the top ([Figure 219](#)) and rear of the Electronics Module and create sufficient access to the components.

Figure 219 – Electronics FFC Access from Top



2. Wear an anti-static wrist strap while performing this procedure.
3. Power down the DuraFlex system.

CAUTION: To avoid cutting wires or cables or damaging hardware, use appropriate tools that are not sharp for the next steps. Do not use a knife, razor blade, or scissors!

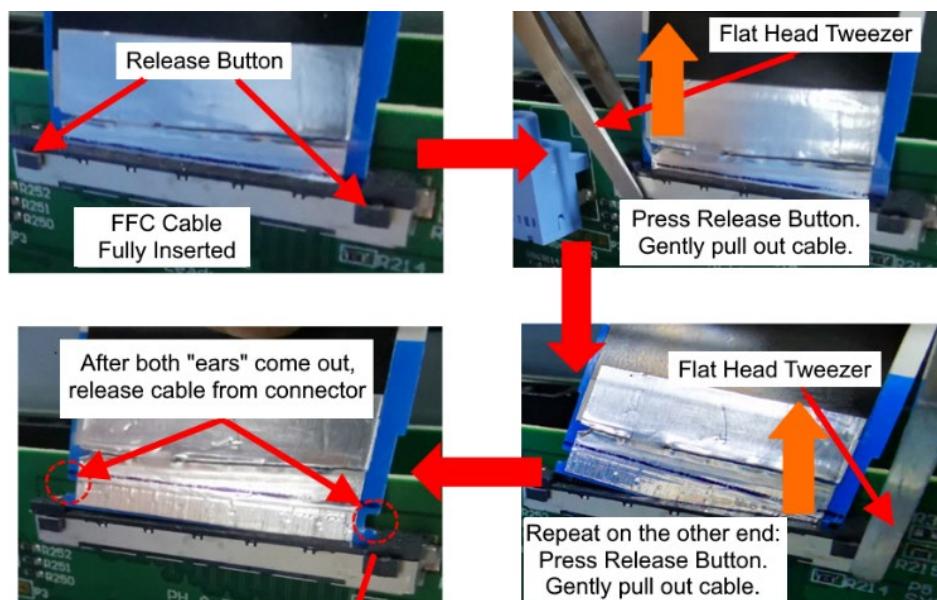
4. Disconnect the ends of both Electronics FFCs (leading and lagging) from the Electrical Module ([Figure 220](#)).

CAUTION: To avoid damaging the flat, flexible cables (FFCs), strictly follow the steps below.

To disconnect the Electronics FFC:

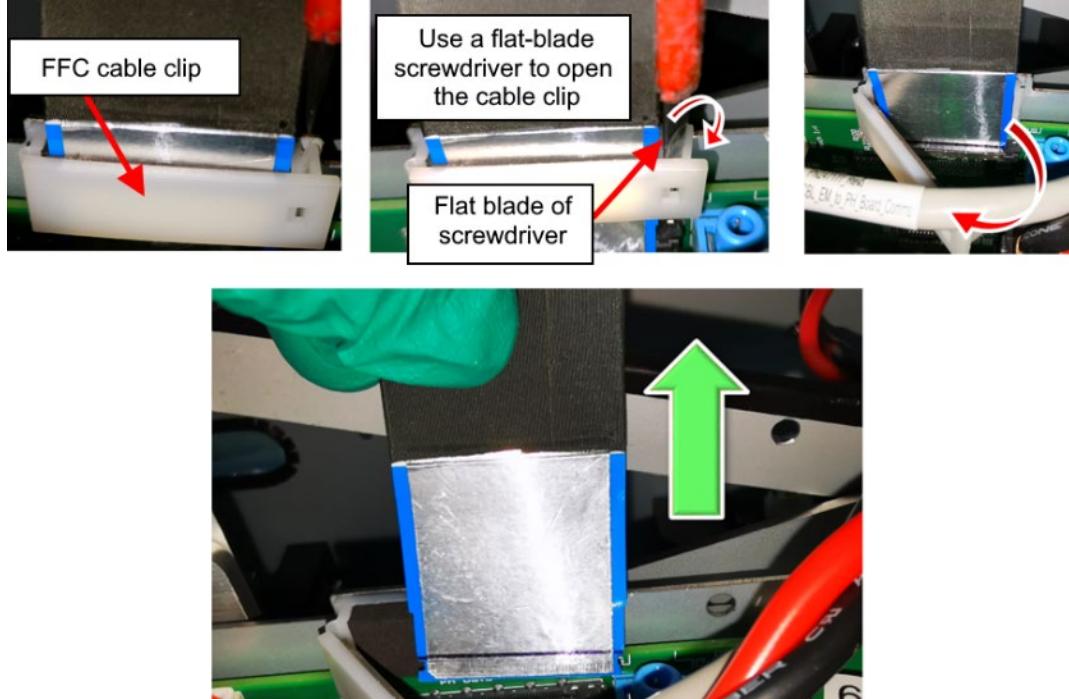
- a. Use a flat-head tweezer (or similar tool) to release the FFC connectors.
- b. Use tweezers to press down one of the release buttons on the FFC connector.
- c. Apply slight force on the pressed side and gently pull on the FFC to disconnect it.
- d. Repeat these steps to disconnect the other FFC.

Figure 220 – Remove Electronics FFC



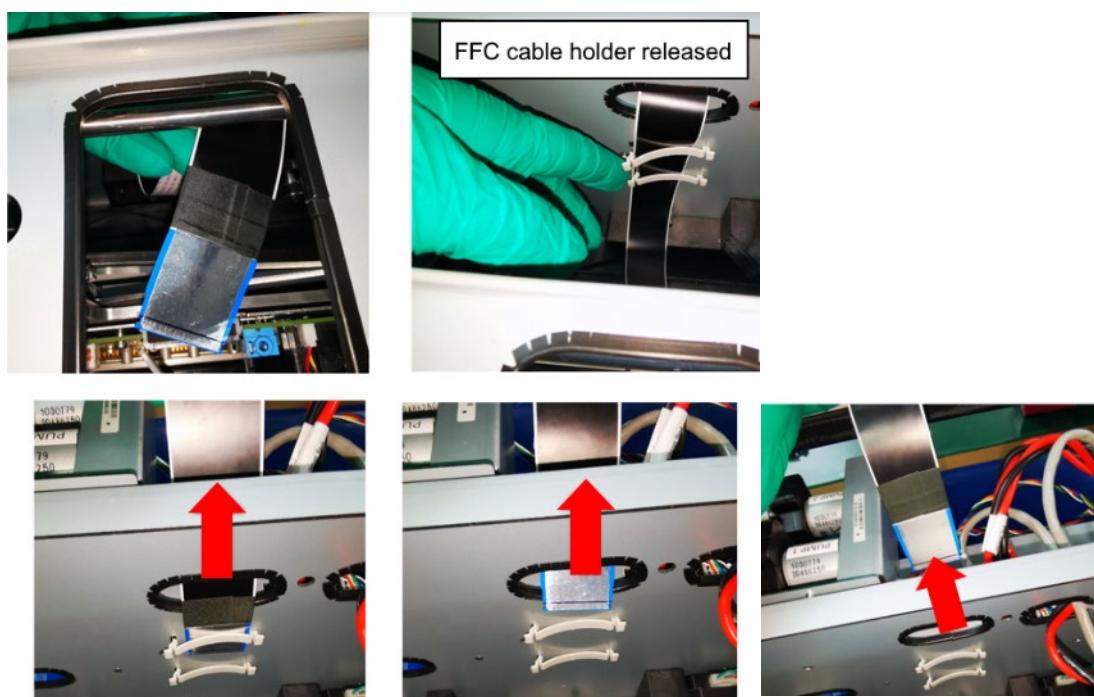
5. From the front of the DuraFlex unit, release the leading FFC from the Printhead Power PCA connector:
 - a. Use a 3/16" slotted screwdriver to open the leading FFC clip ([Figure 221](#))
 - b. Follow the instructions in the previous step to safely disconnect the FFC.

Figure 221 – Release the Leading FFC



6. Release the leading FFC from the FFC holder and thread the cable through the openings in the Print Module to free it.

Figure 222 – Leading FFC Removed



7. Repeat Steps [4](#) to [6](#) to release the Lagging FFC from its connector at the other side of Print Module.

Figure 223 – Release and Remove the Lagging FFC



8. Discard the FFCs according to local disposal recommendations.

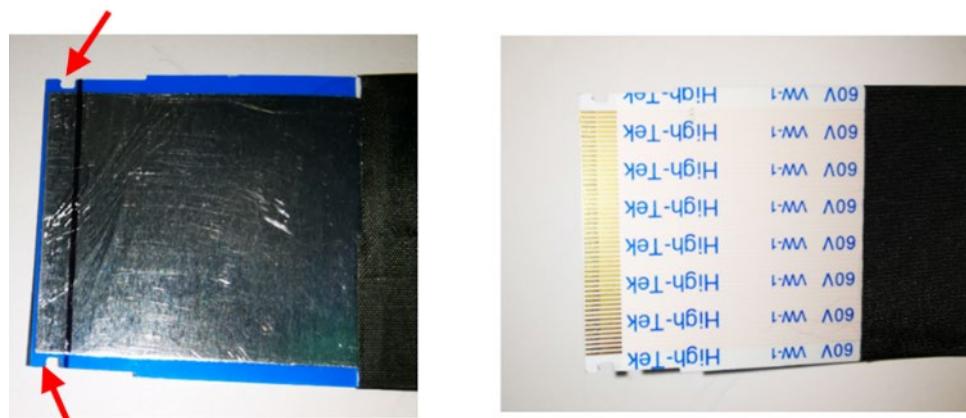
17.5 Installation

1. Inspect the new Electronics FFC.

- Ensure that there is no bend, twist, or damage.
- Ensure that all the contact pads are not damaged.
- Ensure that the “ears” are intact at both ends (no damage or tears).

If damaged, enter a case in Memjet’s Service Desk (<https://OEMsupport.memjet.com>).

Figure 224 – Electronics FFC Inspection



2. Insert both the FFCs (leading and lagging) into the FFC connectors on the Electrical Module enclosure ([Figure 225](#)).

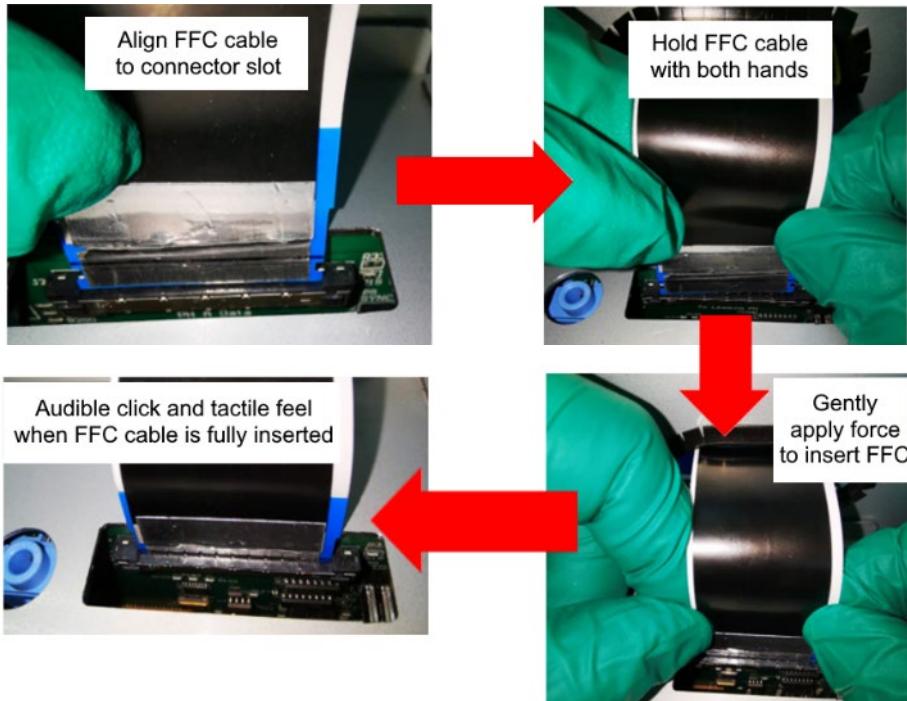
Figure 225 – FFC Locations on Electrical Module Enclosure



CAUTION: To avoid damaging the flat, flexible cables (FFCs), review [Figure 226](#) and strictly follow the steps below.

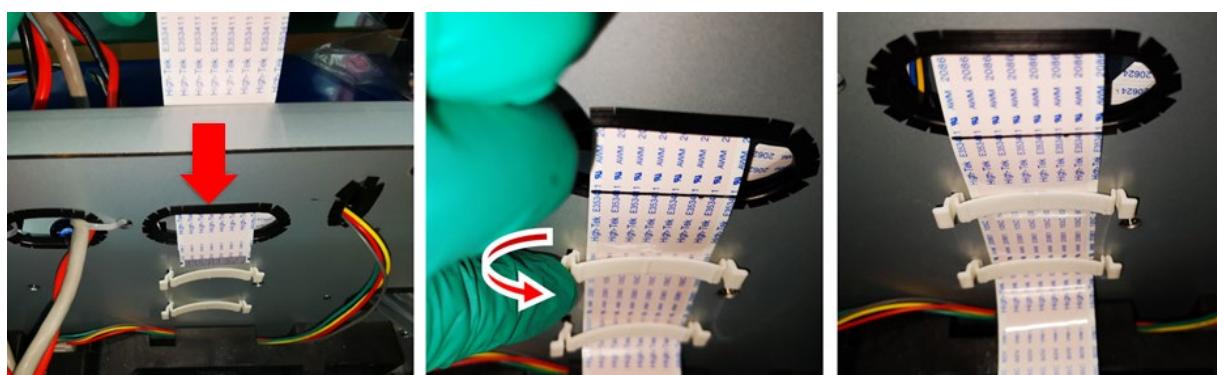
- a. Carefully align the end of the FFC with the open slot of the connector. For proper connection and to avoid damage, ensure that the edge of the FFC is parallel to the connector and not tilted to one side or at an angle!
- b. Hold the end of the FFC with both hands and gradually apply gentle force to insert the FFC into the connector. You will be able to feel the when the FFC is fully inserted and will hear a click to indicate the proper mating and positive locking of the FFC with the connector.
- c. Repeat the process for the other Electronics FFC.

Figure 226 – Insert Electronics FFC



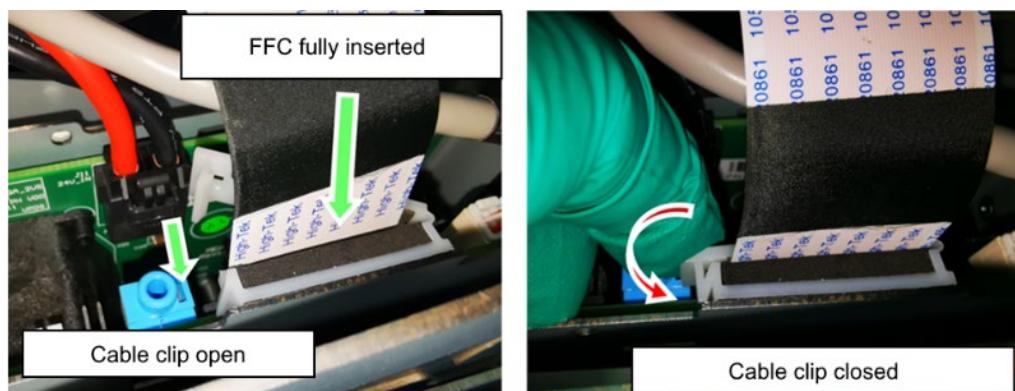
3. On the right side, attach Lagging FFC to the connector on the Printhead Power PCA ([Figure 221](#)):
 - a. Insert the cable into the hole in the rear of the Print Module frame.
 - b. Secure it with the FFC holders.

Figure 227 – Lagging FFC Inserted through Frame



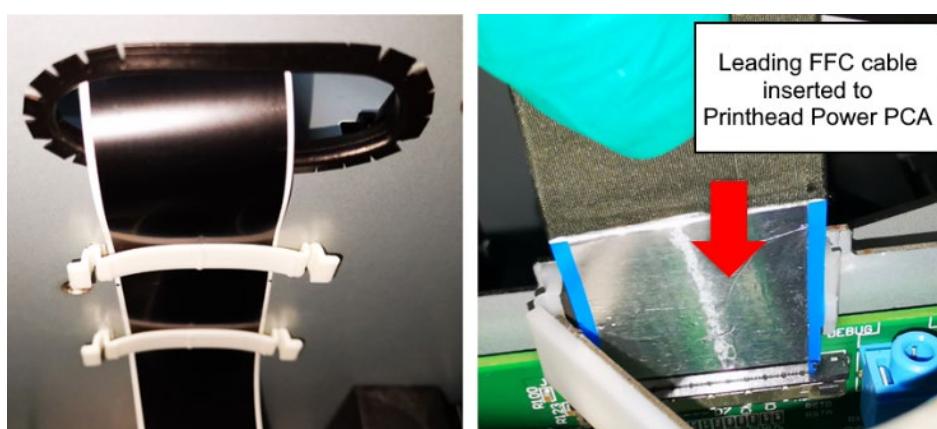
- c. Insert the FFC into the connector on the Printhead Power PCA by following the FFC insertion steps in [Figure 226](#).
- d. Snap the cable clip around the FFC.

Figure 228 – Lagging FFC Installed



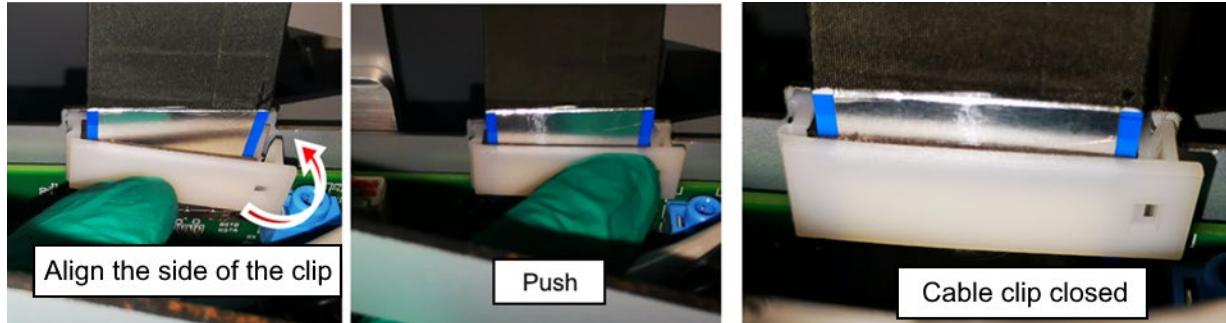
4. On the left Side, attach Leading FFC to the connector on the Printhead Power PCA ([Figure 229](#)):
 - a. Insert the cable into the hole in the rear of the Print Module frame.
 - b. Secure it with the FFC holder.

Figure 229 – Leading FFC Inserted from Frame Hole



- c. Insert the FFC into the connector on the Printhead Power PCA by following the FFC insertion steps in [Figure 226](#).
- d. Snap the cable clip around the FFC ([Figure 230](#)).

Figure 230 – Leading Electronics FFC Installed



17.6 Testing

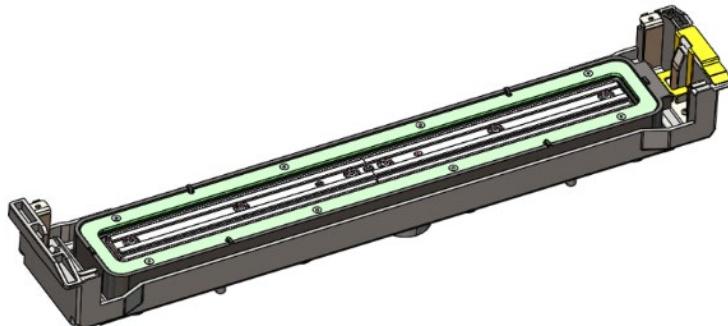
1. Power up the DuraFlex system.
 2. Initialize the print engine.
-
- Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.
3. Start a print job and check the print output.
 4. If there is no error, the Electronics FFC replacement is successful.



18 Cap Replacement

This section provides replacement instructions for the Cap (Capper Assembly – PN 10005278).

Figure 231 – Cap Assembly



18.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

18.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 18 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
Cap assembly – PN 10005278	1	Part
T10 – M3 screwdriver	1	Tool

18.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

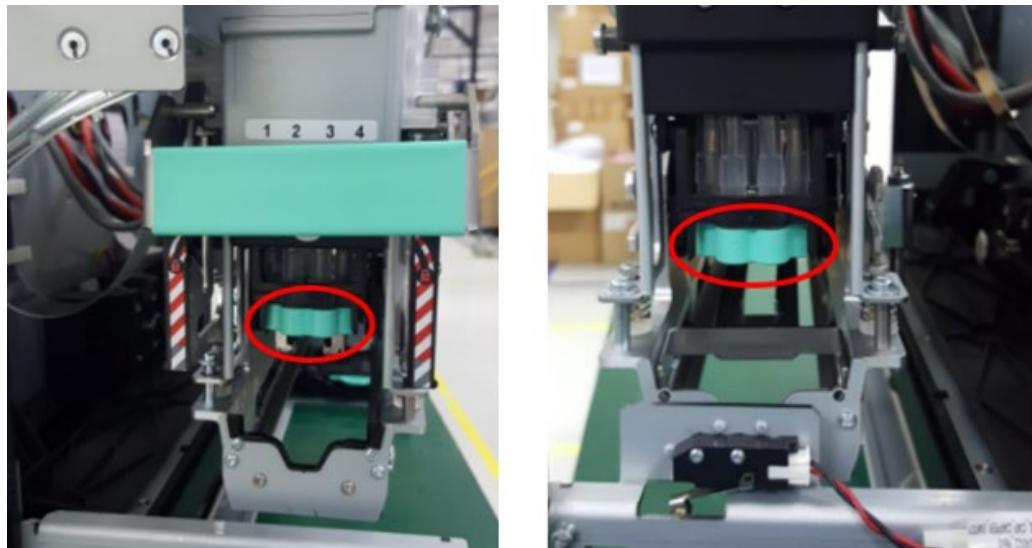
1. Deprime the system and move the Printhead Cradle to RAISE position ([Figure 232](#)).

Figure 232 – Printhead Cradle at Raise Position



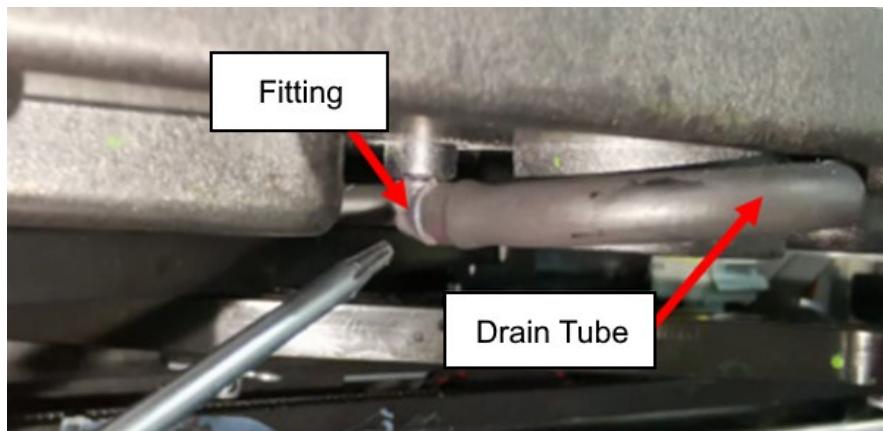
2. Power down the system.
3. Remove the Printhead. Place the Printhead into the storage case properly.
4. Install the fluidic coupling covers (qty: 2, one on each side) to protect the fluidic couplings from contamination.

Figure 233 – Fluidic Coupling Covers



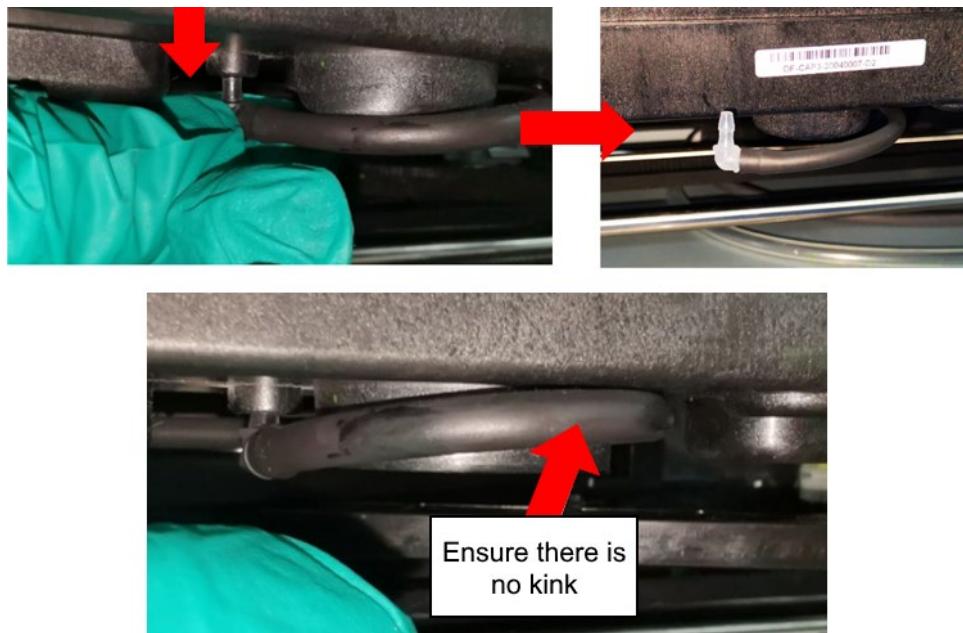
5. Locate the drain tube barb fitting on the underside of the Cap.

Figure 234 – Barb Fitting



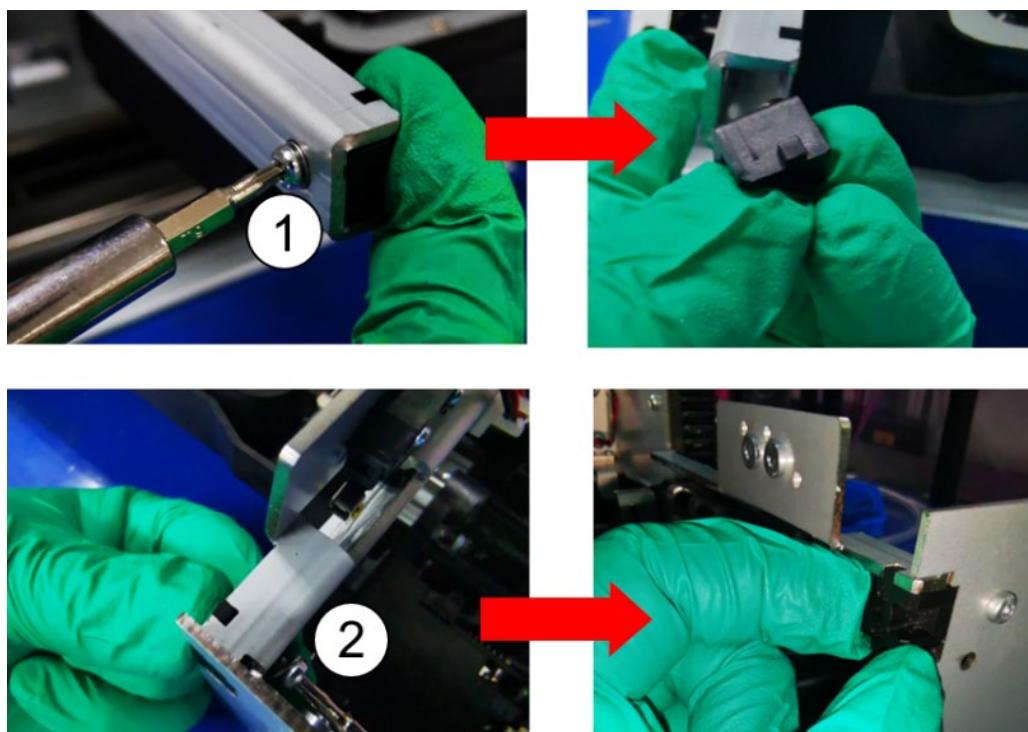
6. Gently pull the drain tube barb out of the Cap. Be sure not to kink the drain tube.

Figure 235 – Remove Drain Tube Barb



7. Loosen the two (2) screws ([Figure 236](#)) to remove the Cap stoppers ([Figure 237](#)) on both ends of the Cap arm.

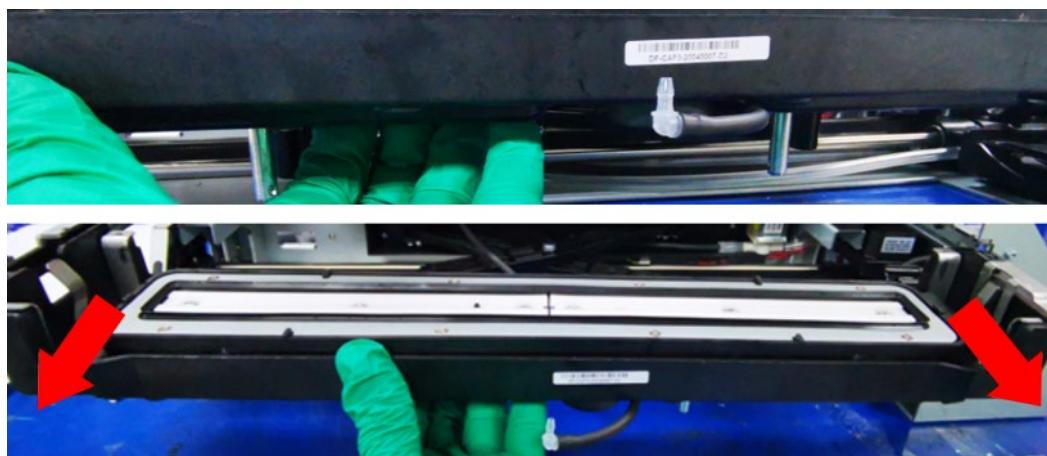
Figure 236 – Cap Stoppers



8. Pull out the retaining clips that lock the Cap mechanism on the left and right ends ([Figure 237](#)).

Figure 237 – Remove Cap Stopper and Retaining Clips

9. Slowly slide the Cap along the Cap Arm (left and right ends) to remove it ([Figure 238](#)).

Figure 238 – Sliding Cap Out

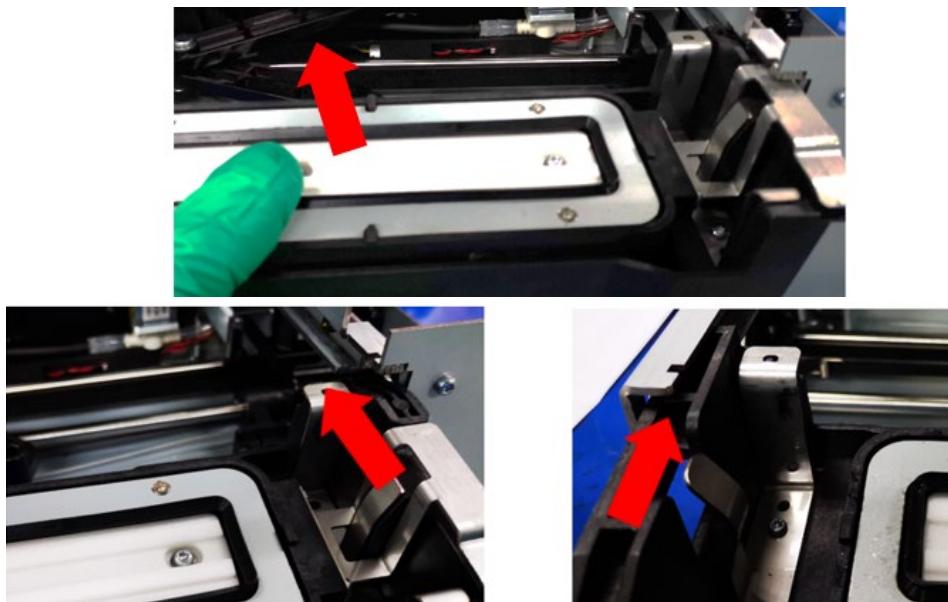
10. Discard the Cap according to local disposal recommendations.

18.4 Installation

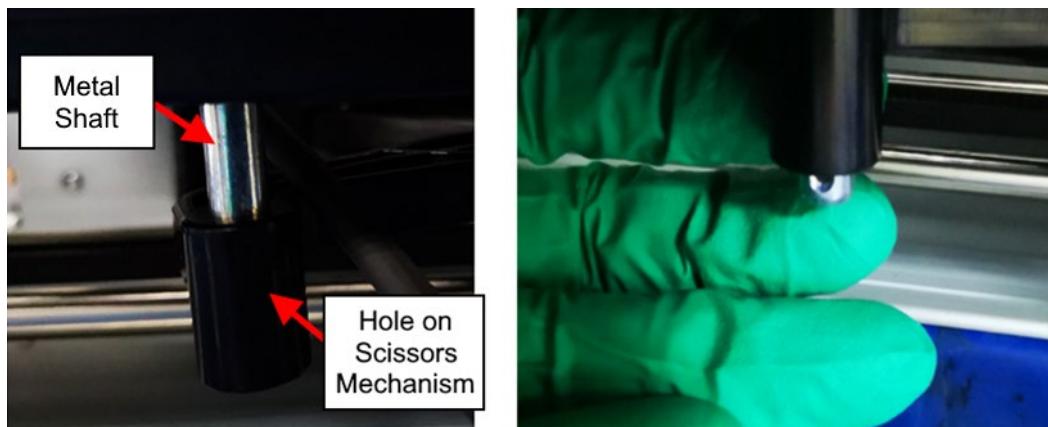
1. Visually inspect the new Cap assembly to ensure that there is no damage, and the wick is clean ([Figure 239](#)). If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 239 – Cap Assembly

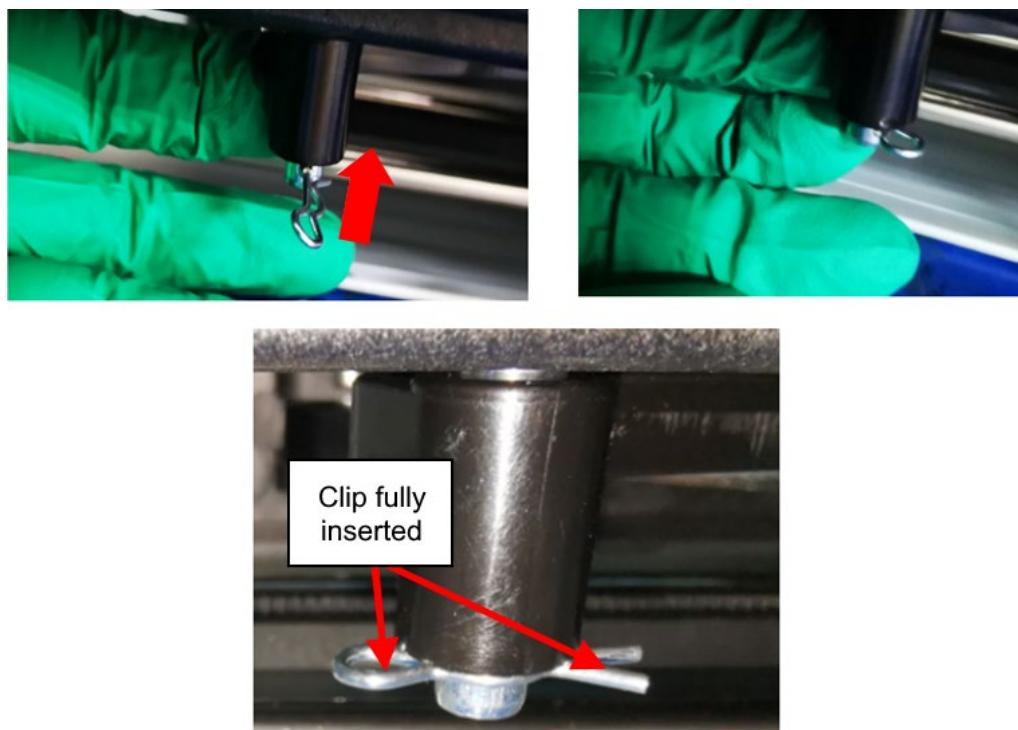
2. Align the Cap to the left and right Cap arms. Slide it into the Home position. Slide the Cap in and out a few times to ensure there are no obstructions ([Figure 240](#)).

