

## **Service Manual**

**Version 1.1**

## **User Manual**

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## Cover



# mPower™ Service Manual

Version 1.1



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## Chapter 1: Introduction

This manual is to be used in conjunction with Anajet mP5i & mP10i Printer User Manual. All operational instructions, normal printer maintenance and troubleshooting guides can be found in the User manual. This Service manual is intended to aid Anajet distributor's, technical and service personnel in providing maintenance and basic repair service to there customers. The services provided by distributor's service personnel are intended to be limited to the diagnosis, often with the help of Anajet's Technical Support personnel, simple adjustments, and replacement of printer circuit boards. Accordingly this service manual is limited to meet the objectives indicated above.

The majority of the hardware used in the Anajet mP5i & mP10i printer is english inch series. There are however a few metric sized fasteners and care must be exercised when reassembling hardware to insure the correct sizes are installed.

## Chapter 2: Adjustments

### 2.1 Carriage Belt Tension

#### Tools Needed

- 7/16 Ratchet Wrench
- Gates Belt Tension Meter or equivalent

1. Loosen the two hex head bolts using a 7/16 ratchet wrench. The two hex bolts will be located on the far right underneath the belt pulley. See photo 2.1-1.

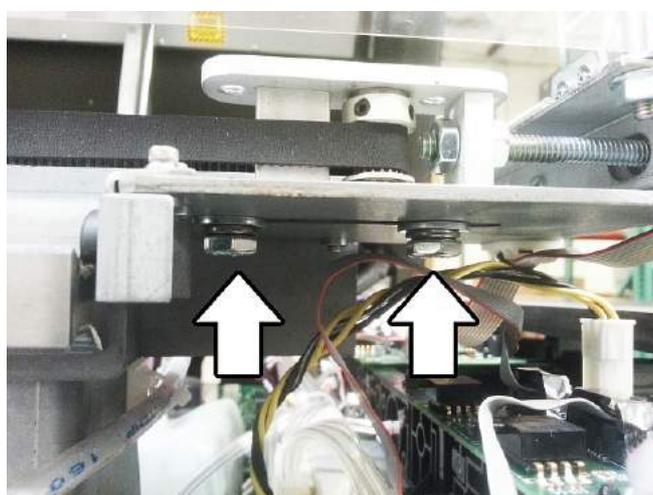


Photo 2.1-1

2. You can now adjust the belt tension by tightening or loosening the nut on the threaded rod. Use a 7/16 ratchet wrench to loosen and tighten the belt. See Photo 2.1-2

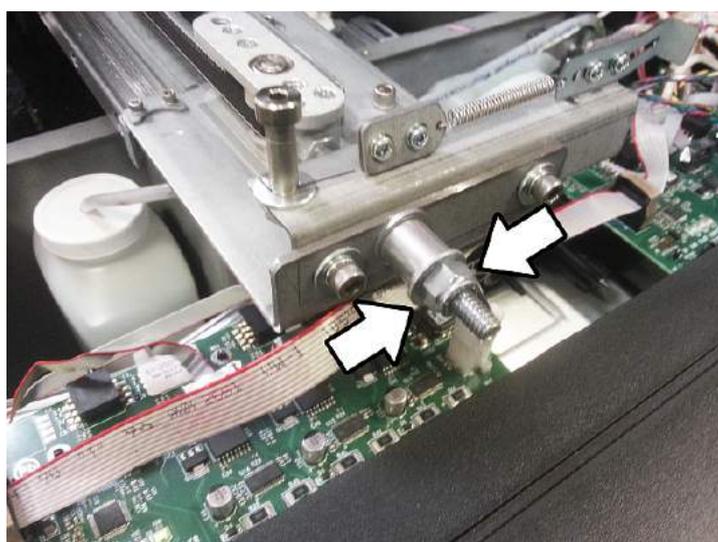


Photo 2.1-2

3. Once you have adjusted the tension, check the belt using a Gates belt tension meter or equivalent. Below

are the belt specifications needed for the meter.

Mass (M) - 001.4 g/mm

Width (W) - 009.0 mm/r

Span (S) - 0800 mm

The belt tension should be set to 23.5 to 25.5 N (84.5 - 91 ozf). Measurements should be made on the rear portion of the belt with the carriage positioned at either end of the travel. Once we reached the desired tension we can retighten the two hex bolts under the pulley to lock it in place.

## 2.2 Table Belt Tension

### Tools Needed

- **Phillips Screw Driver**
- **11/32 Ratchet Wrench**
- **10/32 Allen Key / T-handle**
- **Gates Belt Tension Meter or equivalent**

1. Move the table to the home position by pressing the TABLE button (table should be inside the printer). Remove the three Phillips screws from the bottom of the skirt and remove the skirt. See Photo 2.2-1

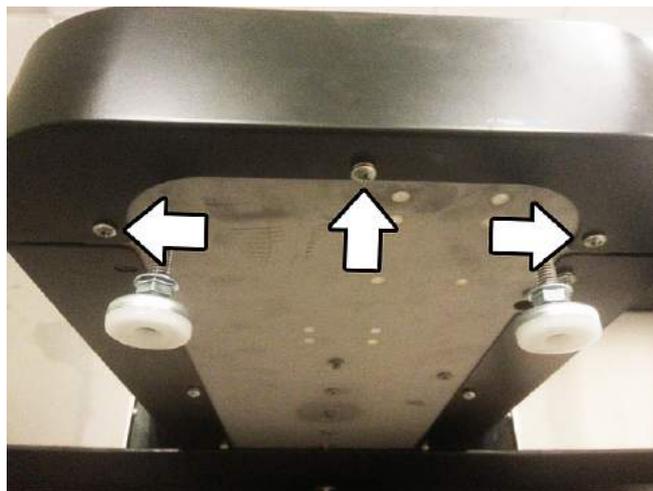


Photo 2.2-1

2. Remove the Two 10-32 screws (use a 11/32 ratchet wrench) and two 8-32 nuts (use 10/32 Allen key / T handle) from the pleated screen mount and slide the pleated screen back to reveal the table belt tensioner. See Photo 2.2-2

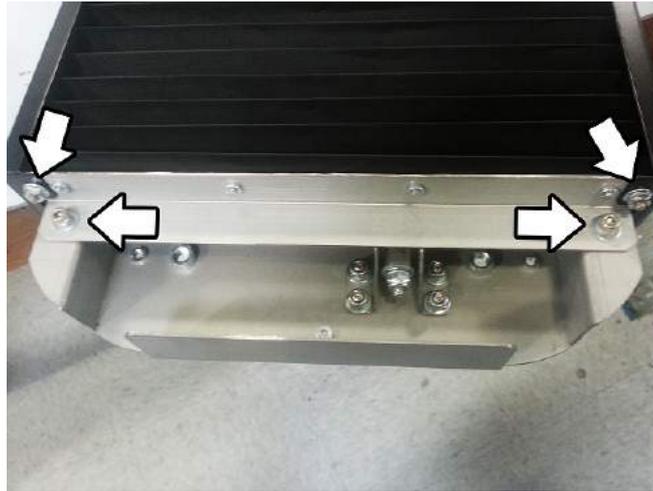


Photo 2.2-2

3. Loosen the table belt **bracket** nuts (use a 3/8 ratchet wrench). See photo 2.2-3. Adjust the belt tension by tightening or loosening the **adjustment nut** on the threaded rod (use a 7/16 ratchet wrench). See Photo 2.2-3

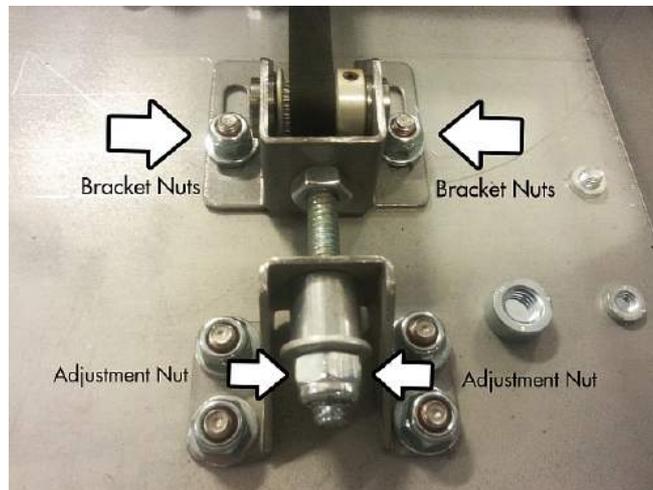


Photo 2.2-3

4. Check the belt tension using a Gates belt tension meter or equivalent. Below are the belt specifications needed for the tension meter.

Mass (M) - 001.4 g/m

With (W) - 009.0 mm/r

Span (S) - 0790 mm

Belt tension should be set to 25 to 30 N (90 to 108 ozf). Measurements should be made on the middle portion of the belt with the table at the home position.

5. Once we reached the desired tension, we can now tighten the table bracket nuts and reassemble the pleated screen mount and skirt by reversing the above steps.

## 2.3 Table Motor Belt Tension Adjustment

### Tools Needed

- 3/8th ratchet wrench

- **Gates Tension Meter**
- **3/32 Phillips screw driver**
- **7/16 ratchet wrench**

1. The best way to adjust the tension in the Table motor belt is to remove the entire table guide assembly from the printer. Before starting power down the printer. To remove the table guide assembly, we must first unplug the cables connected to the table board. See photo 2.3-1 below

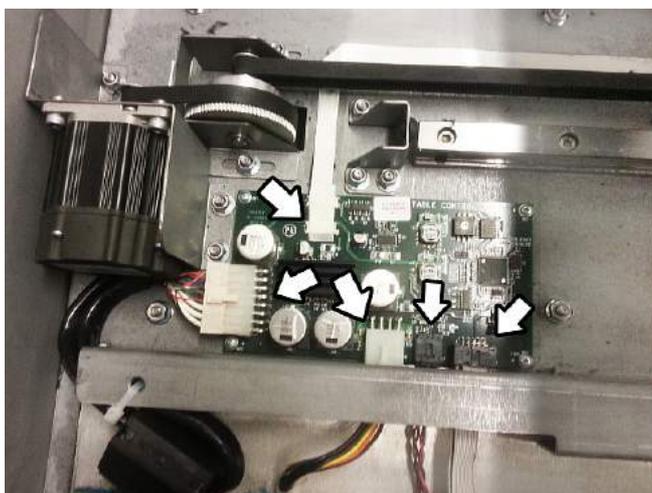
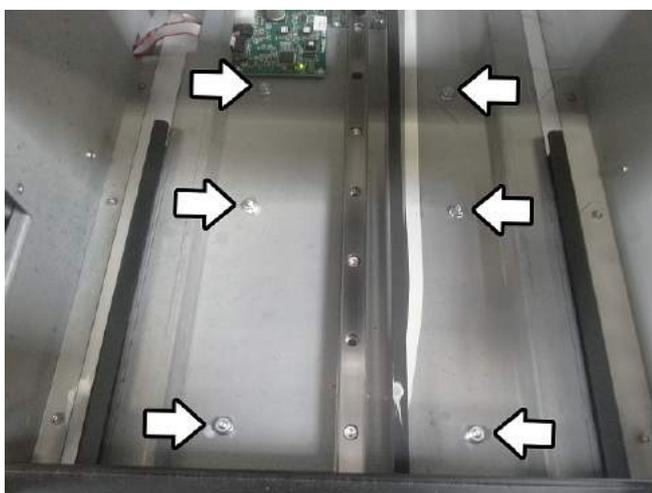


Photo 2.3-1

2. Once the cables have been unplugged from the table board we can now start removing the 8 hex screws holding the table guide assembly in place. Use a 3/8 ratchet wrench to remove the 8 screws see Photo 2.3.2 and Photo 2.3.3 below.



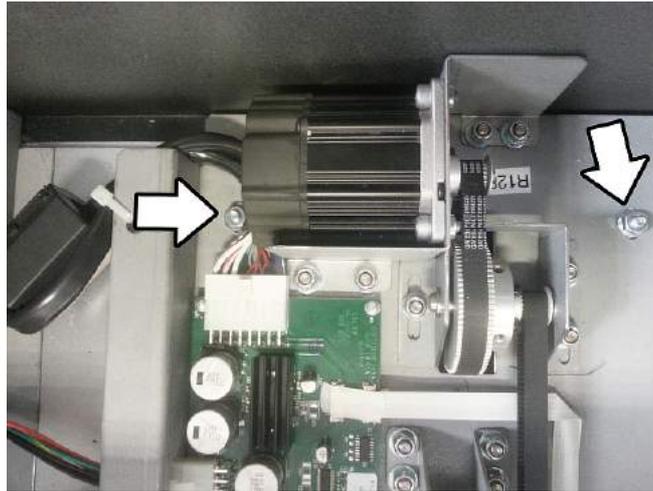


Photo 2.3-2

Photo 2.3-3

You will now be able to remove the entire table guide assembly. We recommended using 2 people to remove the assembly from the printer and place it on a separate table. Your printer should now look like this see Photo 2.3.4 below.

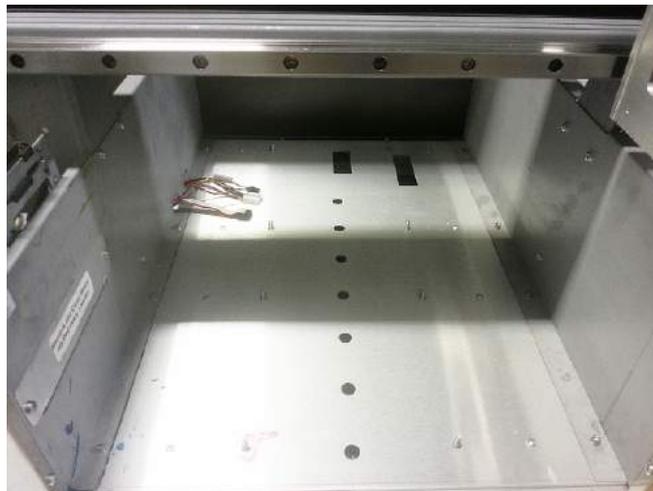


Photo 2.3.4

3. To adjust the tension on the Motor belt we must first loosen the Table Belt. Begin by removing the 3 Phillips screws located underneath the table assembly. See Photo 2.3.5. When the 3 Phillips screws are removed you can now remove the front table cover.

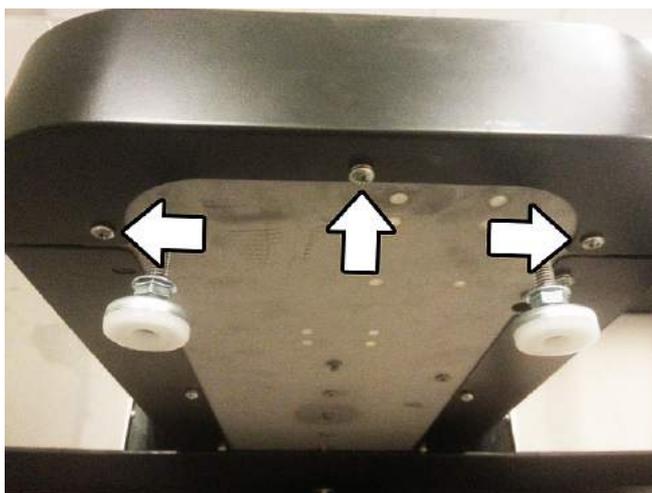


Photo 2.3.5

4. Remove the Two 10-32 screws (use a 11/32 ratchet wrench) and two 8-32 nuts (use 10/32 Allen key / T handle) from the pleated screen mount and slide the pleated screen back to reveal the table belt tensionor. See Photo 2.3.6 below.

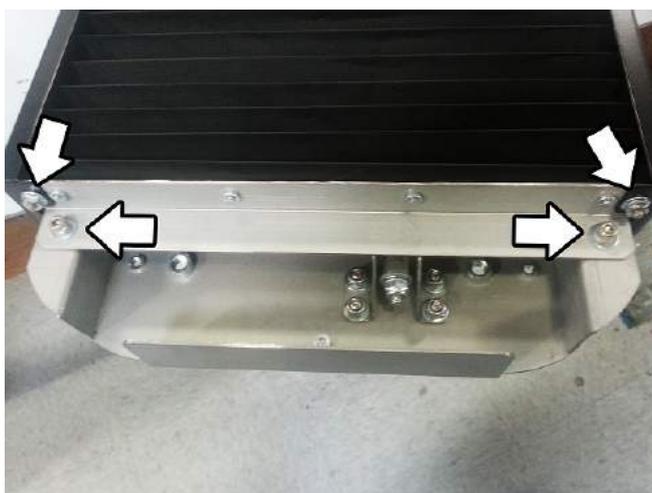


Photo 2.3.6

3. Loosen the table belt **bracket** nuts (use a 3/8 ratchet wrench). Loosening the **adjustment nut** on the threaded rod (use a 7/16 ratchet wrench). See Photo 2.3.7

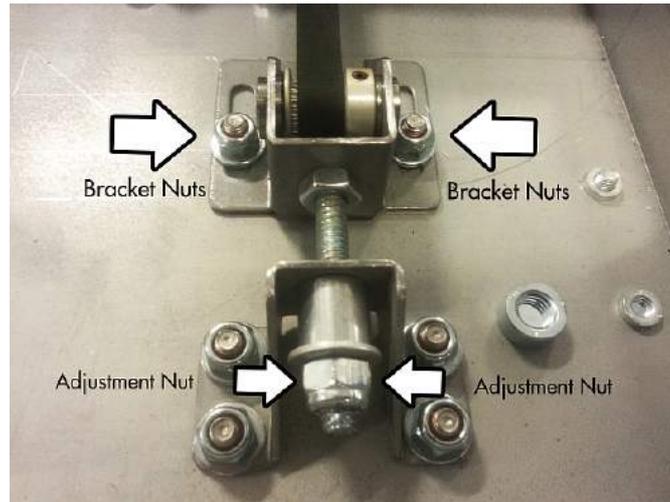


Photo 2.3.7

4. Loosen the three nuts holding the pulley bracket. See photo 2.3.8

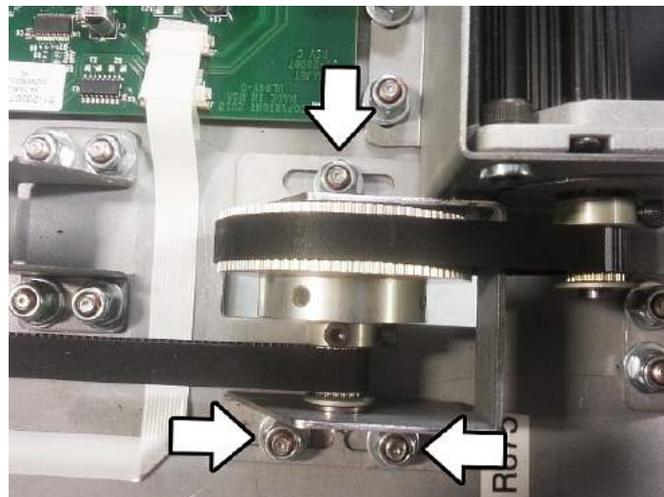


Photo 2.3.8.

5. With the pulley bracket loose you can now adjust the tension by moving the pulley bracket forward or back until the required tension is achieved. Once adjusted tighten the screws back to hold down the pulley bracket in place and measure the tension using a Gates belt tension meter. The specifications for the table motor belt are below.

Mass (M) 001.4 g/m  
 With (W) 009.0 mm/r  
 Span (S) 0047 mm

.....  
 The correct tension for the table motor belt is 9 to 12 n (32 to 43 ozf). Measurements should be made at several positions of the pulley to account for any eccentricity.

**Please note:** When adjusting the tension on the **table motor belt** you will have to also re-tension the **table belt** again. Please see section 2.2 for instructions on how to tension the table belt.

6. Retighten all screws and reverse these steps to place back your table assembly into your printer. Don't forget to re plug all cables back to the table board.

## 2.4 Carriage Encoder Adjustment

### Tools Needed

- 5/32 Allen Key

If excessive abrasion occurs or if the Carriage Encoder is replaced, you will want to check the position of the encoder. If adjustments are needed follow the steps below.

1. Begin by releasing the carriage (Menu > Maintenance Functions > Print Carriage Control > Release Carriage). Once the Carriage has been released move the carriage to the far left. Observe the position of the encoder strip, the encoder strip should be going directly down the middle of the encoder sensor. The encoder should not be touching or leaning toward one side. Move the Carriage to the far right now and check the position of the encoder strip on the far right side.

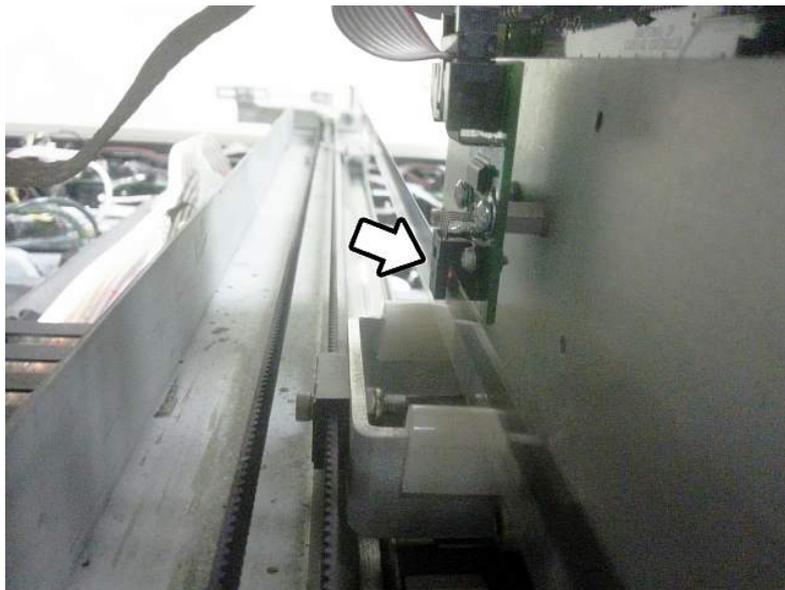


Photo 2.4.1

2. If adjustments are needed loosen the two socket head screws holding the left encoder mount and adjust until centered. Retighten the Screws. See photo 2.4.2

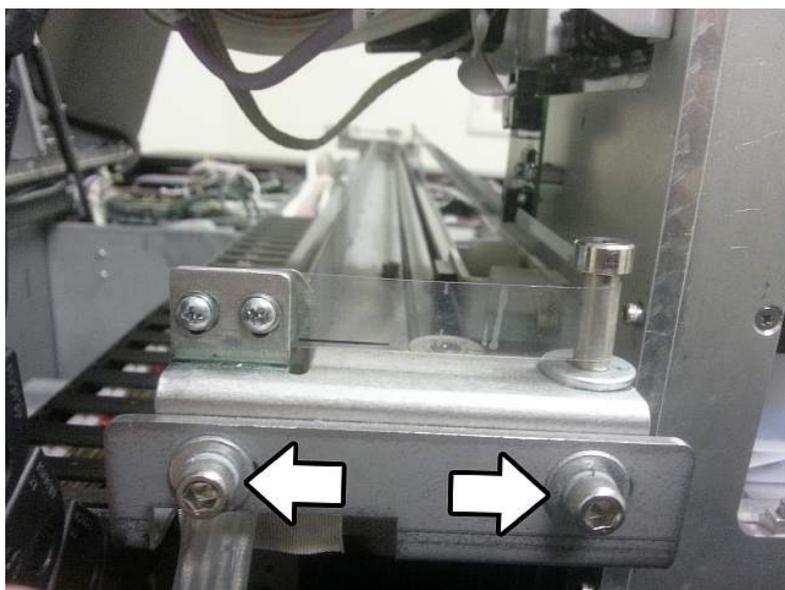


Photo 2.4.2

3. Now that we have adjusted the left hand side, move the carriage to the far right and check the encoder strip alignment on the right side. If the Left side was adjusted its possible that the right side has moved and needs adjusting. If adjustment is necessary loosen the two socket head screws and adjust the encoder until we have the correct position. See Photo 2.4.3

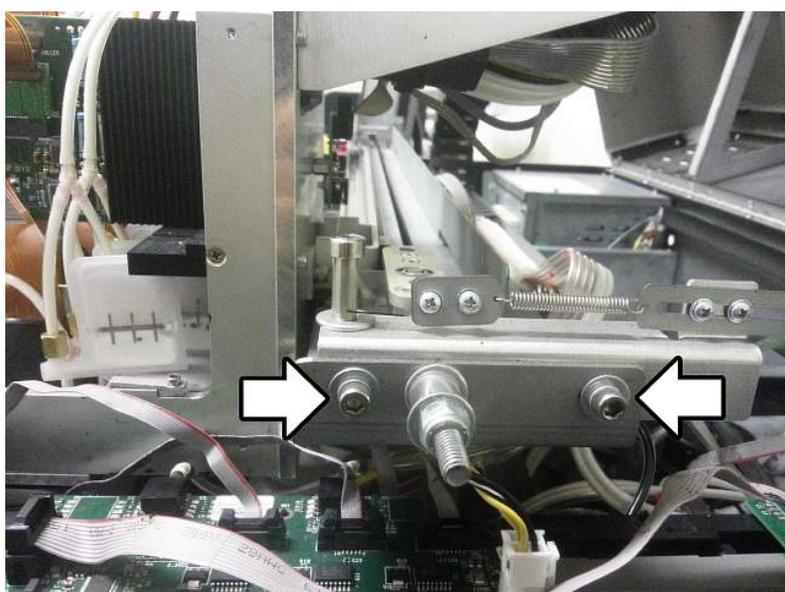


Photo 2.4.3

4. Once the encoder strip has been adjusted secure the carriage back to its home position.

## 2.5 Wiper Height Adjustment

### Tools Needed

- Wiper Gauge Tool (P/N - 150617-001)

○ **Phillips screw driver**

1. Begin by releasing the print head (Menu>Maintenance Functions> Print Carriage Controller > Release Carriage).

2. We must now remove the print head cage from the carriage. There will be 6 phillip screws holding the cage down.

3. In order to make the proper adjustment you will need to move the wiper blade to its "engage" position. Press ENTER + JOBS + MENU at the same time to go into the technical menu > MODULE TEST > MAINTENANCE STATION > WIPER BLADE ENGAGE. The wiper blade should now be moving forward to the wipe position. See photo 2.5.3



See Photo 2.5.3

.. 4. Once the print head has been released use your Anajet Wiper Height Tool and place it on the left hand side of the carriage. The wiper blade tool will have a groove where you can place the tool on top of the nozzle plate. See photo 2.5.4 below.

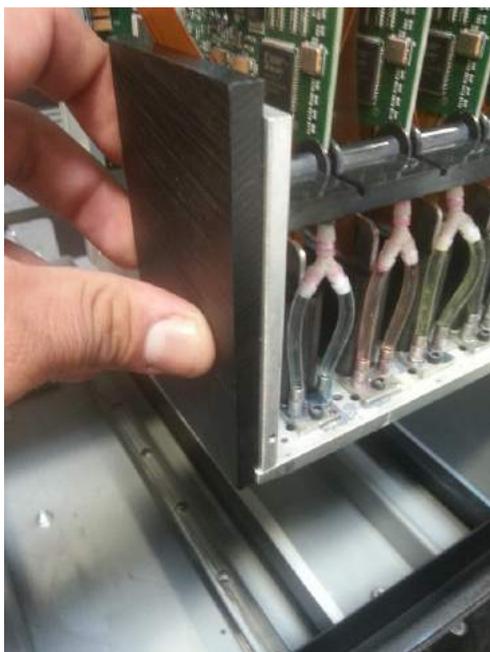


Photo 2.5.4

3. Carefully move the carriage and the wiper blade tool toward the wiper blade. The wiper blade should touch the bottom tip of the wiper height tool. See image 2.5.5 below.

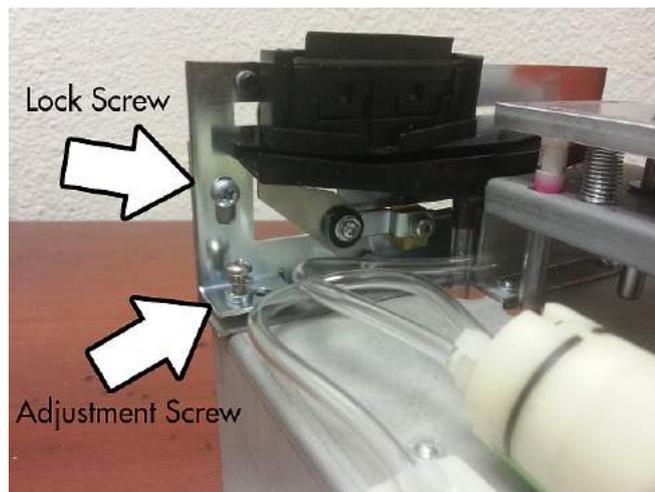
.....

.....



Photo 2.5.5

.... 4. If the wiper blade is too low or too high you want adjust the wiper blade by loosening the lock screws on the left and right hand side. See image 2.5.6. Once the lock screws are loosened you can adjust the height of the wiper blade with the adjustment screws. Moving the adjustment screw counter clockwise will drop down the wiper blade and moving the adjustment screw clockwise will raise the wiper blade. Its Very important that both sides are even. There will be an Adjustment screw on the left and right hand side. Once the wiper blade has been adjusted to the required height, lock the position in place by re tightening the lock screws. See image 2.5.7



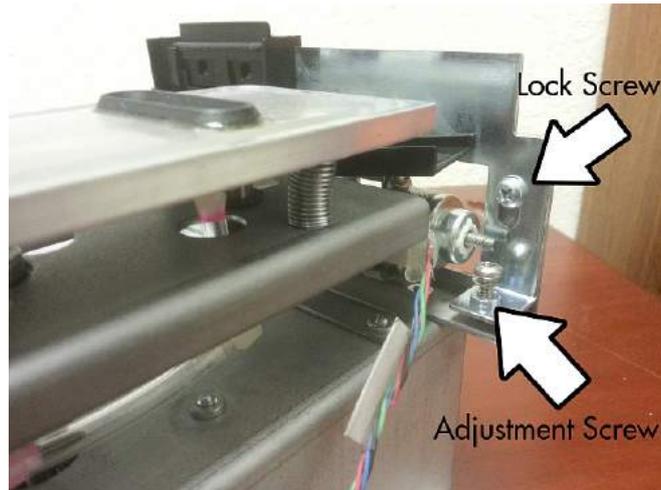
**Left side**

Photo 2.5.6

**Right side**

Photo 2.5.7

## 2.6 Table Z Axis Motor Limit Flag Adjustment

### Tools Needed

- 3/32 Hex Key / Allen key
- Flag Measuring Shim (P/N - 150620-001)

Begin by releasing your carriage. (MENU>MAINTENANCE FUNCTIONS>RELEASE CARRIAGE.

Go to the technical menu (MENU+ENTER+JOBS). >Module Test>Motion control>table up. This will raise the table to its flag limit. See image below.

Use the Flag Shim measuring (.030cm). The shim will have a limit tab to stop you. The shim should fit perfectly underneath the carriage. If the table is too low we will have to raise our flag limit, or if its the shim doesnt fit at all we will have to lower our flag limit.

2. Remove the table assembly. The table assembly will have 4 3/32 hex screws. Once the hex screws are removed the table should be released. See Photo 2.6.2

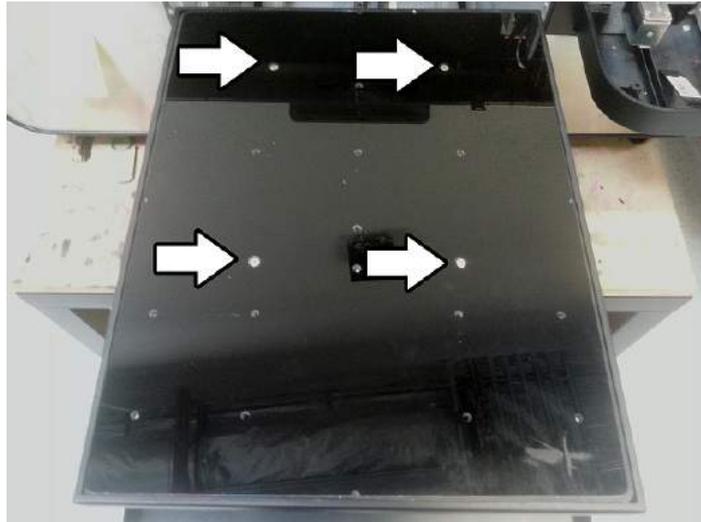


Photo 2.6.2

3. Remove the bottom plate. No screws will be removed from this plate, simply lift up. See Photo 2.6.3

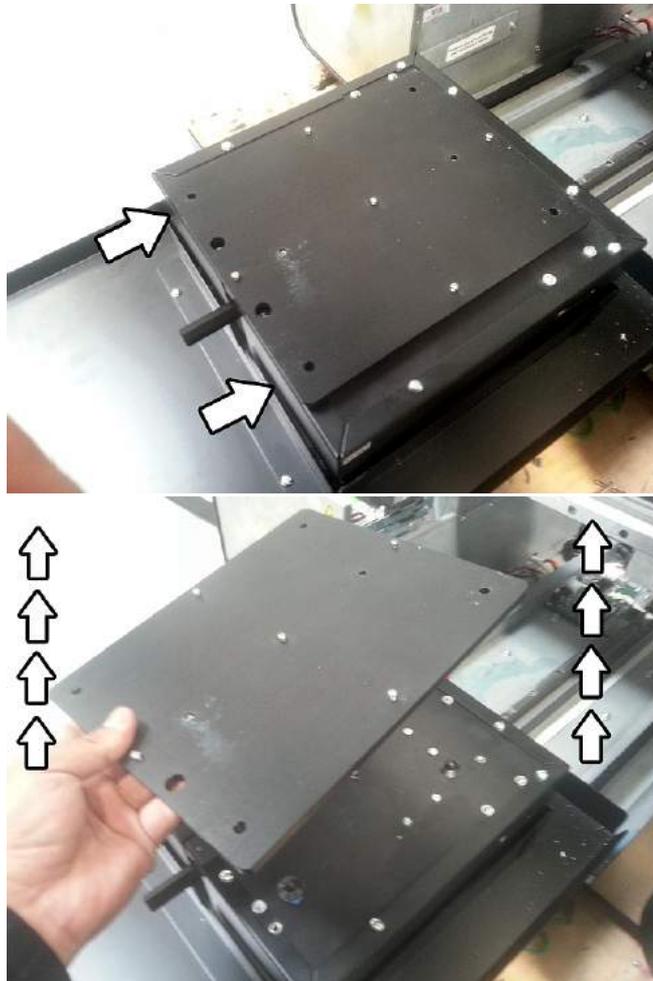


Photo 2.6.3

4. Newer printers will have this skirt covering the table's scissor lift. Older printers will not have this skirt. If your table assembly has a skirt remove the 8 screws below to release the skirt. See Photo 2.6.4

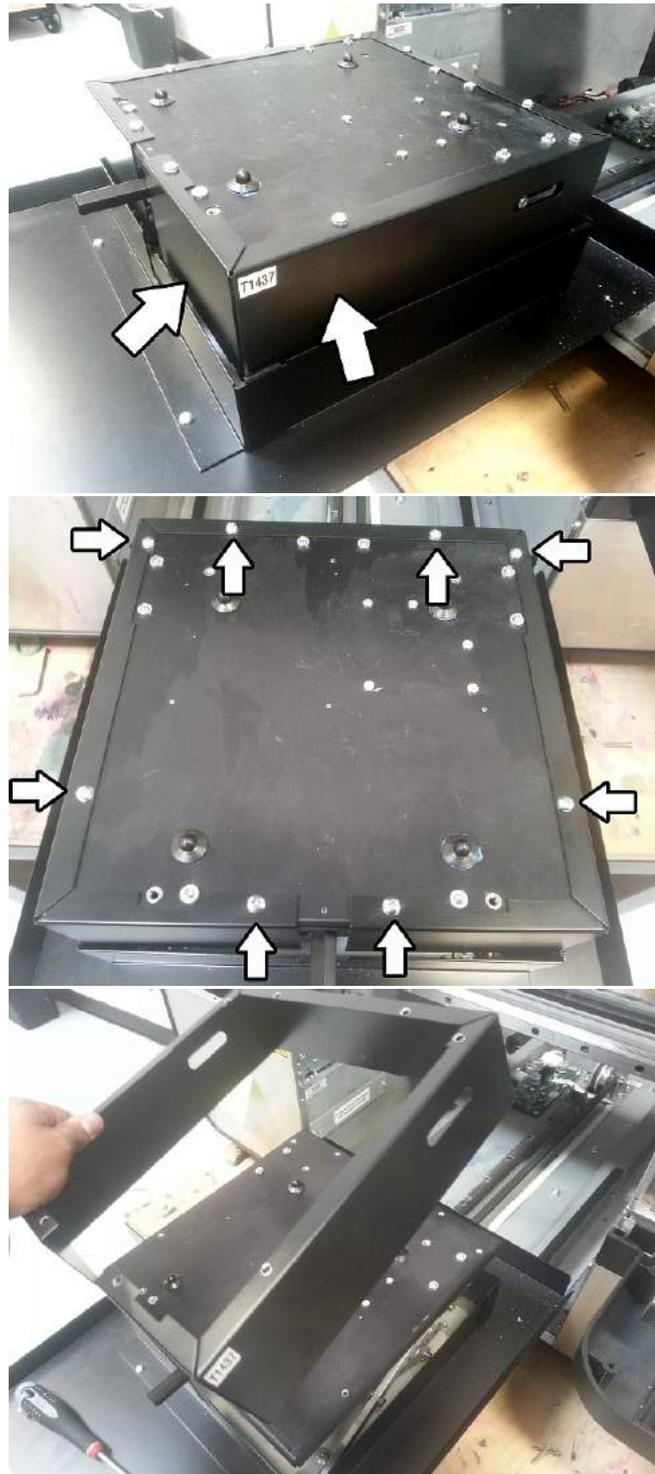


Photo 2.6.4

5. The tables limit flag will have 2 phillip screws. Moving the Flag towards the printer (inside) will raise the flag limit. Moving the flag backwards (away from printer) will set the flag limit lower. The flag is very sensitive and moving the flag too much can lower or raise the table excessively. See Photo 2.6.5

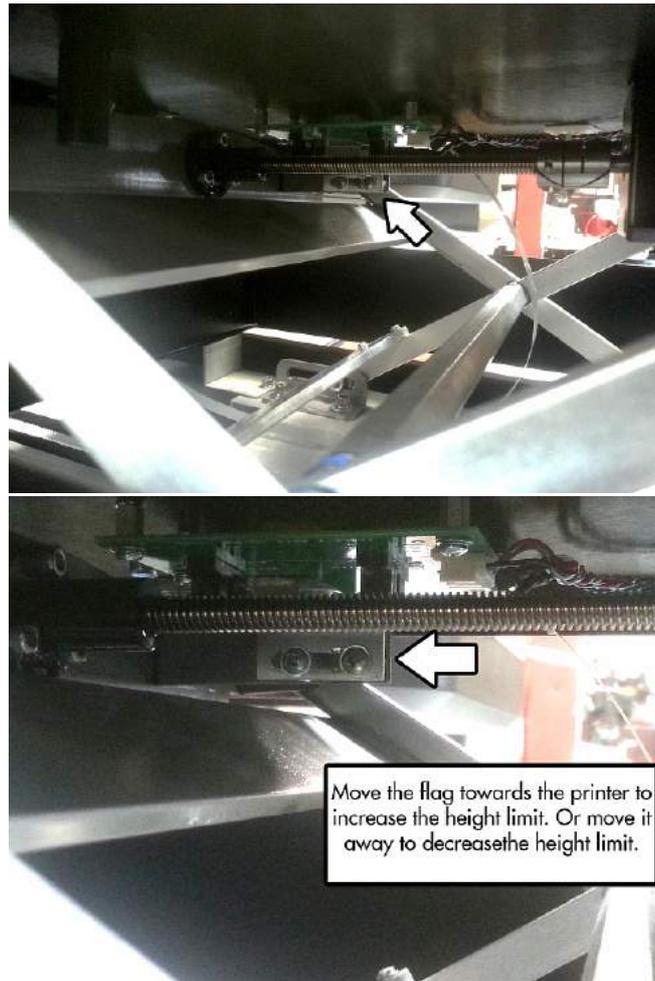


Photo 2.6.5

6. When the flag is adjusted re assemble your table. Use the 4 hex screws to level your table. Loosening the screws will raise your table up tightening the screws will lower your table down. Use the shim and adjust your screws as needed. If the flag was moved too much you will have to remove your table assembly and adjust your flag again. When adjusting the table top do the measurements from both sides on the left and the right. You will also want to check all corners when you move one side as the other side can potentially loose its position. See Photo 2.6.6



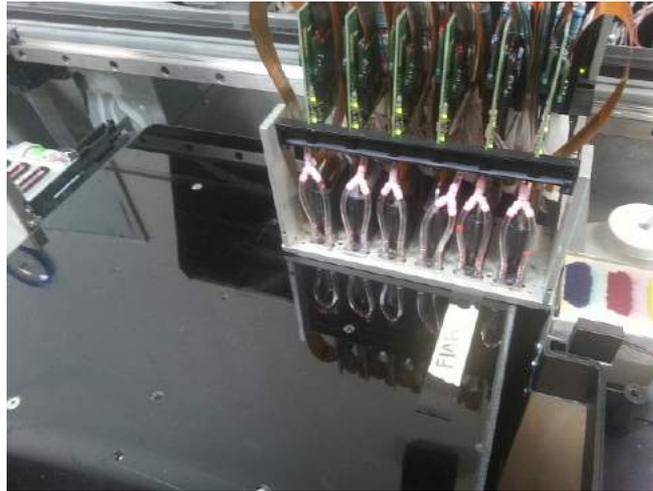


Photo 2.6.6

## 2.7 Obstruction Laser Sensor Adjustment

### Tools Needed

- Phillips Screwdriver
- Laser Gauge

The laser sensor can only be adjusted once the Table Z axis motor limit flag has been adjusted see section 2.6 Before adjusting the laser you will need to have your printer updated to the latest firmware.