Figure 240 – Cap Aligned

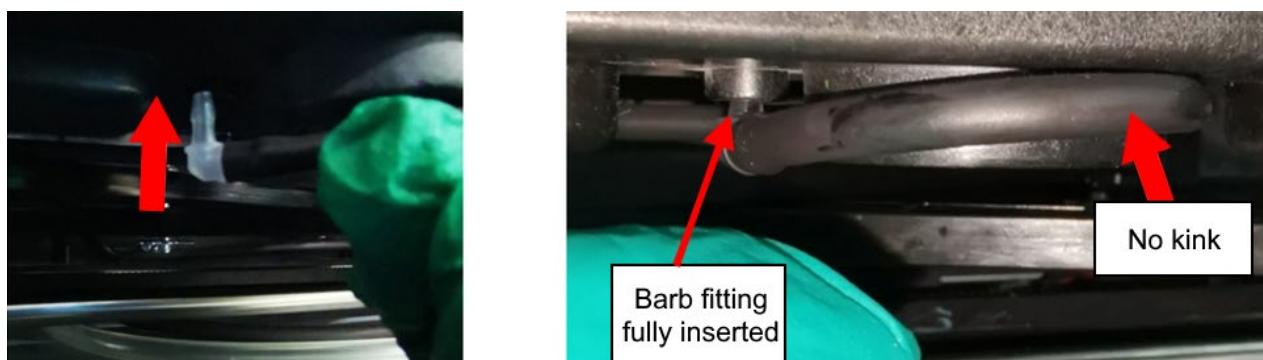
3. Align the Cap metal shaft to the scissors mechanism's arm hole underneath (left and right side).

Figure 241 – Metal Shaft Aligned

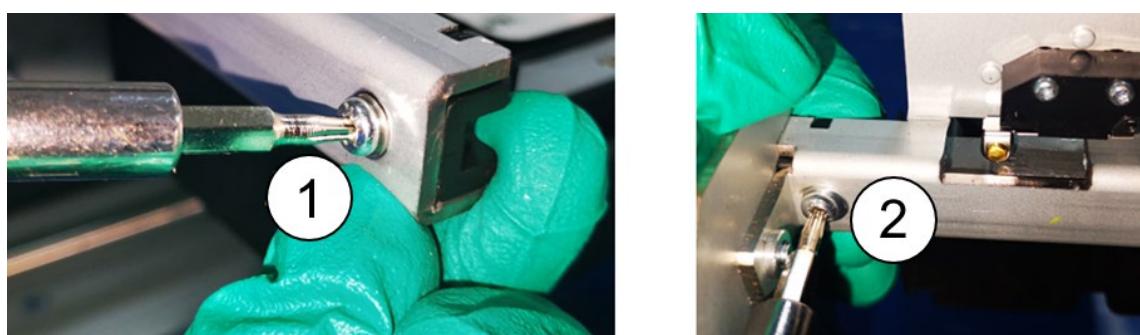
4. Insert the Clip back (left and right side) through the metal shaft hole. Push the clip fully in.

Figure 242 – Clip Inserted

5. Insert the barb of the drain tube into the bottom of the new Cap. Ensure that the drain tube is not kinked and is dressed smoothly around the bottom feature of the Cap.

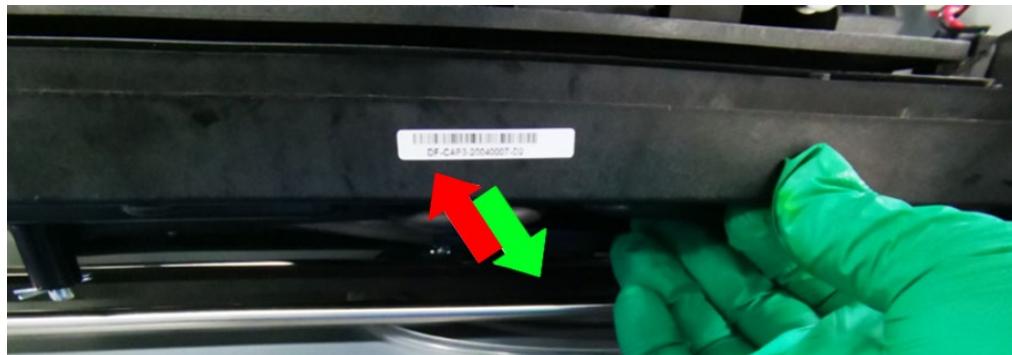
Figure 243 – Barb Inserted

6. Place the stoppers and tighten the screws to the Cap sliding arms at the left and right side.

Figure 244 – Screws and Stoppers Tightened

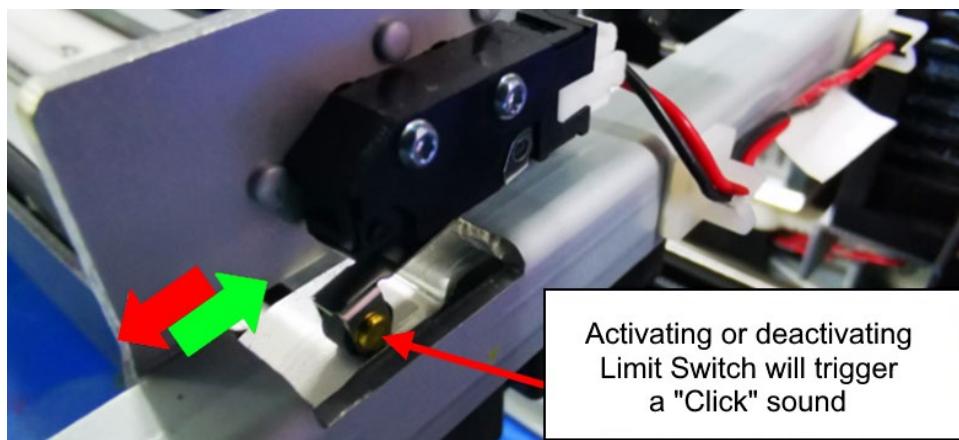
7. Slide the Cap in and out for few times to ensure there are no obstructions ([Figure 245](#)).

Figure 245 – Perform Sliding Test



8. When moving the new Cap in and out, ensure that the Sensor (limit switch) can be activated or deactivated ([Figure 246](#)). There will be a "Click" sound each time the limit switch is activated or deactivated.

Figure 246 – Perform Test to Trigger Limit Switch



18.5 Testing

1. Insert the Printhead.
2. Power on DuraFlex.
3. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

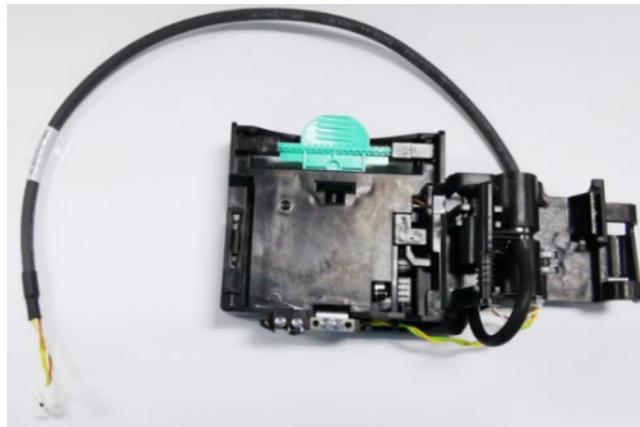
4. Move the Cap to the Cap and Home positions.
5. Move the Printhead to the Cap position.
6. If there is no error, the Cap replacement is successful.



19 Wiper Carrier Replacement

This section provides replacement instructions for the Wiper Carrier Sub Assembly (PN 10005294).

Figure 247 – Wiper Carrier



19.1 Personal Protective Equipment (PPE)

CAUTION: To avoid personal injury, always use appropriate PPE when performing maintenance and replacement tasks. Refer to Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

19.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 19 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
Anti-static wrist strap	As needed	Tool
Wiper Carrier – PN 10005294	1	Part
Cable tie	1	Supply
Diagonal cutter	1	Tool
Hook tool	1	Tool

19.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

1. Wear an anti-static wrist strap during this procedure.
2. Move the Printhead Cradle to RAISE position and Cap to HOME position.
3. Power down the DuraFlex system.



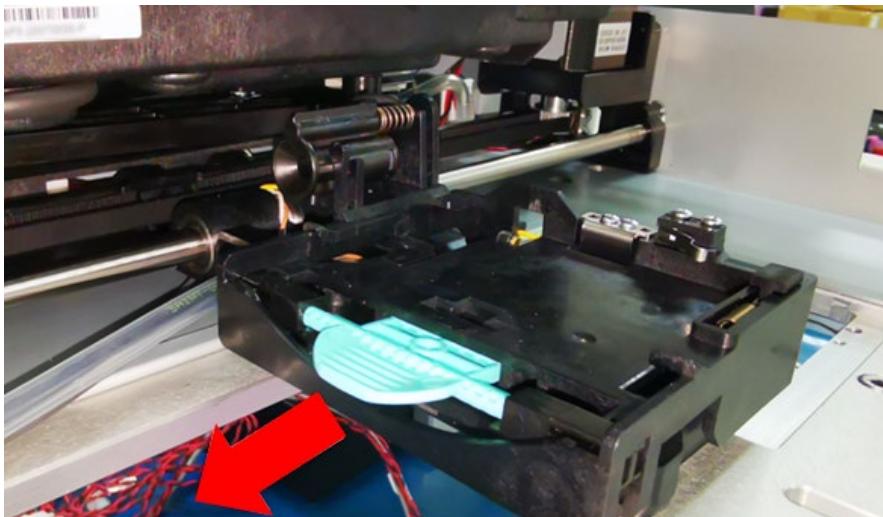
4. Remove the printhead and store it in its storage box, as per Memjet-recommended procedures.
5. Remove the wiper cartridge from the wiper carrier assembly by pressing the green latch ([Figure 248](#)).

Figure 248 – Remove Wiper Cartridge

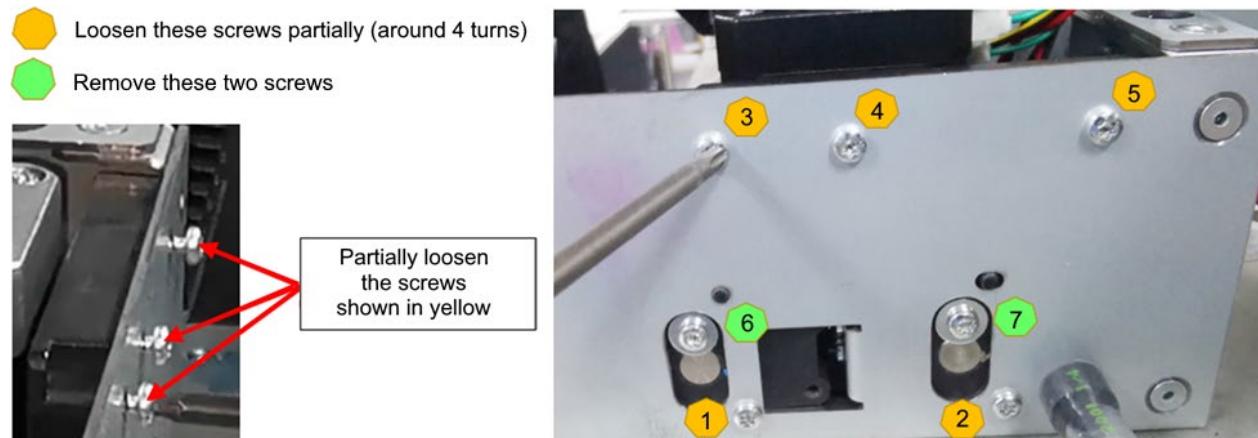


6. Manually push the wiper carrier out from the Home position ([Figure 249](#)).

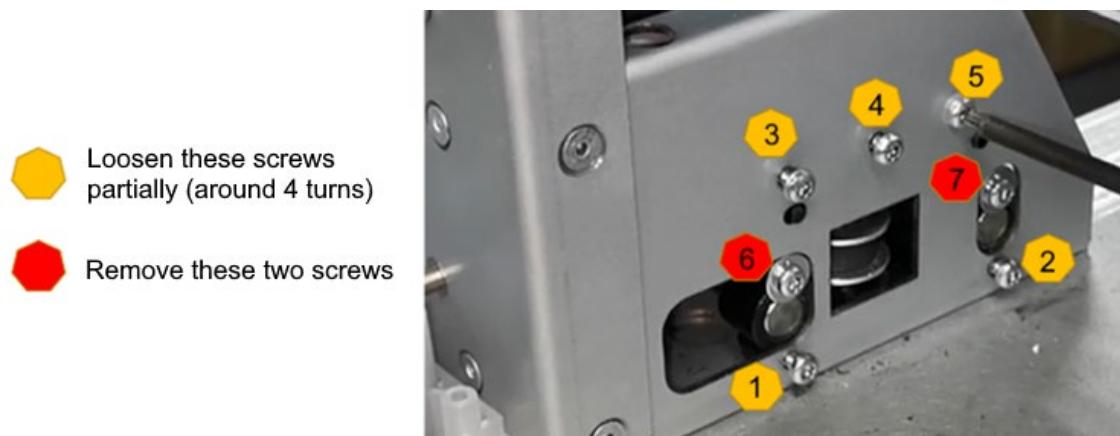
Figure 249 – Push Out Wiper Carrier



7. Locate the screws on the right side of the Print Module ([Figure 250](#)).
8. Use an M3 screwdriver to partially loosen the five (5) screws (shown in yellow below) that tighten the shaft and belts on the right side. Only loosen the screws, do not remove them.
9. Remove the two screws shown in green in [Figure 250](#), and set aside for re-installation.

Figure 250 – Print Module – Right Side

10. On the left side of the Print Module, locate the mounting screws ([Figure 251](#)).
11. Use an M3 screwdriver to partially loosen the five (5) screws (shown in yellow) that tighten the shaft and belts on the left side. **Only loosen the screws and do not remove them!**
12. Remove the two screws shown in red in the next figure and set aside for re-installation.

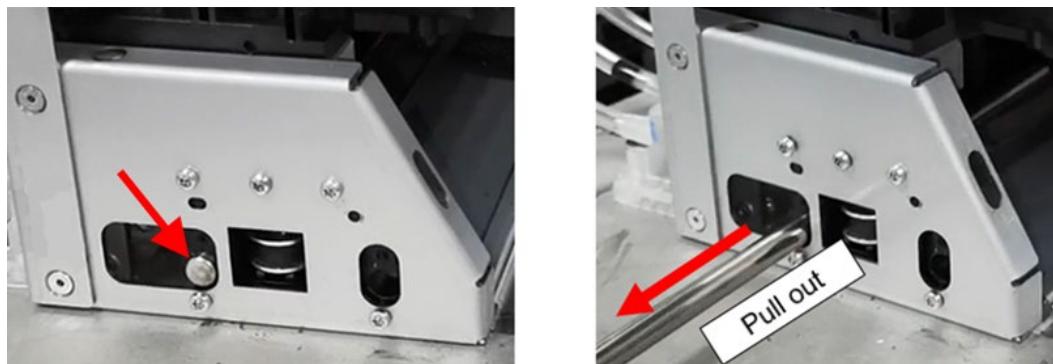
Figure 251 – Print Module – Left Side

13. Pull the first shaft out of the Print Module and set the shaft aside.

Figure 252 – Remove the Shaft

14. Pull the second shaft out of the Print Module and set the shaft aside ([Figure 253](#)).

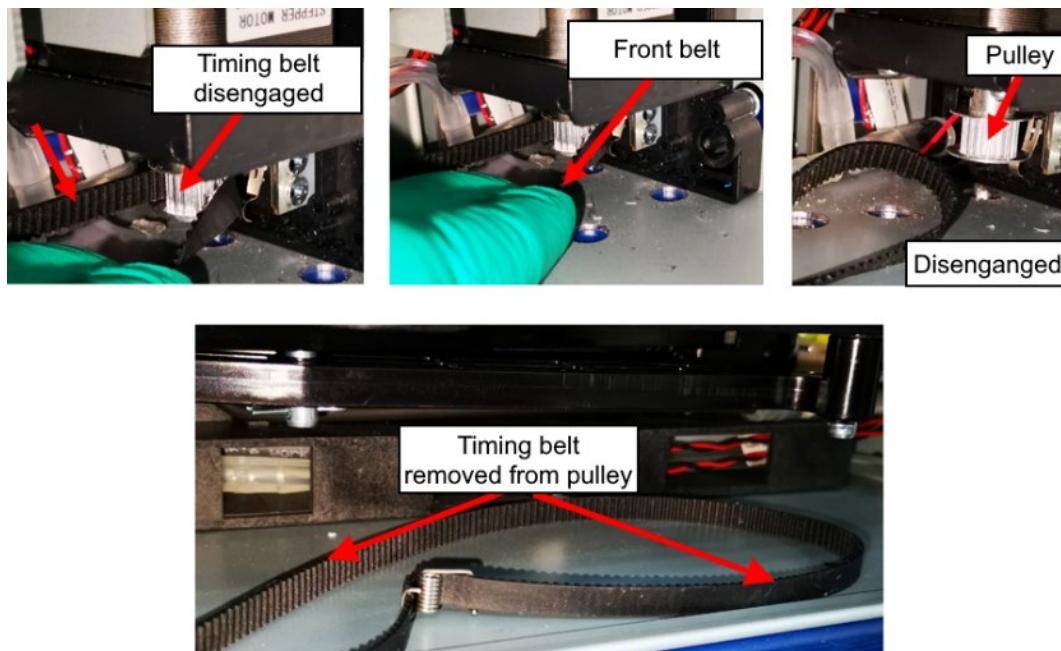
Figure 253 – Remove the Second Shaft



15. Remove the wiper timing belt from the pulley ([Figure 254](#)).

- Disengage the timing belt from the pulley by pushing down on the front of the belt.
- Disengage the pulley, then remove the timing belt from the pulley.

Figure 254 – Release Wiper Belt from Pulley



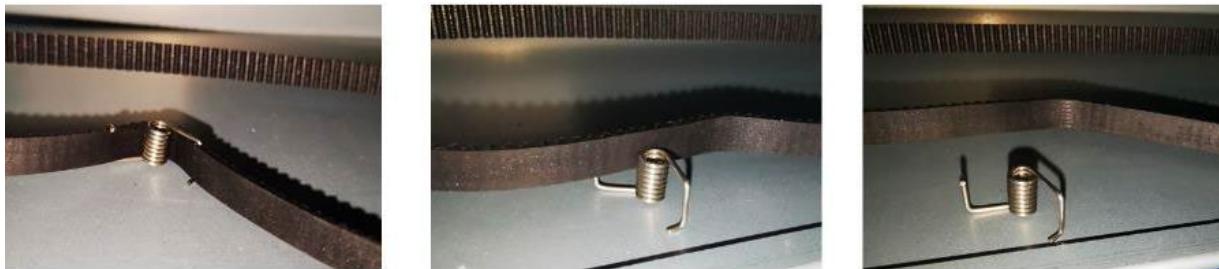
16. Slide the two ends of the timing belt out of the wiper carrier clip.

Figure 255 – Release Wiper Belt from Wiper Carrier



17. Remove the spring tensioner from the timing belt ([Figure 256](#)).

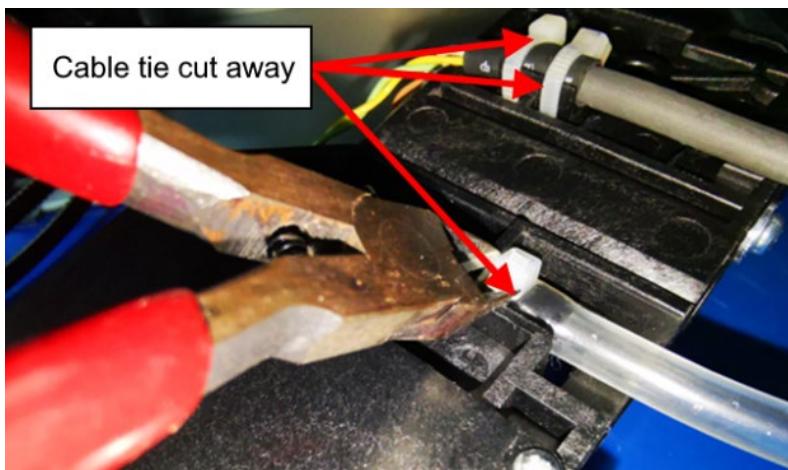
Figure 256 – Spring Tensioner Removed



18. Carefully cut the three (3) cable ties from the underside of the wiper carrier.

Caution: Do not cut the tube inside the sleeve.

Figure 257 – Cable Ties on Bottom of Wiper Carrier



19. Carefully cut the cable tie from the inner side of the Print Module but make sure not to damage the tube inside the sleeve ([Figure 258](#)).

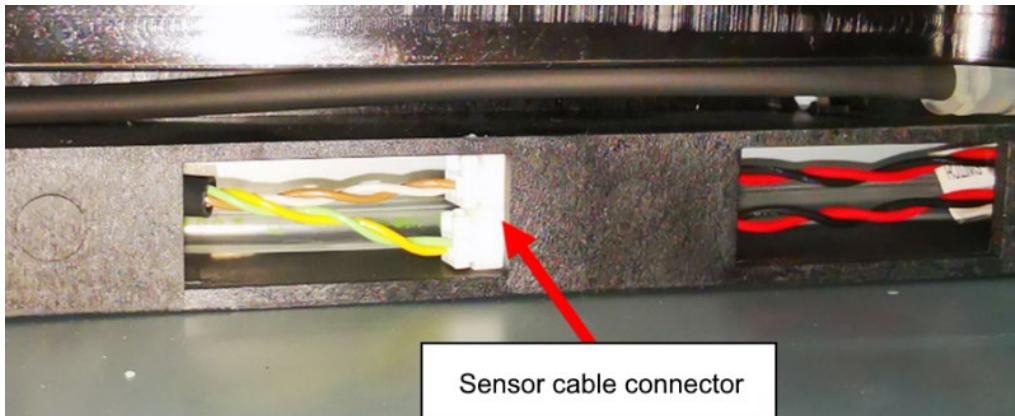
20. Remove the cable tie that attaches the tubing and cable to the Print Module frame base.

Figure 258 – Cable Tie at Inner Side of Print Module



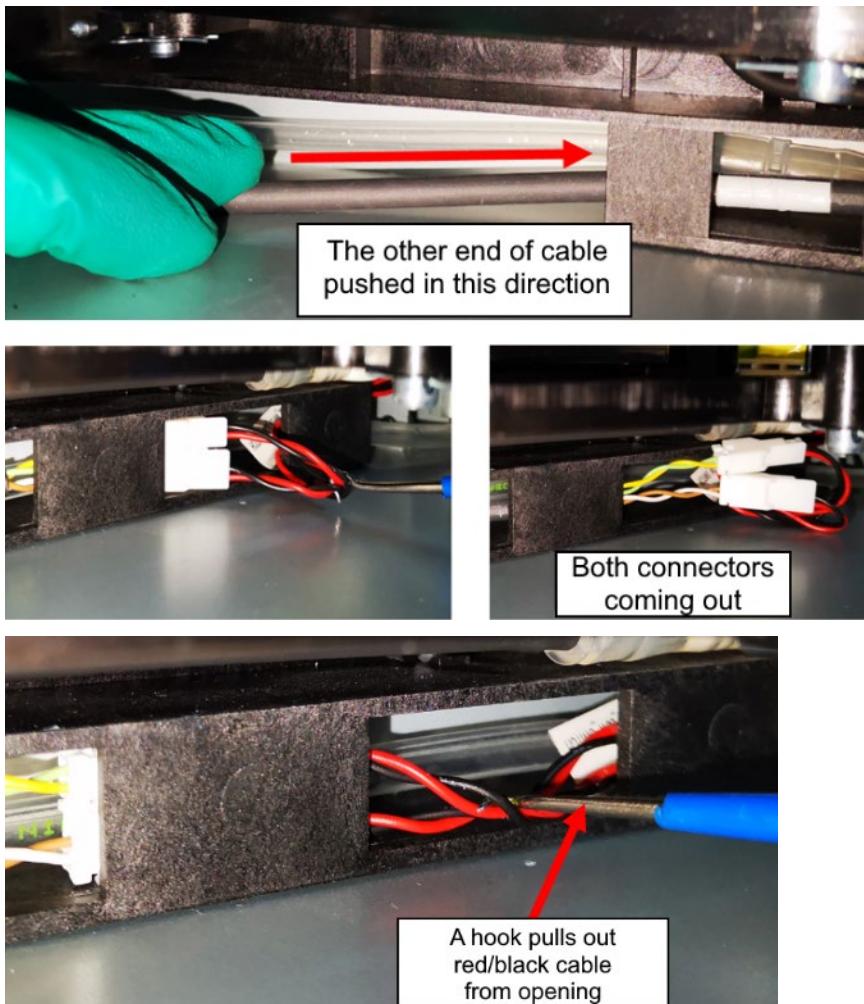
21. Locate the white sensor cable connectors ([Figure 259](#)).

Figure 259 – Sensor Cable Connectors



22. Push the red/black cable towards the opening ([Figure 260](#)). Then use a hook tool to gently pull the sensor cable connectors out through the opening.

Figure 260 – Push Cable to Expose Sensor Cable Connectors and Remove Them



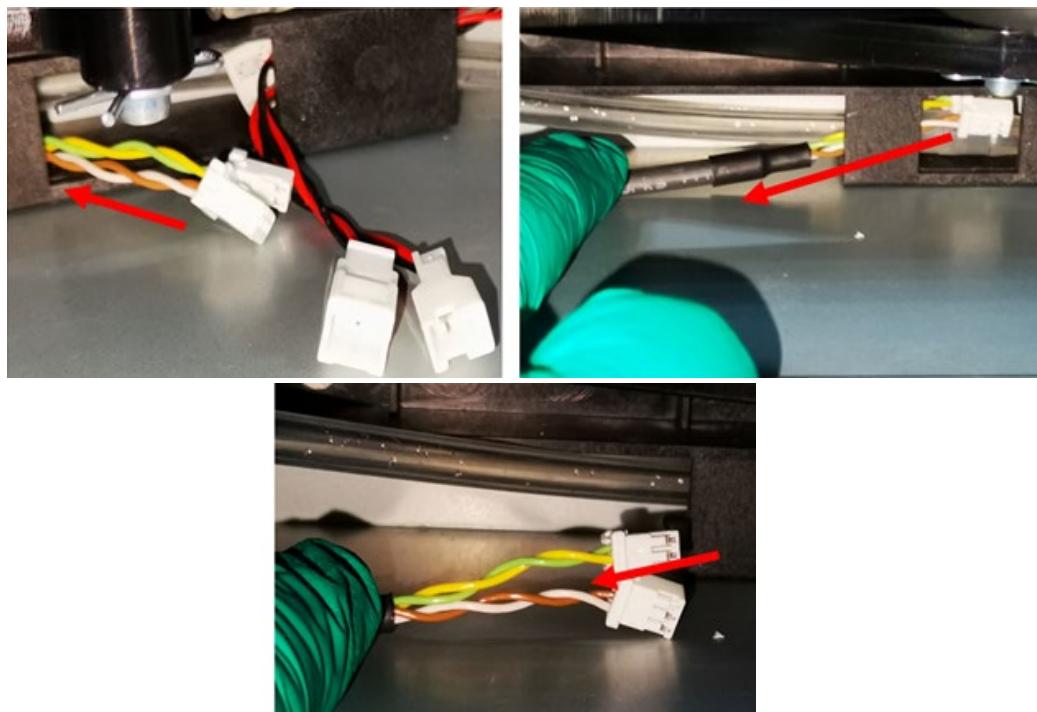
23. Detach the sensor cable connector from the red/black cable ([Figure 261](#)).

Figure 261 – Sensor Cable Connector Detached



24. Push the loose end of cables back through the frame and around the post then pull it out of the frame ([Figure 262](#)).

Figure 262 – Sensor Cable Ends



25. Remove the Wiper Carrier assembly and discard it according to local disposal recommendations.

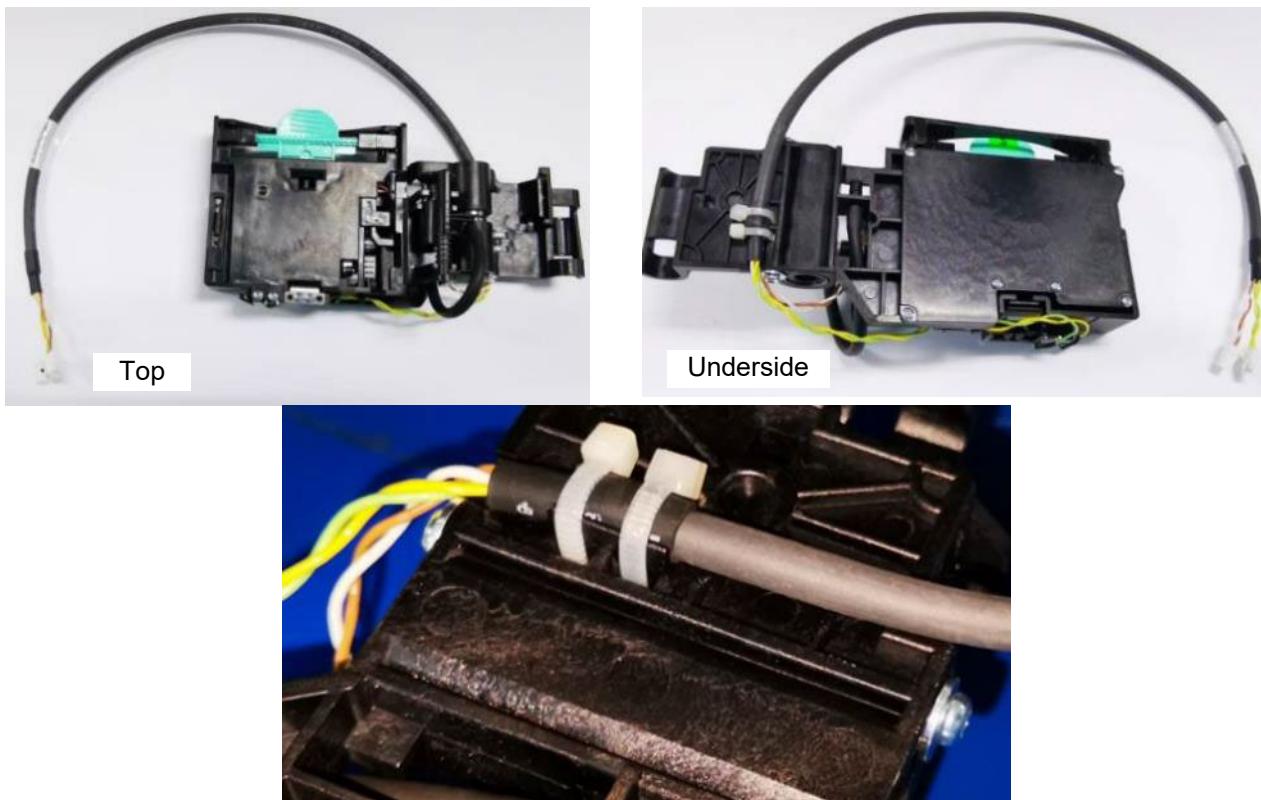
19.4 Installation

1. Visually inspect the new Wiper Carrier Assembly to ensure:

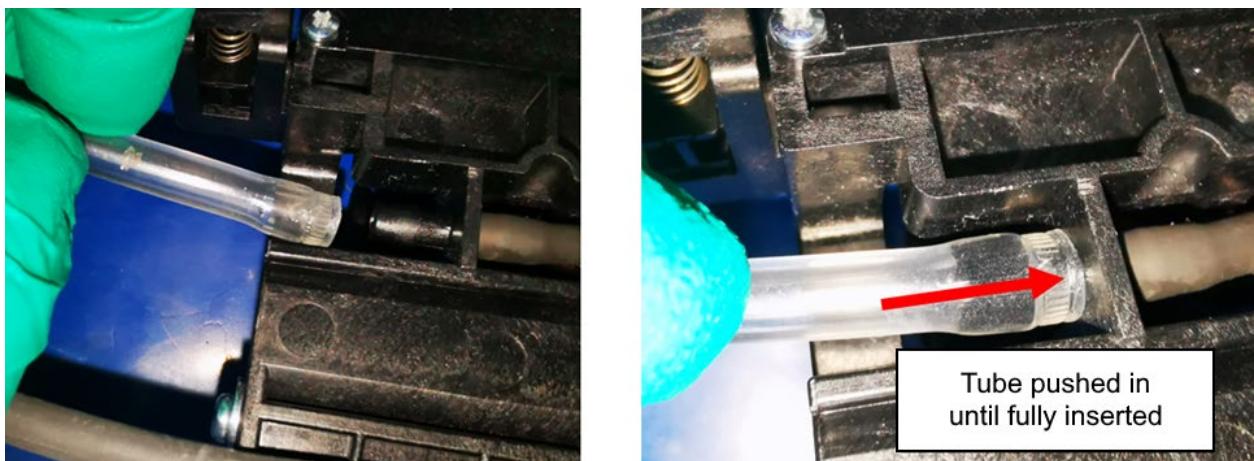
- sensor lever is not deformed
- tube is not kinked
- cables have no damage and are properly assembled with cable ties, etc.

If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).



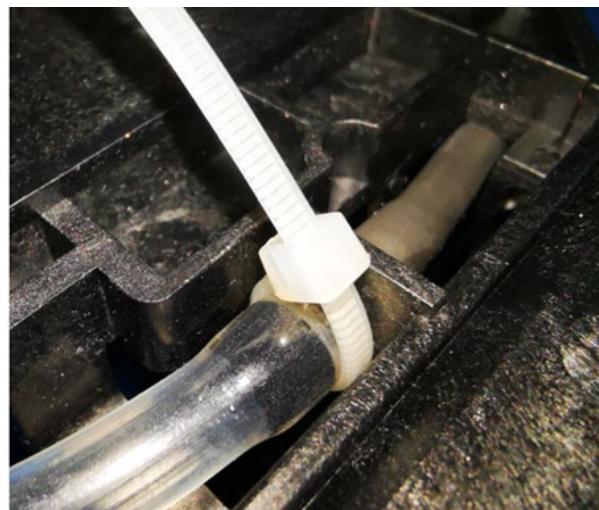
Figure 263 – Wiper Carrier Assembly Views

2. Slide the tube onto the barb on the underside of the new Wiper Carrier assembly. Push the tube until it reaches the bracket securing the barb ([Figure 264](#)).

Figure 264 – Tube Fully Inserted

3. Use a cable tie to secure the tube on the barb ([Figure 265](#)).

Figure 265 – Cable Tie Attached



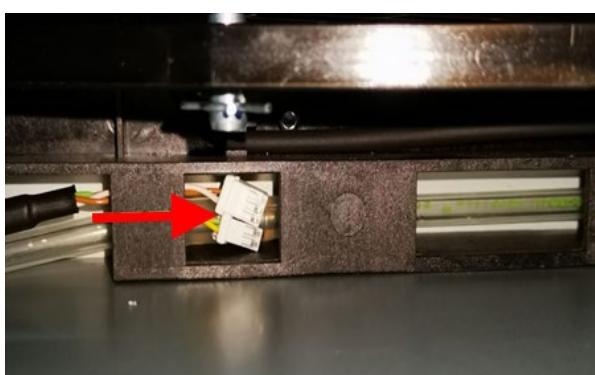
4. Use a diagonal cutter or a pair of pliers to slightly pull and adjust the cable tie tail, until it is tightly binding the tube to the barb, then use a wire cutter to trim the excess cable tie tail ([Figure 266](#)).

Figure 266 – Trim Excess Cable Tie



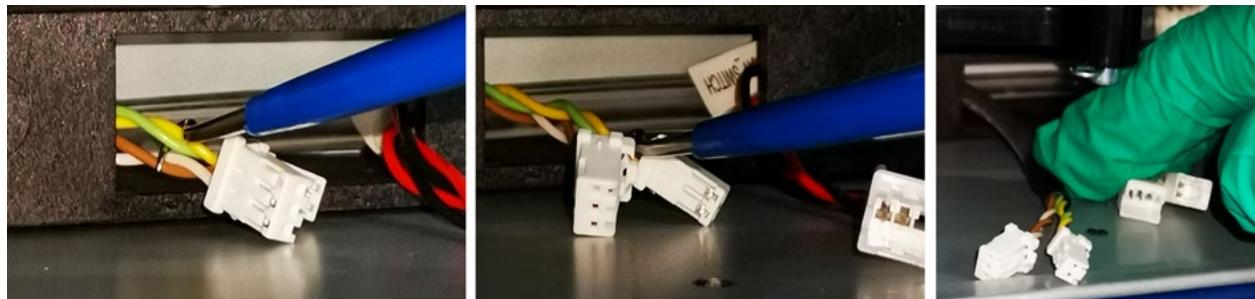
5. Route both sensor cable connectors through the assembly frame ([Figure 267](#)).