To adjust the laser we must first check the current height using the laser shim measuring (.060 cm). Once the laser height is adjusted we can now adjust the laser to be pointing straight. The final step is to check the value of the laser which should read 1023.

### 1. Laser height

Turn your laser on (laser on under technical menu). See photo 2.7.1

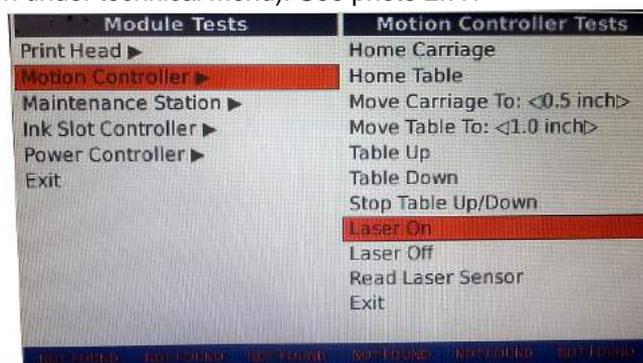


Photo 2.7.1

Hit the table down option under the technical menu as this will move your table all the way down, then hit table up this will raise your table to the current laser height. Use your shim and decide if the laser needs to be adjusted. If the shim is loose, the laser has to go up, if the shim does not fit between the carriage and the table then the laser has to go down. See Photo 2.7.2

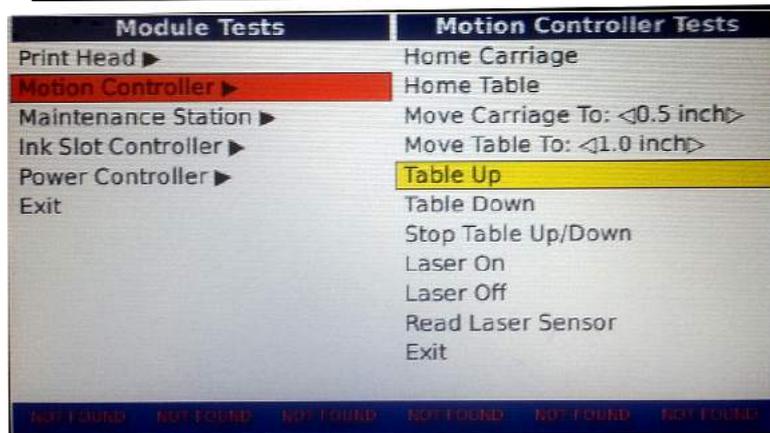
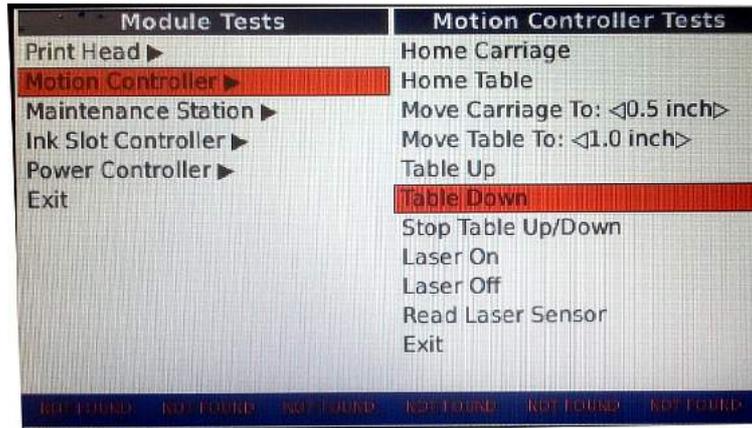


Photo 2.7.2

The laser is held by 2 phillip screws. Remove the screws to release the laser assembly. The laser bracket will have some glue on it, remove the glue before putting the bracket back. Removing these two screws will also allow you to position the laser up and down. Move your laser up or down depending on how to shim fits. . Repeat the step above to check your laser height again. Once the height of the laser is set we can move on to the next step. See photo 2.7.3



Photo 2.7.3

### Laser Pointing Straight

We will be using a Gauge block that has a line going down the side. You can use any tool as long as it has a straight line reference. We want the laser to be pointing perfectly straight.

We drew a line on the block to use as a guide point. I will check the laser at the far left making sure its leveled to my guide point, and move the block all the way across too see where the laser ends up at. The laser should be in the exact position. The image below shows you its not straight on the left the laser is directly on my guide line and on the right the laser is above my guide line meaning the laser is slightly pointed up. See photo 2.7.4

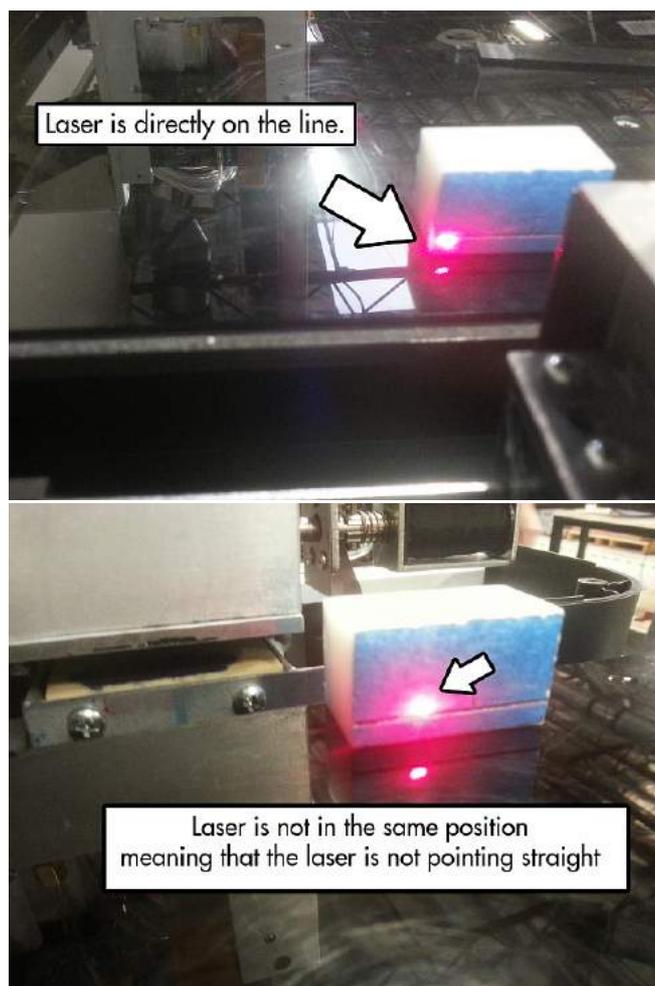


Photo 2.7.4

Use the last screw to adjust the laser point. The last screws will allow you to adjust in and up and down motion of the laser once its locked in place.. The lasers position should be the same on the left and on the right. See photo 2.7.5



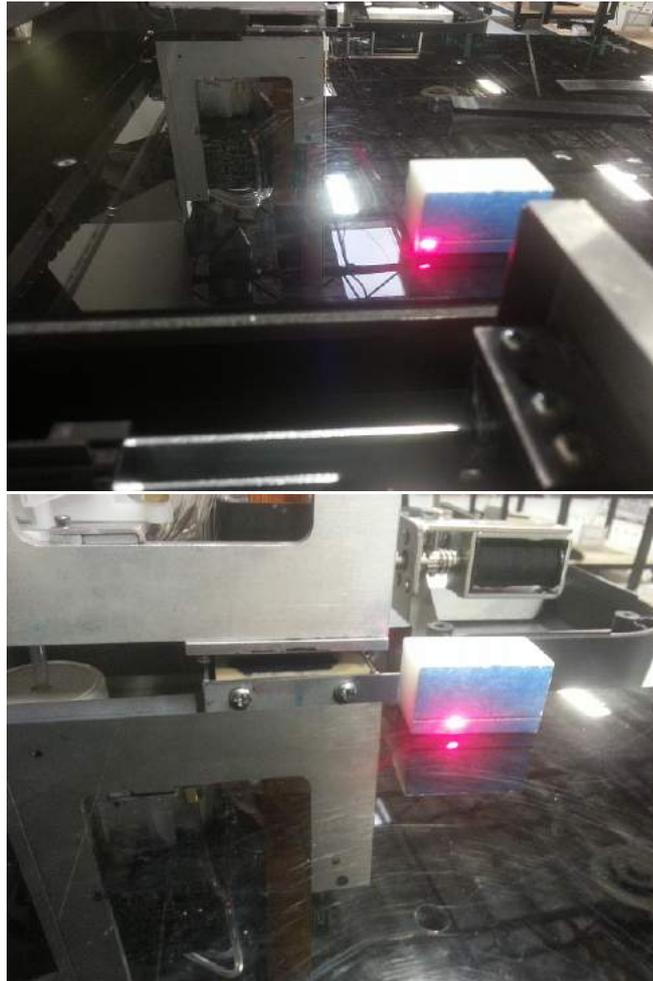
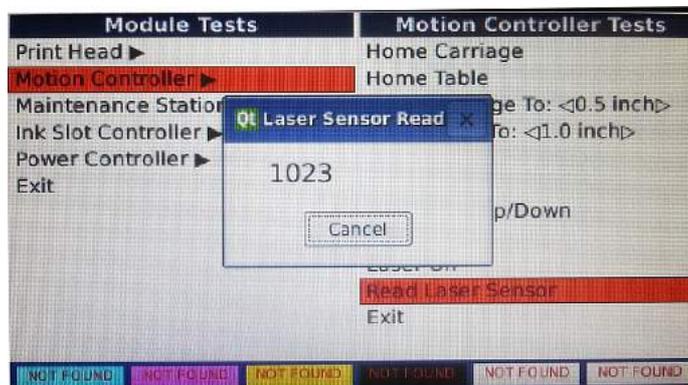


Photo 2.7.5

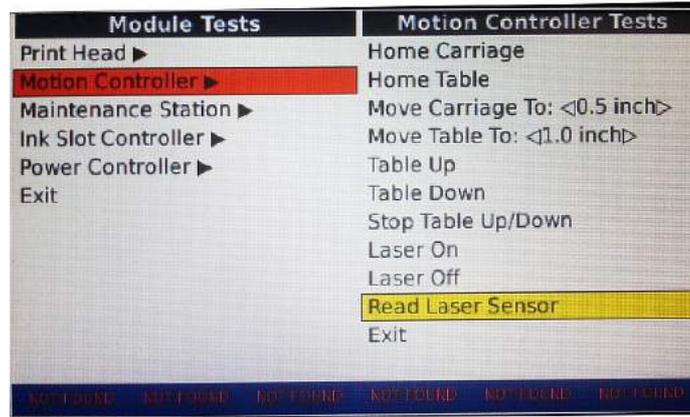
Once your laser is pointing straight we can move on to the next step.

### Laser Value 1032

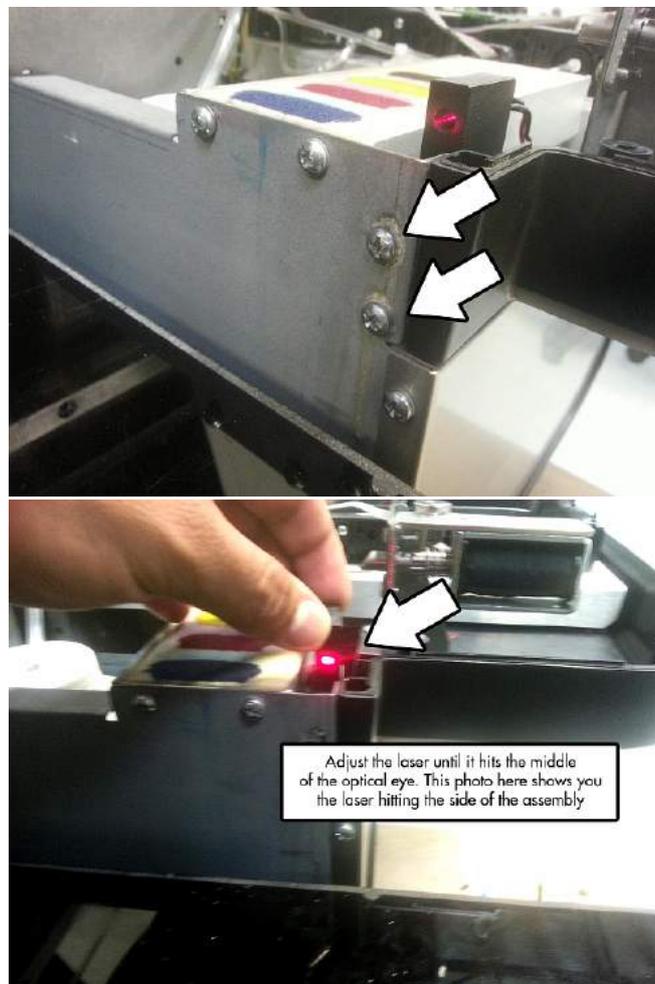
When the laser is hitting the optical eye perfectly the laser value should read 1032.

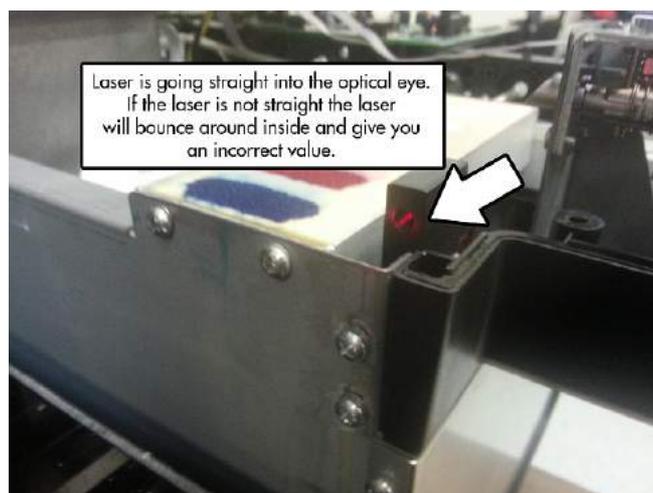


To check the laser value go to the technical menu under Motion Control. You will see the option to "Read Laser". Hit enter and it will read the current value. If the laser is not hitting the optical eye correctly you will end up with a different value or the numbers will be jumping up and down. The correct value is 1032



The right hand side laser assembly will have two screws holding it in place. Loosen these screws and adjust the assembly accordingly. Once you have a set position check the Laser value to make sure its at 1023.





Once you have to correct position of the laser hit table down (under technical menu) then hit table up (under technical menu). Press the "HEIGHT" button to make the automatic adjustment, once its done release your carriage and use the laser shim to check the height.

## 2.8 Lubrication

### 2.8.1 Linear Guide Rail -Table

#### Tools needed.

- **Synthetic Oil (P/N-150646-001)**

1. lubrication of the linear guide rail for the table is needed for every 100 kilometers (62 miles) of travel. This is equivalent to about 80,000 print cycles for the table. If the unit experiences this number of print cycles or has been operating in a severe environment, the table linear guide rail may be lubricated with synthetic oil applied to the rail side surface.

2. Use a synthetic Oil/lubrican to lubricate the rail guides. Place a couple drop of lubricant to the left and right hand side of the linear table rail. See photo 2.8.1.



Photo 2.8.1

3. Once the lubricant has been applied to the rail exercise the table by pressing the "table" button moving it back and forth a couple times to spread the lube.

## 2.8.2 Linear Guide Rail - Carriage

### Tools needed.

- **Synthetic Oil (P/N: 150646-001)**

1. lubrication of the carriage linear guide rail is also needed for every 100 kilometers (62 miles) of travel. This is equivalent to about 2,200 print cycles.

2. To lubricate we must first release our print carriage. (MENU > MAINTENANCE FUNCTIONS > CARRIAGE CONTROLLER > RELEASE CARRIAGE)

3. Move the carriage to the center of the carriage guide rail. Apply drops of lubricant to the linear carriage rail and move the carriage manually left and right to spread the lubricant around. See photo 2.8.2



Photo 2.8.2

4. Once done secure your carriage to the home position.

## Chapter 3: Parts Replacement

### 3. Parts Replacements

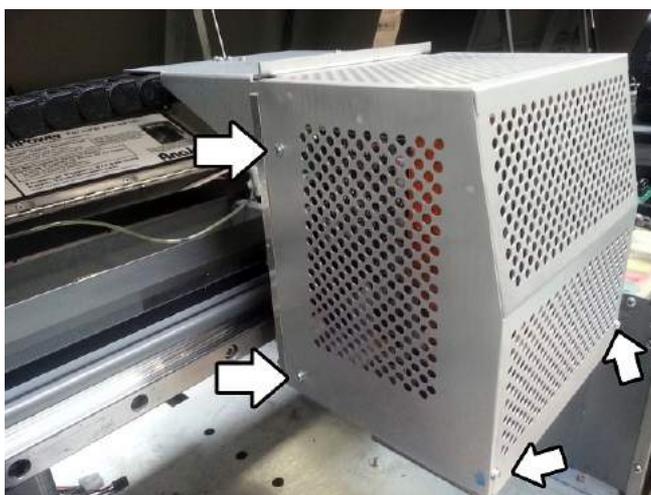
- ▶ Always disconnect the power cable before starting any parts replacement.
- ▶ Use antistatic protective equipment such as a wrist strap when handling electronic assemblies.
- ▶ Read the MSDS sheet before handling inks and cleaning solutions.
- ▶ Wear protective goggles to protect eyes from ink and cleaning solution.
- ▶ Avoid skin contact with cleaning solution and inks.

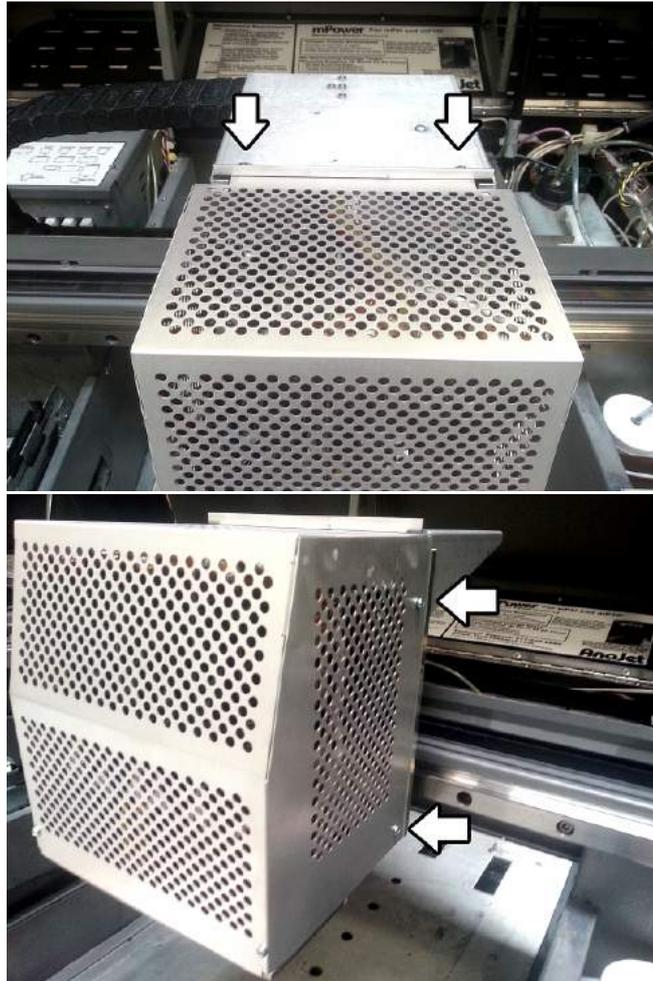
### Tools

The following tools are recommended:

1. Phillips Screwdrivers, #1 and #2
2. Hex wrench set, Inch sizes
3. Hex wrench set, metric sizes
4. Nut Driver Set, Inch sizes
5. Adjustable wrench or combination wrench set, Inch sizes
6. Antistatic wrist strap
7. Torpedo level, 9 inches (22 cm).

We will be removing the cage after during the next sections. The print head cage has 8 screws holding it down. See photo below.





### 3.1 Damper Replacement

To minimize pressure surges in the printhead when the carriage moves from side to side a device called a Damper is utilized. The damper also filters the ink before it enters the print head. If there are persistent problems with ink flow the damper and tubes should be inspected and replaced as required. There are 12 dampers, 2 for each ink channel.

#### Tools Needed

- Phillips Screwdriver
- Cutting Shears

#### Parts Needed (CMYK only)

- Damper Sub (P/N:150552-001)

#### Parts Needed (White only)

- Damper Sub (P/N: 150552-001)
- Check Valve Assy X 2pcs (150583-001)

#### CMYK Damper Replacement

1. Begin by releasing the print head and removing the print head cage. The print head cage will have 8 phillips screws. See photo 3.1.0

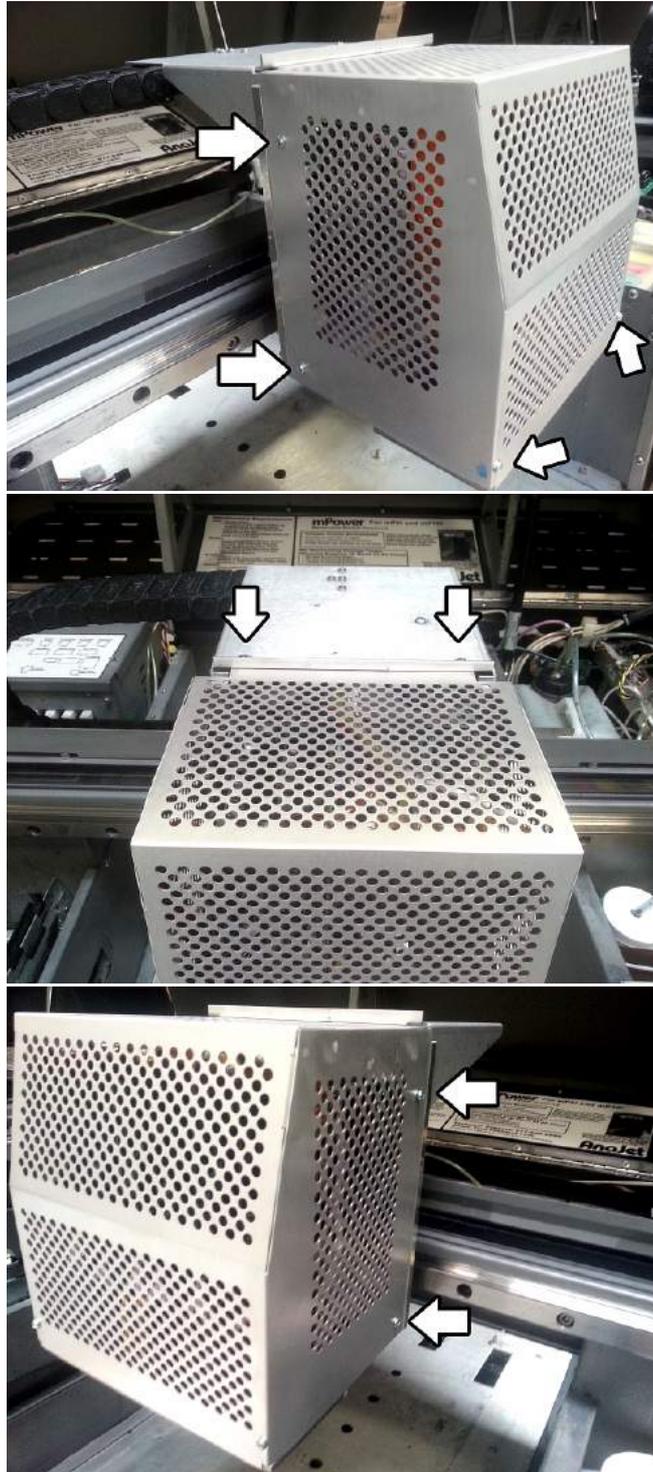


Photo 3.1.0

2. With the cage removed, we can now remove the board retainer in the front. The board retainer will have 2 phillip screws 1 on each side. See photo 3.1.1

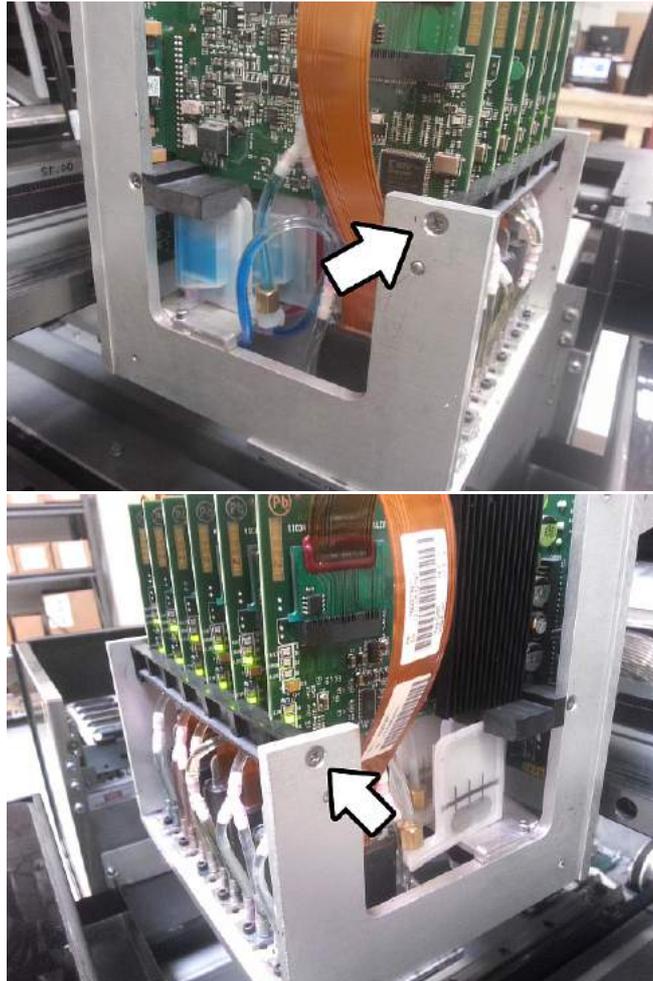


Photo 3.1.1

3. We can now begin removing the print head boards. Very carefully disconnect the print head ribbon cables from the print head boards. The printhead ribbon cable will have a small board. On the board you will see 2 tabs. It is very important that you remove the cable using these tabs. **DO NOT PULL ON THE CABLE.** Remove all boards. See photo 3.1.2



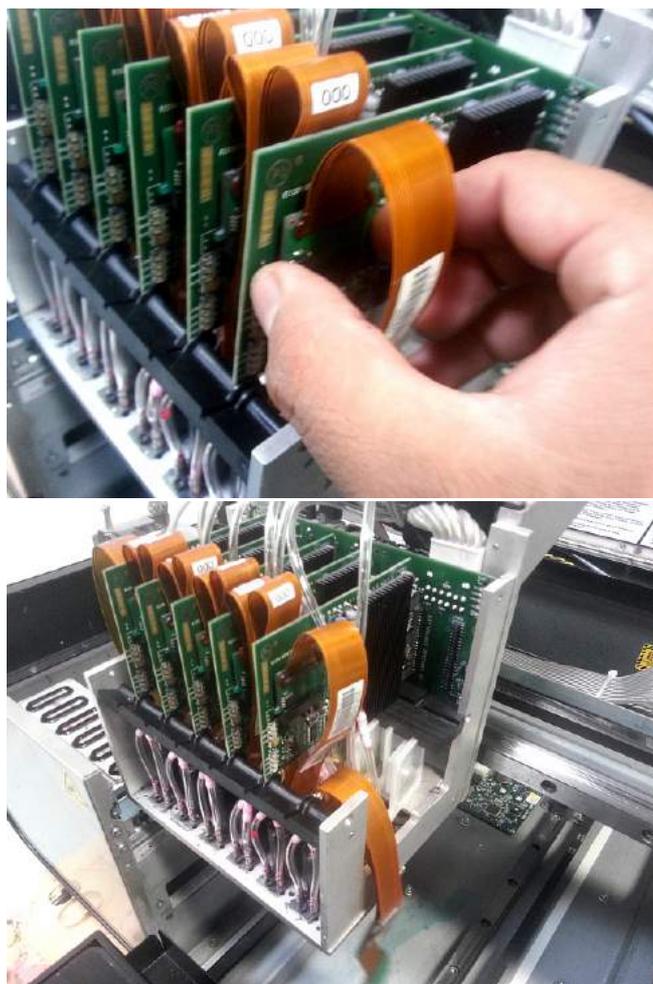


Photo 3.1.2

4. Remove the Damper Retainer. The damper retainer will have two phillip screws one on each side.

4. We always recommend replacing both dampers. Each damper has a elbow connecting at the bottom. Reach underneath the carriage and carefully disconnect the elbow from the dampers. The white ink dampers will have valves attached to them. See photo 3.1.3



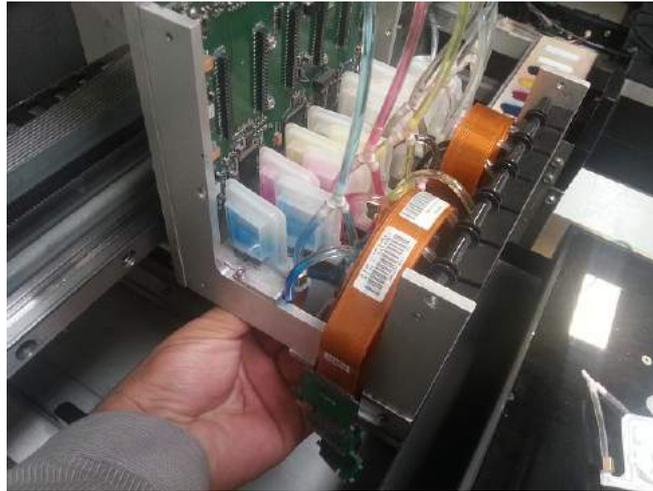
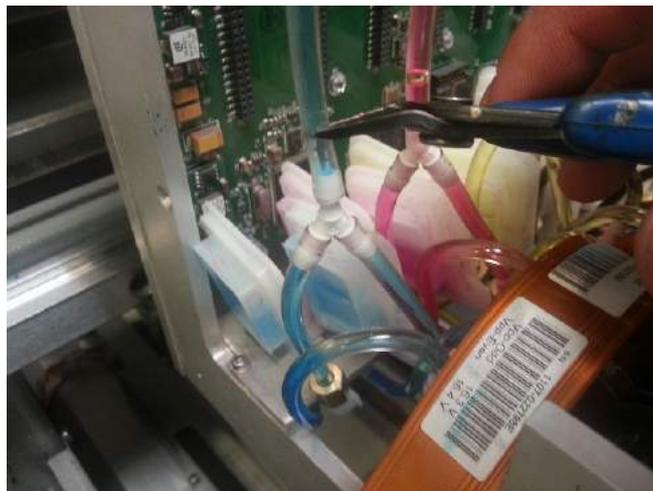


Photo 3.1.3

5. With the elbow disconnected we can now cut the tubing above the damper assembly. It is very important that the cut on the tube is nice and straight. If the cut on the tube is not even we can potentially have an air leak. See photo 3.1.4



See Photo 3.1.4

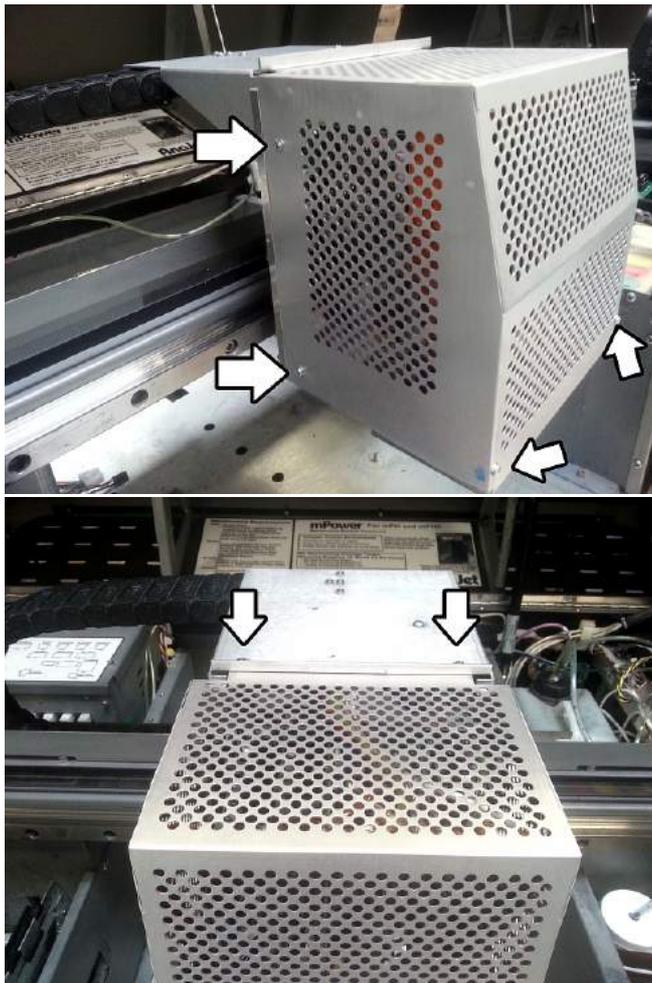
6. With the tube cut we can now remove the damper assembly. Grab your new damper and connect the elbows to the damper. Its very important that the elbow is fully connected to the damper, a bad connection can result in poor ink flow. With the elbows connected we can now connect the print tube back to the top of the Y splitter connecting the dampers. The tube should reach the far end of the Y splitter. See photo 3.1.5



See Photo 3.1.5

## White Damper Replacement

1. Begin by releasing the print head and removing the print head cage. The print head cage will have 8 phillips screws. See Photo 3.1.6



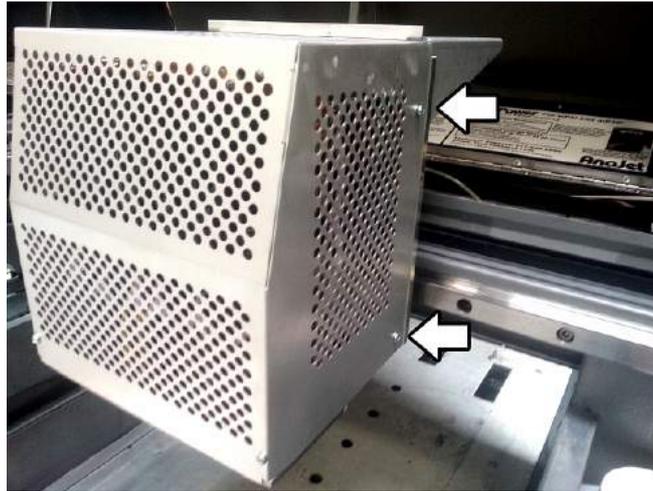


Photo 3.1.6

2. With the cage removed, we can now remove the board retainer in the front. The board retainer will have 2 phillip screws 1 on each side. See photo 3.1.7

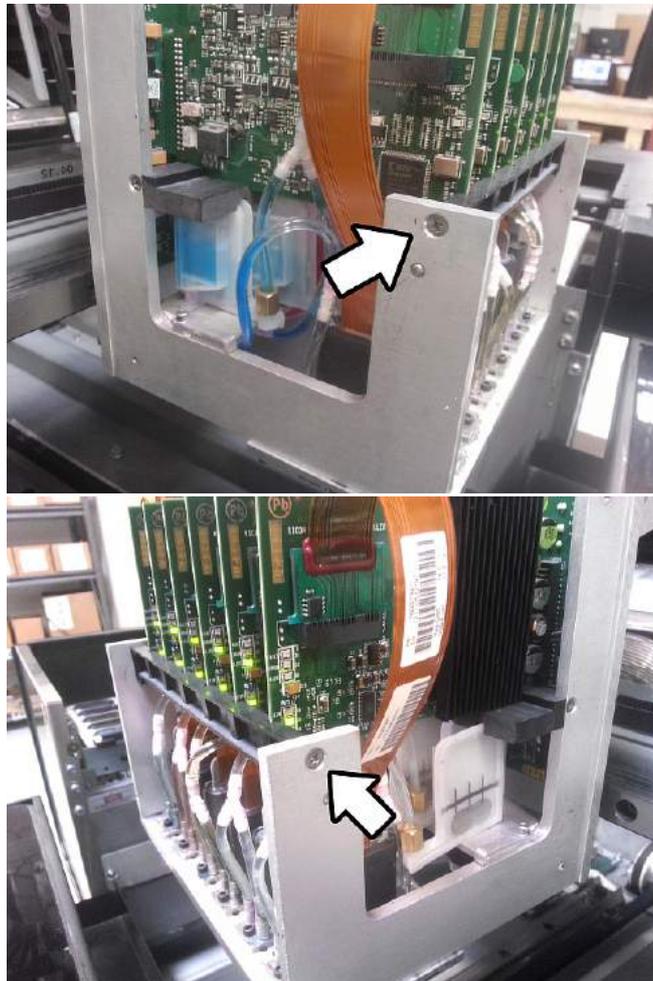


Photo 3.1.7

3. We can now begin removing the print head boards. Very carefully disconnect the print head ribbon cables from the print head boards. The printhead ribbon cable will have a small board. On the board you will see 2 tabs. It is very important that you remove the cable using these tabs. DO NOT PULL ON THE CABLE. Remove all boards. See photo 3.1.8



Photo 3.1.8

4. Remove the Damper Retainer. The damper retainer will have two phillip screws one on each side. Photo 3.1.9

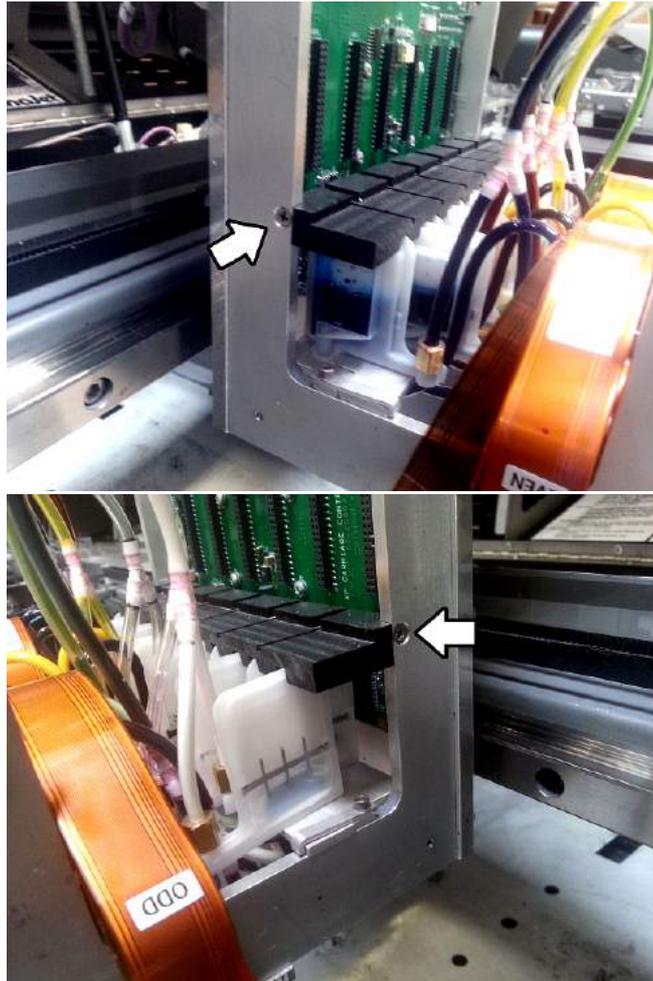


Photo 3.1.9

5. The white ink dampers have a one way valve connected at the bottom. Reach underneath and disconnect the valve from the damper by pulling down.