Figure 267 – Route Sensor Cable Connectors

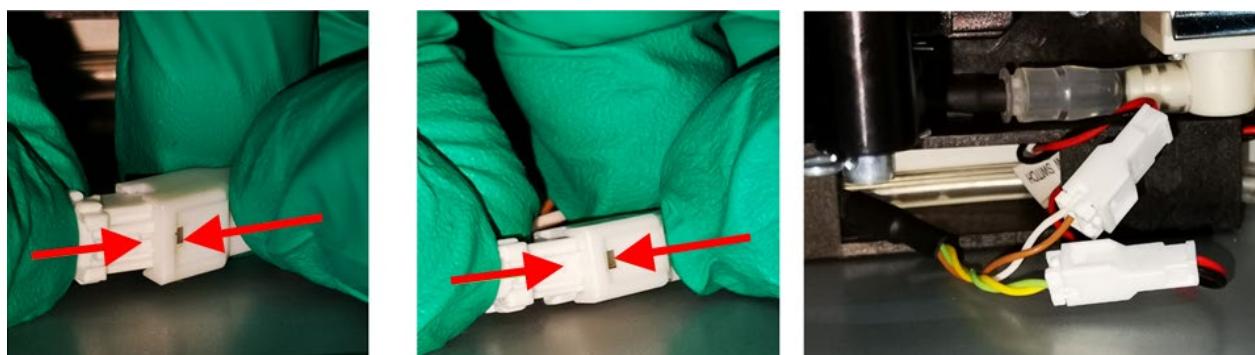


6. Use the hook to gently pull the sensor cable connectors through ([Figure 268](#)).

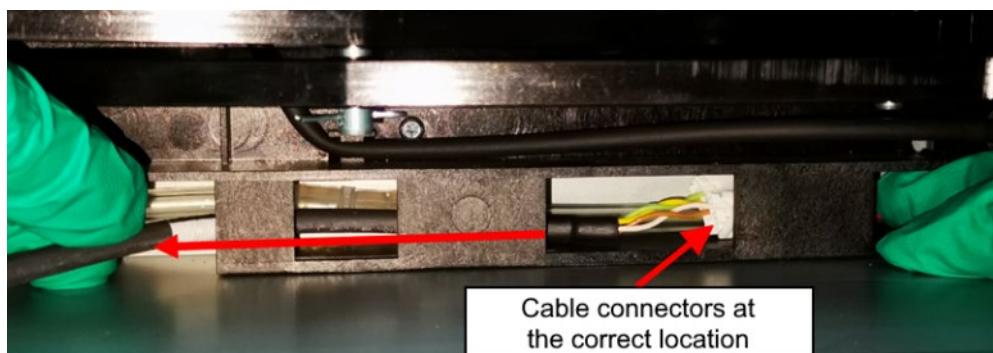
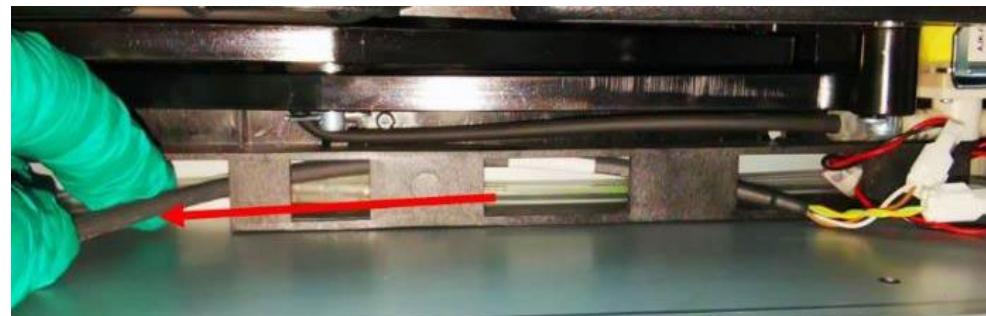


Figure 268 – Sensor Cable Connectors Pulled Out

7. Check the sensor cable and red/black cable connector orientation. The connectors can only be inserted in one direction. Plug the sensor cable connectors into the red/black cable connector. Ensure that they are fully inserted ([Figure 269](#)).

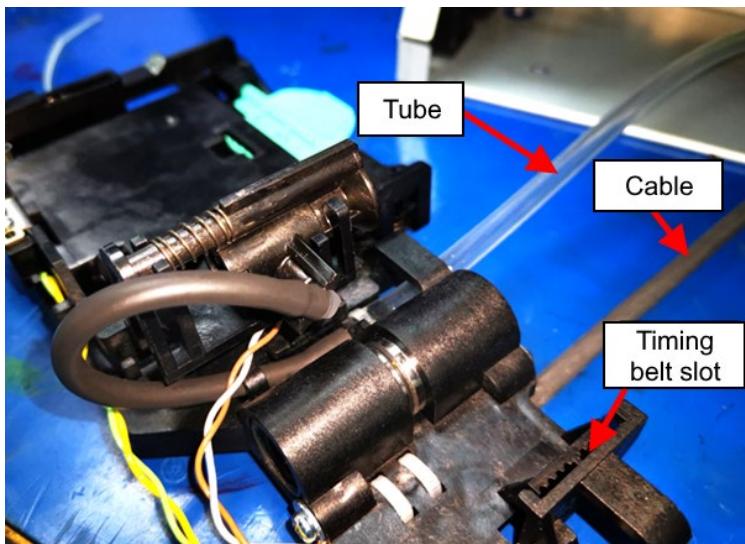
Figure 269 – Connectors Attached

8. Pull the sensor cable from the other end ([Figure 270](#)) until the connectors are at the correct location.

Figure 270 – Pulling Sensor Cables into Position

9. At this point in the installation, the assembly should look like [Figure 271](#).

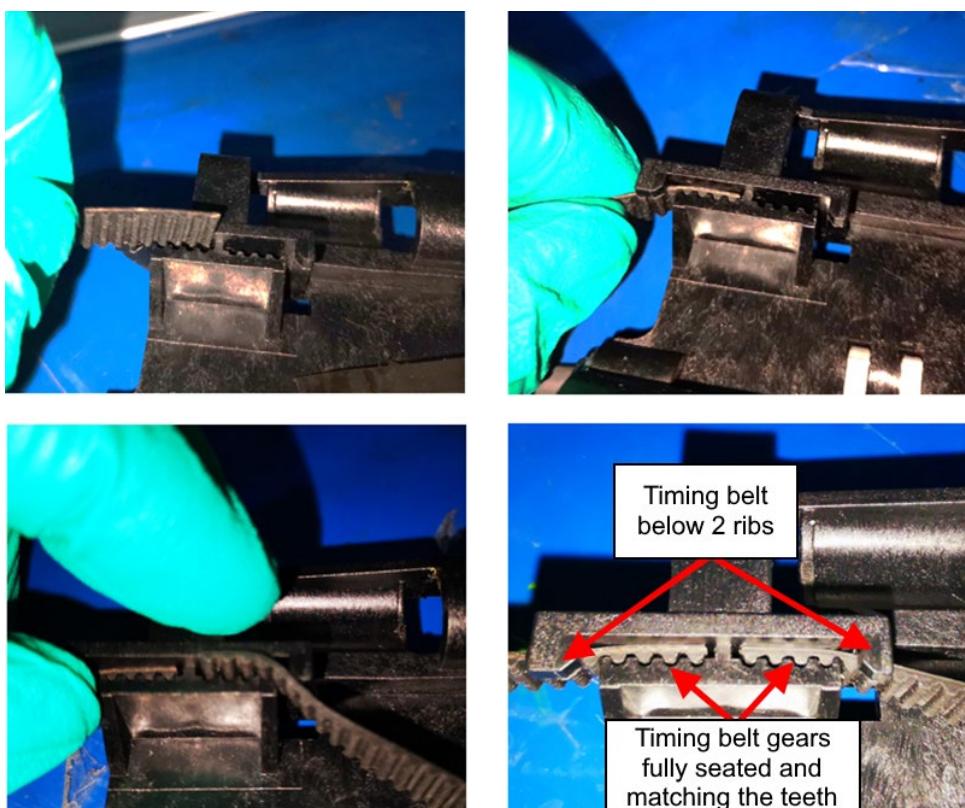
Figure 271 – Wiper Cartridge Assembly Connections



10. Use cable ties as needed to attach the tubing and cable to the Print Module frame base.

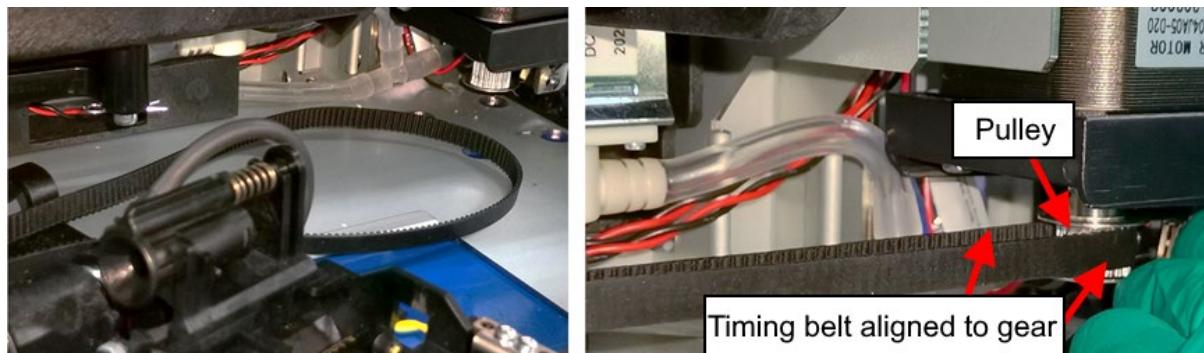
11. Insert one end of the timing belt into the toothed slot, ensuring that it is not twisted, and install the other end into the slot as shown in [Figure 272](#).

Figure 272 – Timing Belt Inserted



12. Align the timing belt with the gear and install the belt on the pulley. Ensure that the timing belt is not twisted when installing ([Figure 273](#)).

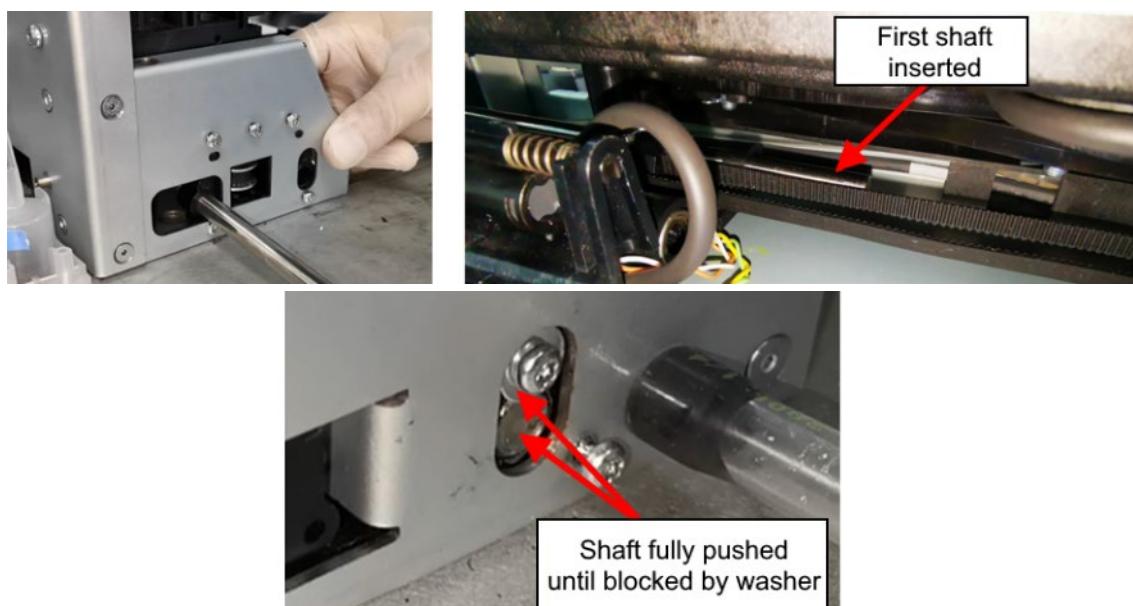


Figure 273 – Installing Timing Belt on Pulley

13. Before re-installing the two (2) shafts, inspect the assembly to ensure that there are no kinks in the tubing and the barb is fully inserted ([Figure 274](#)).

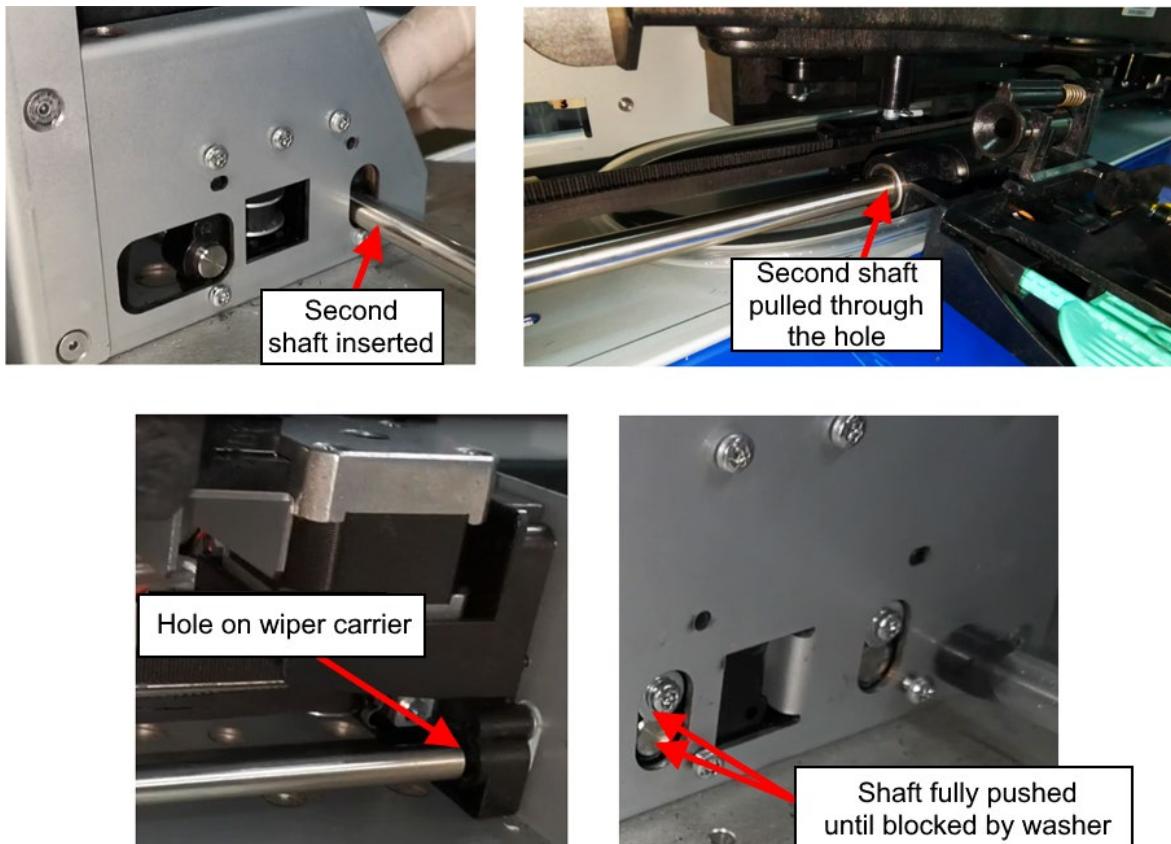
Figure 274 – Timing Belt and Tubing Inspection Points

14. On the left side of the Print Module, insert the first shaft until the washer makes contact ([Figure 275](#)).

Figure 275 – Installation of the First Shaft

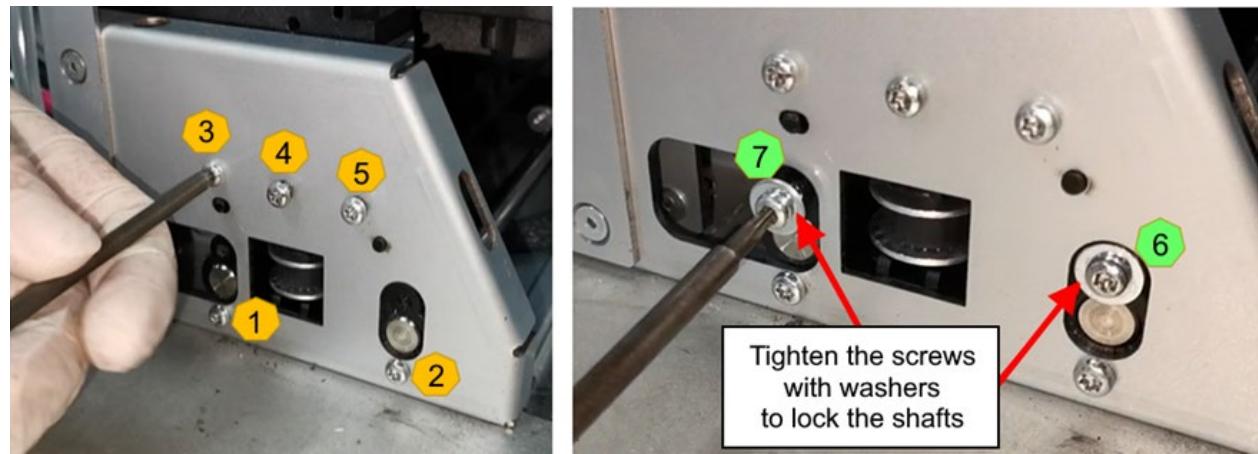
15. Align the second shaft with the hole in the frame. Push the shaft to ensure it is fully inserted. It will mate with the wiper carrier assembly and the washer at the other end will make contact.

Figure 276 – Install Second Shaft



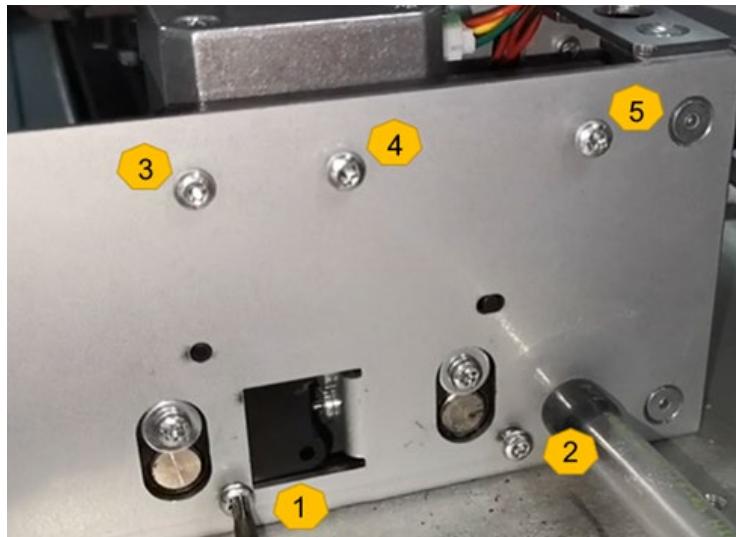
16. Tighten the five (5) screws on the left side of the Print Module ([Figure 277](#)), then tighten the two (2) screws with washers to lock the shafts in place.

Figure 277 – Tighten Screws on Print Module – Left Side



17. Tighten the five (5) screws on the right side of the Print Module ([Figure 278](#)).

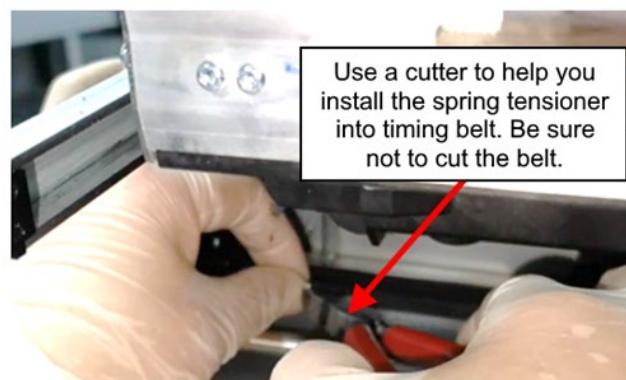
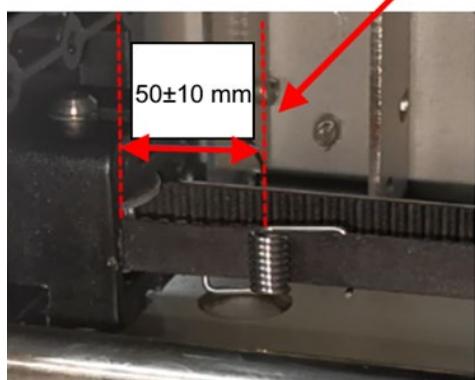
Figure 278 – Tighten Screws on Print Module – Right Side



18. Install the spring tensioner on the timing belt. See location A in the next figure ([Figure 279](#)):

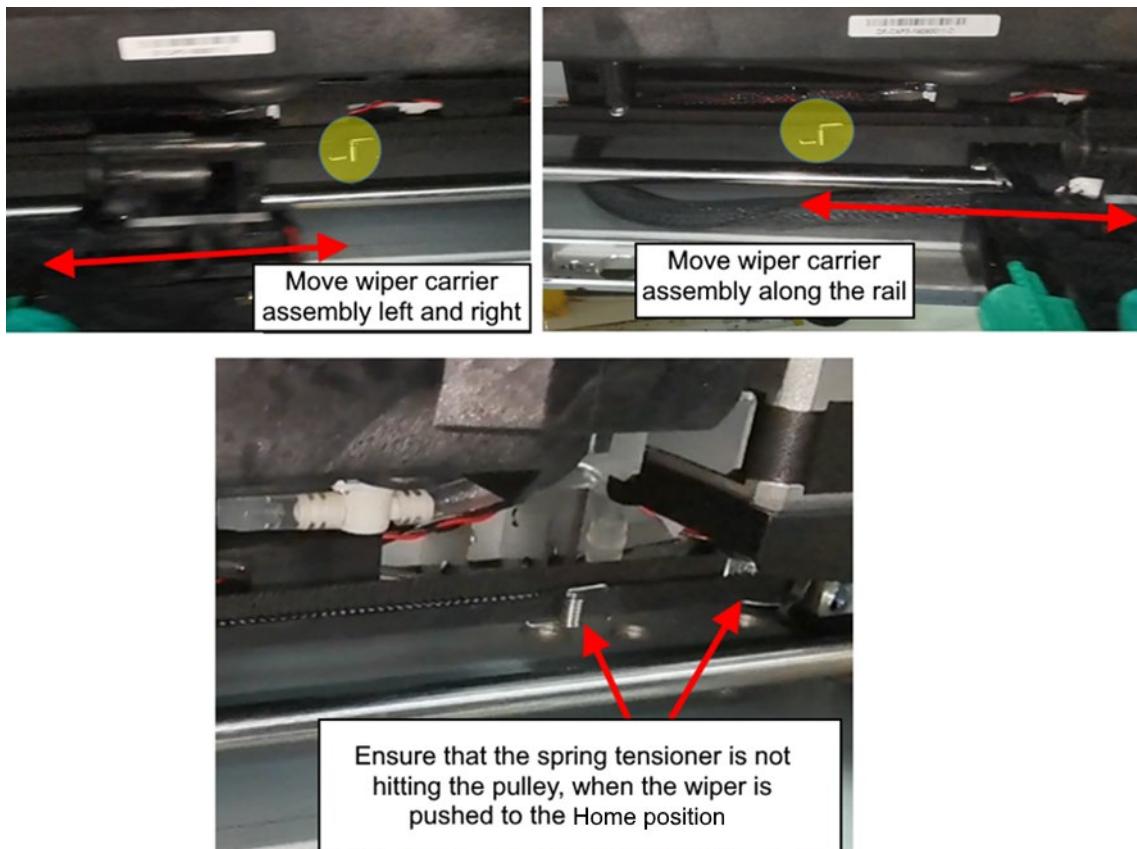
- Push the wiper carrier to the HOME position.
- Use needle-nosed pliers to install the spring tensioner (50 ± 10 mm) but take care not to damage the timing belt.

Figure 279 – Install Spring Tensioner



19. Slide the wiper carrier assembly to the left and right along the rail a few times, to confirm that the spring tensioner moves freely within the wiper carrier travel range and does not contact the frame on the left side or the pulley on the right side.

Figure 280 – Test the Spring Tensioner



20. Confirm the wiper assembly is back at HOME position before continuing.

19.5 Testing

1. Power on DuraFlex.
2. Install the Printhead.
3. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

4. Perform light service five (5) times.
5. If there is no error observed during the light service, the Wiper Carrier is properly replaced.



20 WIMM Replacement

This section provides replacement instructions for the WIMM ASM Separator Tank (PN 10005301).

Figure 281 – WIMM



20.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

20.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 20 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
Lint-free cloth	As needed	Supply
WIMM assembly – PN 10005301	1	Part
Cap – Vinyl, ID 0.25", length 0.5"	4	Supply
Hemostat	4	Tool
T10 – M3 screwdriver (200 mm extension)	1	Tool
Diagonal cutter	1	Tool
Tubing cutter	1	Tool



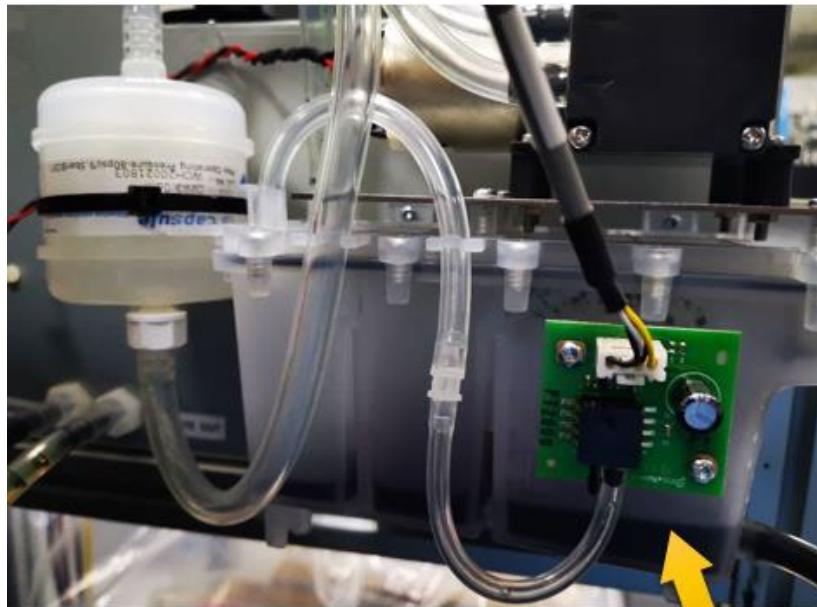
20.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

1. Wear an anti-static wrist strap during this procedure.
2. Power down the printing system.
3. Drain all the waste ink in the WIMM tank (if any).

Figure 282 – Waste Ink in WIMM Tank



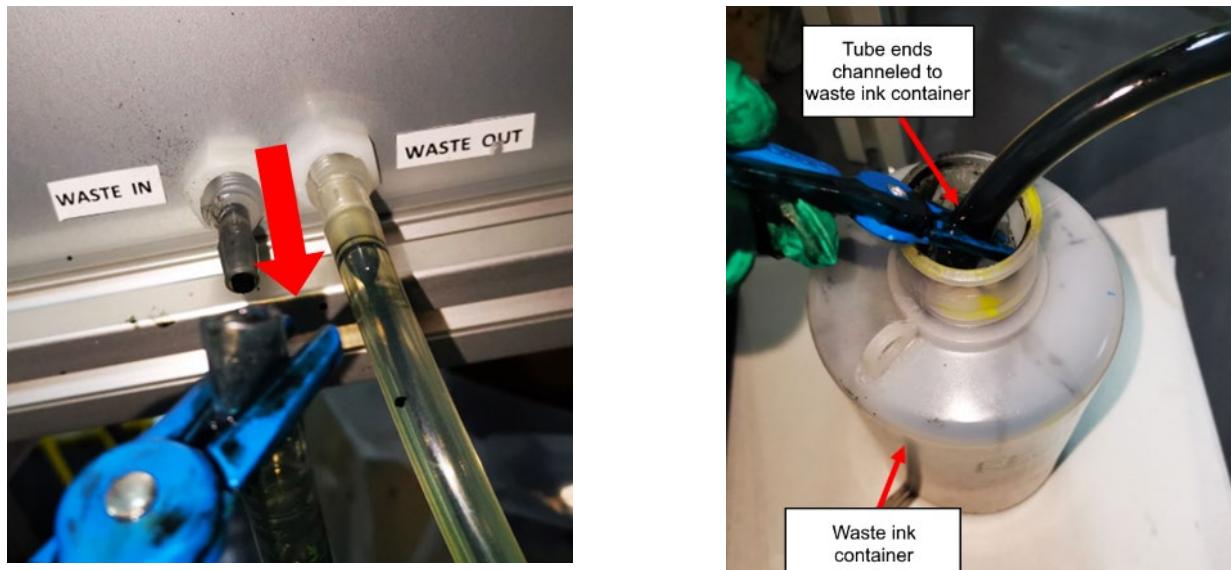
4. Use a hemostat to clamp the waste ink tube from the WIMM to the IDS blade at the WASTE IN barb.

Figure 283 – Hemostat on Tubing at Waste In Barb



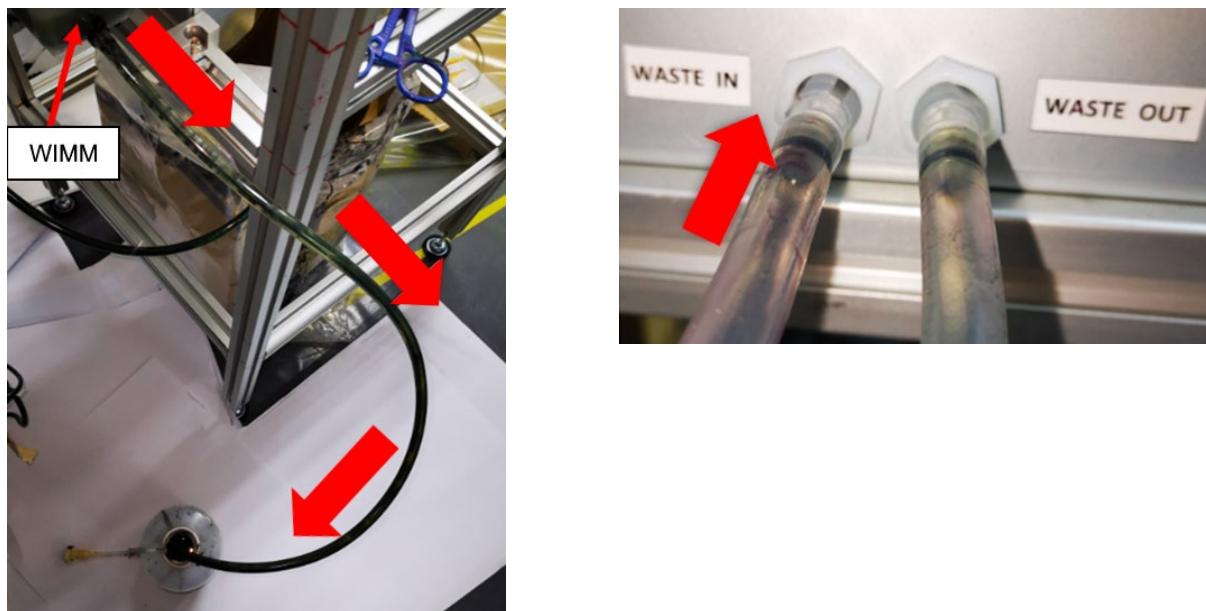
5. Disconnect the tube from the WASTE IN port and place the end of the tubing into the waste ink container ([Figure 284](#)).

Figure 284 – Tube Disconnected from Waste In Barb



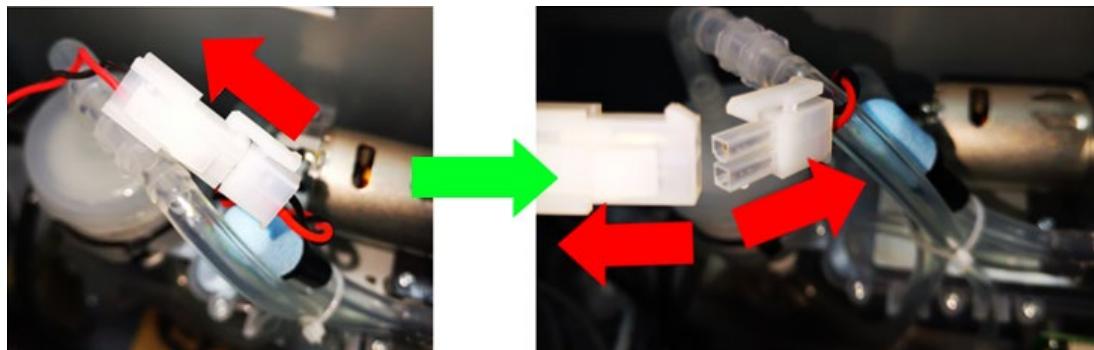
6. Remove the hemostat so that any waste ink in the WIMM will drain into the waste ink container. After all waste ink is drained from the WIMM tank, reconnect the Waste Ink Tube from the WIMM to the IDS blade back to the WASTE IN barb ([Figure 285](#)).

Figure 285 – Draining Waste Ink from WIMM



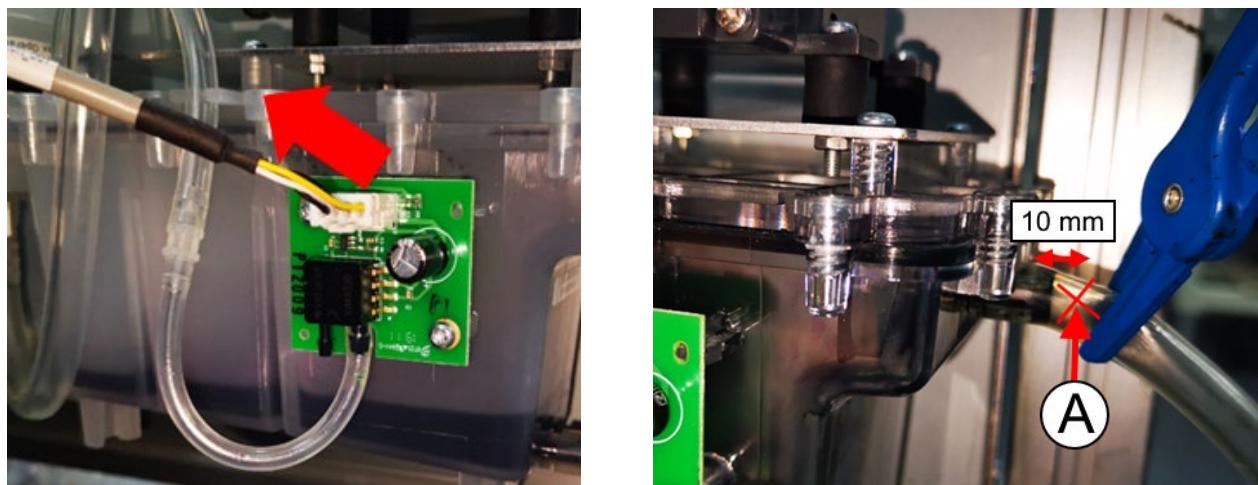
7. Disconnect the vacuum pump cable from the WIMM. Be sure to disconnect one end only. Do NOT remove the cable end connected to the Electrical Module ([Figure 286](#)).

Figure 286 – Vacuum Pump Cable Disconnected



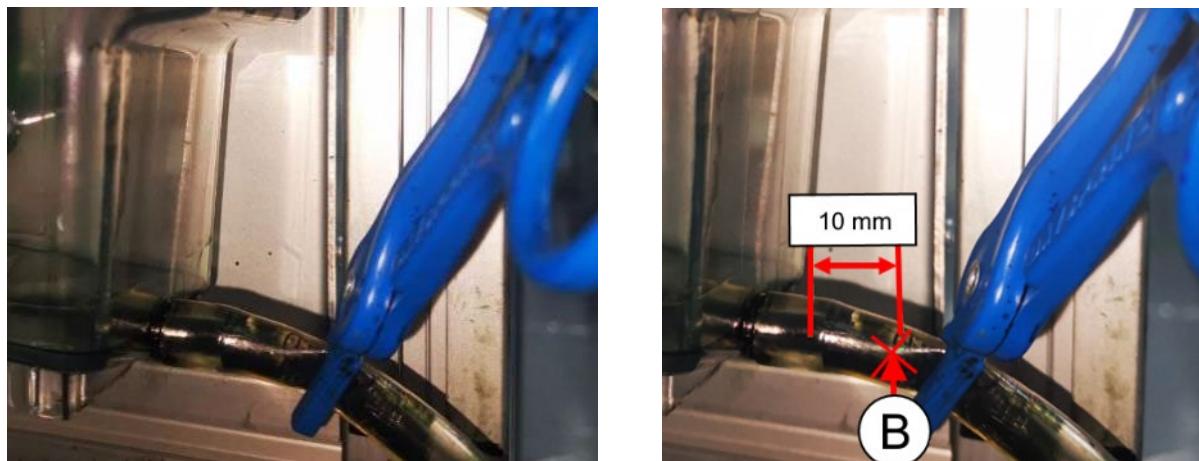
8. Disconnect the Pressure Sensor Cable from the WIMM. Be sure to disconnect one end only. Do not remove the cable end connected to the Electrical Module ([Figure 287](#)).
9. Use a hemostat to clamp the waste ink tube from the Print Module ([Figure 287](#)), then cut the tube approximately 10 mm from the WIMM barb, at the location labeled A.