NOTE: Once the valve has been connected to the damper you cannot remove it. Removing the valve will damage the inside of the damper. See Photo 3.1.10

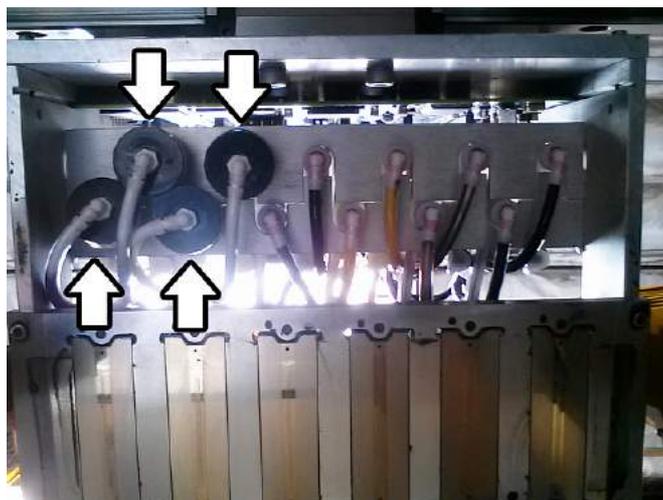




Photo 3.1.10

6. Cut the tube above the damper Y-splitter. See photo 3.1.11

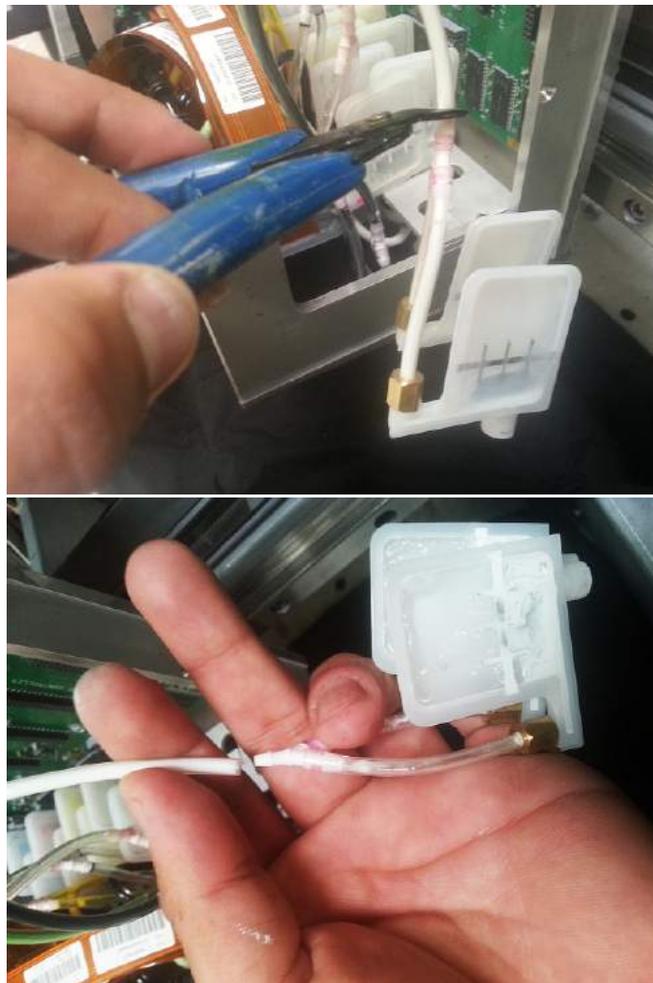


Photo 3.1.11

When replacing dampers we always recommend replacing them as a set not individually. The valve is not always necessary to replace but is recommended when changing out dampers.

When putting back your damper retainer its VERY important that the damper retainer and the dampers are perfectly lined up. If 1 damper is slightly out it will not let the print head board sit correctly resulting in no ink

firing from the print head.

## 3.2 Ink supply tube replacement

Ink tubes can be replaced if ink has dried within the tubes. This is best noticeable when the machine is flushed. We always recommend flushing the printer of all fluid before we remove the tubes. Leaving ink or cleaning solution in the tubes while they are being removed can spill ink into the printer or onto the electronic components of the printer which will damage the boards. If tubes are clogged and ink cannot be removed we can move forward with extra care. During these steps we will also be replacing all dampers and all the tubing in the carriage. It is always recommended you replace all dampers and valves when replacing the ink tube system.

### 3.2.1 Removing Ink tubees

#### Tools needed

- **Phillips Screwdriver**
- **Cutting Shears**
- **Flat head Screwdriver**

1. Begin by releasing the carriage and removing the print head cage. See Photo 3.2.1



Photo 3.2.1

2. Remove the Print head board retainer. There will be 2 phillip screws 1 on each side. See Photo 3.2.2

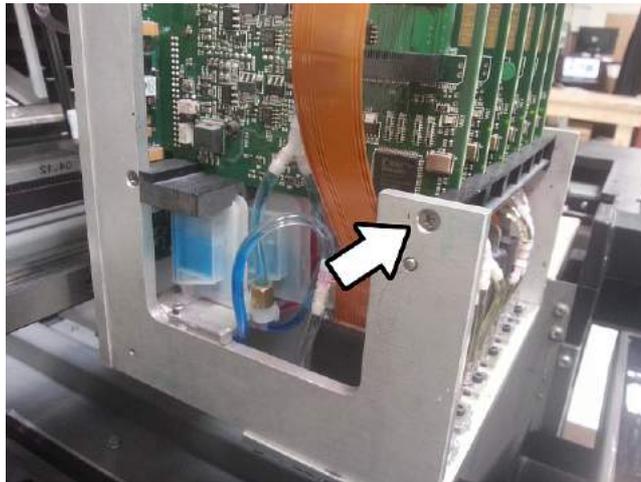
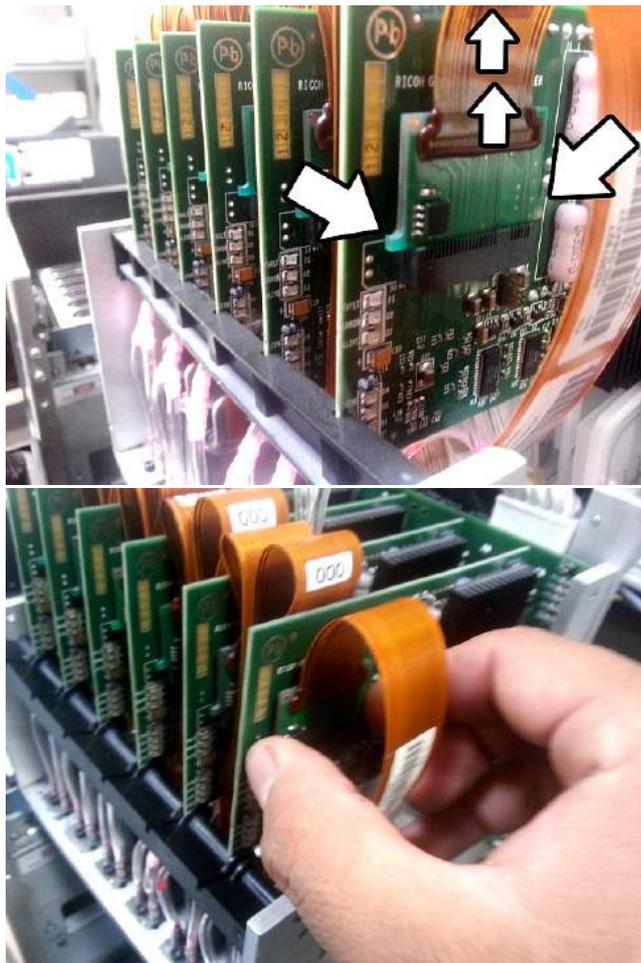


Photo 3.2.2

3. Start removing the Print head boards. Very carefully disconnect the print head ribbon cables from the print head boards. The print head ribbon cable will have a small board. On the board you will see 2 tabs. It is very important that you remove the cable using this tab. **DO NOT PULL ON THE CABLE.** Remove all boards. See Photo 3.2.3



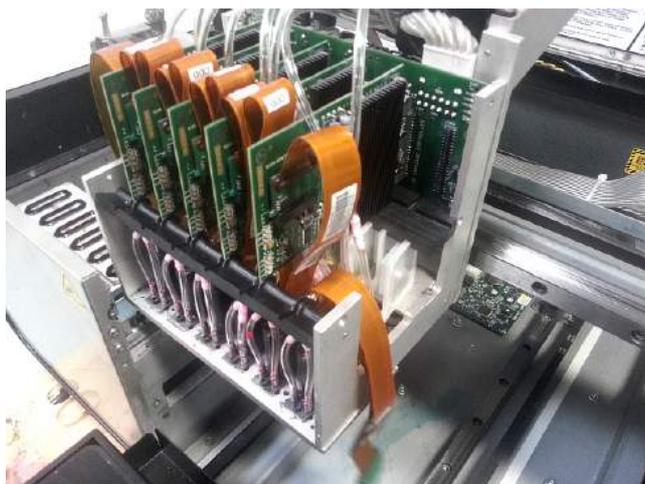


Photo 3.2.3

4. We can now start cutting the tube above the damper Y splitter. You will have 6 tubes to cut from the dampers. See photo 3.2.4



Photo 3.2.4

5. The last two tubes that are still connected are your Purge Tubes, cut the tubing above the Y splitter (only applies to MP10i). See photo 3.2.5

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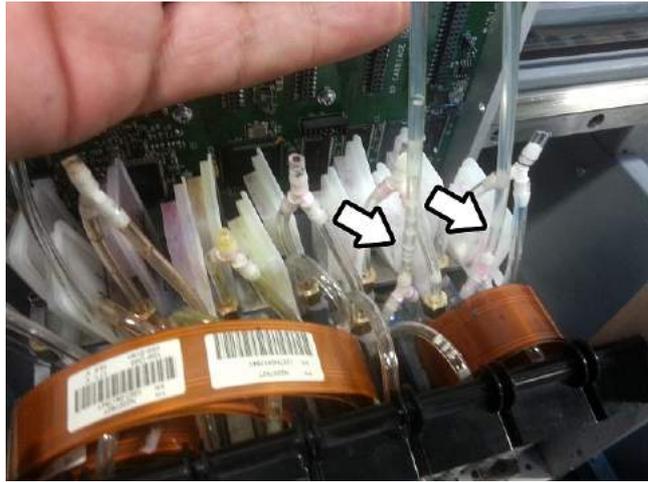


Photo 3.2.5

6. You should now have all tubes loose and cut from the carriage. See photo 3.2.6

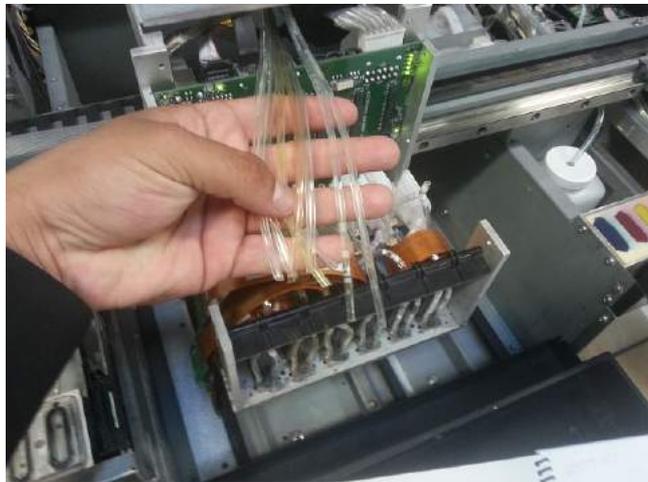
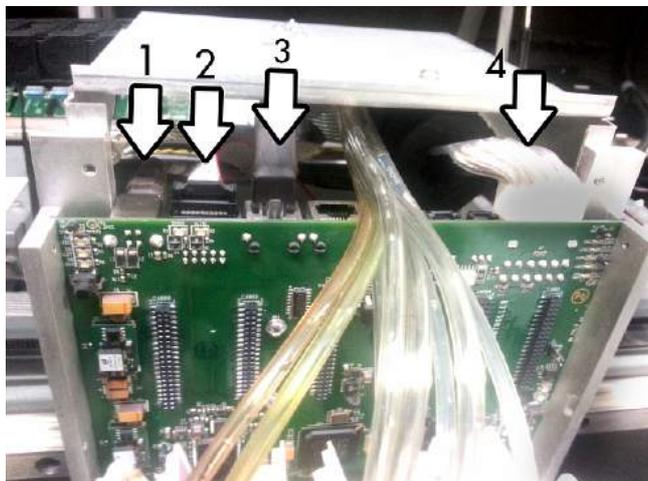


Photo 3.2.6

5. We can now disconnect all cables from the Ricoh Carriage controller. You will have a total of 4 cables to disconnect. See Photo 3.2.7



See Photo 3.2.7

6. To remove the tubing from the black plastic E-chain we must remove the top carriage

cover. The top carriage cover is held by 4 phillips screws located in the back. Please note that there is a ground cable connected to one of these screws. When the 4 screws have been removed you should now have the E-chain loose. Lay the E-chain flat to the left. See photo 3.2.8

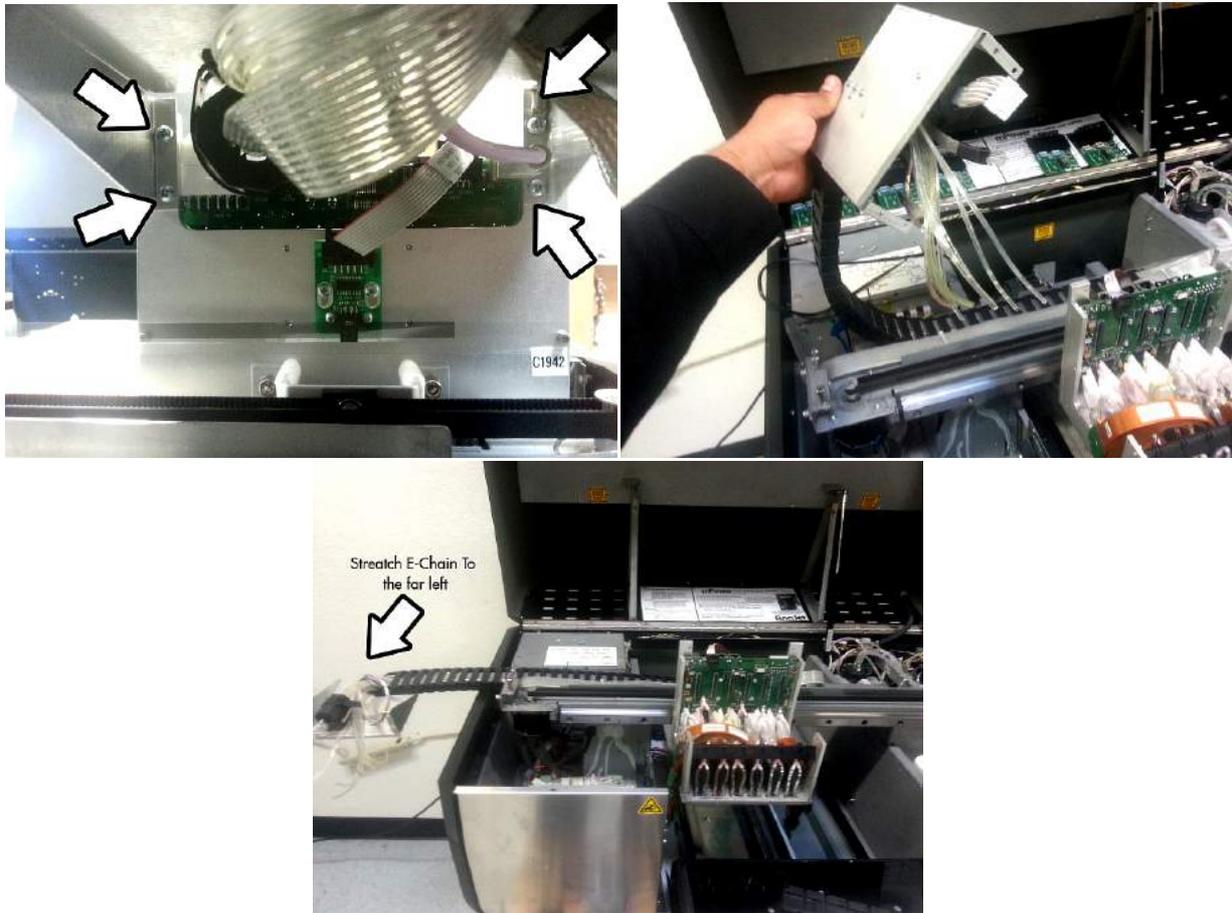


Photo 3.2.8

7. With the E-chain straight we can now pull the tubes from the opposite end of the chain. It is very important to make sure no fluid is spilled onto the printers electronics. Carefully pull on the tubes until they are removed from the E-chain. We recommend placing the tubes into a trash can to avoid any spilling. see image below

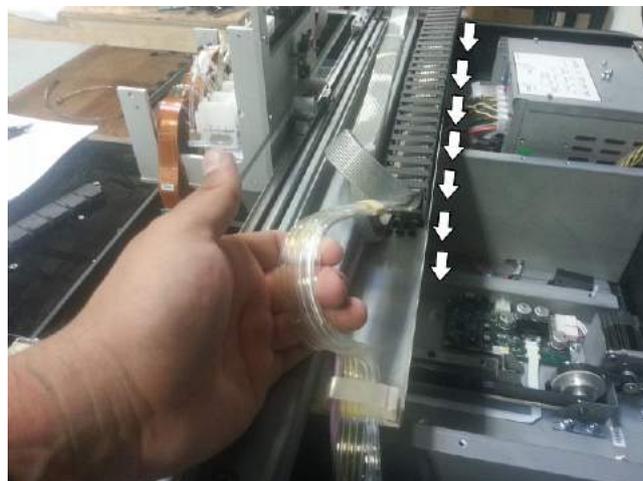




Photo 3.2.9

8. Now that our tubes are disconnected from the carriage side we must now disconnect the tubing from the ink bay side. Begin by removing the ink bay cover. You will have 5 phillip screws underneath the ink bay cover. See photo 3.2.10

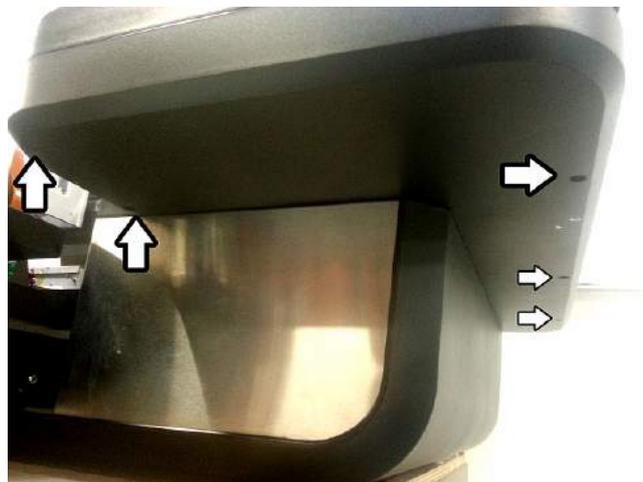


Photo 3.2.10

9. Start by unplugging the tubing from the CMYK valves. Use a small flat head screw driver to gently push on the tubing, use your other hand to pull on the tube at the same time. Be very careful not to damage the ink needle. Unplug all tubing from the CMYK needles. See photo 3.2.11