Figure 287 – Cut Print Module Waste Ink Tube at Location A

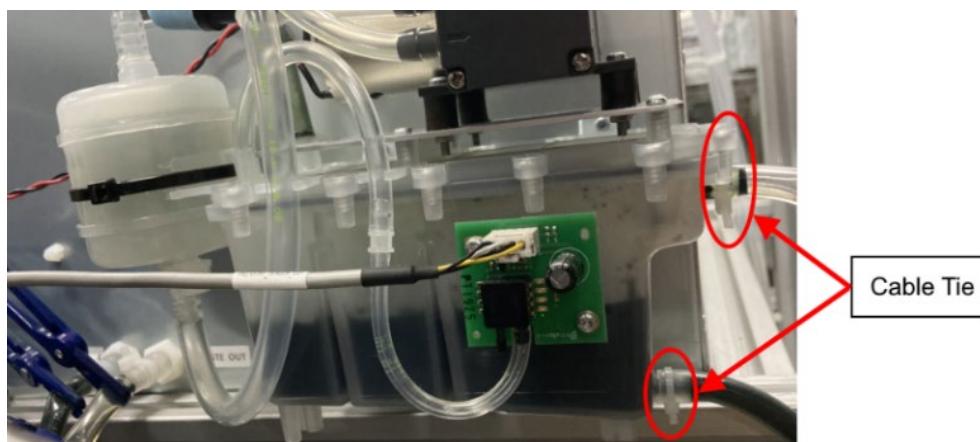


10. Use a hemostat to clamp the waste ink tube from the WIMM to the IDS blade. Place the hemostat near the WIMM barb.
11. Use a tubing cutter to cut the WIMM to IDS waste ink tube at the location labeled B in [Figure 288](#).

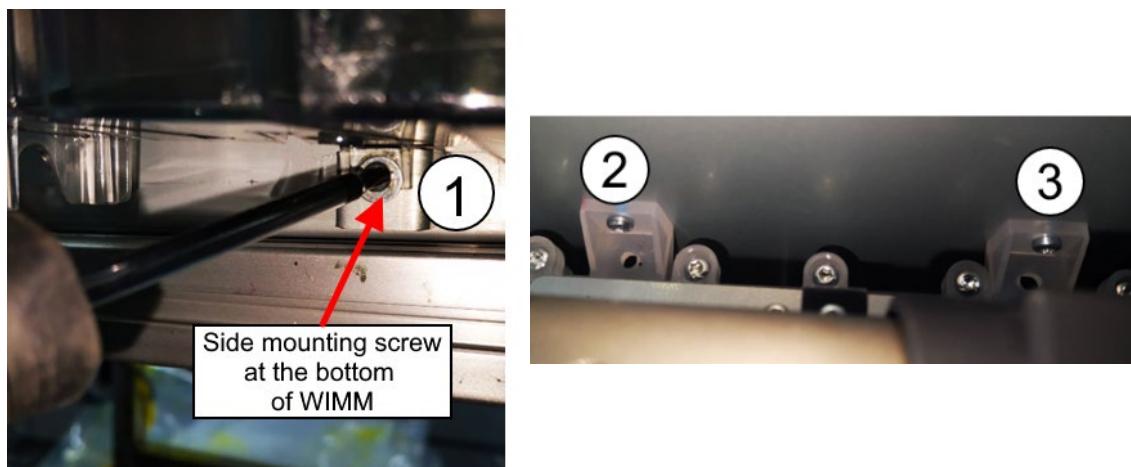


Figure 288 – Clamping and Cutting Waste Ink Tube (WIMM to IDS)

12. If cable ties are present ([Figure 289](#)), use a diagonal cutter to remove them.

Figure 289 – Cable Ties on WIMM

13. Loosen the three (3) WIMM mounting screws, [Figure 290](#) shows an example with the WIMM side-mounted. The actual WIMM mounting is OEM-specific.

Figure 290 – WIMM Assembly – Side Mounting Method

14. Discard the WIMM assembly according to local disposal recommendations.



20.4 Installation

1. Visually inspect the new WIMM assembly to ensure that there is no damage; there are no kinks in tubing, PCA components are intact, tank is in good condition, etc.

If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 291 – WIMM Assembly



Note: This procedure only shows the side mounting method. OEMs may choose to mount the WIMM on the side or from the top or bottom.

Figure 292 – WIMM Assembly – Top Mounting Method

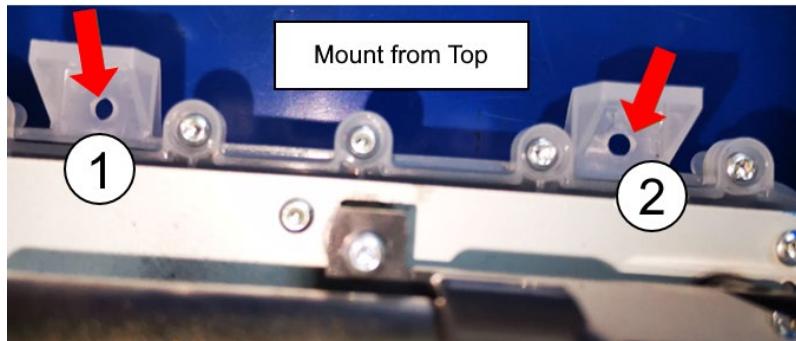
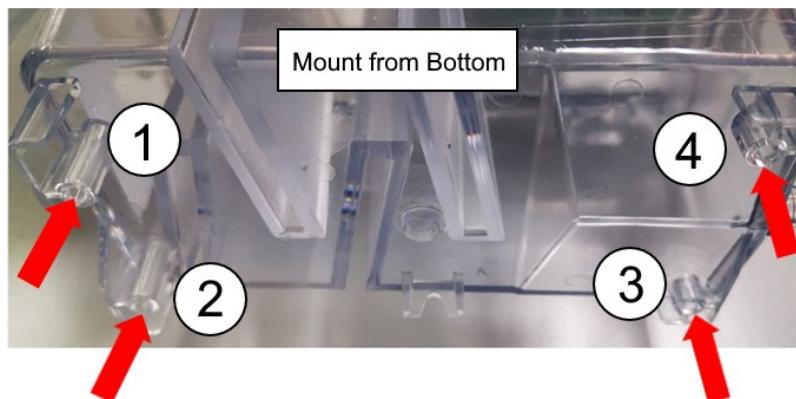
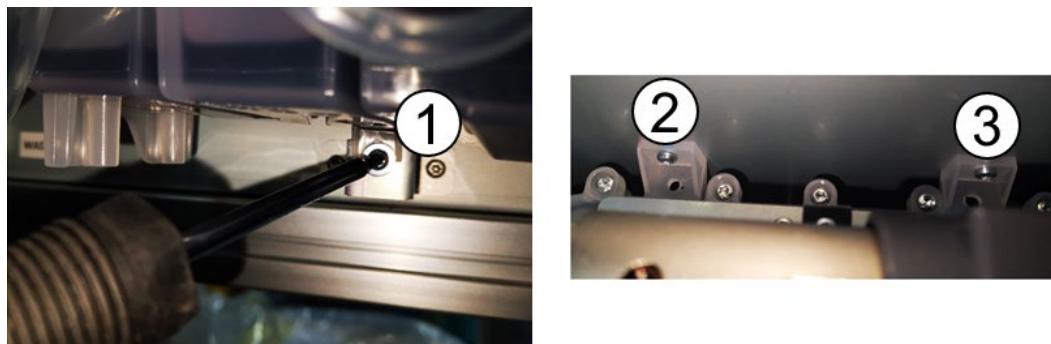


Figure 293 – WIMM Assembly – Bottom Mounting Method

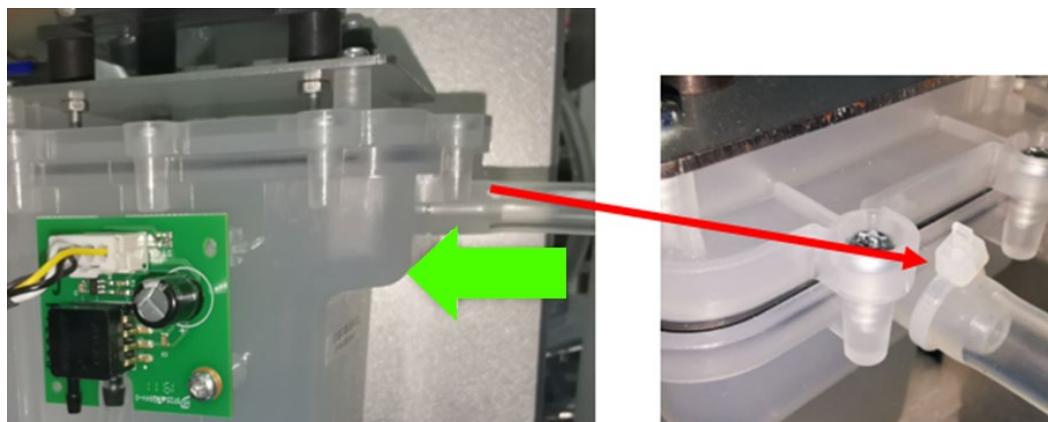


2. Install the new WIMM to the OEM-designed mounting structure by securing the three (3) screws.

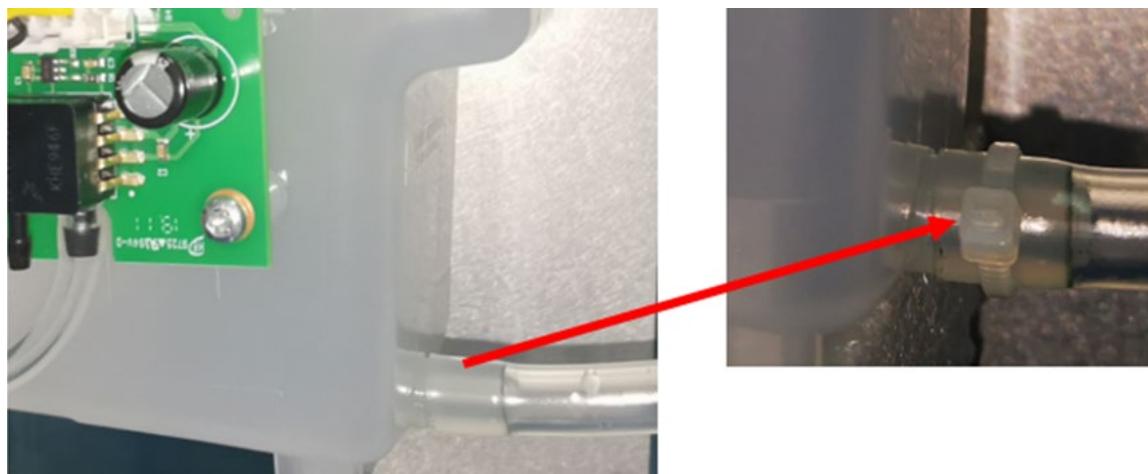


Figure 294 – WIMM Mounting Screws – Side Mount

3. Connect the waste ink tube from the Print Module to the WIMM barb, use a small amount of LEG-1 lubricant to press the tube into place ([Figure 295](#)).
4. Use a cable tie to secure the tube to the WIMM barb and cut off any excess cable-tie.

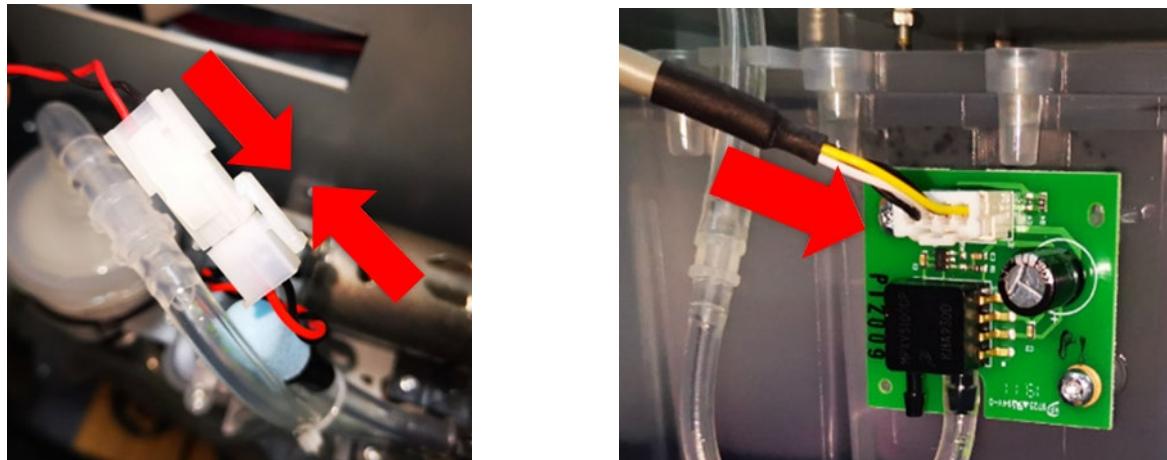
Figure 295 – Print Module Waste Ink Tube Connected to WIMM and Secured

5. Connect the waste ink tube from the IDS blade to the WIMM barb use a small amount of LEG-1 lubricant to press the tube into place ([Figure 296](#)).
6. Use a cable tie to secure the tube to the WIMM barb and cut off the excess tail.

Figure 296 – IDS Blade Waste Ink Tube Connected to WIMM and Secured

7. Connect the cable from Print Module to the vacuum pump and the Pressure Sensor PCA on the WIMM ([Figure 297](#)).

Figure 297 – Cable to the Vacuum Pump and to Pressure Sensor



20.5 Testing

1. Power on DuraFlex.
 2. Perform light service five (5) times.
-
- Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.
3. Perform medium service two (2) times.
 4. If the system can perform light and medium services per normal, it can build up pressure without any problem. The replacement process is successful.



21 WIMM Cable Replacement

This section provides replacement instructions for the WIMM Cable (PN 10005302).

Note: The WIMM cable consists of both the WIMM pump cable and the WIMM pressure sensor cable.

21.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

21.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section 2.2 ESD Guidelines for details.

21.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 21 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
WIMM Cable – PN 10005302	1	Part

21.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

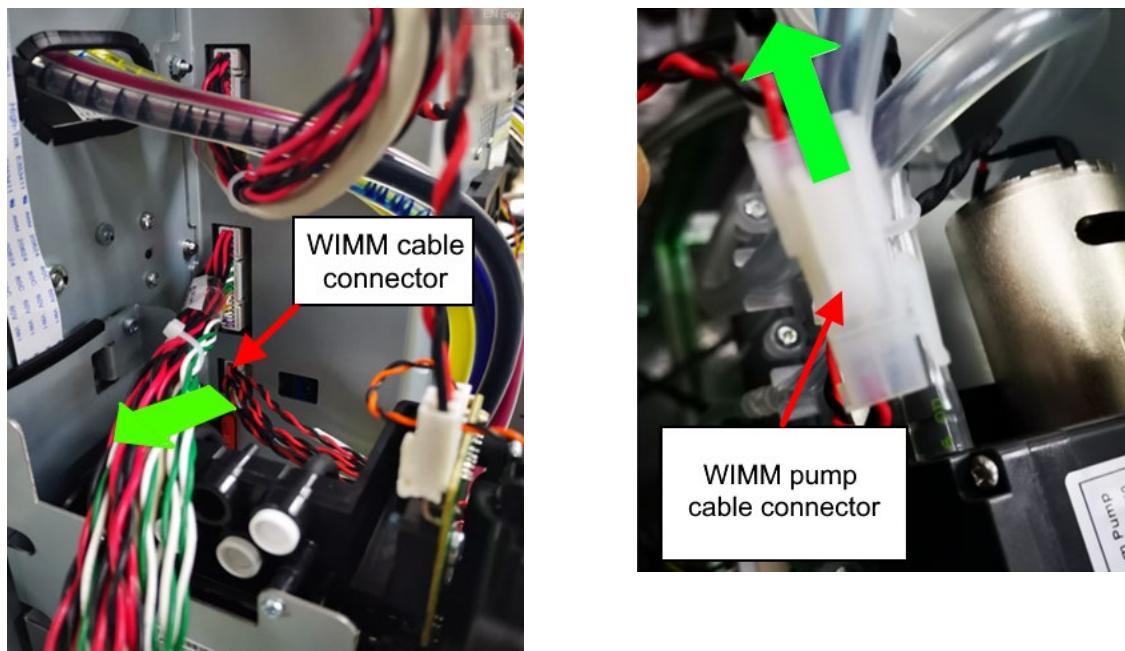
Note: Unless otherwise noted, keep all original hardware for installation.

1. Remove any covers or panels to expose top of the DuraFlex components and create sufficient access to the components.
2. Wear an anti-static wrist strap during this procedure.
3. Power down DuraFlex.



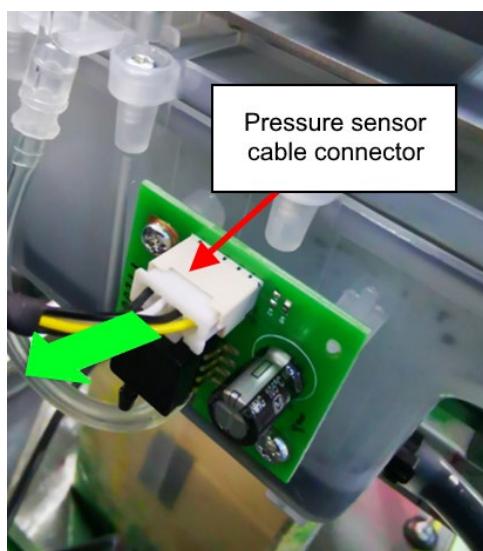
4. Disconnect the WIMM cable from the right side of the Electrical Module, ([Figure 298](#)).
5. Disconnect the WIMM cable from the WIMM pump cable connector ([Figure 298](#)).

Figure 298 – WIMM Cable at Print Module



6. Disconnect the WIMM pressure sensor cable from the Pressure Sensor PCA.

Figure 299 – Pressure Sensor Cable Disconnected from PCA



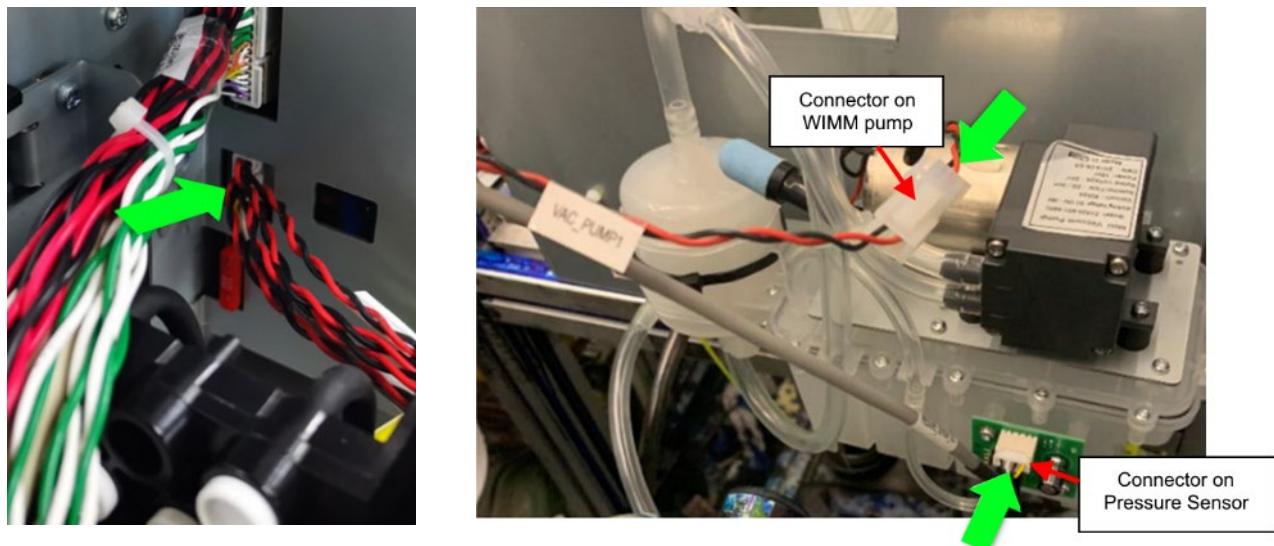
7. Discard the WIMM Cable according to local disposal recommendations.

21.5 Installation

1. Inspect the new WIMM cable and if it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 300 – WIMM Cable

2. Connect the WIMM cable to the Print Module (at the right side of Electrical Module) ([Figure 301](#)).
3. Connect the WIMM cable to the connector on WIMM pump and the connector on pressure sensor ([Figure 301](#)).

Figure 301 – WIMM Cable Connected to Print Module and Pump and Pressure Sensor

21.6 Testing

1. Power up DuraFlex.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Perform three (3) times of light services and one (1) time of medium service.
4. If there is no error, the WIMM cable replacement is successful.

22 WIMM Pressure Sensor PCA Replacement

This section provides replacement instructions for the WIMM Pressure Sensor PCA (PN 10005303).

Figure 302 – WIMM Pressure Sensor PCA



22.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

22.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

22.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 22 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
WIMM Pressure Sensor PCA – PN 10005303	1	Part
T10 – M3 screwdriver	1	Tool



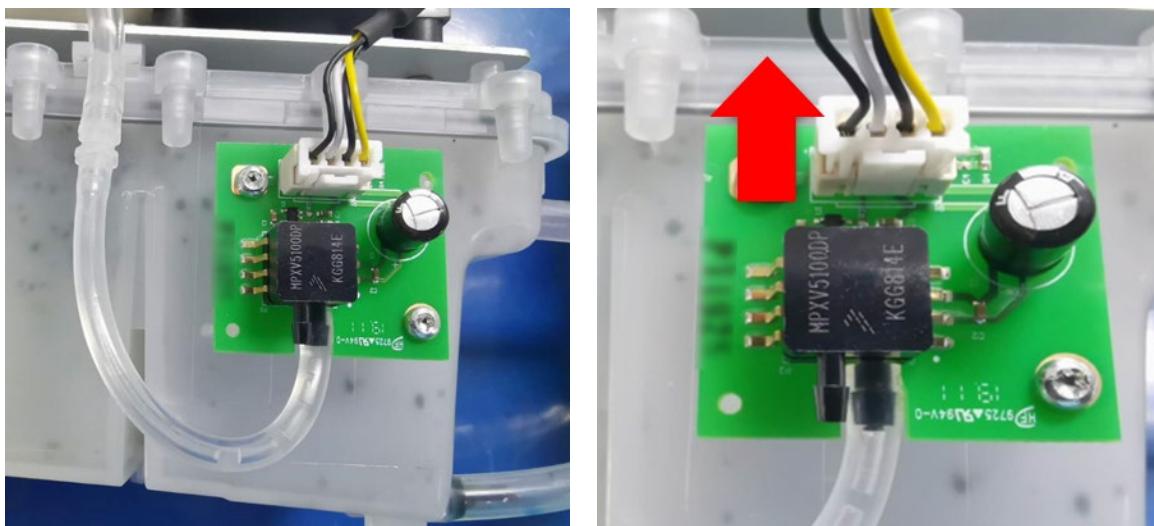
22.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

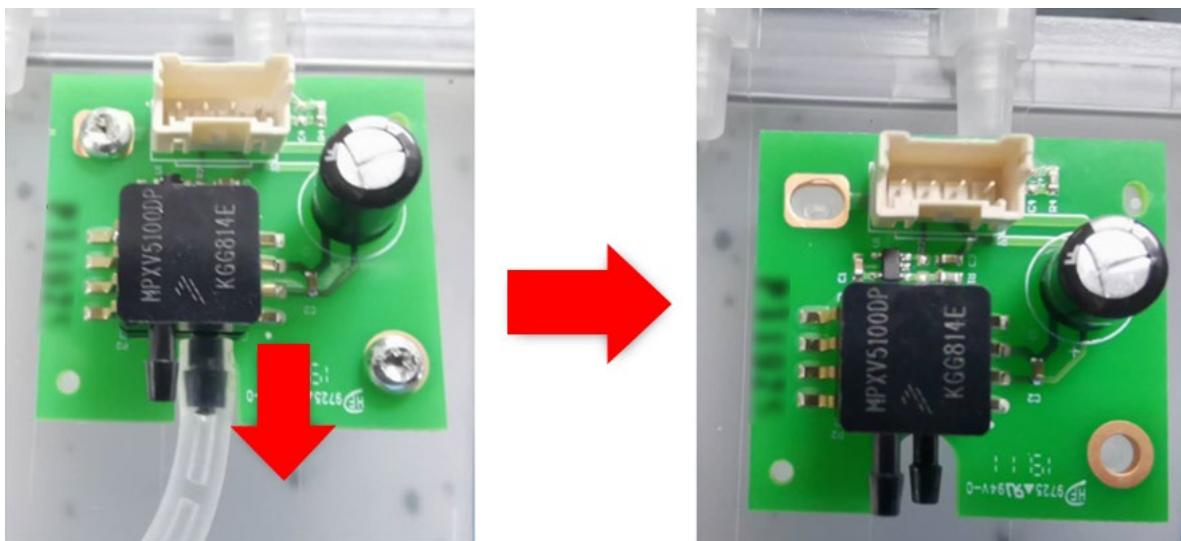
1. Wear an anti-static wrist strap during this procedure.
2. Power down the printing system.
3. Locate the WIMM Pressure Sensor PCA on the WIMM. Disconnect only one end of the WIMM pressure sensor Cable from WIMM Pressure Sensor PCA. Do not remove the cables connected to Mechanical Controller PCA ([Figure 303](#)).

Figure 303 – WIMM Pressure Sensor PCA on WIMM



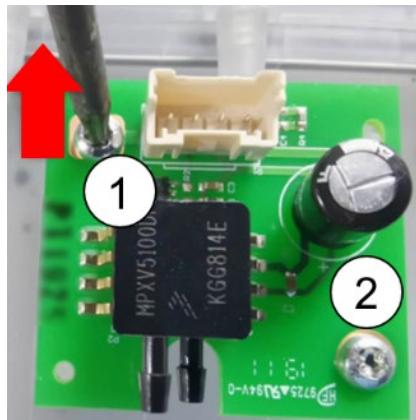
4. Disconnect the tube ([Figure 304](#)).

Figure 304 – Tube Disconnected from WIMM Pressure Sensor PCA



5. Loosen the two (2) screws that secure the WIMM Pressure Sensor PCA ([Figure 305](#)).

Figure 305 – WIMM Pressure Sensor PCA Mounting Screws

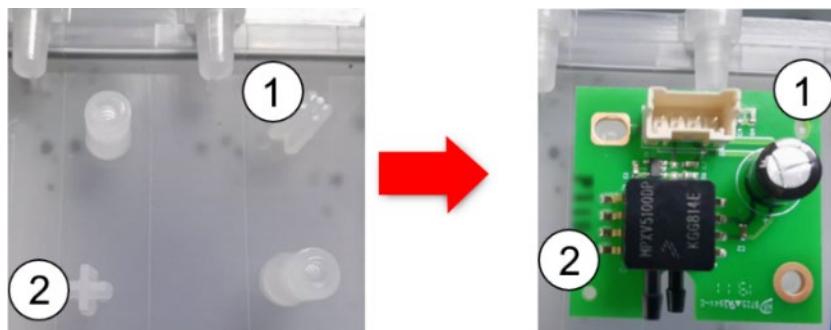


6. Discard the WIMM Pressure Sensor PCA according to local disposal recommendations.

22.5 Installation

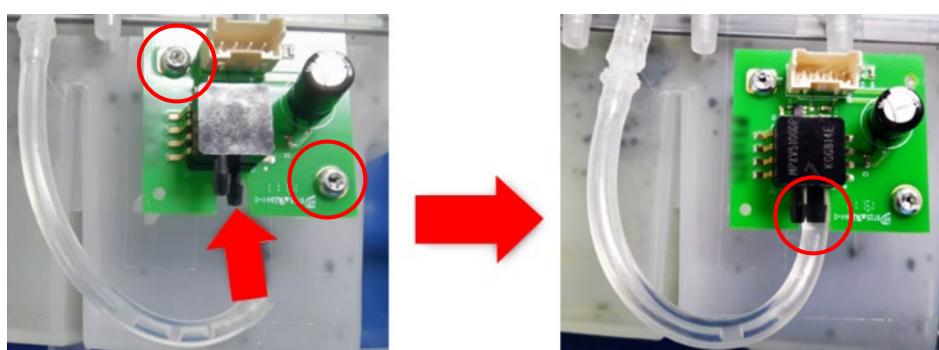
1. Visually inspect the new WIMM Pressure Sensor PCA ([Figure 302](#)) to ensure there is no damage. If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).
2. Align the new WIMM Pressure Sensor PCA locating holes to the two (2) locating pins on the WIMM ([Figure 306](#)).

Figure 306 – Locating Pins



3. Tighten the two (2) screws to secure the WIMM Pressure Sensor PCA and attach the tube to the WIMM pressure sensor barb ([Figure 307](#)).

Figure 307 – Tube Connected to WIMM Pressure Sensor Barb



4. Connect the WIMM pressure sensor cable to the connector on the WIMM Pressure Sensor PCA.

Figure 308 – WIMM Pressure Sensor Cable Connected



22.6 Testing

1. Power on DuraFlex.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Perform a light service.
4. Perform a medium service.
5. If it can perform light and medium services per normal, the replacement is successful.

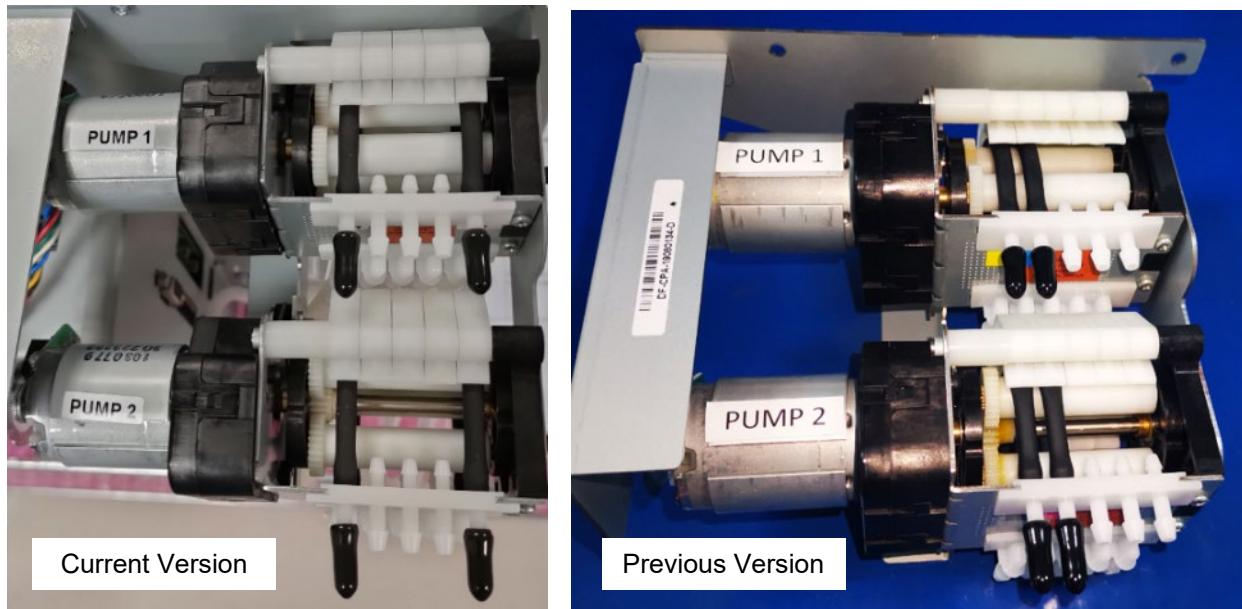


23 Circulation Pumps Replacement

This section provides replacement instructions for the FIDS Circulating Pump Assembly (PN 10005288).

Note: The figures below are examples of the current circulation pumps versus the previous version. The replacement procedure is the same for both versions. Graphics in the remaining instructions reflect the earlier version of the circulation pumps.

Figure 309 – Circulation Pumps – Current and Previous Models



23.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

23.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 23 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
DuraFlex FRU FIDS Circulating Pump Assembly (two channel, two pumps, and mounting bracket) – PN 10005288	1	Part
T10 – M3 screwdriver (with ~200 mm extension)	1	Tool
Diagonal cutter	1	Tool
Tubing cutter	1	Tool
Hemostat	8	Tool
Versilon 2001 tubing - 3.175 mm ID, 240 mm	4	Supply



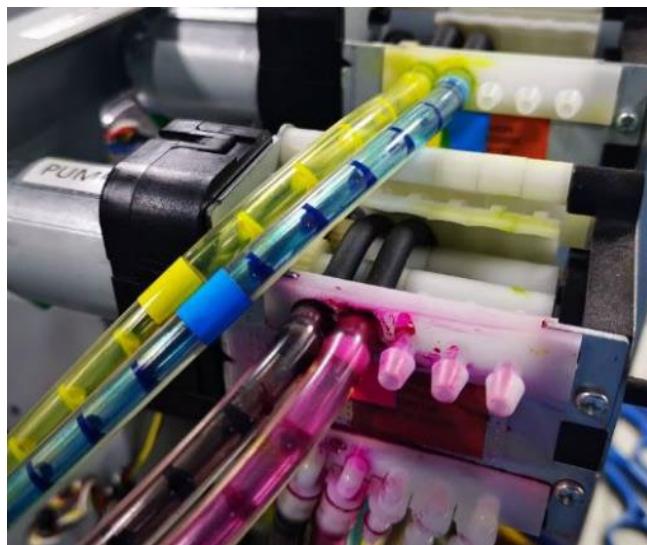
23.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

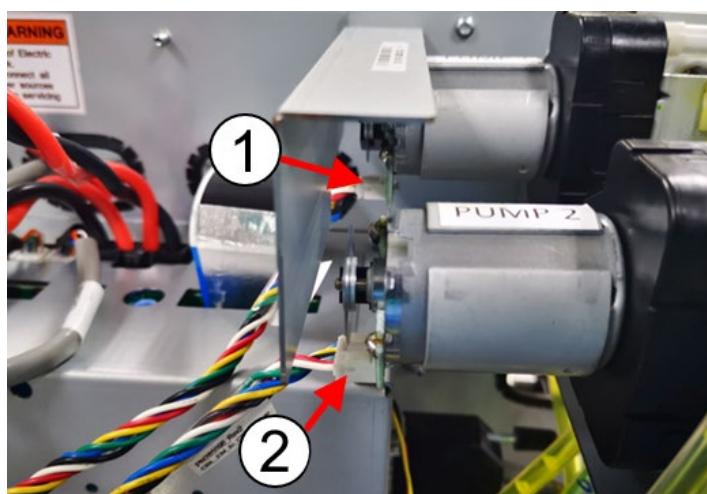
1. Deprime DuraFlex until all tubes from Pinch Valve to IR Tank (through the Return Line) are empty ([Figure 310](#)).

Figure 310 – Empty the Return Line Tubes



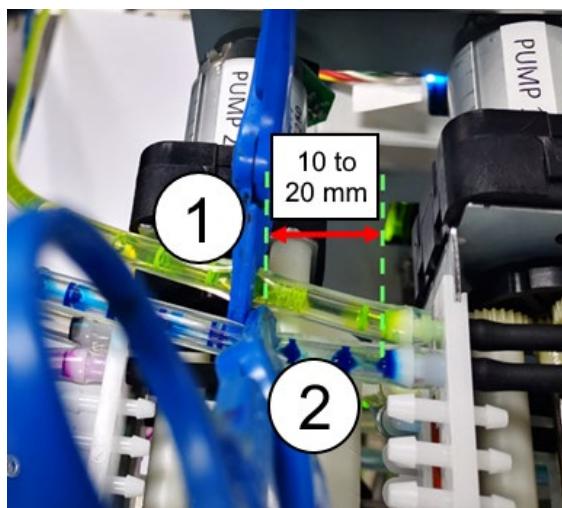
2. Power down the system.
3. Disconnect the two (2) power cables that connect the dual Circulation Pumps to the Mechanical Controller PCA.

Figure 311 – Connectors of Circulation Pumps

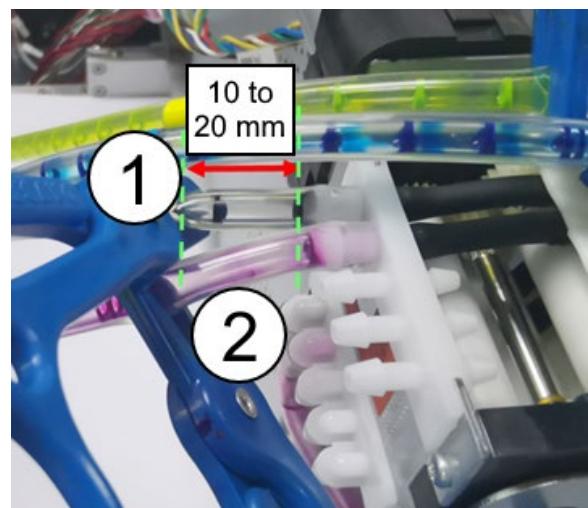


4. Hemostat the Return Line tubes at the four (4) locations shown in figure below, around 10-20 mm from the barb end of each Circulation Pump.

Figure 312 – First and Second Circulation Pump

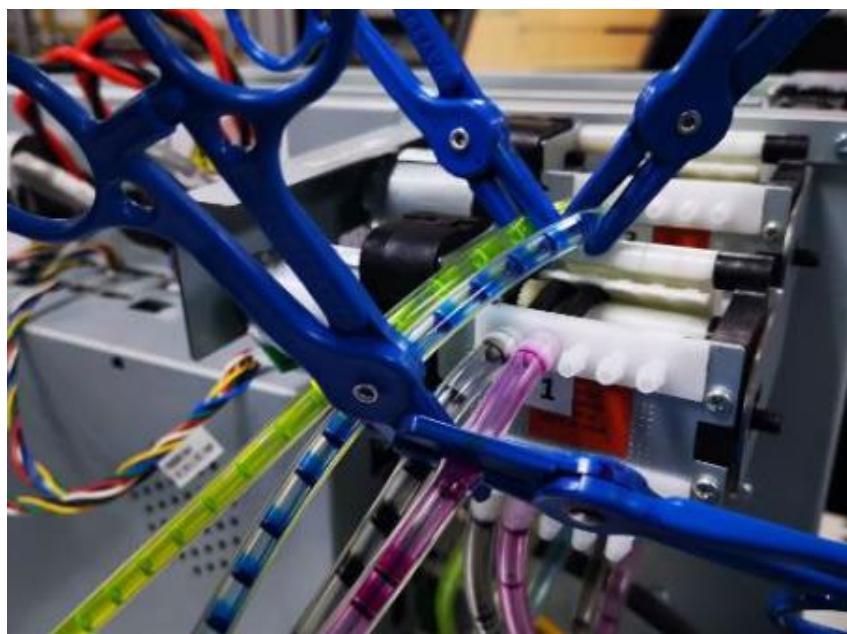


First Circulation Pump



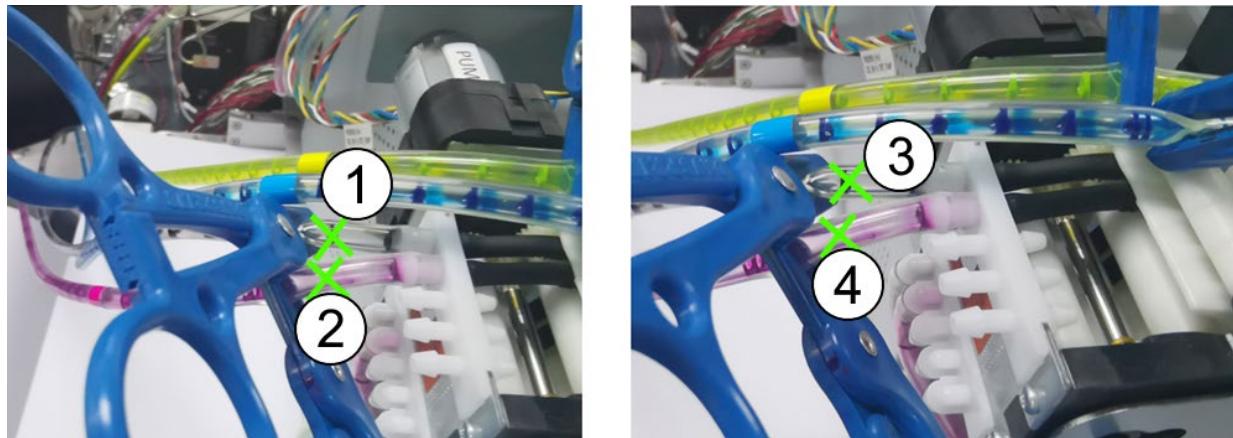
Second Circulation Pump

Figure 313 – Overall View



5. Cut the tubes at the four (4) locations shown in "X" in the figure below, which are adjacent to the barbs of Circulation Pumps.



Figure 314 – Cut Locations

6. Wipe up any spilled ink with lint-free cloth.
7. Use hemostats to clamp the tubes between Circulation Pumps and Compliance Chamber, about 10-20 mm from the Circulation Pump barb end.

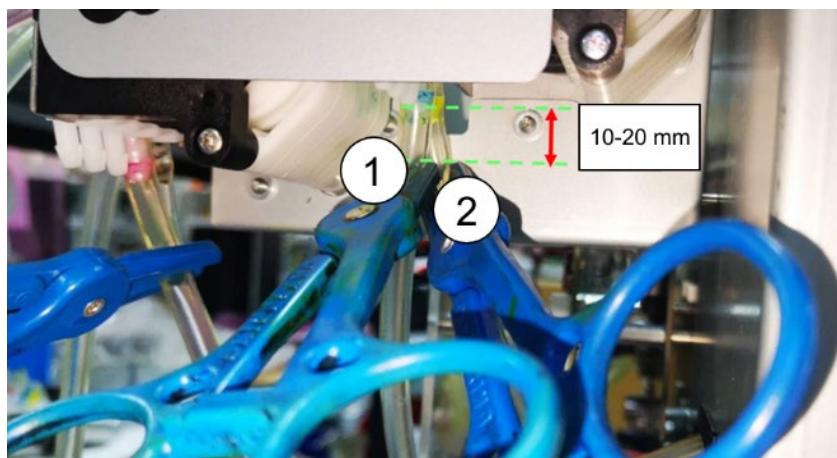
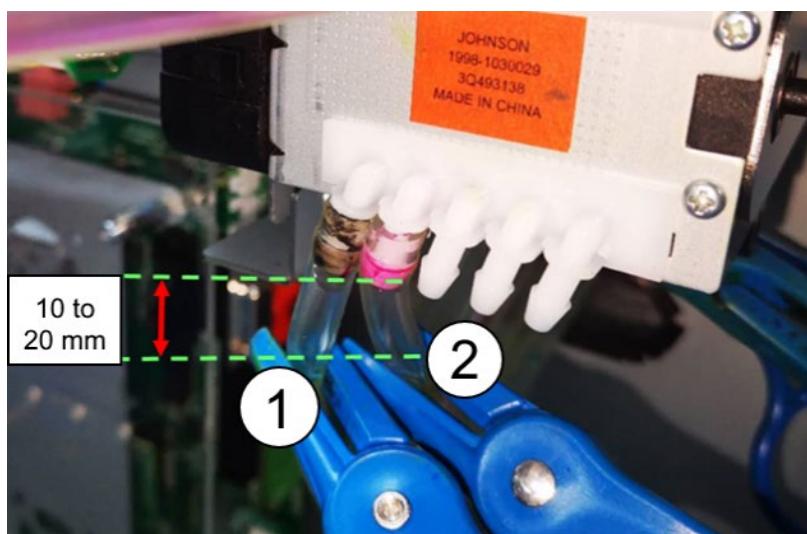
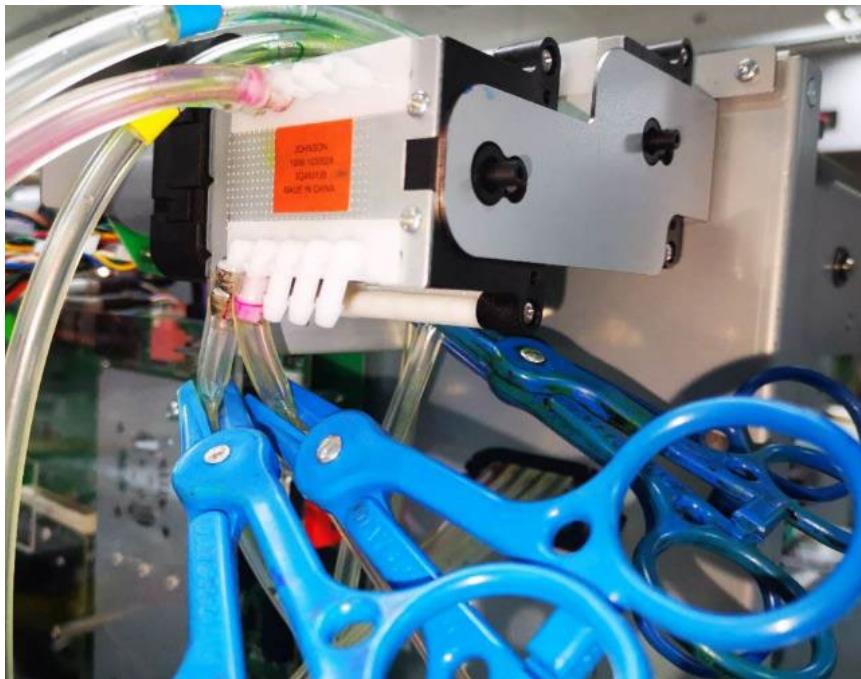
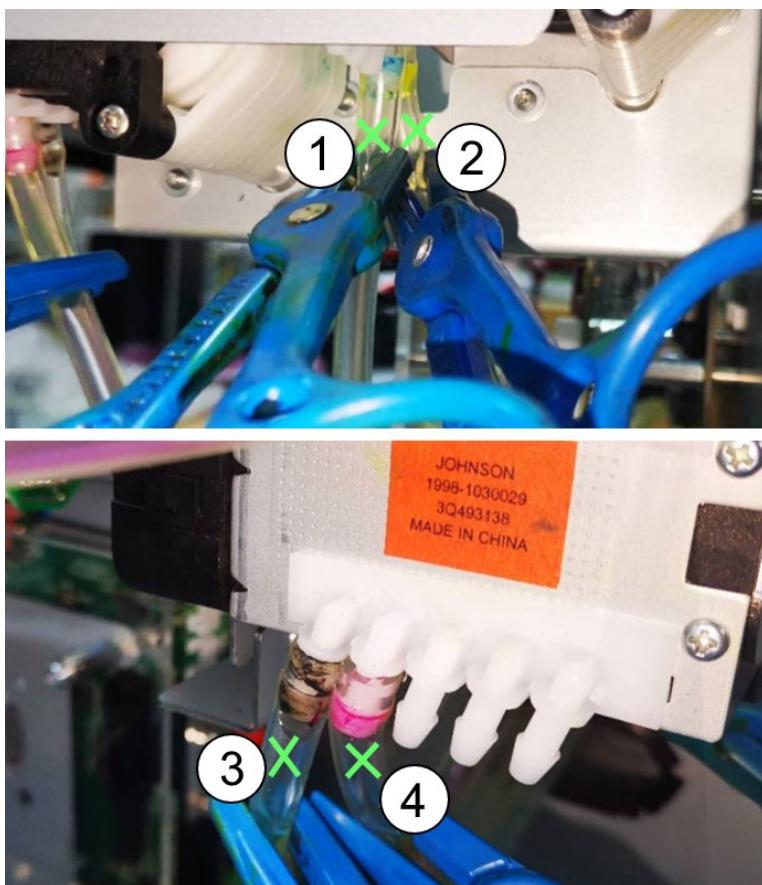
Figure 315 – First Circulation Pump Clamping Position**Figure 316 – Second Circulation Pump Clamping Position**

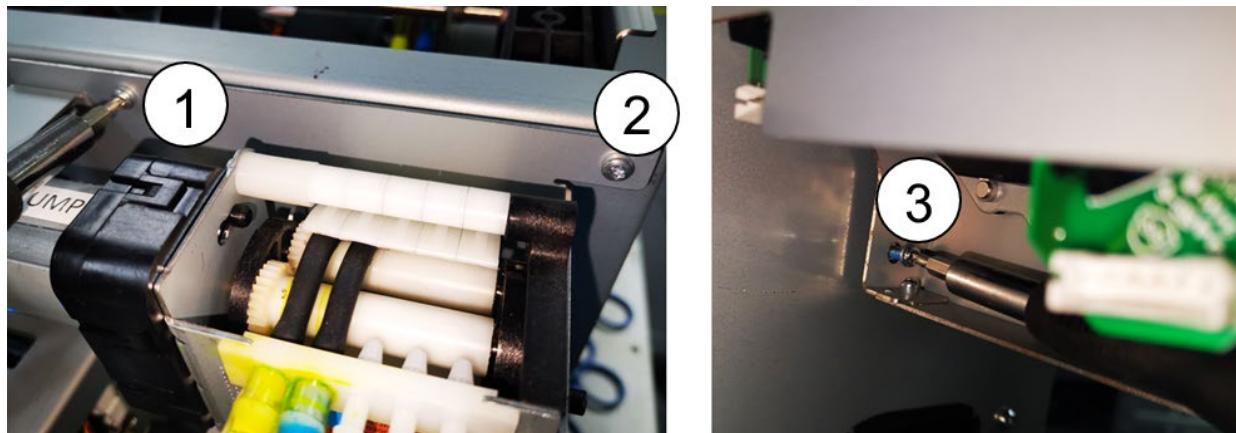
Figure 317 – Overall View

8. Cut the tubes at the four (4) cut locations shown in "X" (nearest to the Circulation Pumps barbs).

Figure 318 – Cut Locations

9. Loosen the three (3) screws that mount the Circulation Pumps Assembly to the Print Module ([Figure 319](#)). There is a screw below the Circulation Pumps, see #3.

Figure 319 – Circulation Pump Assembly Mounting Screws



10. Remove the Circulation Pumps assembly and disconnect the four (4) tubes from the Compliance Chamber ([Figure 320](#)).

Figure 320 – Disconnect Tubing



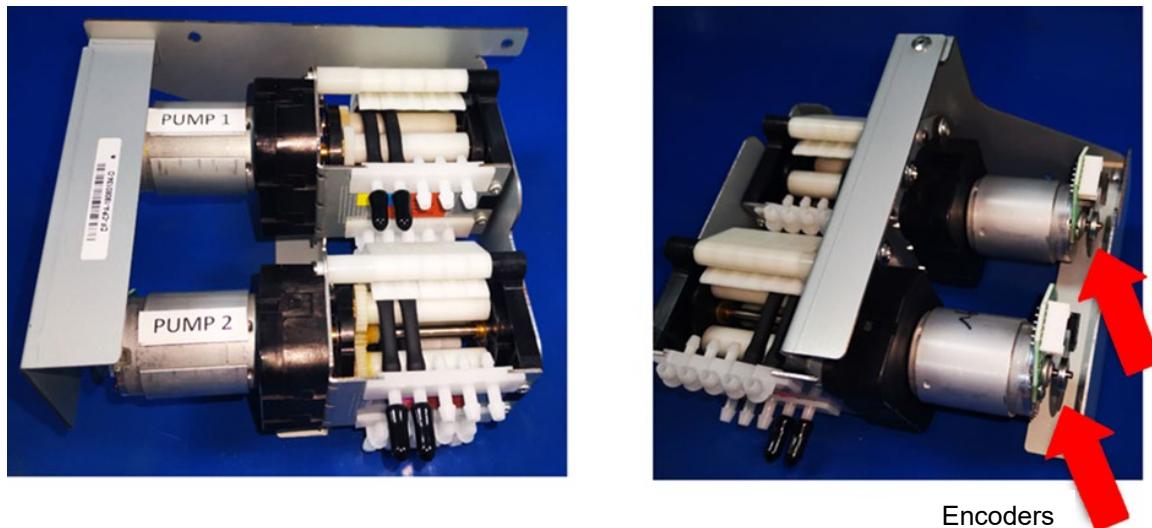
11. Discard the Circulation Pumps according to local disposal recommendations.



23.4 Installation

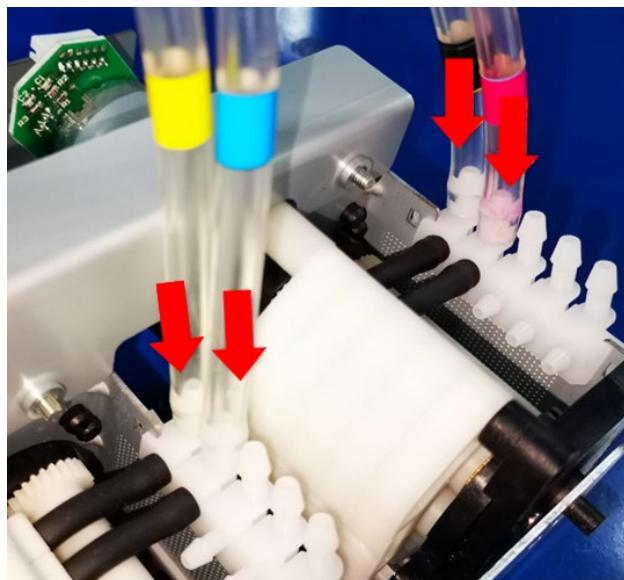
1. Visually inspect the new Circulation Pumps assembly to ensure that the encoders are not deformed, and the black tubing is not damaged or kinked. If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 321 – Circulation Pumps



2. Connect the four (4) new tubes from Compliance Chamber to the barbs of Circulation Pumps 1 and 2 (Figure 322). Apply a small amount of LEG-1 lubricant to assist with assembly.

Figure 322 – Connect Tubes to Circulation Pumps

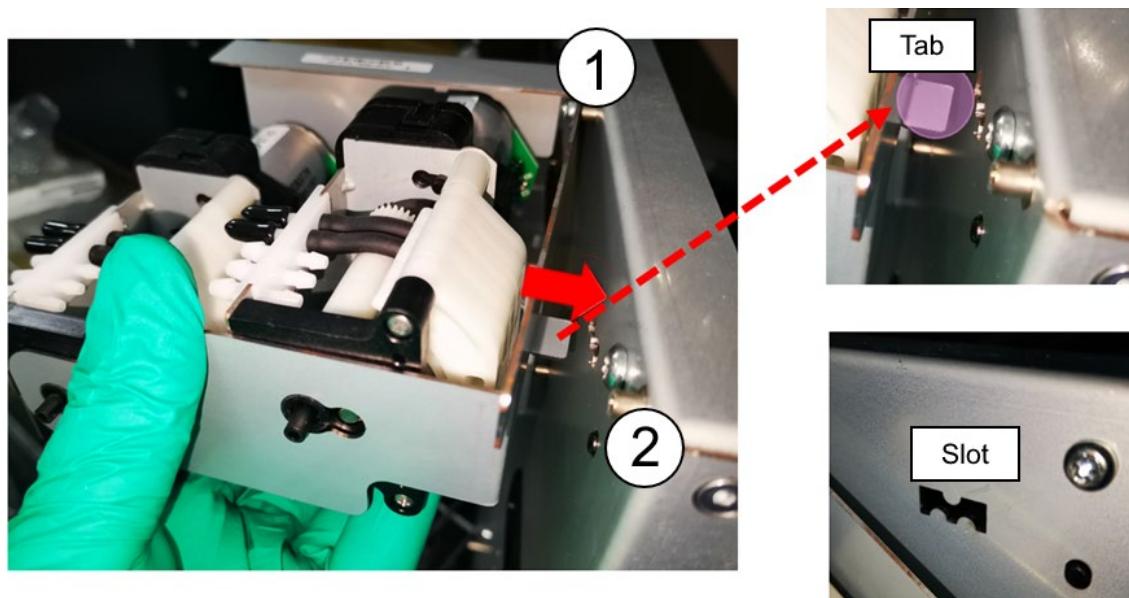


3. Connect the four (4) new tubes (240 mm) from the Circulation Pumps to the Compliance Chamber (Figure 323). Ensure you connect the correct channel by following the numbers labeled on the tubes. Apply some LEG-1 lubricant to assist with assembly.



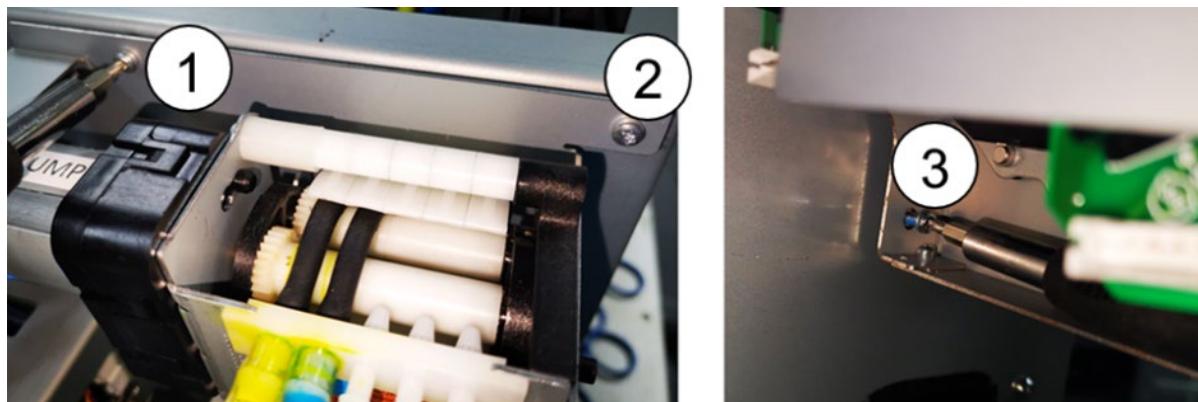
Figure 323 – Connect Tubes to Compliance Chamber

4. While holding the Circulation Pump assembly with one hand, use your other hand to align and insert the tab on the Circulation Pump mounting bracket into the slot on the Print Module frame ([Figure 324](#)).
5. At the same time, align the two (2) screws holes on the Circulation Pumps mounting bracket to the screws locating pin on the Print Module frame.

Figure 324 – Screws, Tab, and Slot

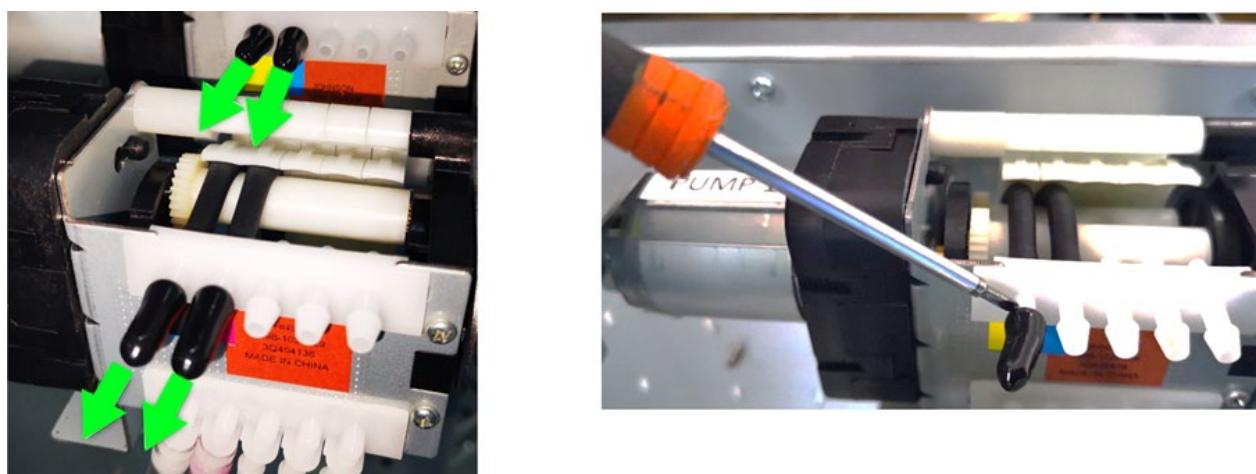
6. While holding the Circulation Pump assembly in one hand, use your other hand to tighten the three (3) screws that mount it to the print module. Do not forget screw #3 ([Figure 325](#)) located below the Circulation Pumps.

Figure 325 – Circulation Pump Assembly Mounting Screws



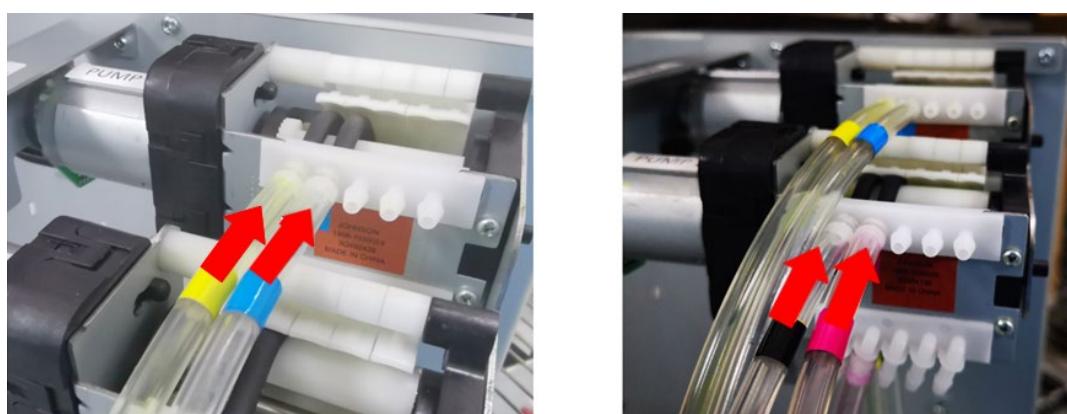
7. Remove the vinyl seal cap from the Circulation Pumps barbs ([Figure 326](#)), use a tool to carefully remove the cap.

Figure 326 – Remove Vinyl Caps



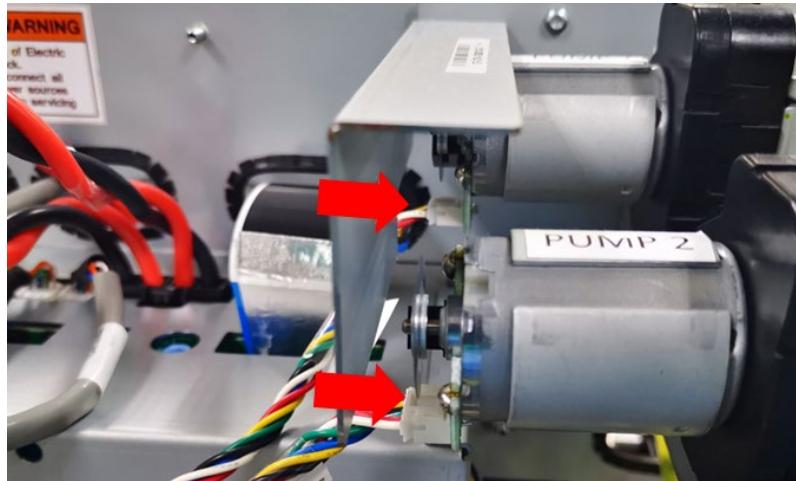
8. Connect the tubes from IDS blade (Return Line) back to the two (2) Circulation Pumps barbs ([Figure 327](#)). Apply some LEG-1 lubricant to assist with assembly.

Figure 327 – Connect Tubes Back to Circulation Pumps



9. Connect the two (2) cables from Mechanical Controller PCA to the dual Circulation Pumps.

Figure 328 – Connect Cable Back to Circulation Pumps



23.5 Testing

1. Power up the system.
2. Prime the printing system.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Observe that the pumps are circulating per normal, and the ink is drawn from the IR tank then back.
4. Observe if there is any leakage from all the tubing coming in and out of Circulation Pumps and Compliance Chamber.



24 Circulation Pumps Cable Replacement

This section provides replacement instructions for the FIDS Circulation Pump Cable (PN 10005276).

Figure 329 – Circulation Pump Cable



24.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

24.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

24.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 24 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
Circulation Pump Cable – PN 10005276	1	Part

24.4 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

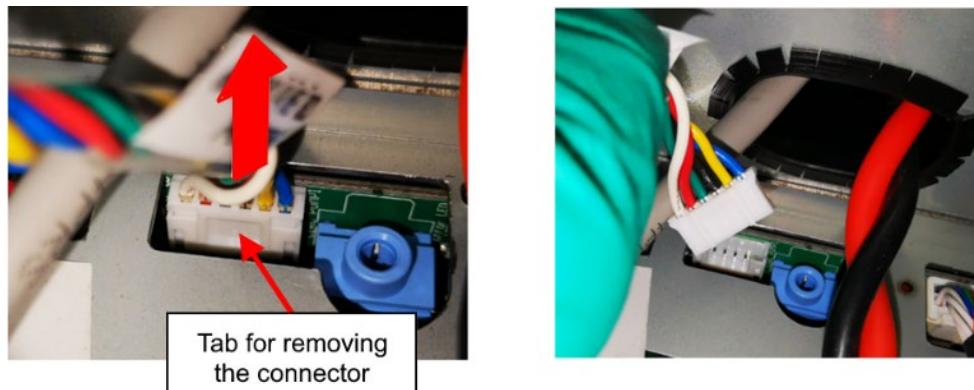
Note: Unless otherwise noted, keep all original hardware for installation.

1. Remove any covers or panels to expose top of the DuraFlex components and create sufficient access to the components.
2. Wear an anti-static wrist strap during this procedure.
3. Power down DuraFlex.



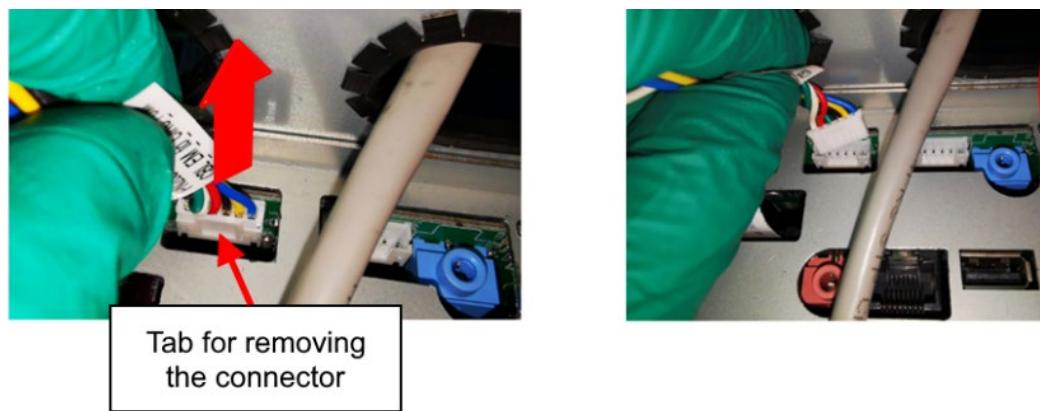
4. To disconnect the Circulation Pump 1 cable from the Print Module (at the top of Electrical Module), press the tab as shown in [Figure 330](#) figure below.

Figure 330 – Circulation Pump 1 Cable Disconnected



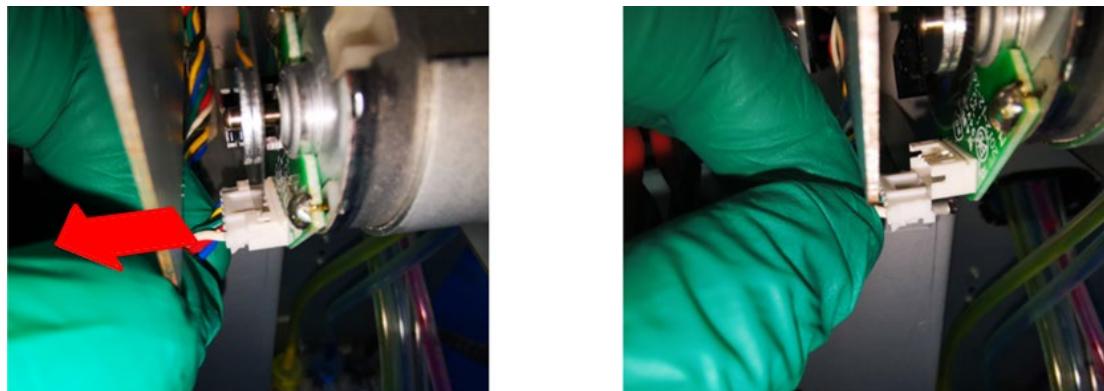
5. To disconnect the Circulation Pump 2 cable from the Print Module (at the TOP of the Electrical Module), press the tab as shown in [Figure 331](#) below.

Figure 331 – Circulation Pump 2 Cable Disconnected



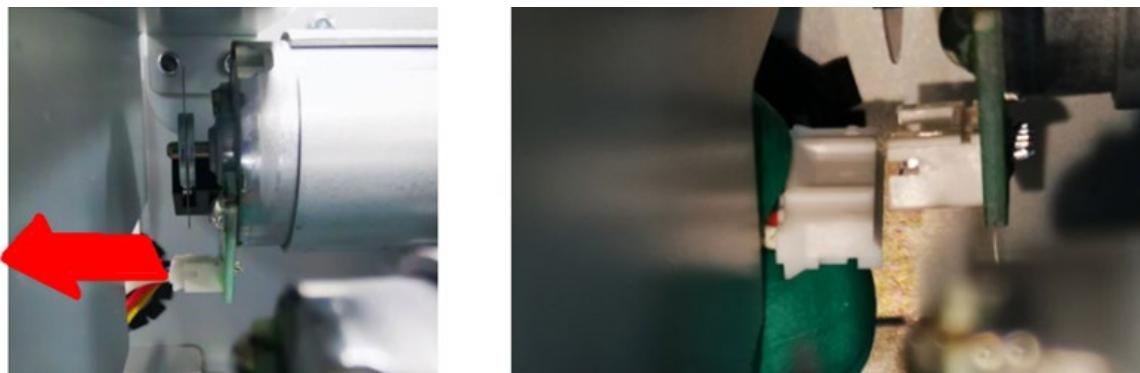
6. Disconnect the Circulation Pump 2 cable from the pump connector ([Figure 332](#)).

Figure 332 – Circulation Pump 2 Cable Removed from Connector



7. Disconnect the Circulation Pump 1 cable from the pump connector ([Figure 333](#)).

Figure 333 – Circulation Pump 1 Cable Removed from Connector



8. Discard the Circulation Pumps Cables according to local disposal recommendations.

24.5 Installation

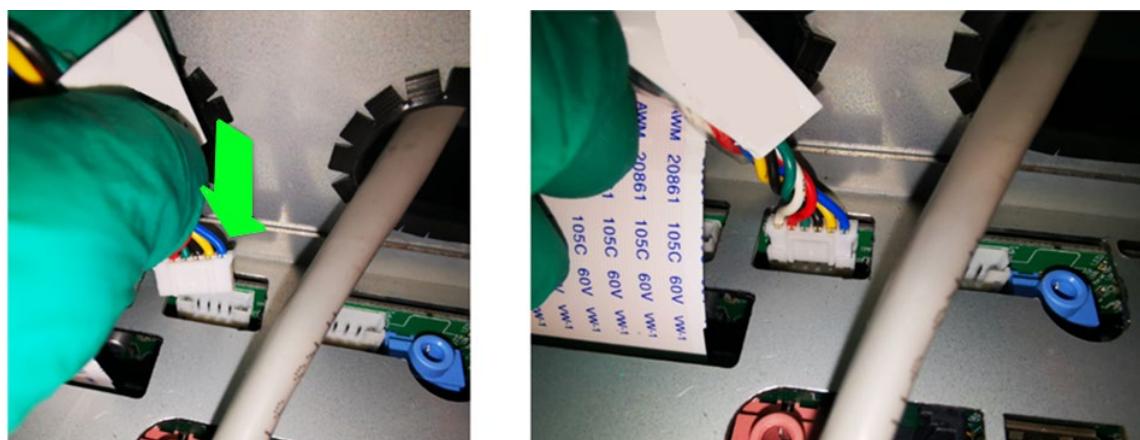
1. Inspect the new Circulation Pump cables. If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 334 – Circulation Pump Cable



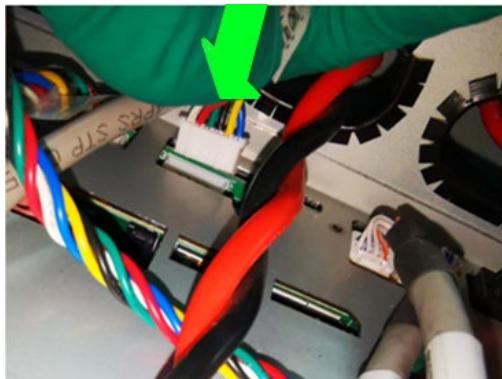
2. Connect the Circulation Pump 2 cable to the Print Module, located at the top of Electrical Module. ([Figure 335](#)).