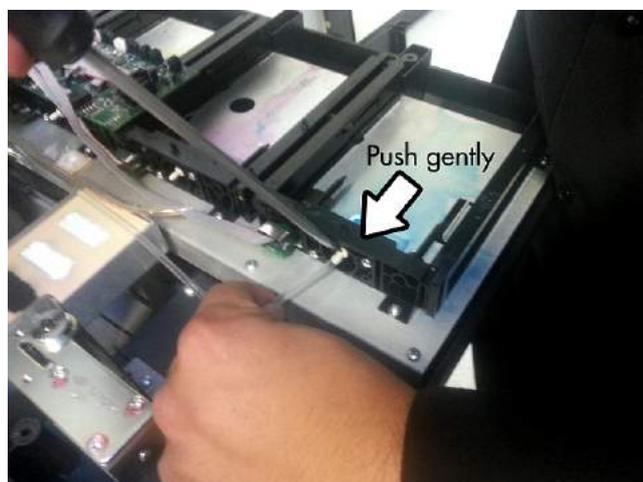


Photo 3.2.11

10. The back two needles (white ink) will have two tubes connected to it. Cut both the tubes from both valves. We always recommend replacing the White Ink needle valves when replacing the tubes. See section 3.7.2 for valve replacement. See Photo 3.2.12

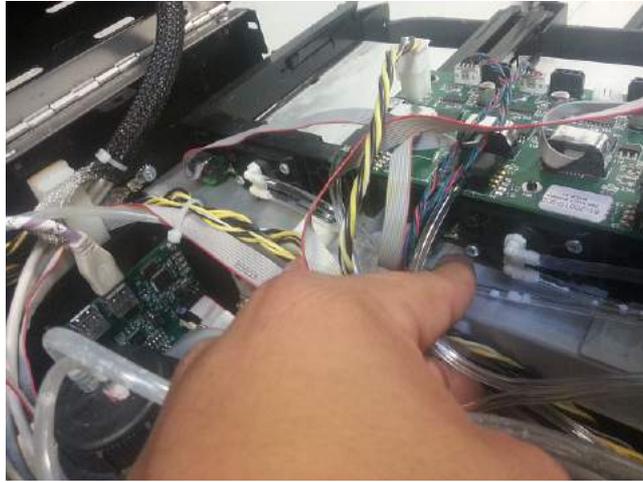


Photo 3.2.12

11. The remaining set of tubes (purge lines) should still be connected. To remove the purge lines we must disconnect the tubing from the Ink Slot Boards. Use a small flat head screw driver to push on the tubing and at the same time you will want to pull on the tube. Be very careful when removing these tubes, the Ink Slot board can be damage if too much pressure is applied by the flat head screw driver. See photo 3.2.13

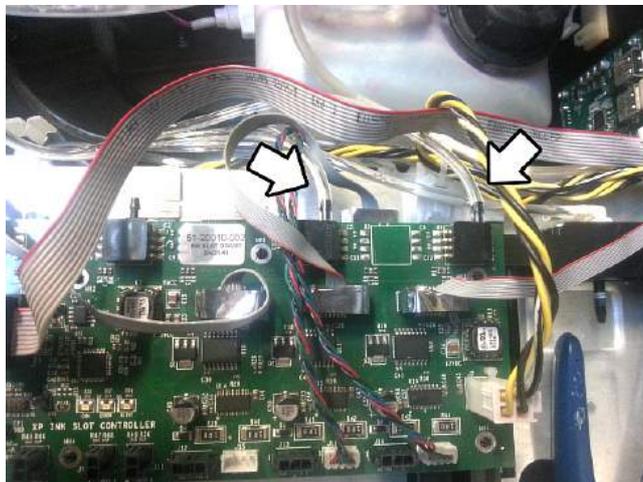


Photo 3.2.13

12. We can now cut the tubing at the purge pumps. The purge pumps are located next to the waste ink tank in the far bottom right. Cut the right hand side tube (if you are facing the pumps). See photo 3.2.14

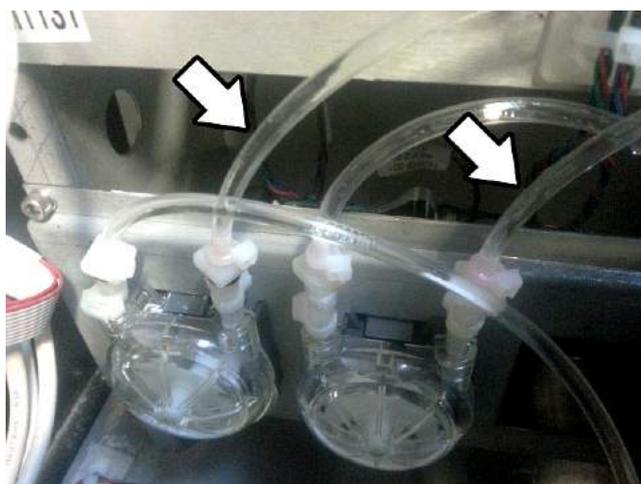


Photo 3.2.14

3. If the steps above were followed correctly your tube sets should now be removed.

## 3.2.2 Replacing Ink tube system

### Tools Needed

- Phillips Screwdriver
- 3/32 hex key / Allen key
- Cutting shears

### Parts needed mP10i

- Print tubes X 1pcs (150205-001)
- Purge Tubes X 1pcs (150207-001)
- Damper Sub X 6pcs (mP10 P/N:150553-001)
- Y-Fitting Valve Assembly X 2pcs (White Dampers only) (P/N: 150591-001)
- Y Splitter Assembly with tube X 12pcs (P/N 150529-001)
- Elbow - Tube kit X 8pcs - (P/N: 150590-001)

### Parts Needed mP5i

- Print tubes X 1pcs (150205-001)
- Purge Tubes X 1pcs (150207-001)
- Damper Sub X 6pcs (mP5 P/N: 150552-001)
- Y-Fitting Valve Assembly X 2pcs (White Dampers only) (P/N: 150591-001)
- Elbow - Tube kit X 8pcs - (P/N: 150590-001)

1. Line your tube set at the very top and tape the end. see image below. The purge tubes (set of 2) will have a T splitter. The T splitter should be facing up. See image below. It is very important that the tubes are arranged in this position. See Photo 3.2.1

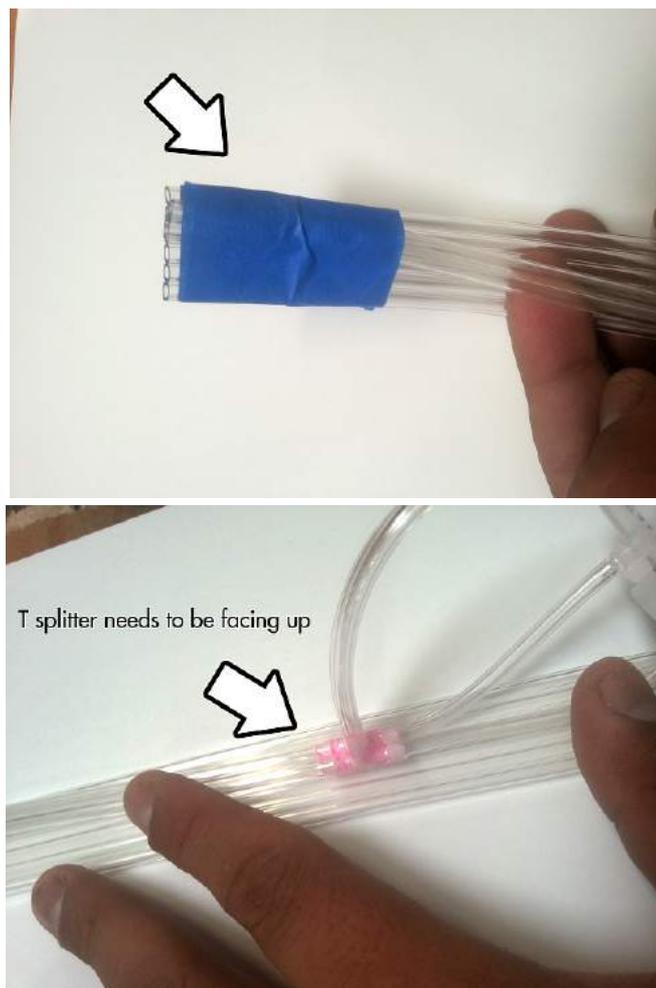


Photo 3.2.1

2. Carefully feed the tubes though the E-chain below all the cables. See Photo 3.2.2

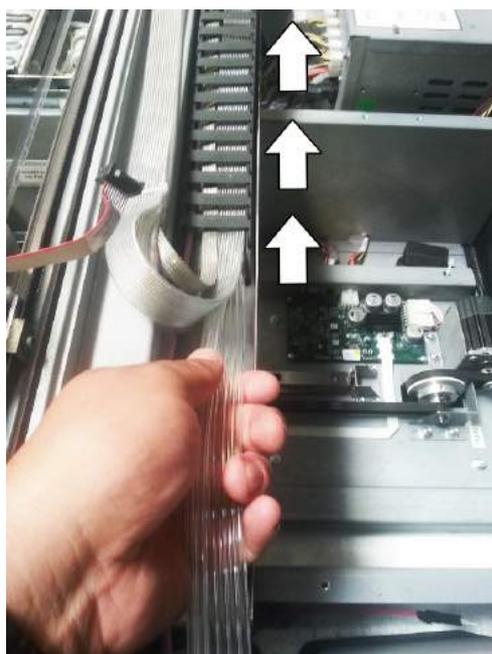


Photo 3.2.2

3. When the tubes come out on the other side of the E-chain the following measurements are needed. Measure from the edge of the E-chain. These measurements are very important, use a marker to make a guide line on the tubes. See photo 3.2.3

Print Lines 14 inches from E-chain.

Purge Tubes 15.5 inches from E-chain.

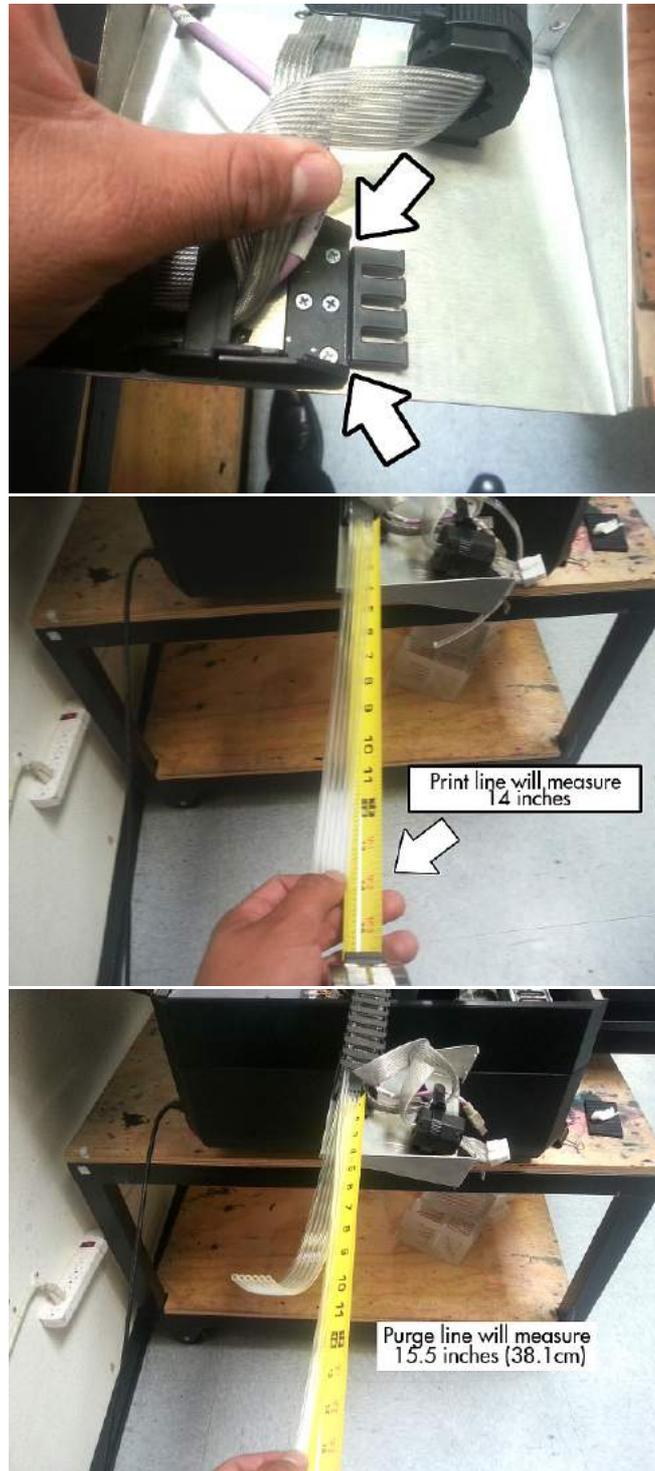


Photo 3.2.3

Print Tube #1 (yellow) will be on the right hand side use a marker to mark the tube to avoid confusion.  
Purge Tube #5 (white 1) will be on the right hand side use a marker to mark the tube to avoid confusion. See Photo 3.2.4

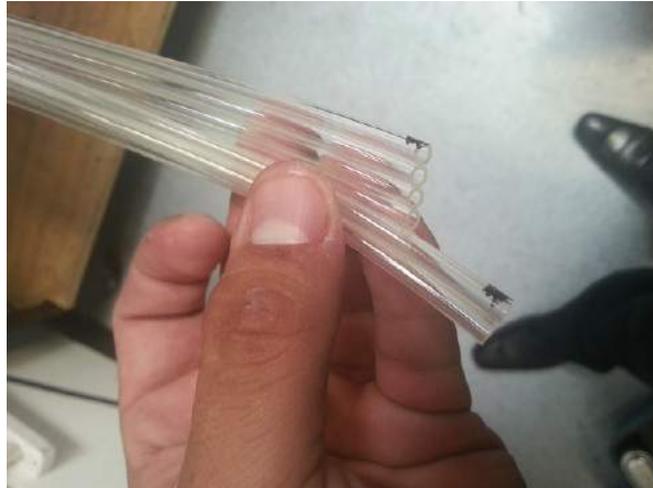


Photo 3.2.4

4. We can now assemble our top carriage cover and connect all the cables to the Ricoh carriage controller.

5. Bring in the tubes from the back, making sure that tube #1 (yellow) and Purge tube #5 are on the left hand side.

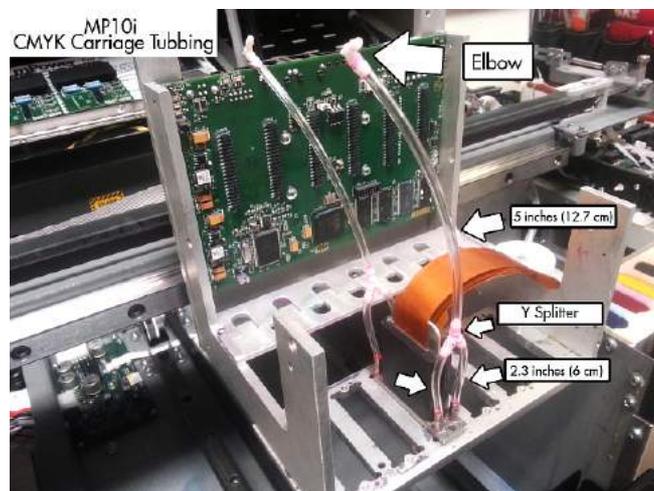
We can now start assembling our carriage tubing.

### Carriage Tubbing Assembly.

The following Instructions only apply to mPower MP10i.

### CMYK Print heads

Each CMYK Print Head will have a Y splitter on both the back and the front. The tubing will measure 2.3 inches (6 cm). Following with a 5 inch (12.7 cm) piece of tubing with an elbow at the end. Each elbow will bend back and connect to the corresponding damper. See Photo 3.2.5



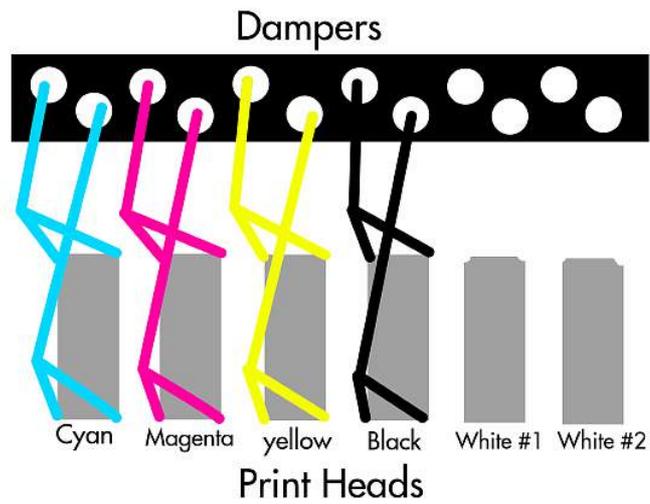
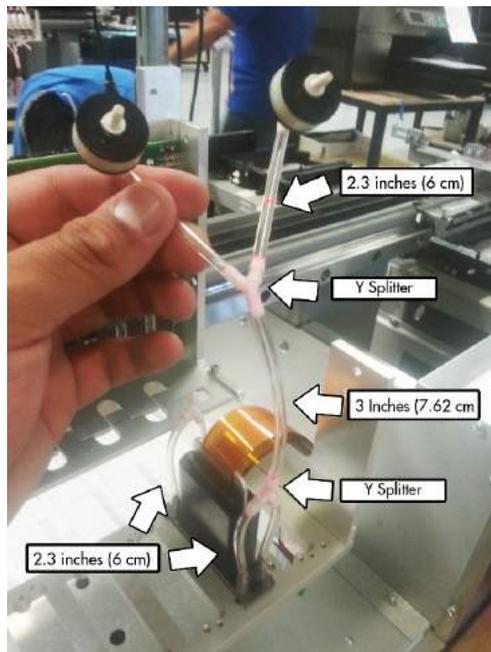


Photo 3.2.5

The white print heads consist of a Y splitter in the front > Followed by 3 inches (7.62cm) of tubing > Y splitter > 2.3 inches of tubing > Damper Valve.

The back of the print heads will have a Y splitter connected one for each purge line.

The valves will bend back and connect to the corresponding dampers. See Photo 3.2.6



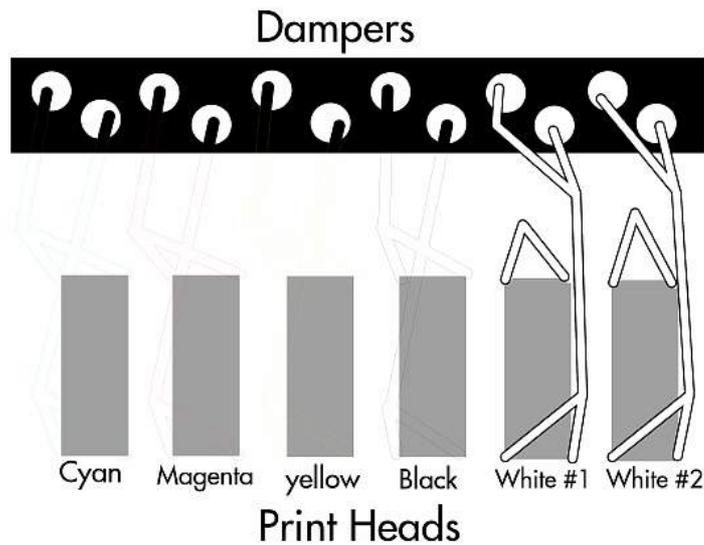


Photo 3.2.6

Once all the tubing is in place we can now start connecting our dampers. Grab your damper assemblies and start connecting them. Use the diagram above to make sure each tube is connected to the correct damper. Once the elbow or the valve are connected to the damper you can not disconnect it anymore. If the elbow or valve is disconnected the damper will be damaged and can no longer be used. Using a damaged damper will result in poor ink flow and air will be introduced into the system. Photo 3.2.7

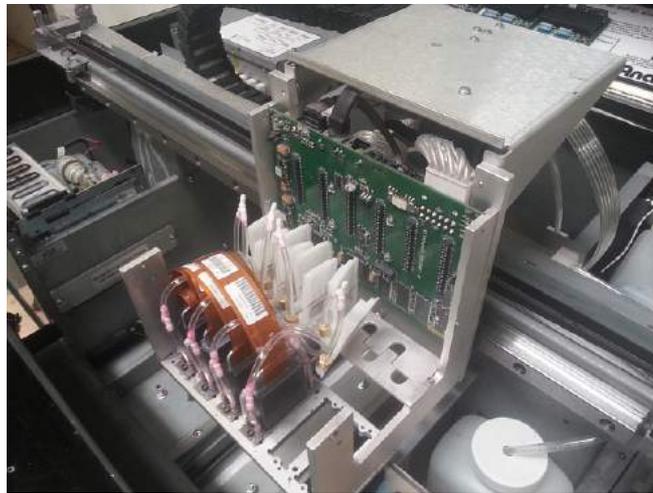


Photo 3.2.7

When all the dampers are connected we can now connect our Print and Purge lines to the dampers and heads.