Figure 335 – Circulation Pump 2 Cable Connected



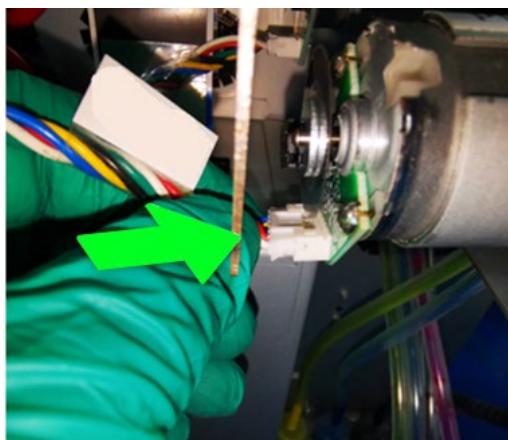
3. Connect the Circulation Pump 1 cable to the Print Module, located at the top of Electrical Module. ([Figure 336](#)).

Figure 336 – Circulation Pump 1 Cable Connected



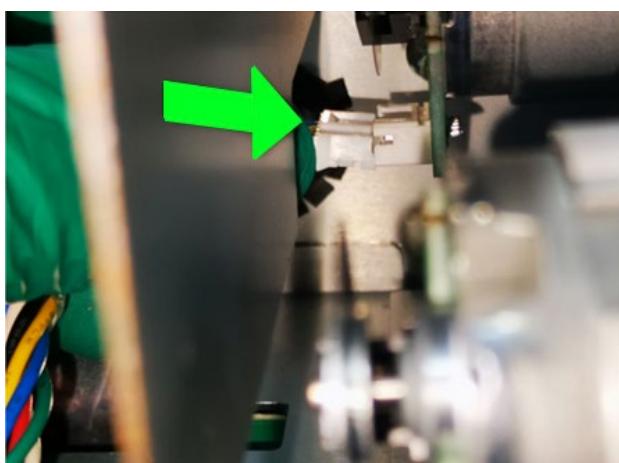
4. Connect the Circulation Pump 2 cable to the pump connector ([Figure 337](#)).

Figure 337 – Circulation Pump 2 Cable Attached to Connector



5. Connect the Circulation Pump 1 cable to the pump connector ([Figure 338](#)).

Figure 338 – Circulation Pump 1 Cable Attached to Connector



24.6 Testing

1. Power up DuraFlex.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. Perform priming and depriming two (2) times each.
4. Perform light service two (2) times.
5. If there is no error, the Circulation Pump cable replacement is successful.



25 Compliance Chamber Replacement

This section provides replacement instructions for the Compliance Chamber (FIDS Compliance Module – PN 10005289).

Figure 339 – Compliance Chamber



25.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

25.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 25 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
Compliance Chamber – PN 10005289	1	Part
T10 – M3 screwdriver (with 150-200 mm extension)	1	Tool
Tubing cutter	1	Tool
Hemostat	4	Tool
Versilon 2001 tubing - 3.175 mm ID, 240 mm	4	Supply

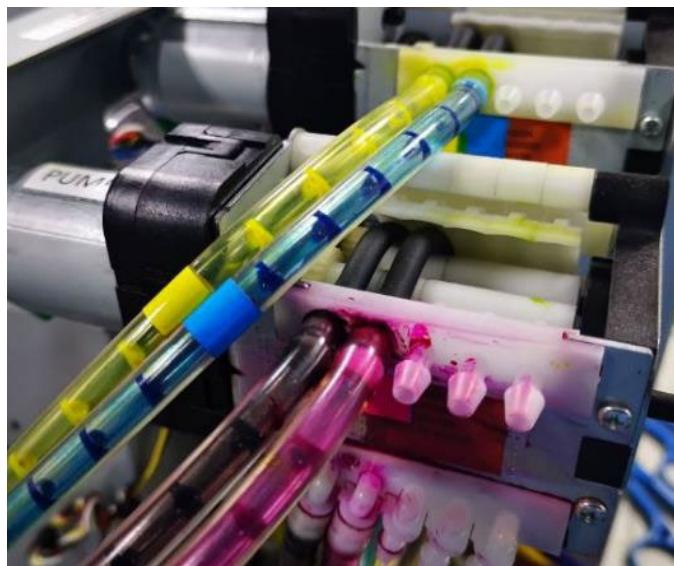
25.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

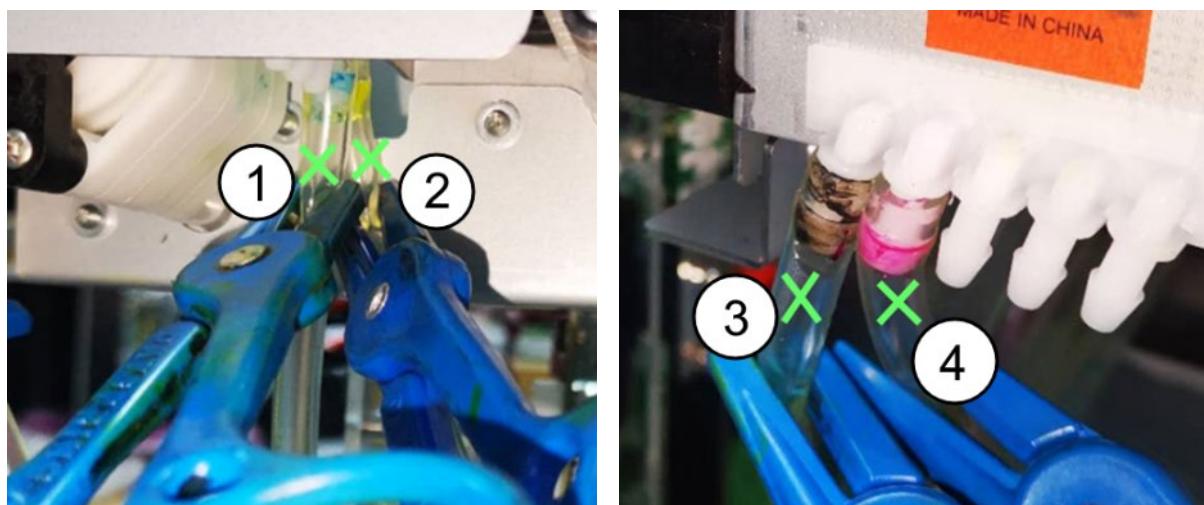
Note: Unless otherwise noted, keep all original hardware for installation.

1. Deprime DuraFlex until all tubes from Pinch Valve to IR Tank (through Return Line) are empty ([Figure 340](#)).



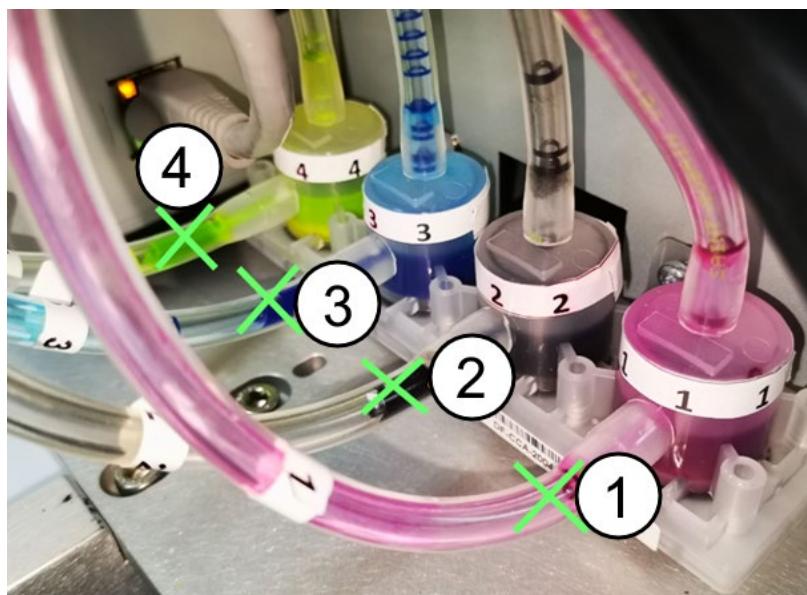
Figure 340 – Empty Return Line Tubes

2. Power down the system.
3. Cut the tubes at the four (4) cut locations shown in "X", nearest to the Circulation Pumps barbs. ([Figure 341](#)).

Figure 341 – Cut Locations 1 to 4

4. Wipe up any spilled ink with lint-free cloth.
5. Cut the tubes between Circulation Pumps and Compliance Chamber, about 5-10 mm from the Compliance Chamber barb end. The cut locations are shown in "X" in [Figure 342](#).



Figure 342 – Cut Locations

6. Loosen the two (2) screws that mount the Compliance Chamber to the Print Module ([Figure 343](#)).

Figure 343 – Screws for Mounting Compliance Chamber

7. Discard the Compliance Chamber according to local disposal recommendations.

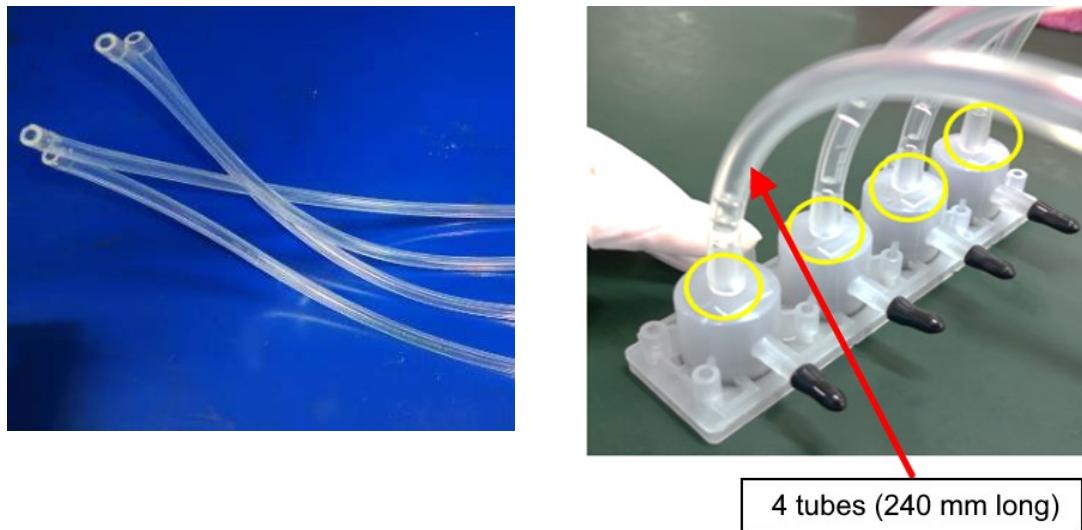
25.4 Installation

1. Visually inspect the new Compliance Chamber ([Figure 344](#)). If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 344 – Compliance Chamber

2. Connect the four (4) new tubes (3.25 mm ID and 240 mm long) to the Compliance Chamber ([Figure 345](#)). Apply some LEG-1 lubricant to assist with assembly.

Figure 345 – New Compliance Chamber Tubes Connected



3. Tighten the two (2) screws that secure the Compliance Chamber to the Print Module ([Figure 346](#)).

Figure 346 – Compliance Chamber Mounting Screws



4. Remove the vinyl seal caps from the Compliance Chamber. If needed, use a tool (a flat blade screwdriver) to carefully remove the seal caps ([Figure 347](#)).

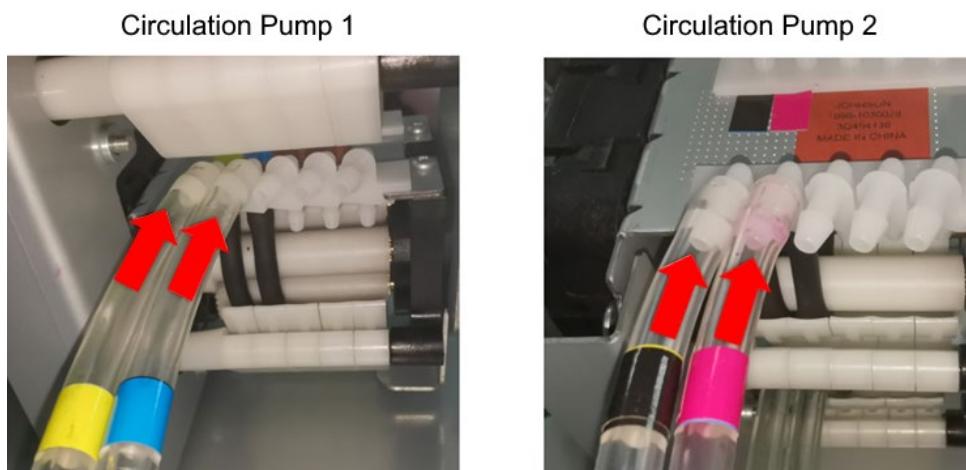
Figure 347 – Vinyl Seal Caps



5. Connect the tubes from printhead fluidic couplings back to the Compliance Chamber barbs ([Figure 348](#)). Apply some LEG-1 lubricant to assist with assembly.

Figure 348 – Tubes Connected to Compliance Chamber Barbs

6. Connect the tubing to both Circulation Pumps ([Figure 349](#)).

Figure 349 – Tubes Connected to Circulation Pumps

25.5 Testing

1. Power up the system.
2. Perform priming.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

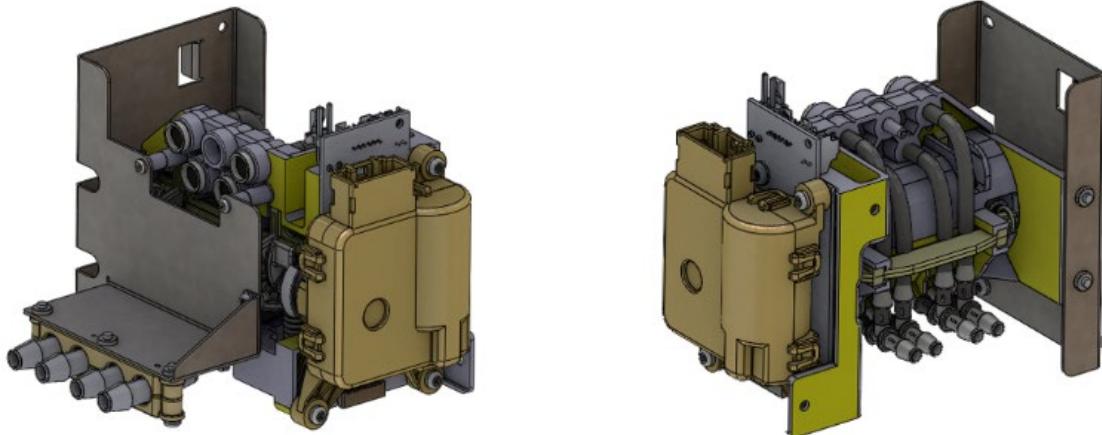
3. Observe the priming runs per normal and the ink is drawn from IR Tank then back to it.
4. Observe if there is any leakage from all the tubing that come in and out of the Compliance Chamber.



26 Pinch Valve Replacement

This section provides replacement instructions for the FIDS Pinch Valve Assembly with bracket (PN 10005290).

Figure 350 – Pinch Valve



26.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

26.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 26 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
Pinch Valve Assembly – PN 10005290	1	Part
Setup Printhead – PN 10005444	1	Part
T10 – M3 screwdriver (with 150-200 mm extension)	1	Tool
Tubing cutter	1	Tool
Hemostat	4	Tool
Cap – Vinyl, ID 0.25", length 0.5"	4	Tool
Filtered (Syringe with 0.8 µm filter) lubrication (Glycerol or LEG-1)	As needed	Supply



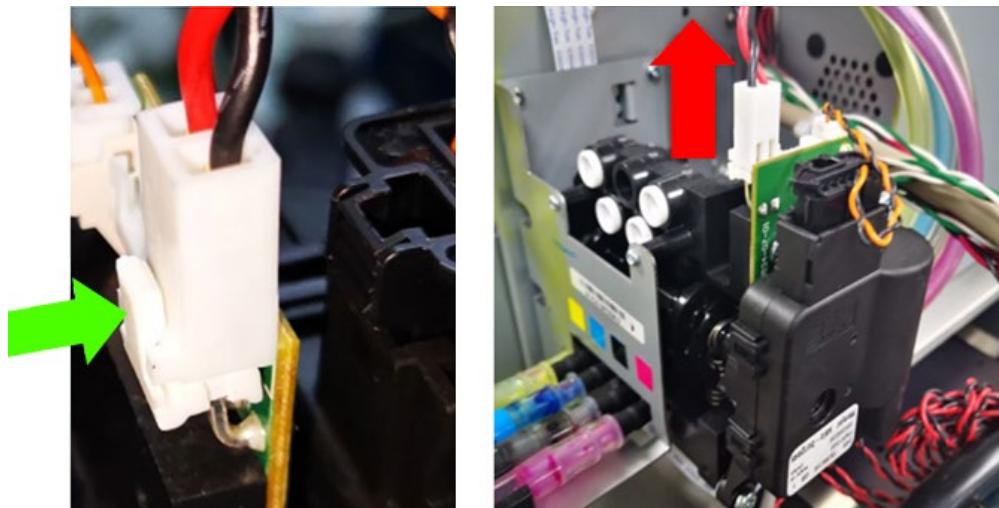
26.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

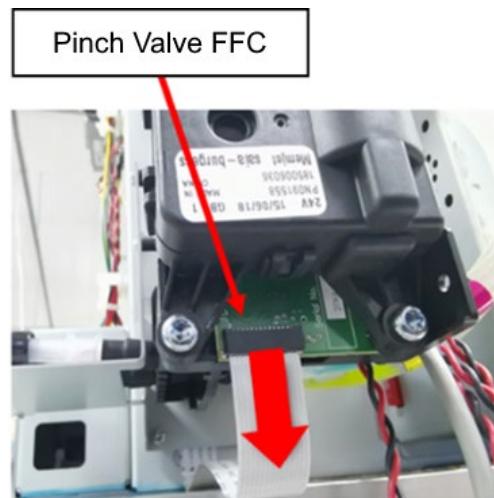
1. Deprime the system and remove the printhead.
Refer to the *DuraFlex Installation and Commissioning Guide* for proper procedure.
2. Place the printhead into the storage case and store until it can be installed in the system.
3. Push in the power cable connector latch (green arrow) and lift the connector up (red arrow) to disconnect the power cable ([Figure 351](#)).

Figure 351 – Power Cable Connector



4. Locate the Pinch Valve FFC below the pinch valve ([Figure 352](#)). Gently pull the Pinch Valve FFC to disconnect and discard it. New pinch valve assemblies include an FFC.

Figure 352 – Pinch Valve FFC

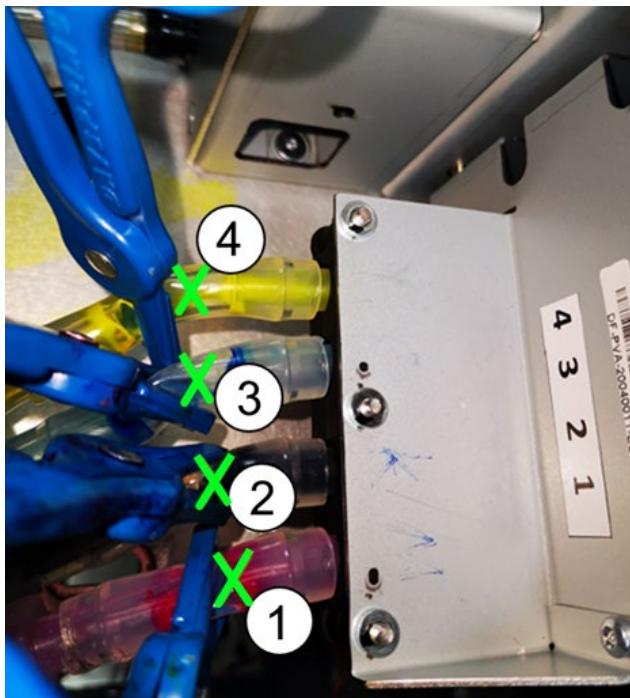


5. Use hemostats to pinch the four (4) Feed Line tubes about an inch away from the inlet (from BIDS to pinch valve) connectors, as shown in [Figure 353](#). Make sure the hemostats are clamped tightly on the tubes.



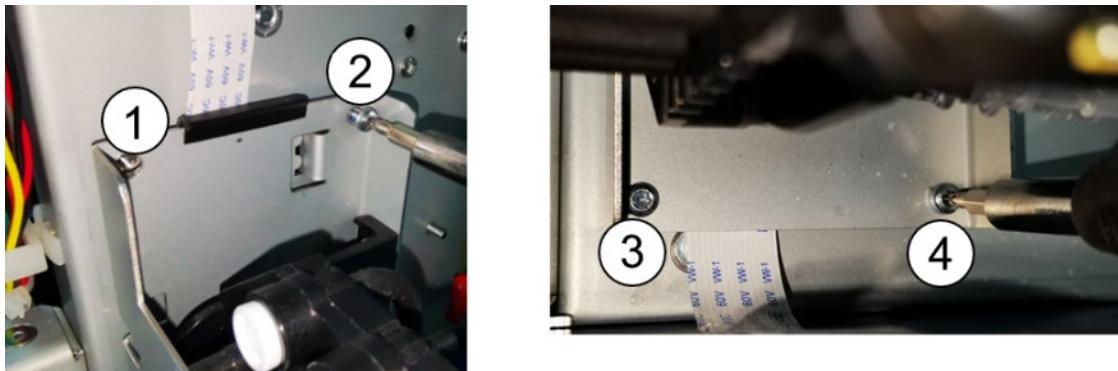
6. Use a tubing cutter to cut the Feed Line tubes between the hemostat and fitting ([Figure 353](#)). The cut locations are shown in "X" in the figure below.

Figure 353 – Feed Line Tube Clamping and Cutting



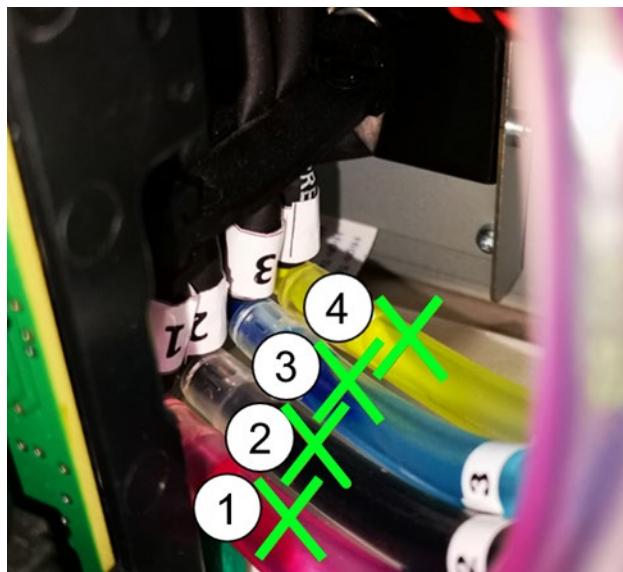
7. Wipe up any spilled ink with lint-free cloth.
8. Loosen the four (4) screws that secure the pinch valve to the metal frame of the print module ([Figure 354](#)). Note that screws 3 and 4 are on the bracket below the pinch valve.

Figure 354 – Pinch Valve Mounting Screws



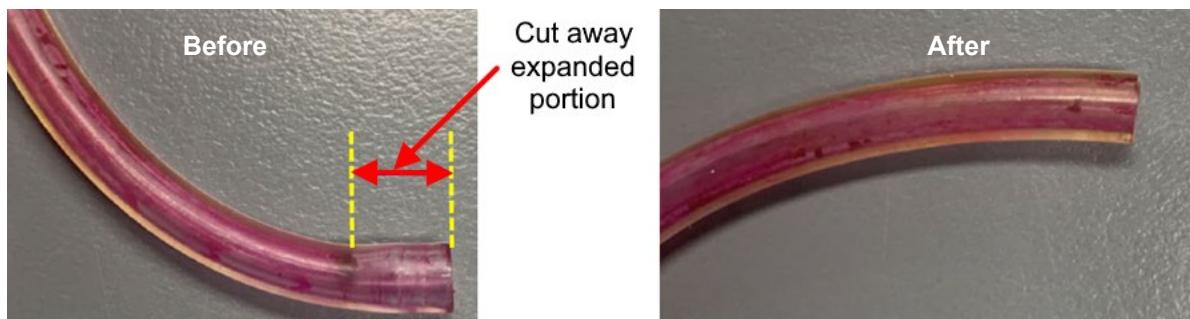
9. Confirm that all tubing is labelled (1-4).
10. Use a tubing cutter to cut the four (4) Outlet tubes (from pinch valve to fluidic coupling) as close to the pinch valve fitting as possible. The cut locations are shown in "X" in the figure below.

Figure 355 – Cut Outlet Tubing



11. Remove the pinch valve.
12. Inspect the ends of the Outlet tubing (pinch valve to fluidic coupling). If the tubing ends are flared and show excessive expansion ([Figure 356](#)), cut away the expanded section with a tube cutter.

Figure 356 – Removing Flared Tubing



13. Install vinyl caps on the ends of the four (4) Outlet tubes to prevent contamination ([Figure 357](#)).

Figure 357 – Outlet Tube Ends Sealed



14. Discard the Pinch Valve according to local disposal recommendations.

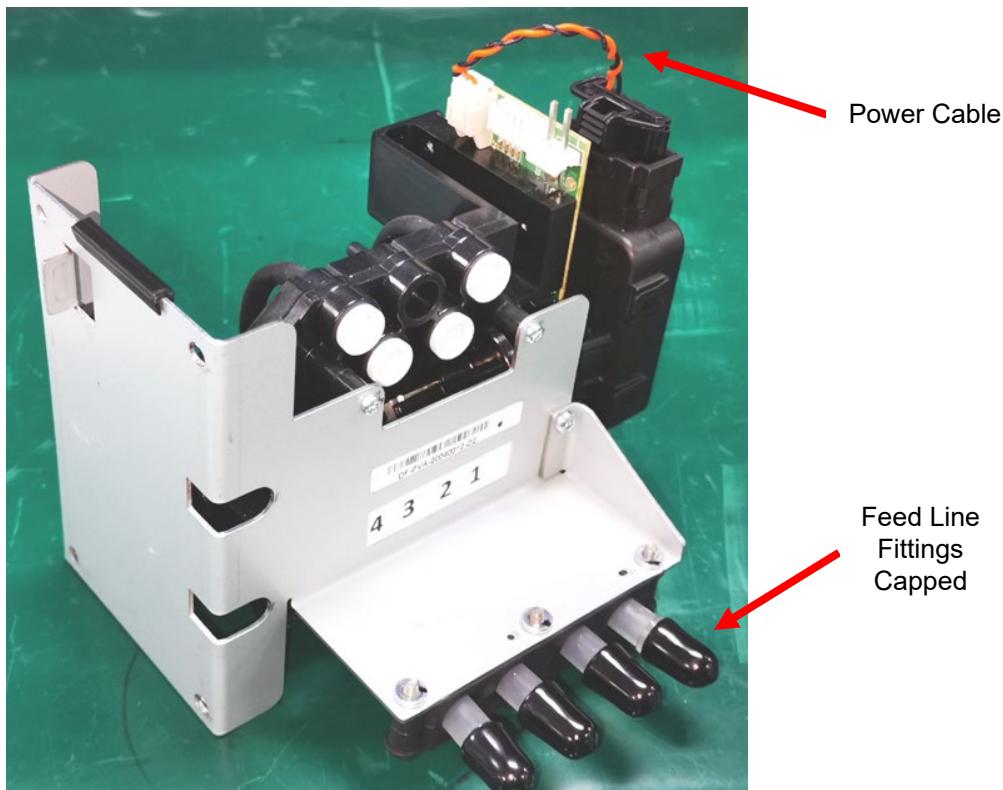


26.4 Installation

1. Visually inspect the new pinch valve to ensure:
 - there is no physical damage
 - feed line fittings are capped
 - tubing is not kinked or twisted and there are no holes
 - power cable is properly connected
 - FFC is included with the pinch valve

If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 358 – Pinch Valve Assembly



2. Prepare the lubrication syringe with filter.

Note: Perform the next two steps one tube at a time to reduce contamination.

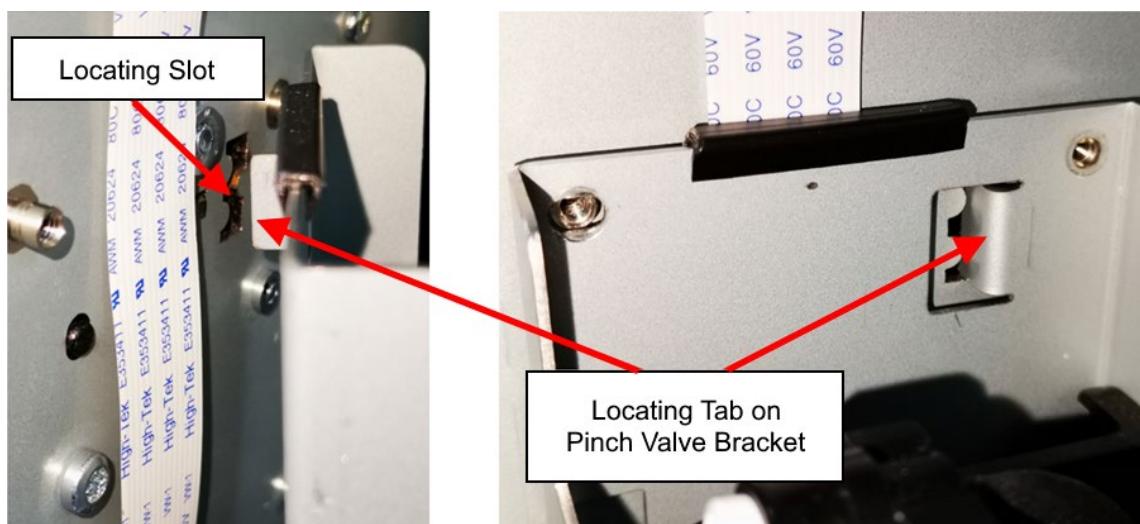
3. Remove the cap from Outlet fitting #1 on the new pinch valve and uncap and attach the end of tube #1. This is the tube that runs from the fluidic coupling (Figure 359).
4. Apply a small amount of lubricant to the tubing end and the pinch valve fitting to ease the insertion process.
5. Continue with tubes #2-4 until all four (4) tubes are connected between the pinch valve and the fluidic couplings.

Note: Make sure the numbering on the tubes matches the numbering on the pinch valve.

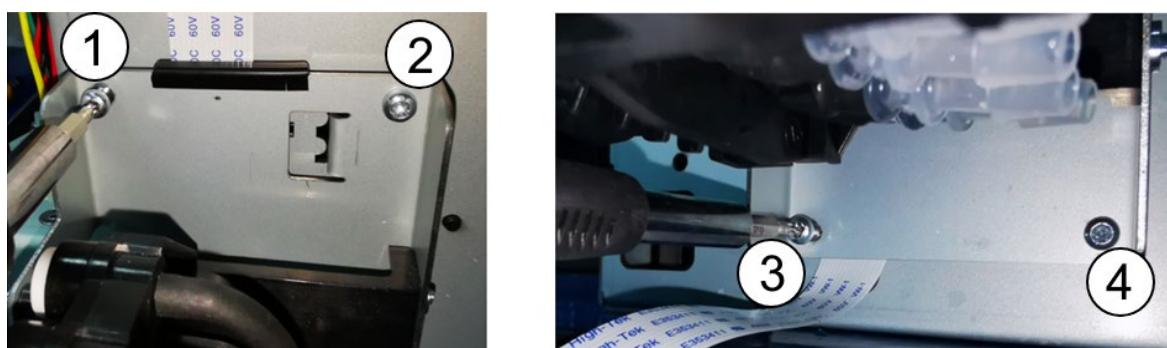


Figure 359 – Connecting Tubes to the Pinch Valve

6. Align the locating tab on the pinch valve bracket with the locating slot on the Print Module frame.

Figure 360 – Locating Tab Aligned

7. Secure the pinch valve to the Print Module frame with four (4) screws.

Figure 361 – Pinch Valve Mounting Locations

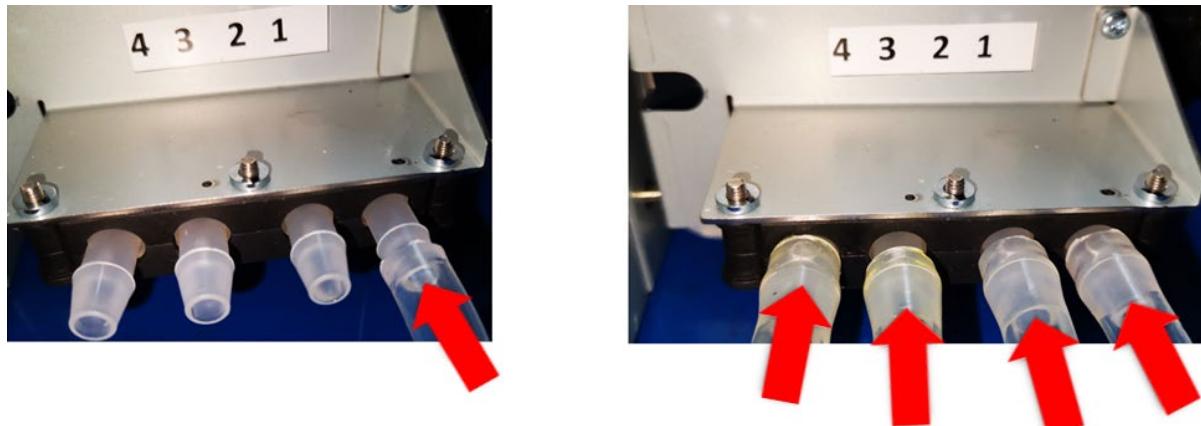
Note: Perform the next two steps one tube at a time to reduce contamination.



8. Remove the cap from Inlet fitting #1 on the new pinch valve and uncap and attach the end of Feed Line #1. This is the tube that runs from the BIDS to the pinch valve.
9. Apply a small amount of lubricant to the tubing end and the pinch valve fitting to ease the insertion process.
10. Continue with tubes #2-4 until all four (4) feed line tubes are connected between the pinch valve and the BIDS.

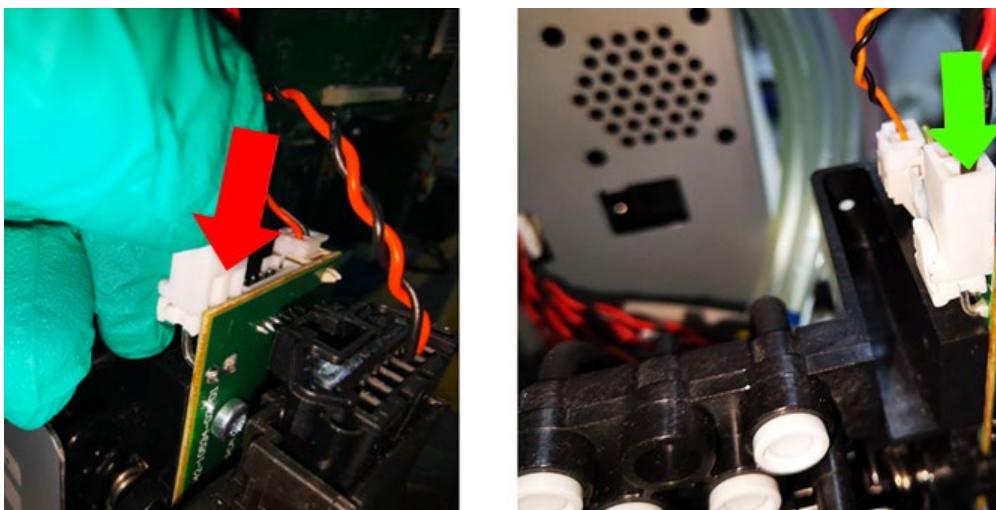
Note: Make sure the number on the tubes match the numbering on the pinch valve.

Figure 362 – Feed Line Tubes Connected to Pinch Valve



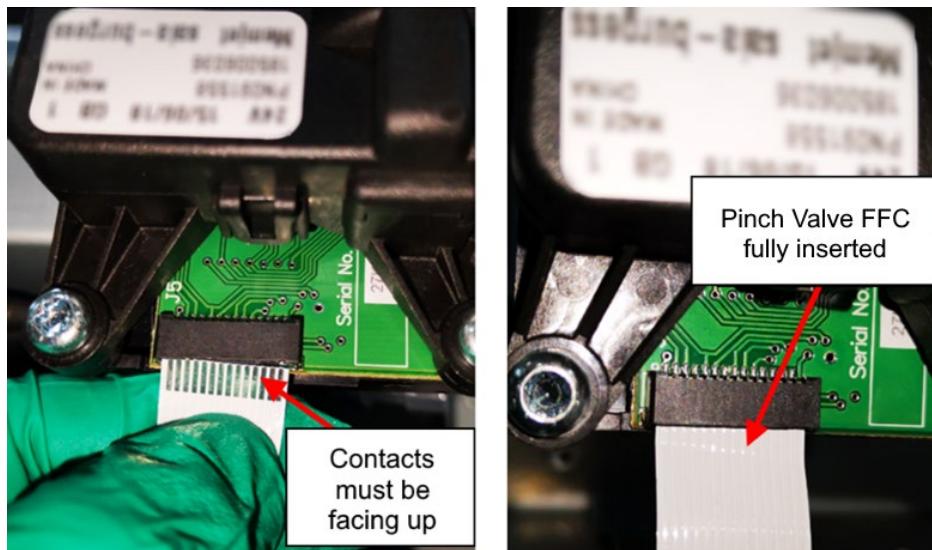
11. To avoid damage, carefully align the power cable connector with the receptacle on the PCA and then connect the power cable. Make sure the power cable connector is fully inserted.

Figure 363 – Connector Aligned and Power Cable Connected



12. Carefully align the FFC with the PCA connector on the bottom of the pinch valve. Make sure the contacts are facing up as shown in the figure below. Insert the cable fully into the connector until the contacts are no longer showing.



Figure 364 – FFC Connected to Pinch Valve

26.5 Testing

1. Install a setup printhead.
2. Power on the DuraFlex unit and initialize the print engine.
3. Check that the pinch valve can move to the INK, AIR, and CLOSED positions.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

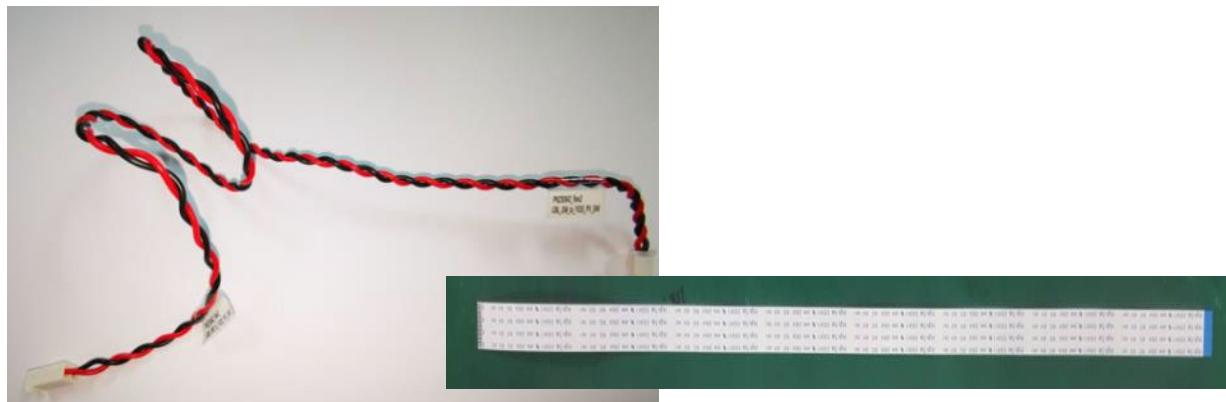
4. With the setup printhead installed, prime the system again.
5. Observe the tubing to see if priming is successful. All tubes should be filled with ink.
6. Deprime the system.
7. Remove the setup printhead.
8. Place the setup printhead in the storage case and follow standard storage procedures.
9. Install the original printhead into the system.



27 Pinch Valve Cables Replacement

This section provides replacement instructions for the FIDS Pinch Valve Cables (PN 10005277). Pinch Valve cables consist of the Pinch Valve 24V Power Cable and the Pinch Valve FFC. The OEM needs to replace only the faulty cable.

Figure 365 – Pinch Valve 24V Power Cable and FFC



27.1 Personal Protective Equipment (PPE)

CAUTION: To avoid injury, always use appropriate PPE when performing maintenance and replacement tasks. See Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

27.2 ESD Guidelines

CAUTION: To avoid equipment damage or injury to personnel, follow all standard ESD practices during this procedure. Refer to Section [2.2 ESD Guidelines](#) for details.

27.3 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 27 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Anti-static wrist strap	As needed	Tool
Pinch Valve Cable – PN 10005277	1	Part
Diagonal cutter	1	Tool

27.4 Pinch Valve 24V Power Cable

27.4.1 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

12-May-23

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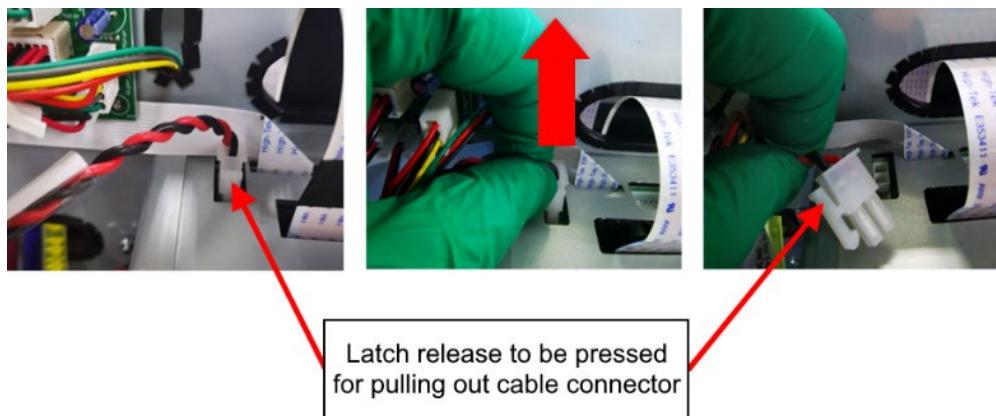
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DURA**FLEX**TM

1. Wear a correctly fitted and connected anti-static wrist strap during this procedure.
2. Power down DuraFlex.
3. Remove any covers or panels to expose top of the DuraFlex components and create sufficient access to the components.
4. To disconnect the Pinch Valve 24V Power Cable connector from the Print Module (at the TOP of the Electrical Module), press the latch release to loosen the connector, then pull it out.

Figure 366 – Pinch Valve 24V Power Cable Disconnected from Print Module



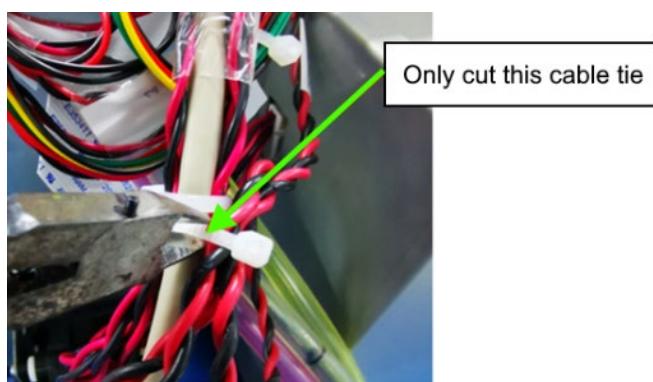
5. Disconnect the Pinch Valve 24V Power Cable connector from the Pinch Valve.

Figure 367 – Pinch Valve 24V Power Cable Disconnected from Pinch Valve



6. Cut the cable tie that binds the Pinch Valve 24V Power Cable and Print Module Cable to remove the faulty Pinch Valve cable completely from the Print Module. There is only one cable tie to cut.

Figure 368 – Cut Cable Tie



7. Discard the Pinch Valve 24V Power Cable according to local disposal recommendations.

27.4.2 Installation

1. Inspect the new Pinch Valve 24V Power Cable.

If damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 369 – Pinch Valve 24V Power Cable



2. Connect the Pinch Valve 24V Power Cable to the Print Module via the connector, at the TOP side of the Electrical Module ([Figure 370](#)).

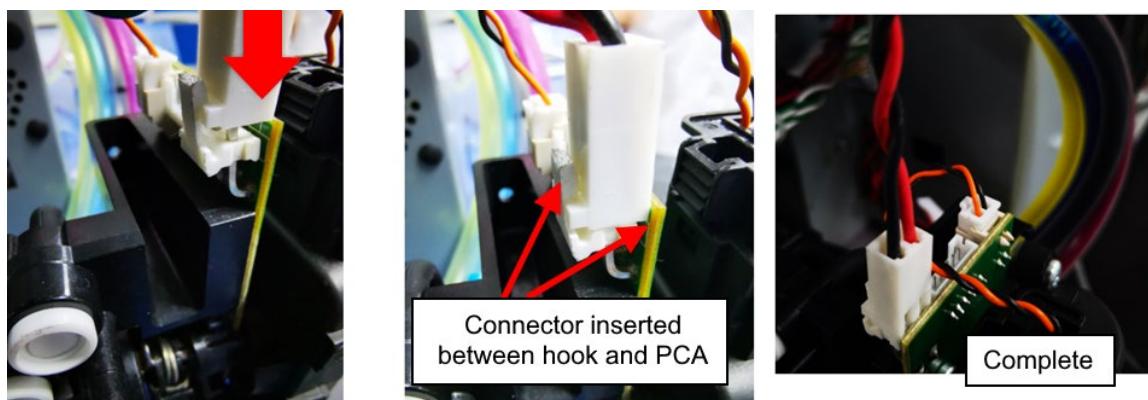
Figure 370 – Connector on Print Module



Latch release fully inserted and properly hooked to cable connector

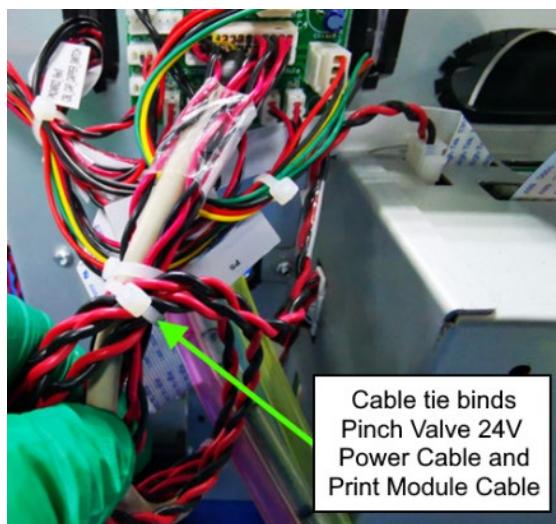
3. Connect the Pinch Valve 24V Power Cable to the Pinch Valve via the connector ([Figure 371](#)).

Figure 371 – Connector on Pinch Valve



4. Bind the Pinch Valve 24V Power Cable and the Print Module Cable together using a cable tie ([Figure 372](#)).

Figure 372 – Use Cable Tie to Bind Cables



27.4.3 Testing

1. Power up DuraFlex.
 2. Initialize the print engine.
-
- Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.
3. Perform depriming and priming to ensure that the Pinch Valve is working.
 4. If there is no error, the Pinch Valve 24V Power Cable replacement is successful.

27.5 Pinch Valve FFC

27.5.1 Removal

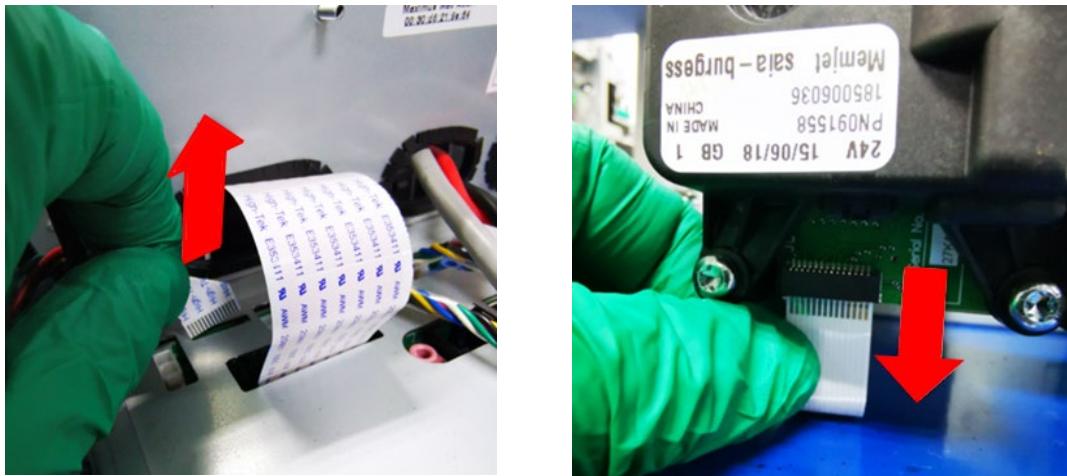
CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.



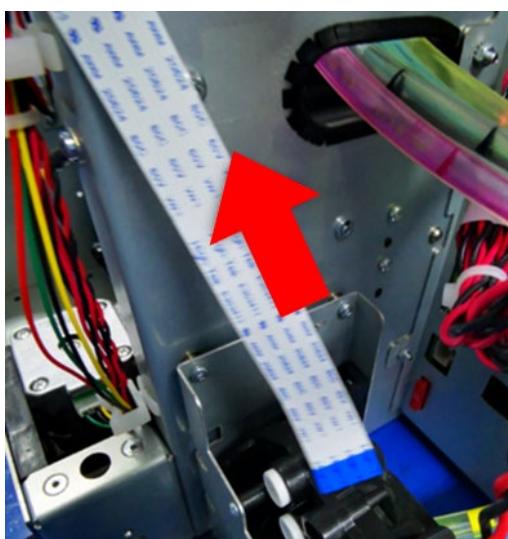
1. Power down DuraFlex.
2. Disconnect the Pinch Valve FFC from the Print Module (at the TOP of the Electrical Module) and from the Pinch Valve ([Figure 373](#)).

Figure 373 – Pinch Valve FFC Disconnected from Print Module and from Pinch Valve



3. Remove the whole FFC from the Print Module ([Figure 374](#)).

Figure 374 – Pinch Valve FFC Removed



4. Discard the Pinch Valve FFC according to local disposal recommendations.

27.5.2 Installation

1. Inspect the new Pinch Valve FFC ([Figure 375](#)). If it is damaged enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 375 – Pinch Valve FFC



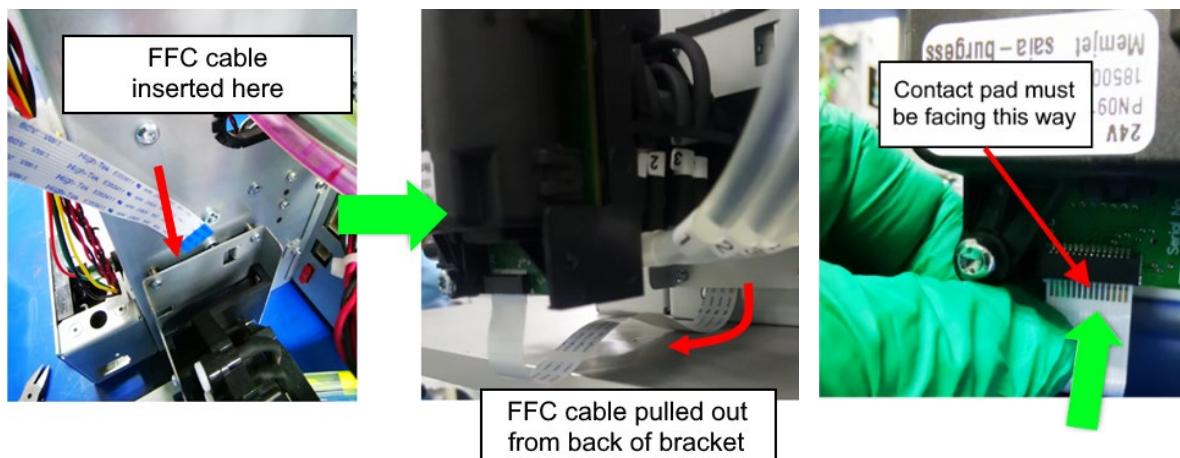
2. Connect the Pinch Valve FFC to the Print Module (at the TOP of Electrical Module).

Figure 376 – One End of Pinch Valve FFC Connected to Print Module



3. Thread the other end of the Pinch Valve FFC through the back of the Pinch Valve and pull it through from the bottom ([Figure 377](#)). Connect the Pinch Valve FFC to the Pinch Valve.

Figure 377 – The Other End of Pinch Valve FFC Inserted



27.5.3 Testing

1. Power up DuraFlex.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

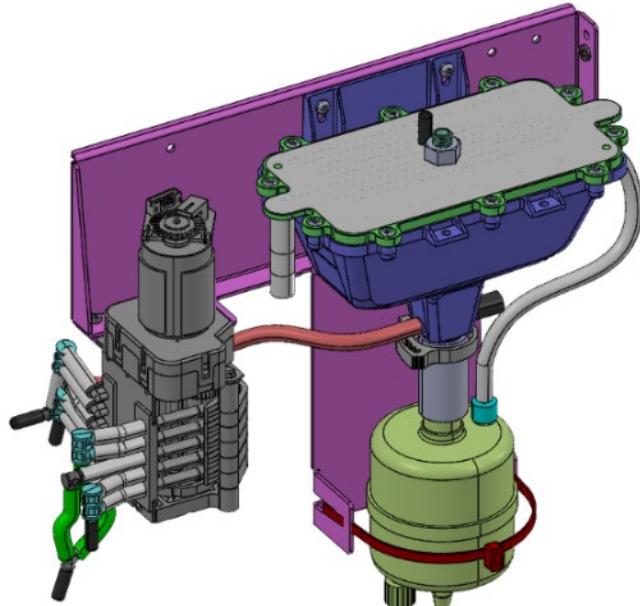
3. Perform depriming and priming to ensure that the Pinch Valve is working.
4. If there is no error, the Pinch Valve FFC replacement is successful.



28 IDS Blade Replacement

This section provides replacement instructions for the IDS blade with non-integrated filter (**DuraFlex Ink Delivery System Single**) (PN 10005641).

Figure 378 – IDS Blade with Non-Integrated Filter



28.1 Personal Protective Equipment (PPE)

CAUTION: To avoid personal injury, always use appropriate PPE when performing maintenance and replacement tasks. Refer to Section [2.3 Personal Protective Equipment \(PPE\)](#) for details.

28.2 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 28 – Required Tools and Supplies

Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
IDS blade with non-integrated filter – PN 10005641	1	Part
T10 – M3 screwdriver (with ~200 mm extension)	1	Tool
Tubing cutter	1	Tool
Hemostat	2	Tool
Waste ink container (minimum volume: 1L)	1	Tool



28.3 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

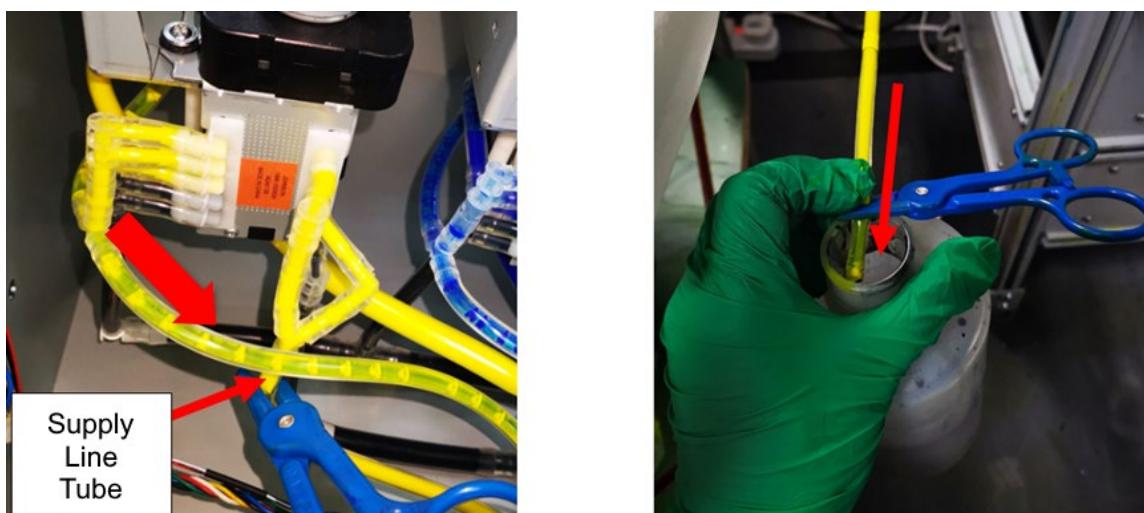
1. Print a test chart to have a baseline to compare the print quality before and after replacing the IDS blade.
2. Deprime the system so that all ink in Return Line tube is pulled back into the IR tank.
3. Disconnect the refill pump cable connector of the faulty IDS blade from the refill pump board ([Figure 379](#)). Disconnect the ink level sensor cable connector from the BIDS PassThru PCA.

Figure 379 – Refill Pump Cable and Ink Level Sensor Cable



4. Carefully disconnect the Return Line tube from the refill pump and place the end into a waste ink container.
5. Use a hemostat to pinch the Supply Line tube at a point near the refill pump. Use a tubing cutter to make a straight cut in the tube. ([Figure 380](#))
6. Place the loose end into a waste ink container. Use ink absorber to absorb any ink spill from the refill pump barb.

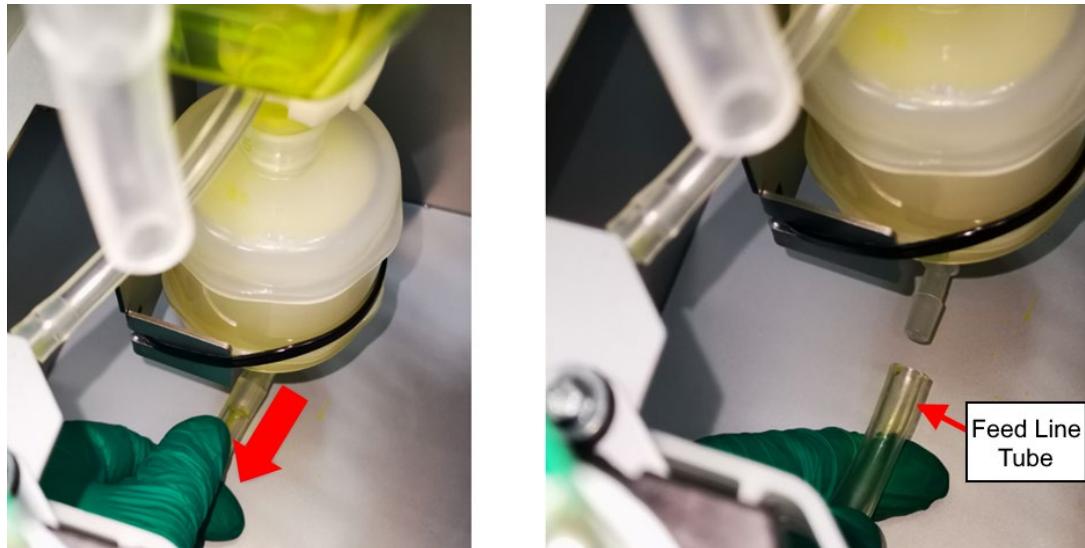
Figure 380 – Supply Line Tube Cut Location



7. Wipe up any spilled ink with lint-free cloth.
8. Enter the combined mode and use commands to run the circulation pumps for four (4) minutes. See Section [4.4 Frequently Used System Commands](#) for details about the custom flush.
9. Power down the system.
10. Disconnect the Feed Line tube from the non-integrated filter on the faulty IDS blade.

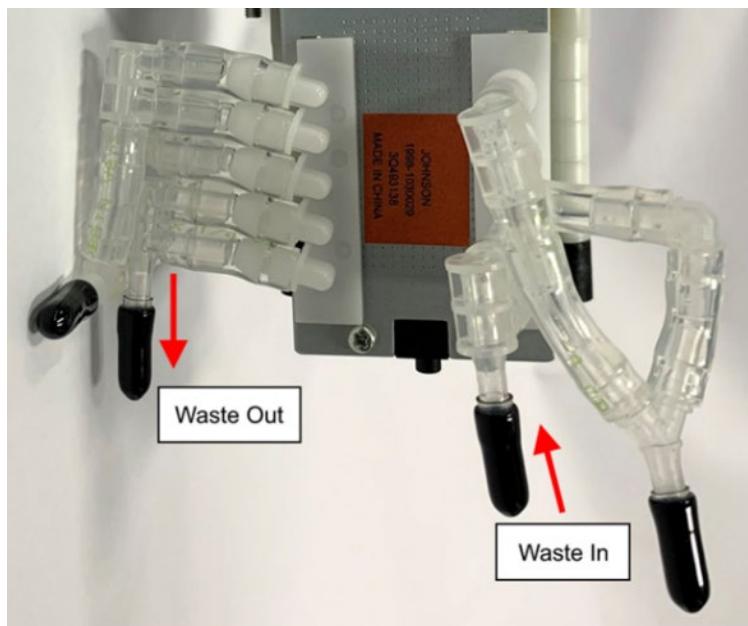
Note: Place ink absorber material under the IR tank barb to absorb any residual ink that might flow out of the IR tank when disconnecting ink tubing.

Figure 381 – Feed Line Tube



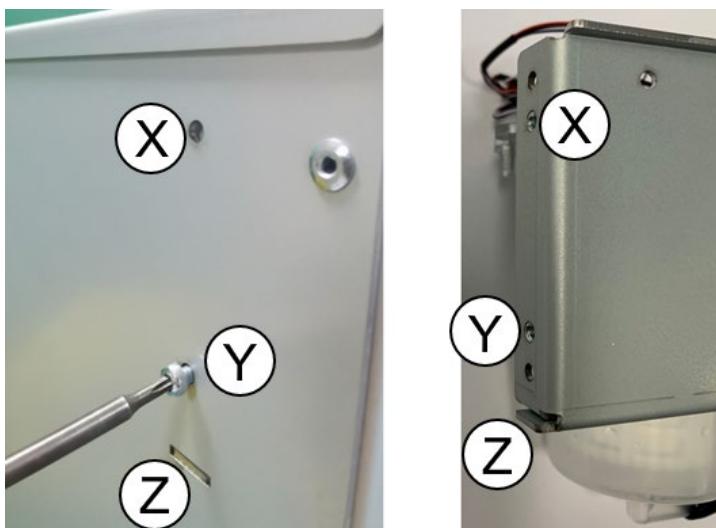
11. Disconnect the Waste In and Out tubes from the Refill Pump tubes, in 2 places ([Figure 382](#)).

Figure 382 – Waste In and Waste Out



12. Remove the IDS blade by loosening the two (2) mounting screws (shown at X and Y in [Figure 383](#)).



Figure 383 – IDS Blade Mounting Screws

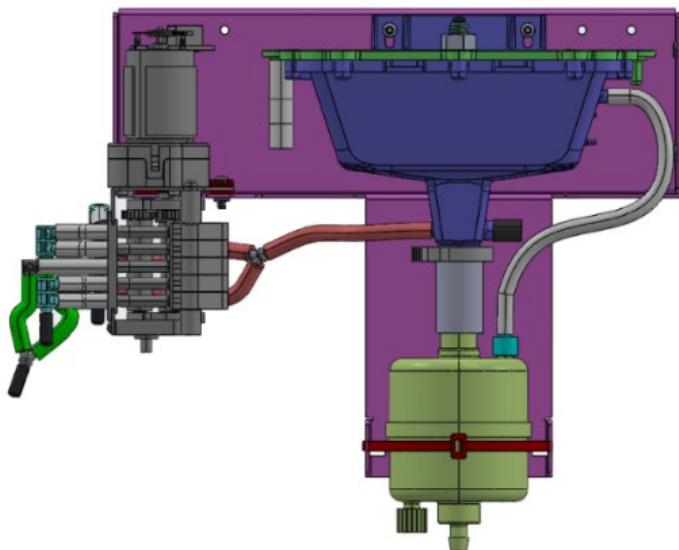
13. Discard the IDS blade according to local disposal recommendations.

28.4 Installation

1. Visually inspect the new IDS blade ([Figure 384](#)) to confirm that:

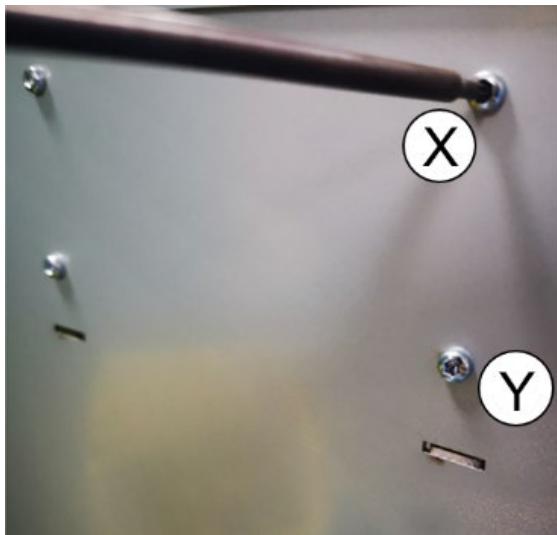
- there is no damage (cracks in material, broken hardware, missing screws, etc.) to the major components (pump, IR tank, filter, sensor cable, etc.)
- tubing is fully connected and not kinked or damaged

If it is damaged, enter a case in Memjet's Service Desk (<https://OEMsupport.memjet.com>).

Figure 384 – IDS Blade

2. Install the new IDS blade with two (2) mounting screws (shown at X and Y in [Figure 385](#)).

Figure 385 – IDS Blade Mounting Screws



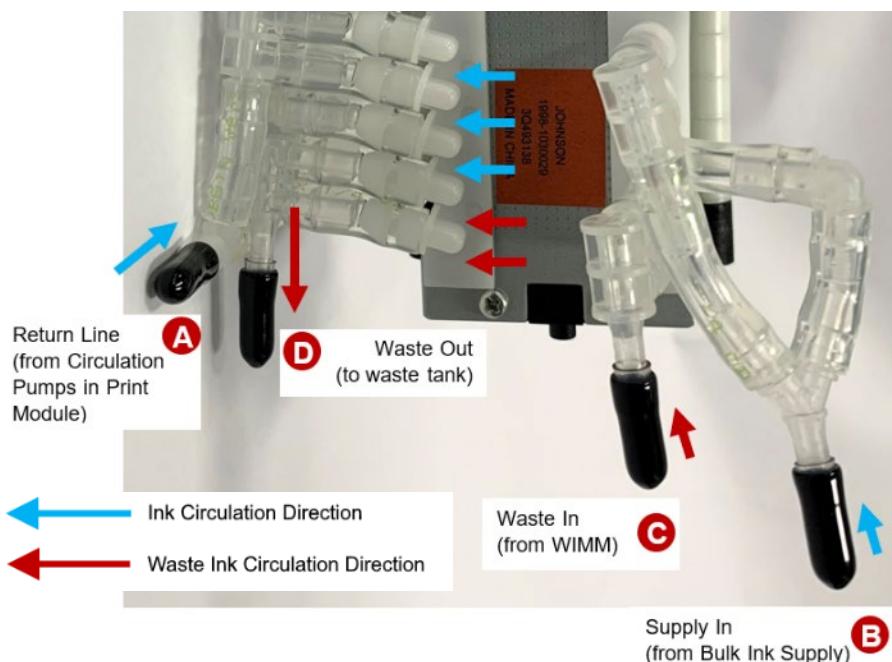
3. Inspect the end of Feed Line tube for flaring, or damage. Use a tube cutter to trim any damaged ends. Trim only a short piece for minimal effect on the overall tubing length.
4. Connect the Feed Line tube to the non-integrated filter on the IDS blade ([Figure 386](#)). Use a small amount of the LEG-1 lubricant to ease the tube insertion.

Figure 386 – Connect Feed Line Tube



5. Inspect the following tubes for deformity, flaring, or damage ([Figure 387](#)). If found, use a tubing cutter trim away the damaged portion. Trim only a short piece for minimal effect on the overall tubing length.
 - a. Return Line tube (from Circulation Pump)
 - b. Supply Line tube (from Bulk Ink Supply)
 - c. Waste Ink IN tube (from WIMM)
 - d. Waste Ink OUT tube (to OEM Waste Ink container)
6. Reconnect all the tubes shown in figure above to the Refill Pump on the new IDS blade. Use a small amount of the LEG-1 lubricant to help with assembly.

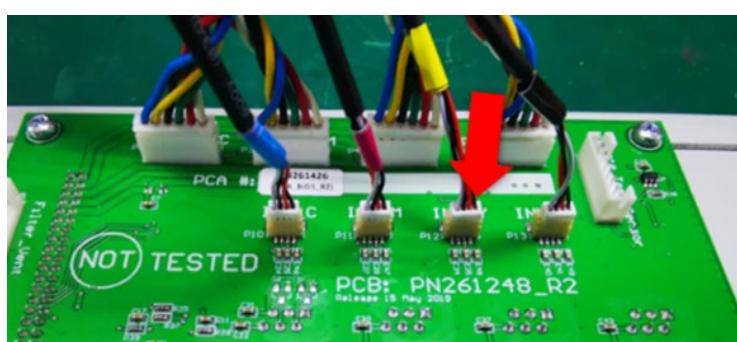


Figure 387 – Return Line, Supply In, Waste In, and Waste Out

7. Insert the IDS Vent Reservoir tube of the affected IR Tank ([Figure 388](#)). Use the LEG-1 lubricant to ease the insertion. Then connect the Refill Pump cable to the Refill Pump.

Figure 388 – Vent Reservoir Tube and Refill Pump Cable Connected

8. Connect the ink level sensor cable connector to the BIDS PassThru PCA ([Figure 389](#)).

Figure 389 – Ink Level Sensor Cable Connected

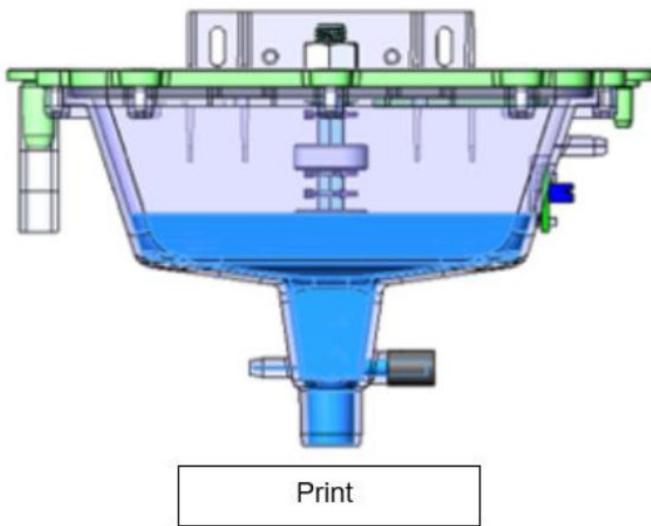
28.5 Testing

1. Power on the system.
2. Initialize the print engine.

Note: See Section [4.4 Frequently Used System Commands](#) for detailed instructions.

3. The refill pump should run and fill the IR tank with ink until it reaches the Print level.

Figure 390 – IR Tank with Ink at Print Level



4. Deprime the system.
5. Remove the printing printhead and temporarily store it in the protective case.
6. Insert a setup printhead and perform priming.
7. Print a test chart to compare with the baseline printed with the old IDS blade.
8. Inspect the printed chart for print quality defects. If there are no defects, the new IDS blade is free of contamination.
9. Deprime the system.
10. Remove the setup printhead and temporarily store it in the protective case.
11. Reinstall the printing printhead.
12. Print another test chart.
13. Inspect the printed chart for print quality defects.



29 Consumable Replacement

29.1 Printhead Replacement

For initial printhead installation or how to use a setup printhead, see the *DuraFlex Installation and Commissioning Guide*.