### Connecting Print lines

We will start with the Print lines (set of 6). Split each tube up to the top of the carriage. Connect the first tube to the first dampers. You will continue with the rest of the tubes until you reach #6. Its very important that the correct tube goes to the correct dampers. Mixing your tubes can result in a improper fill of ink and printing results will be poor. If there is extra tubing in the carriage you can cut a small amount if needed. Photo 3.2.8



Photo 3.2.8

### Connecting Purge lines

The purge lines (set of 2) will connect direct to the back of the white print heads using the Y splitter. If there is extra tubing cut a small amount if needed. See Photo 3.2.9



Photo 3.2.9

Your carriage tubing should now all be connected. See photo 3.2.10

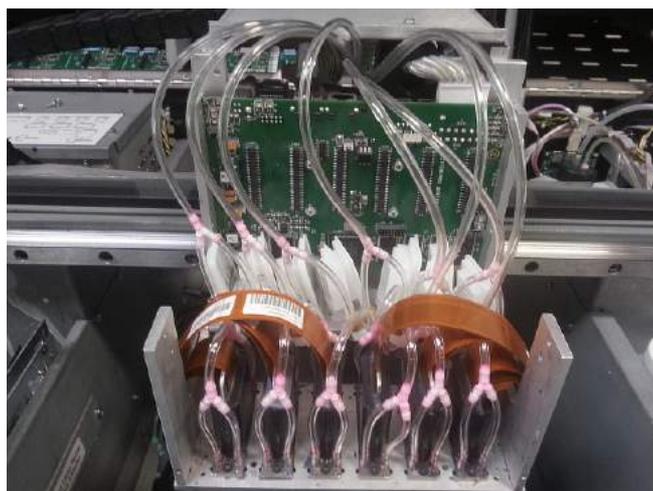


Photo 3.2.10

You can now Re assemble your carriage boards and retainers.

### **Ink Bay Tubing Assembly**

#### **Print Tube Assembly (set of 6)**

Feed the Print lines and purge lines through the first holding clip. Then follow the print lines only to the second clip. See photo 3.2.11

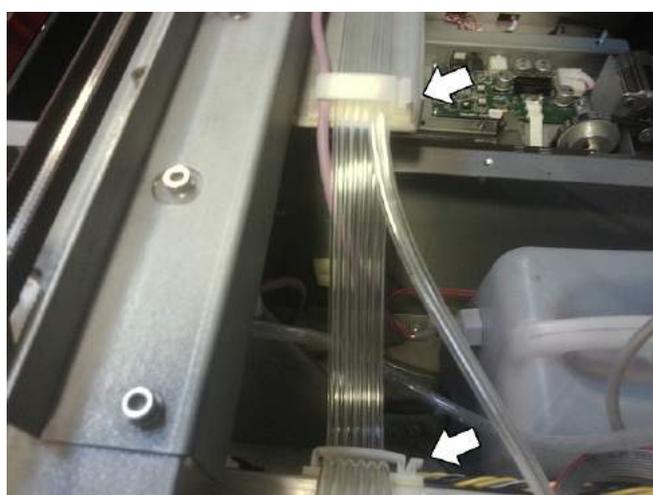


Photo 3.2.11

Split your Print tubes (set of 6) into 3. Split the tubes up to the second clip. See image below. Route the tubes to each side. Tubes 1-3 to the left, and tubes 4-6 to the right hand side. See photo 3.2.12

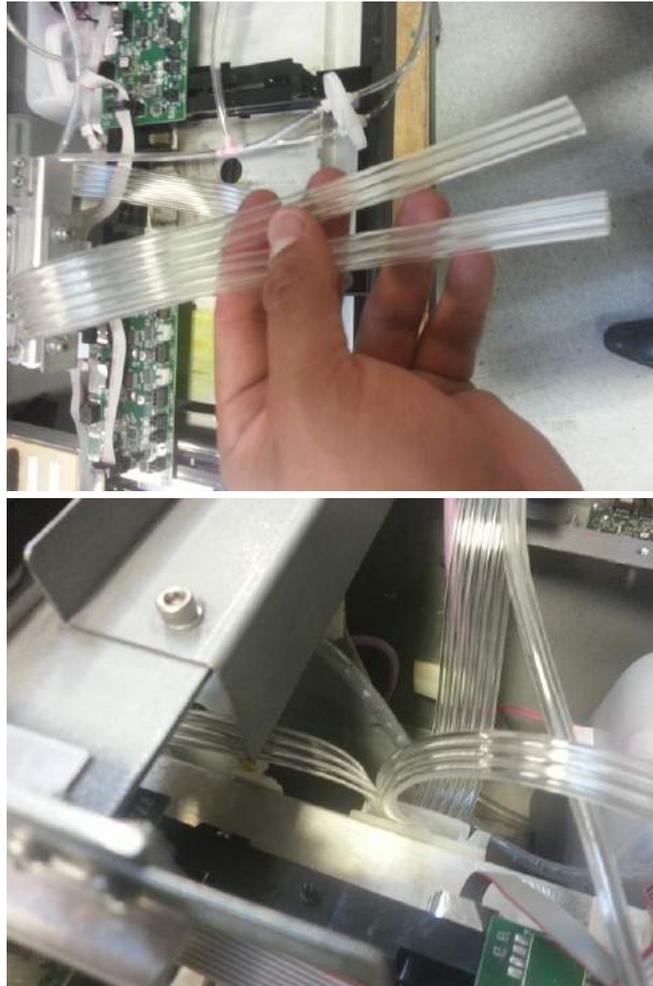
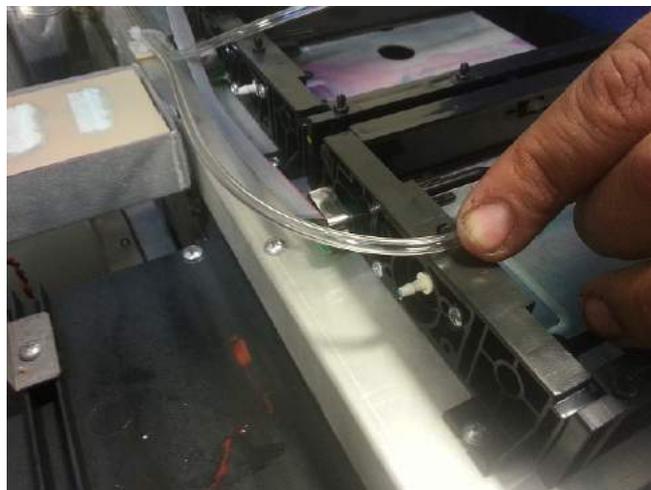


Photo 3.2.12

Split tube #1 (yellow) and make the measurement to have the correct length to the needle. See image below. Once you have an appropriate length we can cut and connect the tube to the needle. Make sure the tube is connected all the way into the valve. Do the same to tube #2 (magenta) . **KEEP ALL EXTRA TUBING PIECES WE WILL USE THEM LATER.** See photo 3.2.13



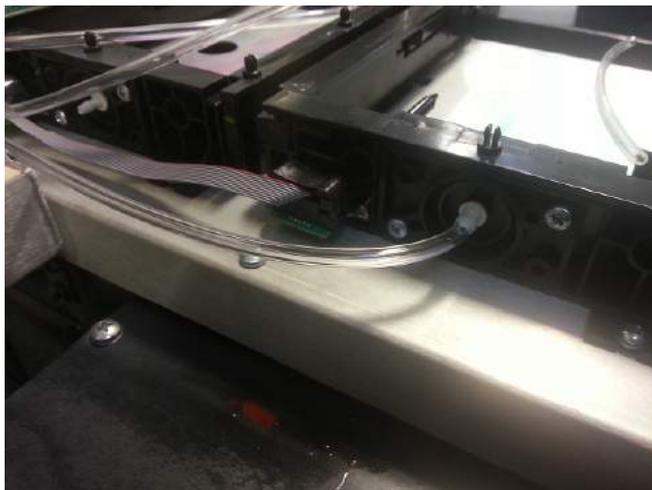


Photo 3.2.13

Tube #3 (yellow) will have a small curve to the tubing. Its very important that the tube is not kinked or bent. If the tube is bent it will result in poor to no ink flow. See photo 3.2.14

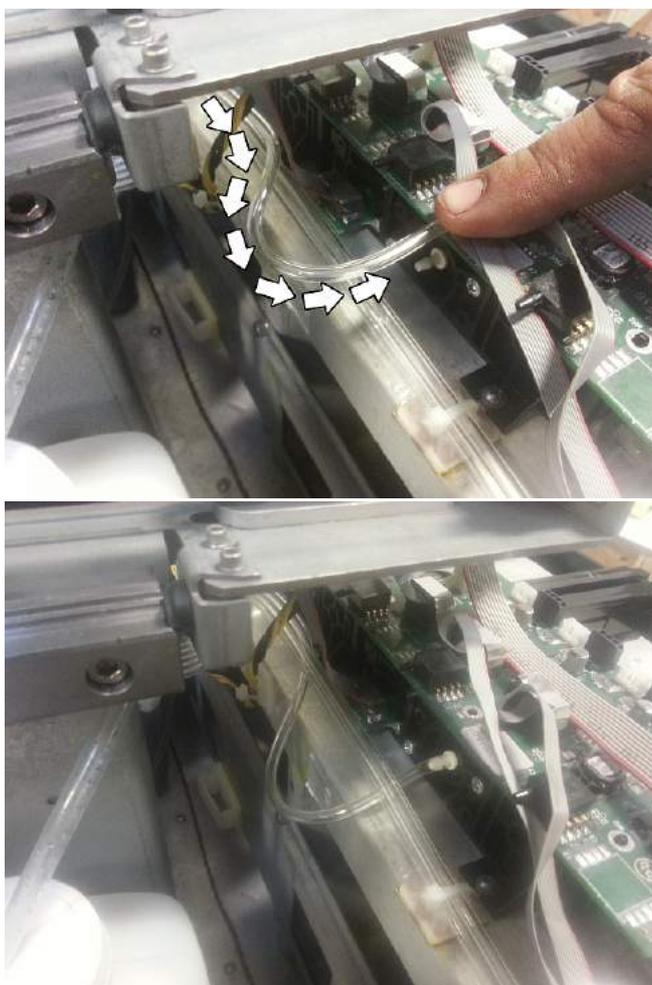


Photo 3.2.14

Tube #4 (Black) will have a small loop around the print lines. See image below. It is very important that the tube is not kinked or bent. If the tube is bent it will result in poor to no ink flow. See photo 3.2.15

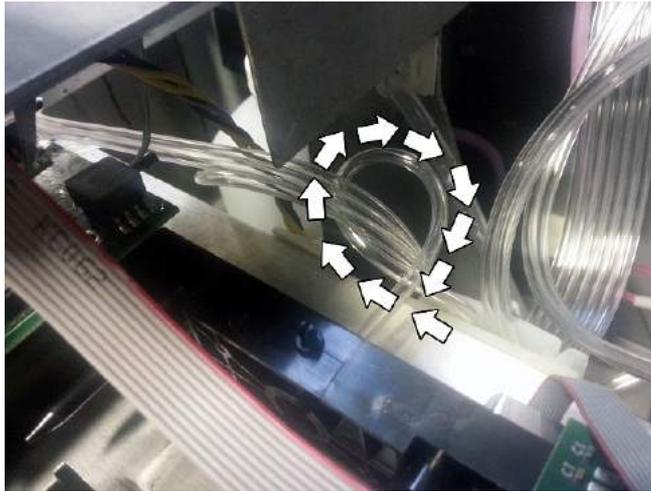


Photo 3.2.15

Print Tubes #5 and #6 (White 1 / White 2) will connect to the BOTTOM of the cartridge valve. It is very important that that Print line (set of 6) is connected to the bottom part of the valves. See photo 3.2.16

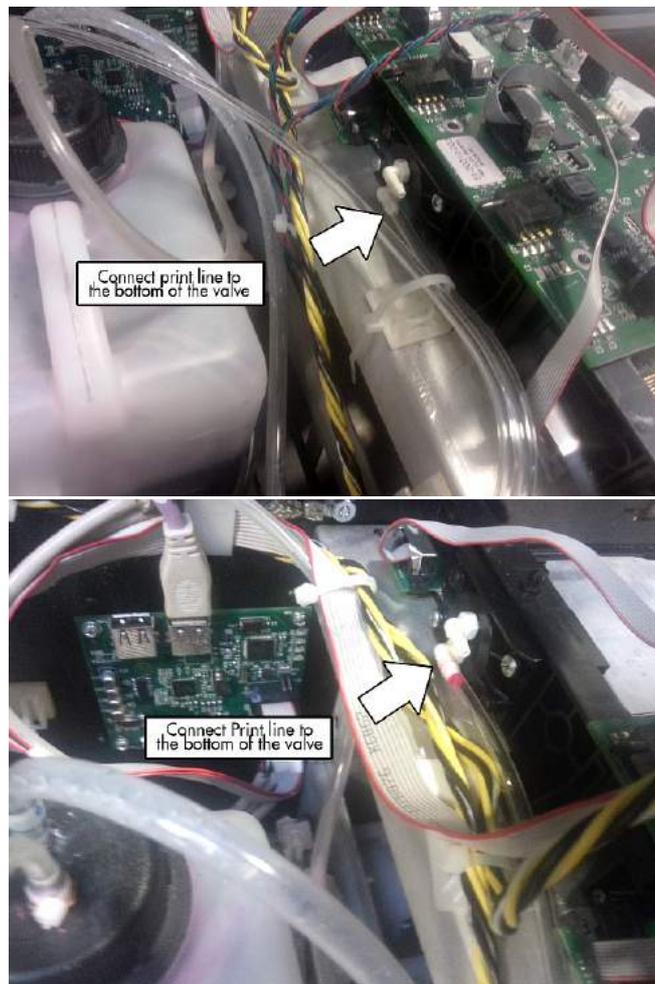


Photo 3.2.16

Your Print lines should now all be connected.

**Purge tube assembly (set of 2 / white)**

Route your purge tubes to the bottom clip see image below. The T splitter should be sticking out. The tubes split into 2 one side will have a round filter, and the other end will not. See Photo 3.2.17

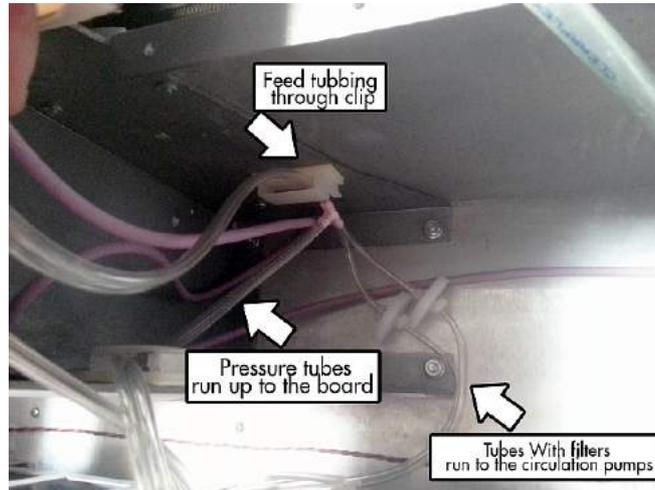
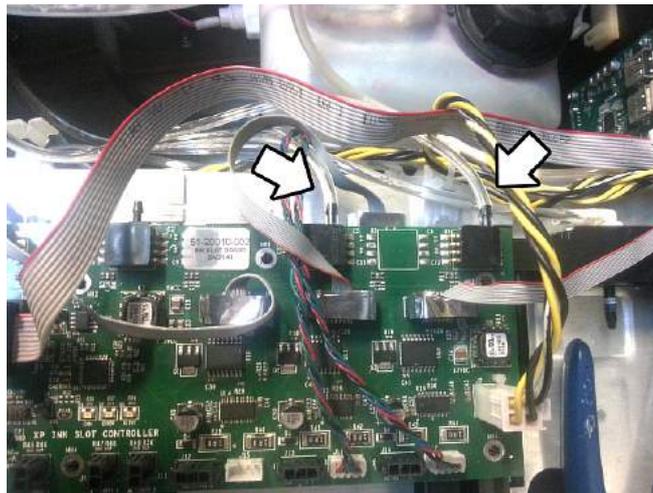


Photo 3.2.17

Find the piece of tubing that does not have the filter. These tubes will connect to the pressure sensor on the back Ink slot board. The board will have 3 pressure connections. We will only be using the back 2. Connect the tube to the pressure sensor. See photo 3.2.18



3.2.18

Now grab the remaining tube with the filters and we will connect them to the circulation pumps. The circulation pumps will have two sides. We will be connecting the filter tubes to the right hand side if you are facing the pumps. See photo 3.2.19

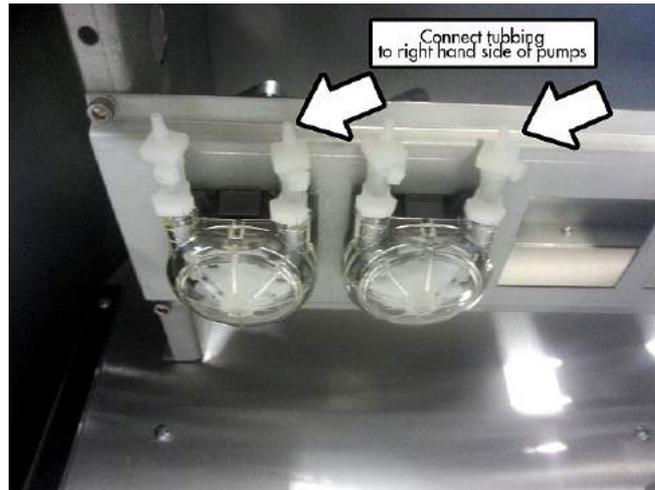


Photo 3.2.19

We will now use a 12 inch piece of tubing to connect the other side of the pump to the top white cartridge valve. See photo 3.2.20

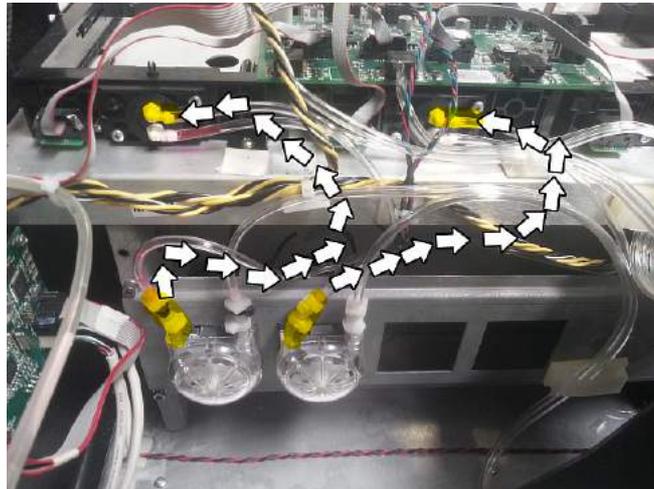


Photo 3.2.20

Your tubing should now all be connected. Inspect all tubing before loading the printer with ink. If any tube is loose you can risk the chance of introducing air into the system which will result in poor ink flow. Make sure no tube is bent or kinked which can cause poor or no ink flow.

### 3.3 Maintenance Station Replacement

#### Tools Needed

- **Phillips Screwdriver**
- **Wiper Gauge**
- **Maintenance Station**

Maintenance station can be replaced if excessive damage has been done to the rubber gaskets,

ink has dried within the tubing, or motor flag is no longer working. It is very important that the Maintenance station is kept clean on a regular basis. Improper care of the Maintenance station will result in poor ink flow and bad printing.