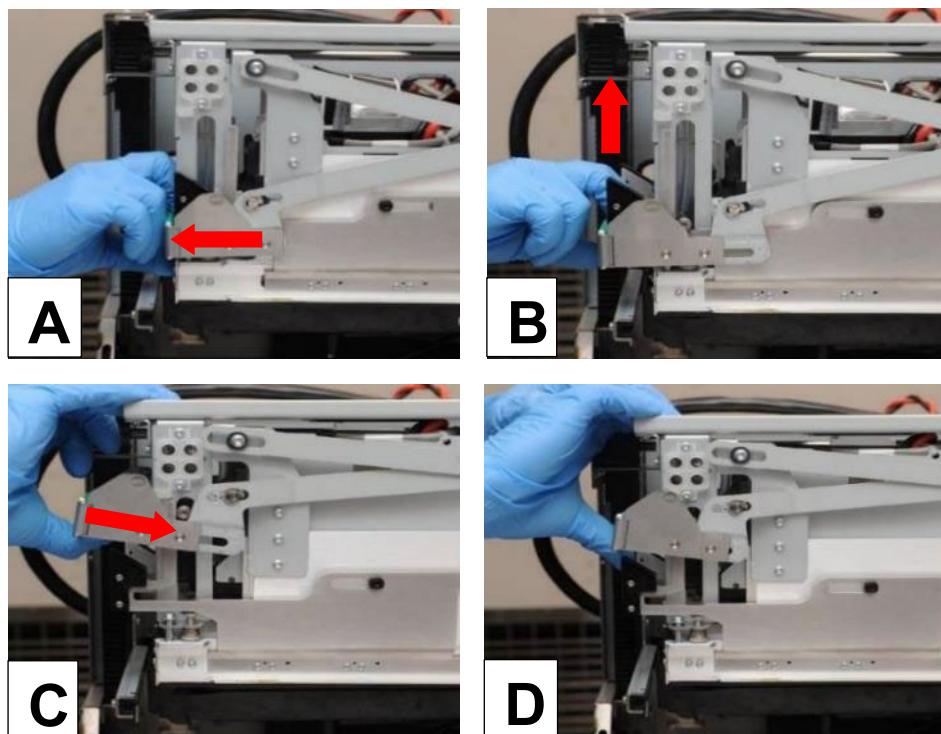
29.1.1 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

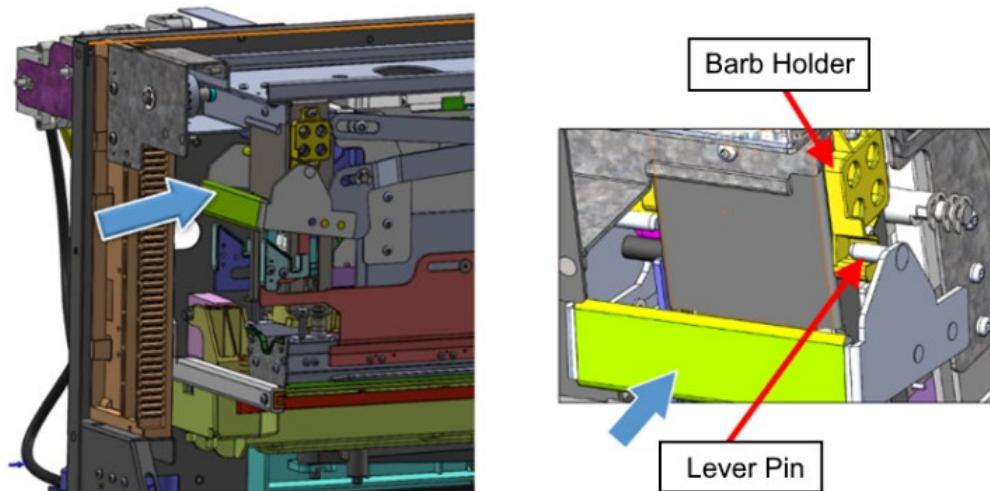
1. Verify that the Printhead Cradle is in the RAISE position before beginning this procedure.
2. To unlock the printhead latch ([Figure 391](#)):
 - a. Pull the green printhead latch out to the side (A) and then raise it (B).
 - b. Slide it inwards on the slot (C) and lock it into place (D).

Figure 391 – Unlock the Printhead Latch



- c. Ensure that the lever pin is locked into the barb holder slot ([Figure 392](#)).



Figure 392 – Lock Lever Pin onto Slot

3. Slide out the used printhead and discard it according to local disposal regulations.

29.1.2 Installation

To prepare the printhead for installation:

1. Remove the printhead from the cardboard box and foil bag.
2. Open the red printhead protective case.

Figure 393 – Printhead in Protective Case

3. On the Print Module, remove the two green covers from the fluidic couplings (one at each end).

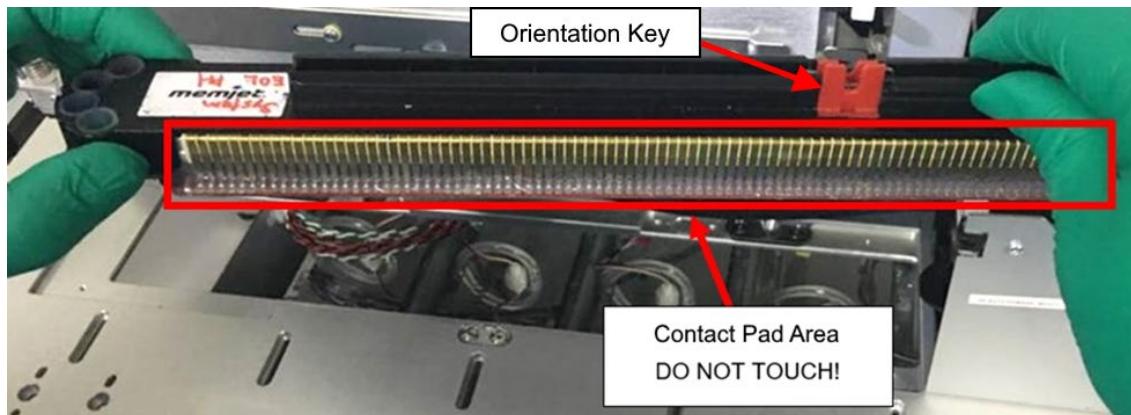
Figure 394 – Remove Fluidic Coupling Covers

4. Keep the red protective case and fluidic coupling covers for storage and shipping. Close the protective case during storage and put the green fluidic coupling covers in a clean plastic bag to prevent contamination.

CAUTION: Avoid contact with the printhead nozzle surface to prevent nozzle damage. Avoid contact with printhead ink ports and print unit couplings to prevent contamination. Do not touch the printhead electrical connectors (pads), nozzles, or contact pin area.
Touch only the black plastic parts of the printhead!

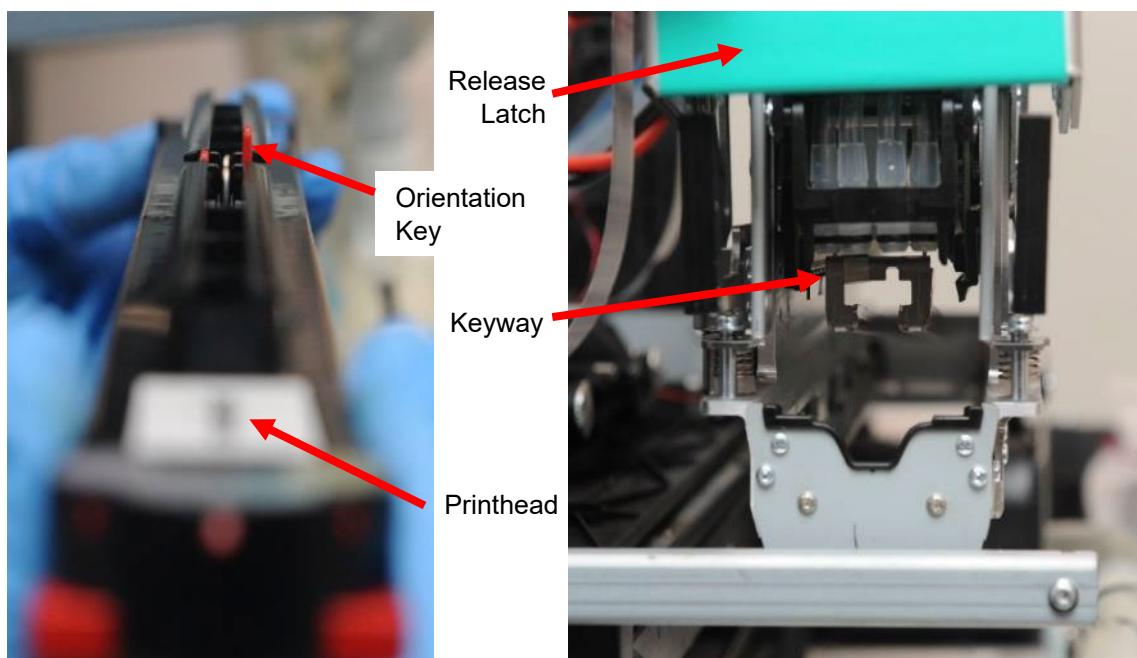
5. With one hand, hold the side of the printhead with your index finger and thumb. With the other hand, hold the handle of the printhead and ensure that the red orientation key is oriented as shown in [Figure 395](#).

Figure 395 – Hand Position when Holding Printhead



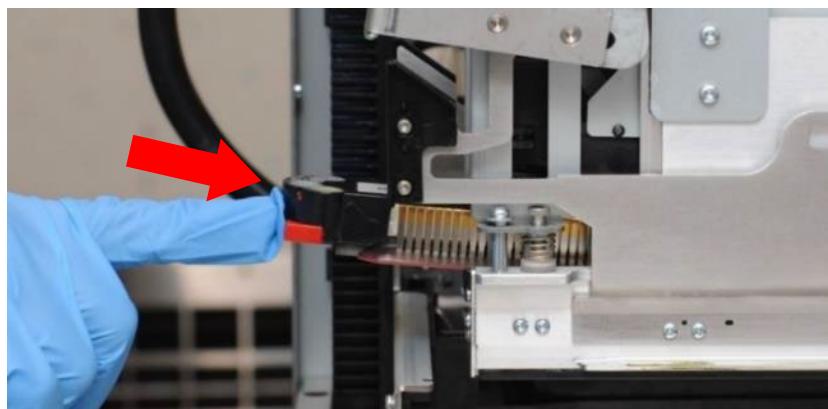
6. Align the red orientation key with the keyway inside the cradle and slide it along the plastic guide ([Figure 396](#)).

Figure 396 – Orientation Key and Printhead Handle Details

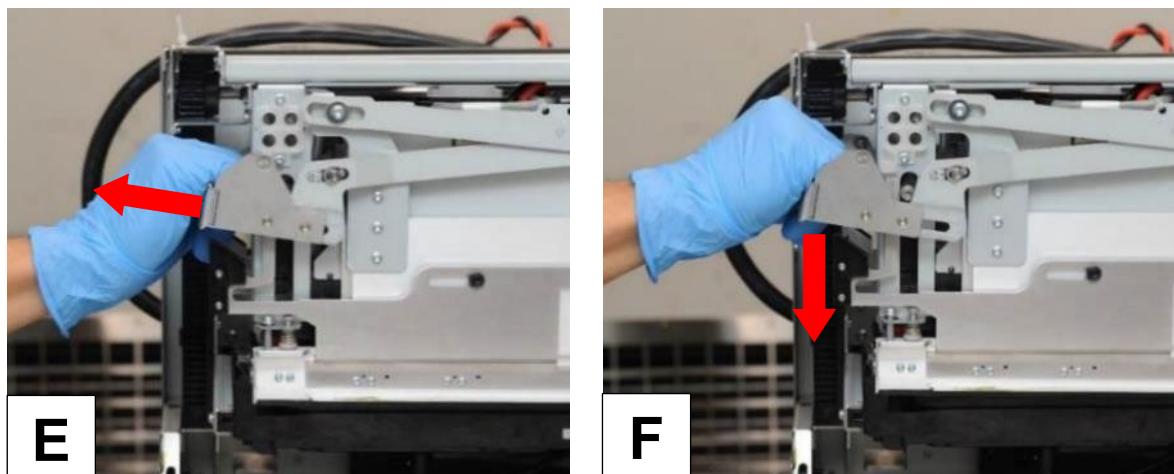


7. After you insert the printhead, push the end of it with one finger to ensure that it is fully seated.

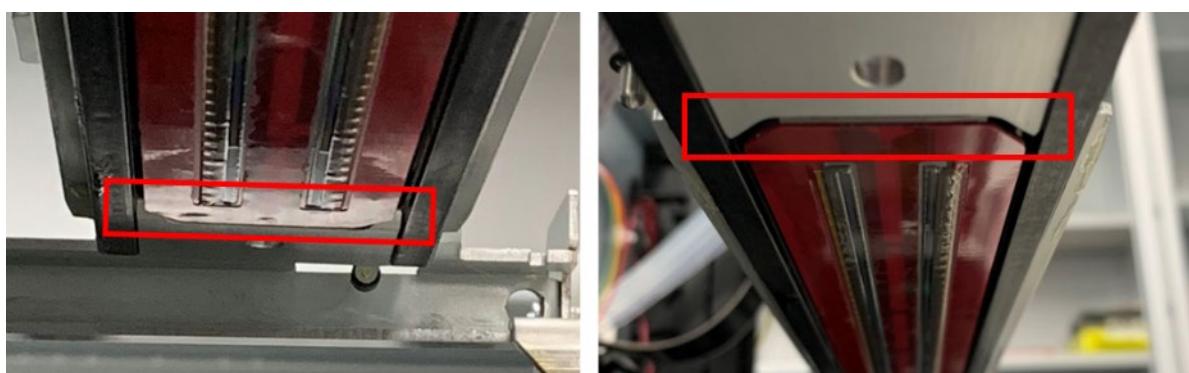


Figure 397 – Push the Printhead into Position

8. Disengage the green printhead latch lever pin from the barb holder slot and pull it out to the side of the print module (E) shown in [Figure 398](#).
9. Push the latch down (F) shown in [Figure 398](#).

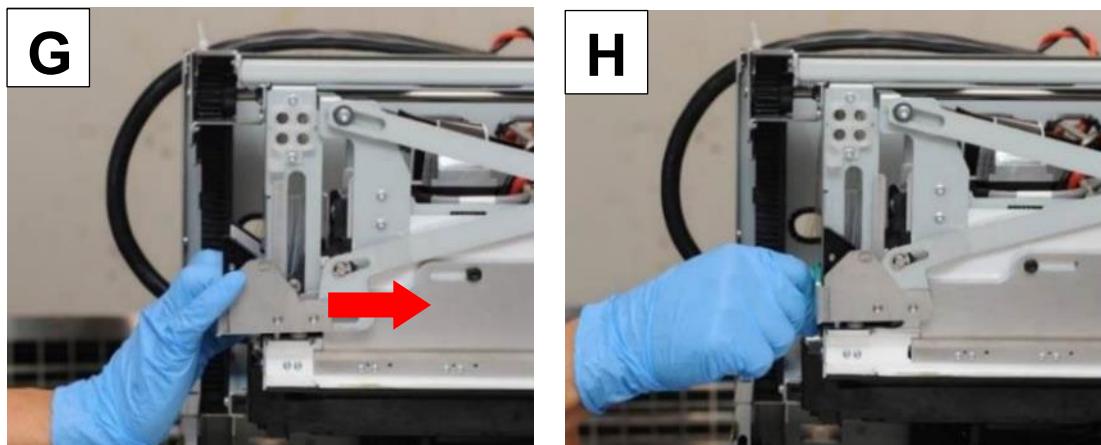
Figure 398 – Disengage the Printhead Latch

10. From below, visually inspect both ends of the installed printhead to ensure that the lower printhead surface (red) is flush with the frame (silver). If it is not flush, remove the printhead and install again ([Figure 399](#)).

Figure 399 – Printhead Surface Flush with Frame at Both Ends

11. Slide the latch into the print module (G) until it is fully engaged (H) shown in [Figure 400](#).

Figure 400 – Engage the Printhead Latch



12. Verify that the latch is fully engaged ([Figure 401](#)).

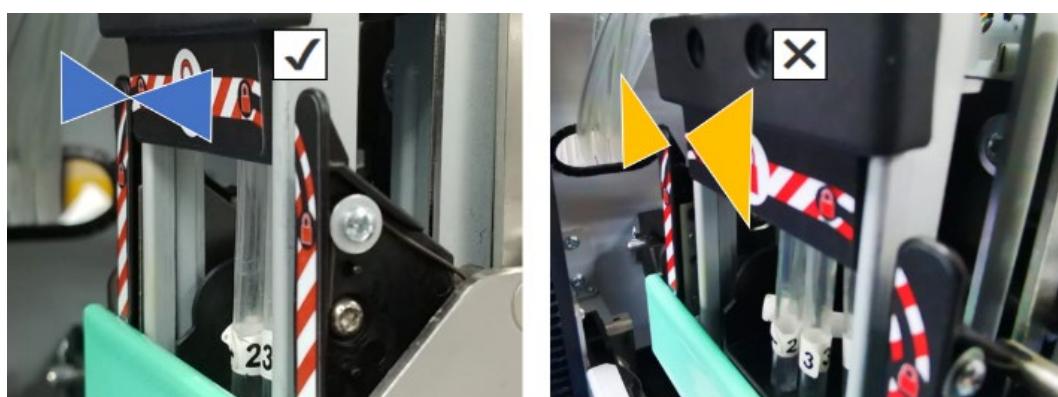
CAUTION: If the green release latch is not properly secured, it may get caught on the cap rail and damage the cradle.

Figure 401 – Fully Engaged Release Latch



13. Check that the three (3) labels on the Print Module are on the same plane.

Figure 402 – Three Labels on the Same Plane



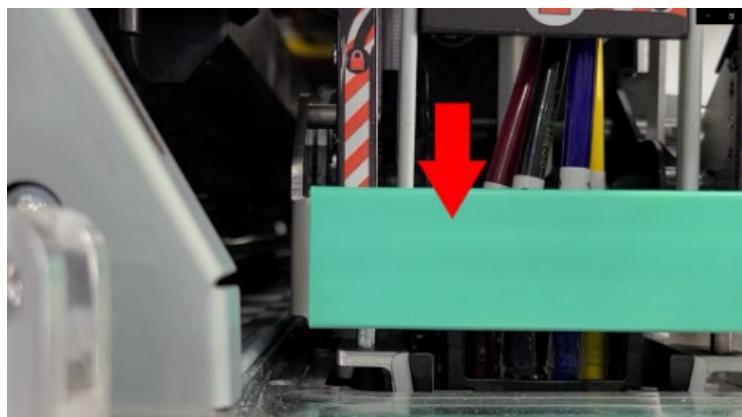
14. When the Printhead Cradle reaches the PRINT position, verify that it is fully seated into the datum surface by carefully pushing down on the green printhead latch:

- If there is no movement, that means the cradle is correctly seated.



- If there is movement, then the cradle is not fully seated. Contact your Memjet Technical Account Manager.

Figure 403 – Ensure Printhead Cradle Fully Seated



29.1.3 Testing

Each time a printhead is installed, the printhead insertion test is required. Use the OEM printer control software to initialize the print engine to test that the printhead is properly inserted.

During initialization, the print module lifts, the cap retracts from the printhead, and then recaps the printhead. This process may take a few minutes.

29.2 Wiper Cartridge Replacement

The **MICROFIBRE_OUT** condition of the Maintenance Module indicates that the microfiber is used up and the wiper cartridge needs a replacement. The OEM printer control software is responsible to notify the users when a replacement is required.

29.2.1 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

1. Use the OEM printer control software to move the printhead cradle to its RAISE position.
2. In the OEM printer control software, send the wiper cartridge to its SERVICE position.
3. Use your hand to press the green release latch until you hear a “click”, which means the wiper cartridge is disengaged.
4. Manually remove the wiper cartridge.
5. Dispose of the used wiper cartridge according to local disposal regulations.

Note: The print unit can be initialized without a wiper cartridge being installed. This allows the wiper carrier to move to the wiper insert (SERVICE) position to install the wiper cartridge.



29.2.2 Installation

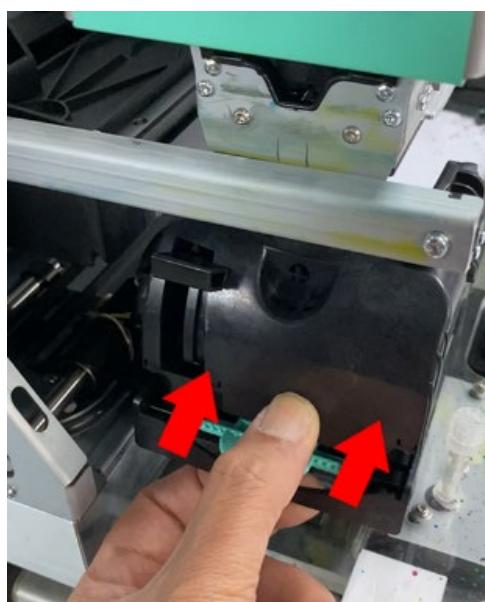
1. Confirm that the Printhead Cradle is in RAISE position.
2. Confirm that the Wiper Carrier is in HOME position.
3. Power on the DuraFlex system and the Client PC.
4. Hold the wiper cartridge in one hand and locate the blue tab protruding from the cartridge.
5. Gently, but firmly, pull down on the tab to remove it from the wiper cartridge.

Figure 404 – Disposable Tab on New Wiper Cartridge



6. In the OEM printer control software, move the wiper carrier to SERVICE position. Insertion can only occur at the SERVICE position.
7. Insert the wiper cartridge. You will hear a “click” sound when it is fully seated ([Figure 405](#)).

Figure 405 – Insert Wiper Cartridge



8. In the OEM printer control software, move the printhead to the CAP position. The wiper will move back to the HOME position.



29.3 Bulk Ink Supply Replacement

The QAI detects a low ink level and triggers a notification on the OEM printer control software when the bulk ink supply is low on ink.

To minimize exposure to contaminants, prepare the new bulk ink supply for installation before disconnecting the CPC female connector on the empty bulk ink supply.

- Clean the connector on the bulk ink supply with lint-free wipes and DI water.
- Position the bulk ink supply close to the installation location.

29.3.1 Removal

CAUTION: To minimize ink contamination, always wear clean, nitrile, powder-free gloves when working on the DuraFlex system.

Note: Unless otherwise noted, keep all original hardware for installation.

1. Disconnect the QAI Cable (RJ12) from the bulk ink supply ([Figure 406](#)).
2. Disconnect the CPC connector (female) on the IDS Supply Line from the male connector on the bulk ink supply by pressing the unlock tab ([Figure 406](#)).

Figure 406 – QAI Cables (RJ12) and Unlock Tab on the CPC Connectors



Figure 407 – Male and Female (CPC) Connectors and Tubing Disconnected



3. Move the bulk ink supply away from the installed location (in the rack, on a shelf, etc.).



29.3.2 Installation

1. Visually inspect the new bulk ink supply to ensure that the connectors are intact. If it is damaged, replace the connectors before attaching them to the IDS Blades.
2. Place the new bulk ink supply in the same location as the previous bulk ink supply (in the rack, on a shelf, etc.)
3. Connect the CPC connector (female) on the IDS Supply Line to the male connector on the bulk ink supply ([Figure 408](#)).
 - a. Press the unlock tab (see arrow in #1).
 - b. When the CPC connector (female) is unlocked (#2), insert the male connector.
 - c. The male connector presses the lock button (see arrow in #3) and moves it towards the lock position (#4).

Connectors should not come apart when pulled.

Figure 408 – CPC Connector (Female) Details



Figure 409 – Male and Female (CPC) Connectors Before and After Connecting



4. Connect QAI Cables (RJ12) to each bulk ink supply.



30 Shipping

30.1 Print Module Shipping

Follow the steps in this section to securely package and ship a Print Module. For system decommissioning tasks, refer to the *DuraFlex Operations Guide*.

30.1.1 Required Tools and Supplies

Gather the items in the table before beginning this procedure.

Table 29 – Required Tools and Supplies

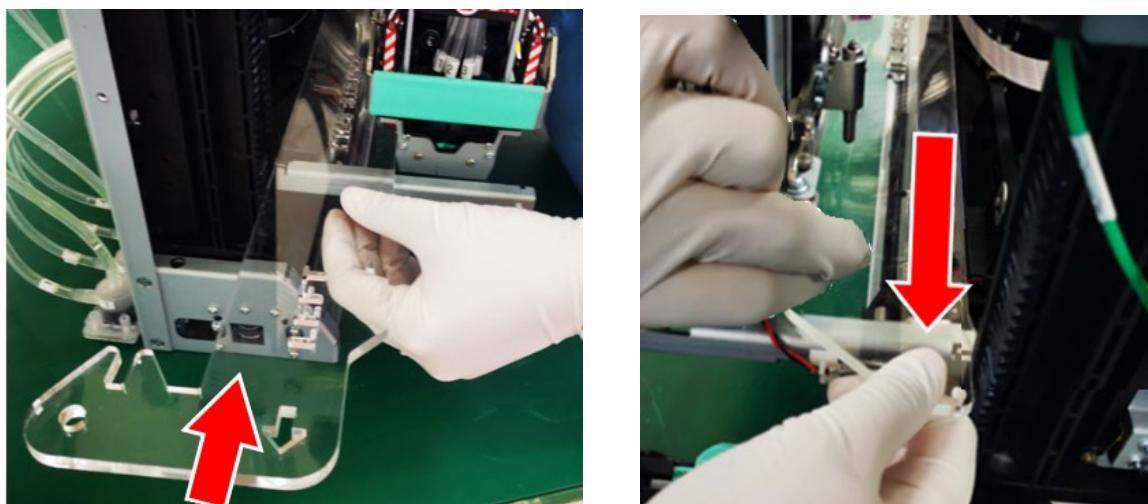
Description	Quantity	Type
Safety glasses	1 pair	PPE
Powder-free, nitrile gloves	As needed	Supply
Lint-free cloth	As needed	Supply
Original packaging for the Print Module	1 set	Supply
PE anti-static sheet	As needed	Supply
Shipping plate	1	Supply
Tape – low-adhesive	As needed	Supply
Anti-static foam	As needed	Supply

Note: If the original packaging is not available, use a sturdy cardboard box, anti-static wrap, and non-collapsible packaging material to secure the Print Module for shipping.

30.1.2 Packaging

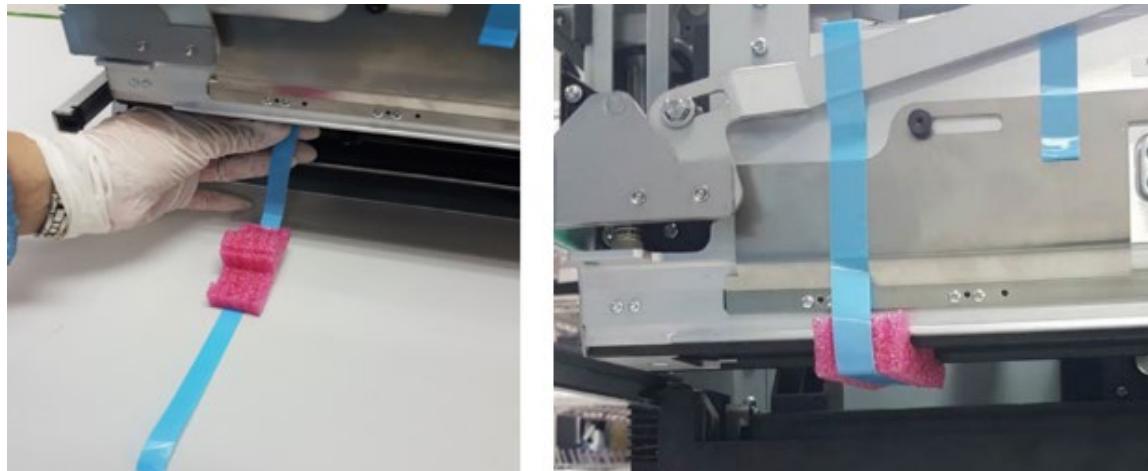
1. Install the shipping plate to protect the Print Module mechanisms during transportation. Carefully slide the shipping plate into the **left** side of the Print Module to insert it. Use your other hand to slightly pull the shipping plate towards the **right** side of Print Module to engage it ([Figure 410](#)).

Figure 410 – Insert Shipping Plate



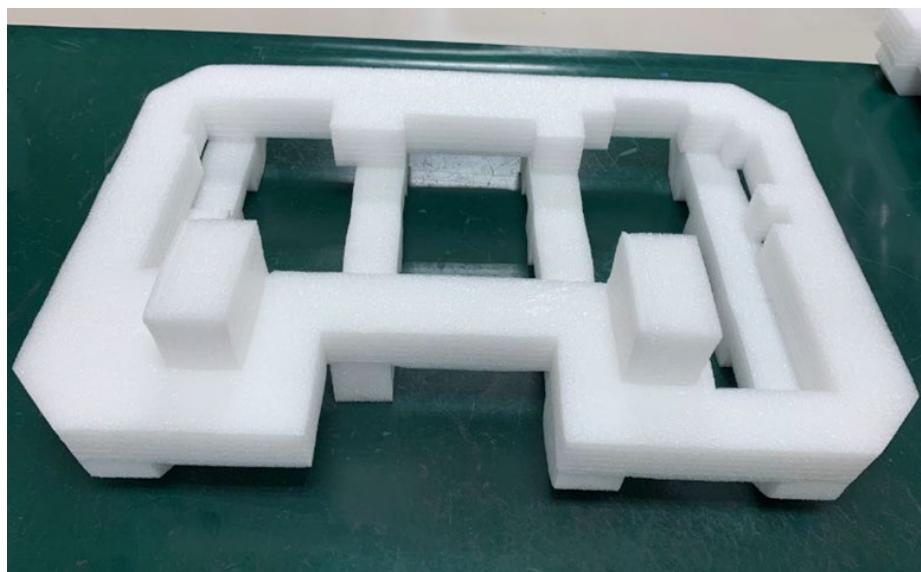
2. Tape the green printhead latch to the Print Module so that it does not move during shipping.
3. Ensure that:
 - a. the wiper cartridge is removed and stored in its original packaging or a clean plastic bag.
 - b. all external cables are disconnected.
 - c. all external tubing are disconnected and the barbs are capped.
 - d. the five (5) ultra-flathead mounting screws are removed and stored properly.
4. Position the packing foam under the printhead and tape it into place, as shown in the figure below. The tape should be applied to the front and back of the Print Module.

Figure 411 – Foam and Tape on Print Module



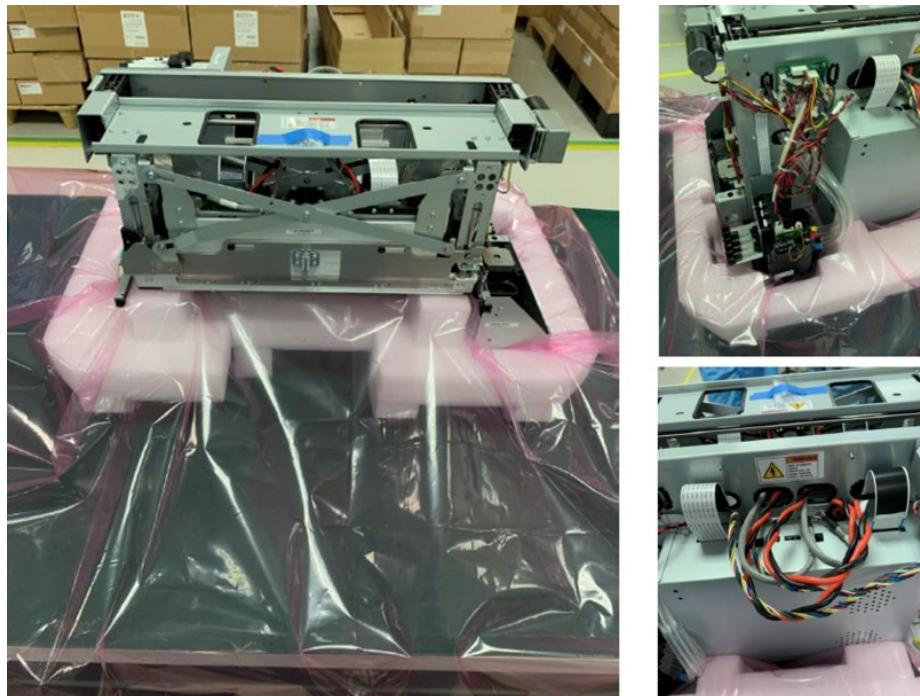
5. Place the Print Module packing foam on a clean work surface.

Figure 412 – Packing Foam



6. Place the anti-static PE sheet on top of the packing foam and place the Print Module on top of it.

Figure 413 – Print Module on PE Sheet



7. Place lint-free, ink-absorbing material close to the Printhead Fluidic Couplings (capped with green covers), Pinch Valve, and Circulation Pumps to minimize the chances of residue ink leaking.
8. Add a pack of desiccant at the location shown in [Figure 414](#) and wrap the Print Module using the anti-static PE sheet. Use tape to secure the wrapping in place.

Figure 414 – Desiccant Placement and Wrapping



9. Place the Print Module in a crate.
10. Place the top piece of foam onto the Print Module.
11. Use anti-static bubble wrap to completely cover the wiper cartridge and seal it with transparent tape. Then place the wrapped wiper cartridge into a box and seal it with tape.



12. Place the wiper cartridge box into the compartment in the top piece of foam.
13. Close the crate and secure it.
14. Place the packaged Print Module on a pallet and use straps to secure it to the pallet for shipping.

CAUTION: Do not stack pallets.

15. Place a Do Not Stack cone on top of the crate.

30.2 Printhead Shipping

30.2.1 Packaging for Shipping

Only a printhead stored in a protective case, sealed in a plastic bag, and placed in a sturdy cardboard box can be shipped. Refer to Section [3.4 Printhead Cleaning and Storage](#) for details.

1. Use original printhead packaging (foam and cardboard box) whenever possible for shipping. If not available, use a sturdy box of similar size with non-collapsible packing material to prevent the printhead from moving. If possible, locate one of the original cardboard shipping boxes the printhead was stored in, or a shipping box of similar dimensions.
2. Wrap the zip bag around the protected printhead and insert both ends of the printhead case into the foam shipping blocks.

Figure 415 – Printhead Case in Foam Blocks to Ensure Proper Orientation



3. Place the printhead and foam blocks into the cardboard box and ensure the printhead case is resting on the center foam block as shown in [Figure 416](#).

Figure 416 – Printhead Case Properly Seated in Shipping Box



4. Seal the cardboard box securely.



Appendix – Ultrasonic Parts Cleaning

All barb connectors and CPC connectors need to undergo ultrasonic cleaning. OEMs can choose to purchase pre-cleaned connectors or perform ultrasonic cleaning at the OEM site. Follow the instructions in this section to clean IDS components.

Required Tools/Parts/Supplies

Gather all required supplies before beginning this procedure.

- Ultrasonic bath with adjustable temperature and timer
- Ultrasonic Surfactant such as Triton X-100 or Micro-90
- ASTM Type 3 de-ionized water supply
- Gloves – new, nitrile, powder-free
- Ultrasonic-proof Beaker, 2.5 liter or similar
- Stainless steel strainer/basket
- Part-handling tweezers or similar
- Parts to be cleaned

Note: This procedure does not have to be performed in a cleanroom environment, although critical component cleaning standards should be applied. These include a dust-free environment during cleaning, transfer, and storage, and the maintenance of clean equipment.

Prerequisites

1. Set the ultrasonic tank temperature to 50°C.
2. Ensure that the liquid level in the ultrasonic tank is above the minimum level as per the tank's instruction manual.

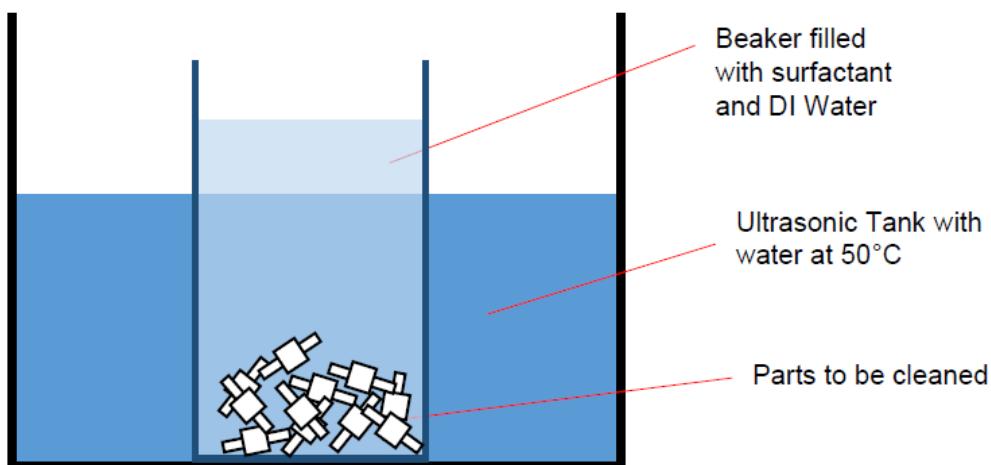
Cleaning Procedure

1. Choose a beaker that is large enough to hold the parts to be cleaned plus DI water and 0.5% (by volume) of surfactant. For example, 2.5 L of DI water will require 12.5 mL of surfactant.
2. Fill the beaker with the parts, DI water, and surfactant.



3. Once the ultrasonic cleaner is at the correct temperature, place the beaker of parts into the ultrasonic tank ([Figure 417](#)).

Figure 417 – Recommended Ultrasonic Cleaning Setup



4. Place the parts into the beaker ensuring they are fully submerged.

Multiple beakers of parts can be placed in the tank at once if space allows, however it will take time for the beakers to get to the correct temperature. When performing this task for the first time, verify that the parts beaker(s) fits into the tank.

5. Turn on the ultrasonic tank and run for 15 minutes.
6. When the cycle is complete, remove the beaker from the ultrasonic tank.
7. Use the stainless-steel strainer to drain the parts from the beaker.
8. Rinse the parts thoroughly under running DI water.
9. Transfer the parts back into the beaker and fill the beaker with DI water. Place the beaker in the ultrasonic tank.
10. Turn on the ultrasonic tank and run for 5 minutes.
11. When the cycle is complete, remove the beaker from the ultrasonic tank.
12. Turn off the ultrasonic cleaner, if no longer required.
13. Use the stainless-steel strainer to drain the parts from the beaker.
14. Rinse the parts thoroughly under running DI water.
15. Transfer the parts onto a drying tray and allow them to air dry overnight.

Note: To avoid contamination of clean parts, maintain a dust-free environment during cleaning, transfer, and storage.

16. Use clean tweezers to transfer dry parts into clean storage bags/containers and close the bag/container.