### Removing Maintenance Station.

Begin by releasing your carriage (Menu>Maintenance Functions>Print Carriage Controller > Release Carriage).

1. Remove the Drip tray from underneath. Remove 2 phillip screws to release the tray. See photo 3.3.1



2. The maintenance station is held by 4 Phillip screws. One on each corner See photo 3.3.2

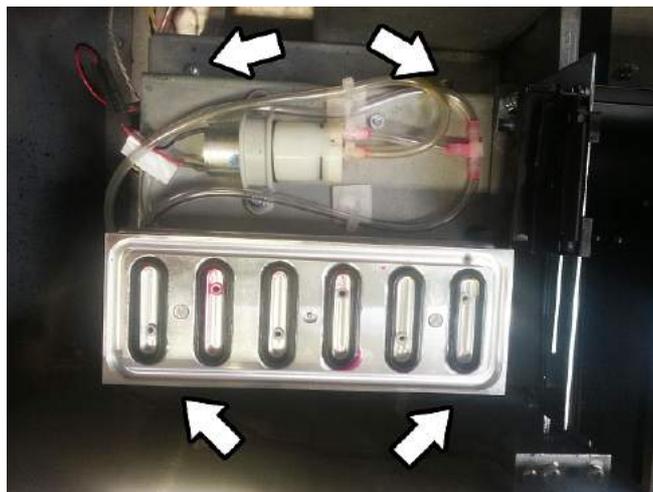


Photo 3.3.2

3. Before pulling the station out carefully pull it up and disconnect the 4 cables connected to the Maintenance station board. See photo 3.3.3



Photo 3.3.3

4. Carefully slide out the Maintenance station to the right. See photo 3.3.4

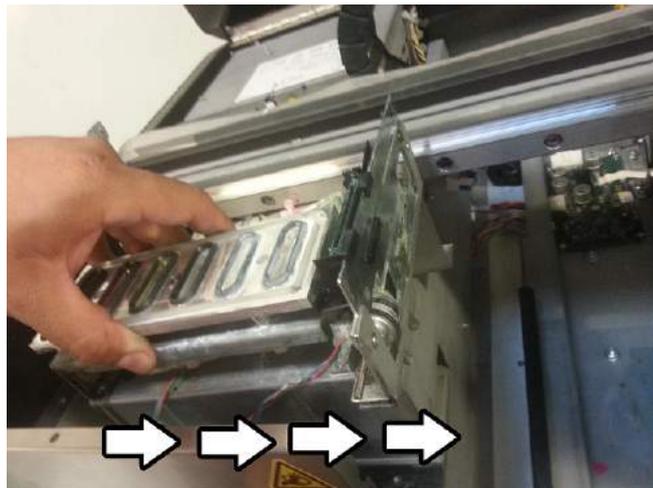


Photo 3.3.4

5. when inserting the new station you want to push the station to the far right and tighten the screws in.

6. To Check the current position between the Maintenance station and the print heads dip your finger in some waste ink (black ink). Rub the top of the gaskets and secure your carriage. This will

leave a visible mark on the print heads when you release the print heads again.

If adjustment is needed you can loosen the 4 Phillip screws and move the station accordingly.

### 3.3.1 Maintenance Station Pump Replacement

#### Tools Needed

- **Phillips screwdriver**
- **Maintenance Station Pump (P/N:150595-001)**

The maintenance station pump can get clogged or damaged from improper or no maintenance. If ink has dried within the pump or the pump is physically damaged we recommend changing the pump. See photo 3.3.1

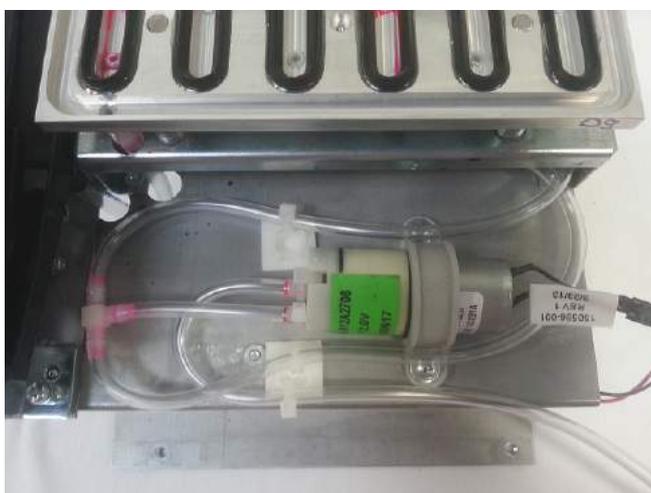


Photo 3.3.1

1. Begin the releasing your carriage. (MENU>MAINTENANCE FUNCTIONS>CARRIAGE CONTROL>RELEASE CARRIAGE)
2. Remove the maintenance station. See section 3.3 for maintenance station removal.
3. Newer printers or the newer pumps will have a small easy disconnect attachment. Older model printer will not have this easy disconnect attachment and will require you to unplug the entire cable from the maintenance station board. See photo 3.3.2

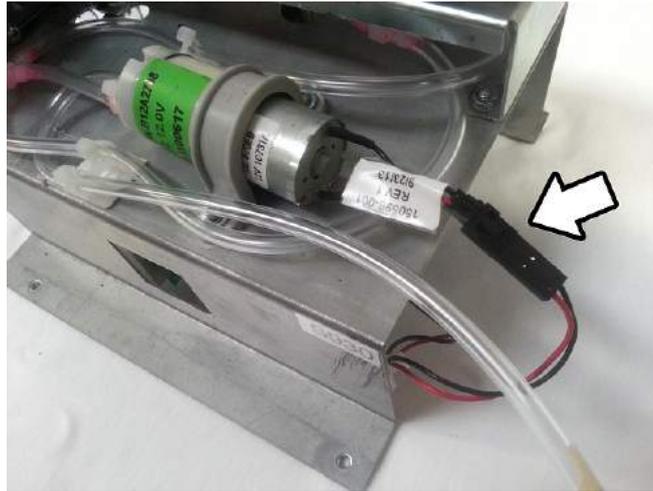


Photo 3.3.2

4. The pump is held by a small clamp. The clamp will have 2 phillip screws holding it down. Loosen the screws only and the pump should slide out. See photo 3.3.3

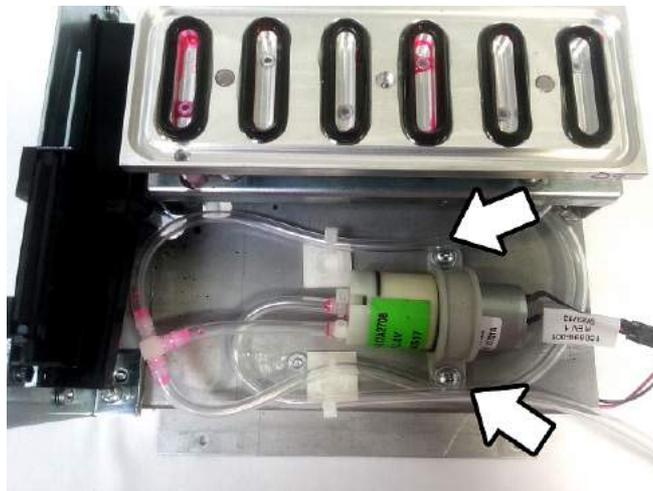


Photo 3.3.3

5. The pump will have two tubes connected to it. The middle Tube feeds ink out (to waste tank). While the tube on the side feeds ink in. The tubes will have a small zip tie holding it down. Remove the zip tie, and carefully unplug the tubes. Replace the old pump with a new one. We recommend having a zip tie on the tubes to ensure an air tight seal. See photo 3.3.4

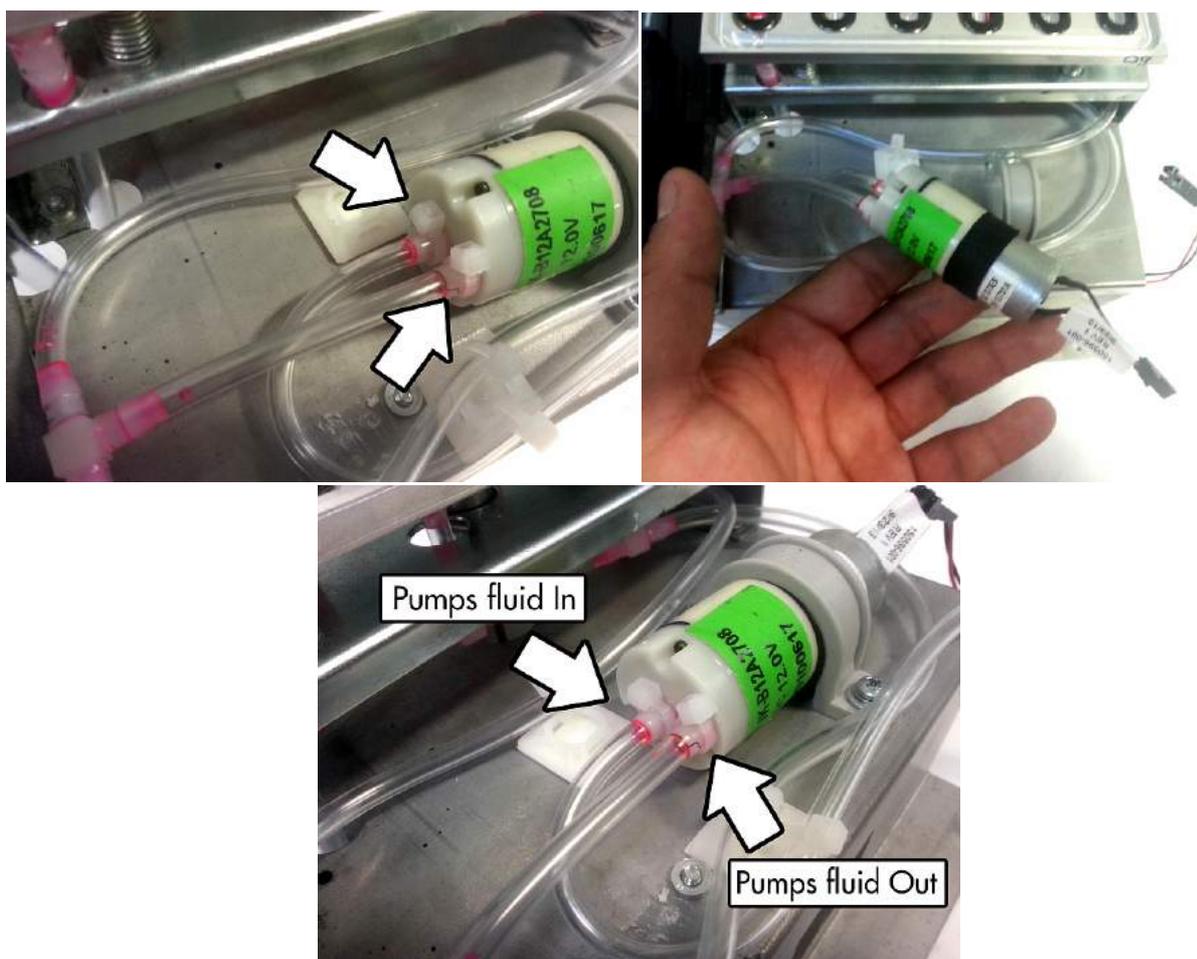


Photo 3.3.4

### 3.3.2 Maintenance Station Wiper Assembly Replacement

#### Tools Needed

- Phillips Screwdriver
- Wiper slider assembly (P/N:150600-001)
- Wiper Gauge (P/N:150617-001)

1. Begin by releasing your carriage, and powering down your printer from the back switch. (MENU>MAINTENANCE FUNCTIONS>CARRIAGE CONTROL>RELEASE CARRIAGE)
2. Remove the maintenance station see section 3.3.
3. Unplug the cable connecting to motor on the side. See photo 3.3.2-1



Photo 3.3.2-1

4. The wiper blade assembly is held by two Phillip screws one on each side. see image below. Remove these 2 screws to slide out the assembly. See photo 3.3.2-2



Photo 3.3.2-2

Replace your assembly and reassemble your maintenance station back into the printer. Anytime the Wiper Slider Assembly is replaced you will need to readjust the wiper blade height see section 2.5 for wiper blade adjustment.

## 3.4 Ricoh Gen 4 Print Head Controller Replacement

### Tools Needed

- Phillips screwdriver
- Ricoh Gen 4 Print Head Controller(P/N:51-20004-001)

Print head boards can be damaged if ink or moisture gets on the board. Improper cable connections can also damage the board resulting in print head errors.

To replace the board begin by releasing your print head and powering down the printer. Remove the print head cage.

Remove the 2 phillip screws holding the print head board retainer and swing the retainer downwards. See photo 3.4.1

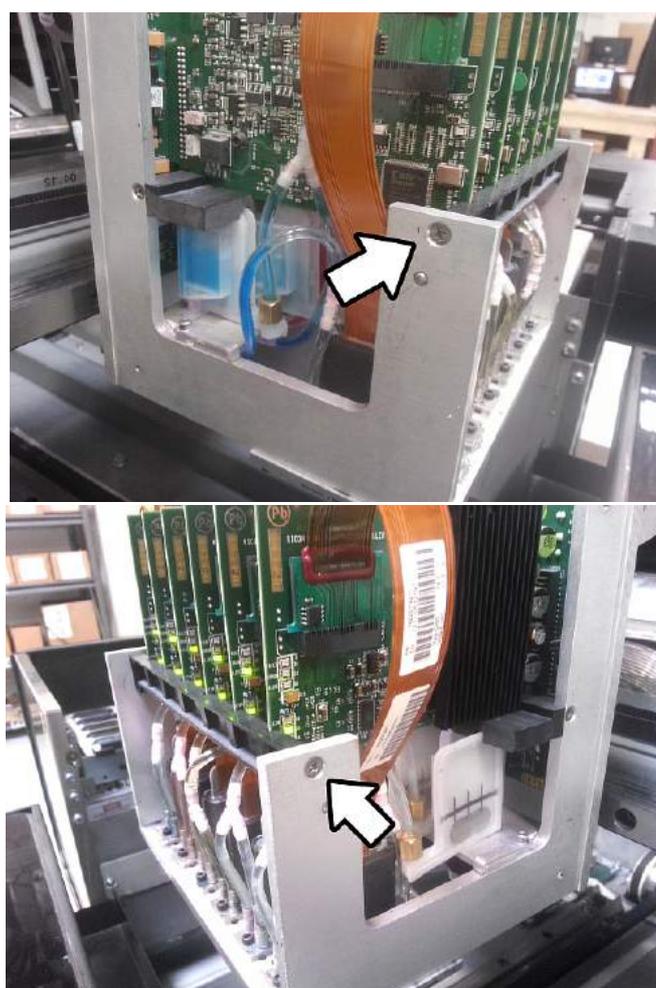
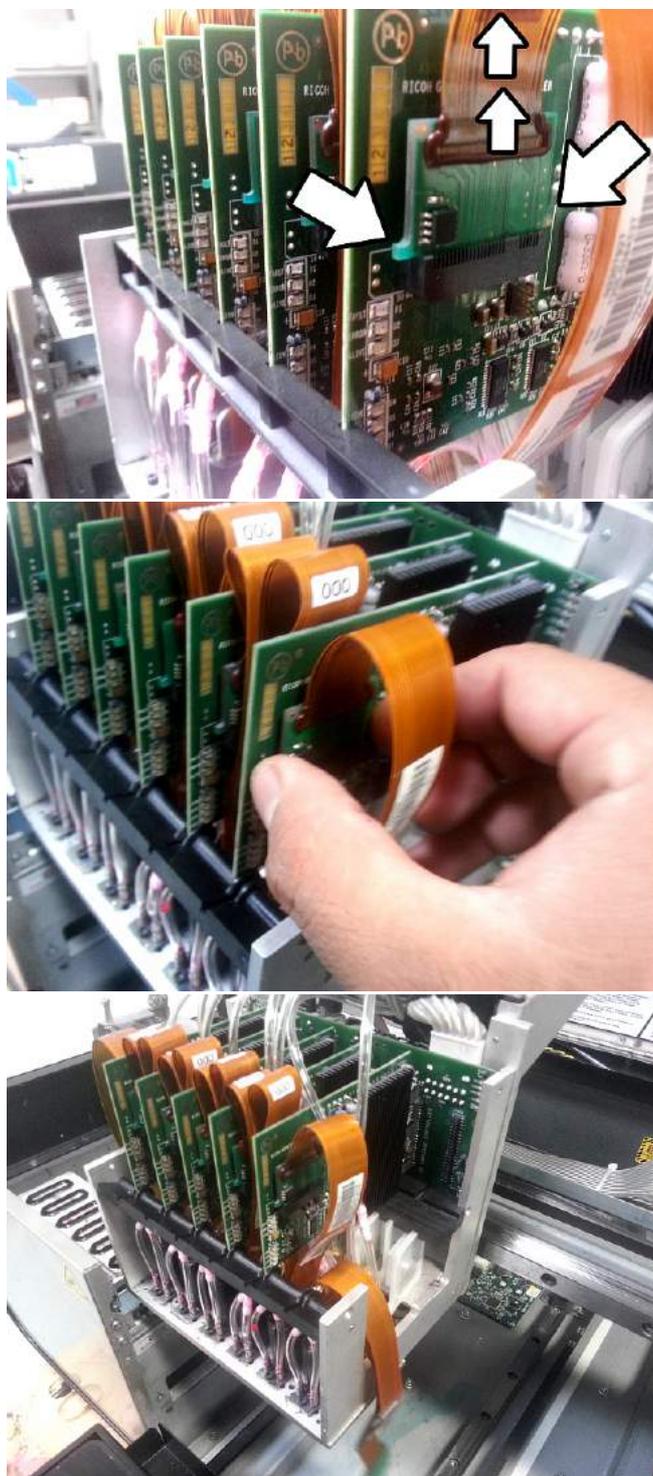


Photo 3.4.1

Each print head board will have a print head ribbon cable connected to it. Each ribbon cable also has a small board attached to it. The small board will have two small tabs one on each side. Carefully remove the print head ribbon cable using these small tabs. Pulling on the cable can permanently damage the print heads.



Carefully unplug the print head board from the Ricoh Carriage Controller slot by sliding it out.

Replace your board and carefully connect the print head ribbon cable back. Its very important that we do not

get any moisture, ink, or cleaning fluid on the boards.

Follow these steps in backwards to reassemble your carriage.

## 3.5 Print head Replacement

### Tools Needed

- **Phillips Screwdriver**
- **3/32 Hex key / Allen Key**
- **Cutting Shears**
- **Ricoh Gen 4 print head (P/N:150200-001)**

Print heads can be clogged from improper care or no maintenance. Ink will settle and permanently dry in the nozzles causing poor printing results or banding. If the print head is clogged we recommend replacing the print head.

Begin by releasing your carriage. Once the carriage is release remove the print head cage.

Remove all print head boards from the carriage and remove the board retainer. see section 3.4

Each print head is held by 2 hex screw one in the front and one in the back. Use a 3/32 hex key to remove the screws. See photo 3.5.1

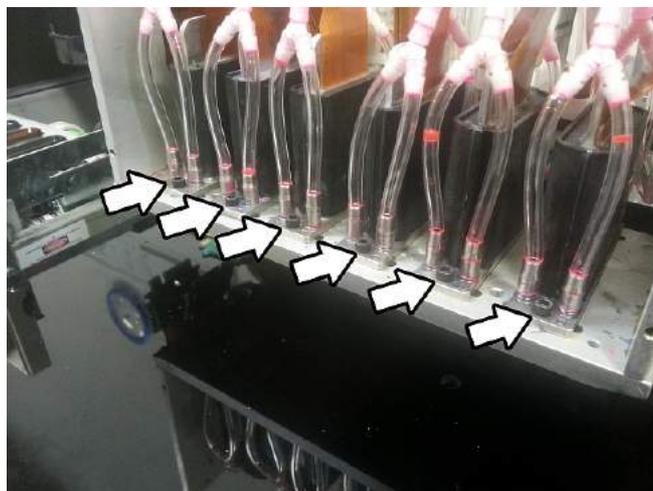




Photo 3.5.1

Once the screws are removed your print head will be released. Very carefully use a pair of cutting shears to gently push up on the tube. We are not applying pressure to the tube we are only pushing up. Applying pressure to the print head post can damage the post and permanently damage the print head. Photo 3.5.2

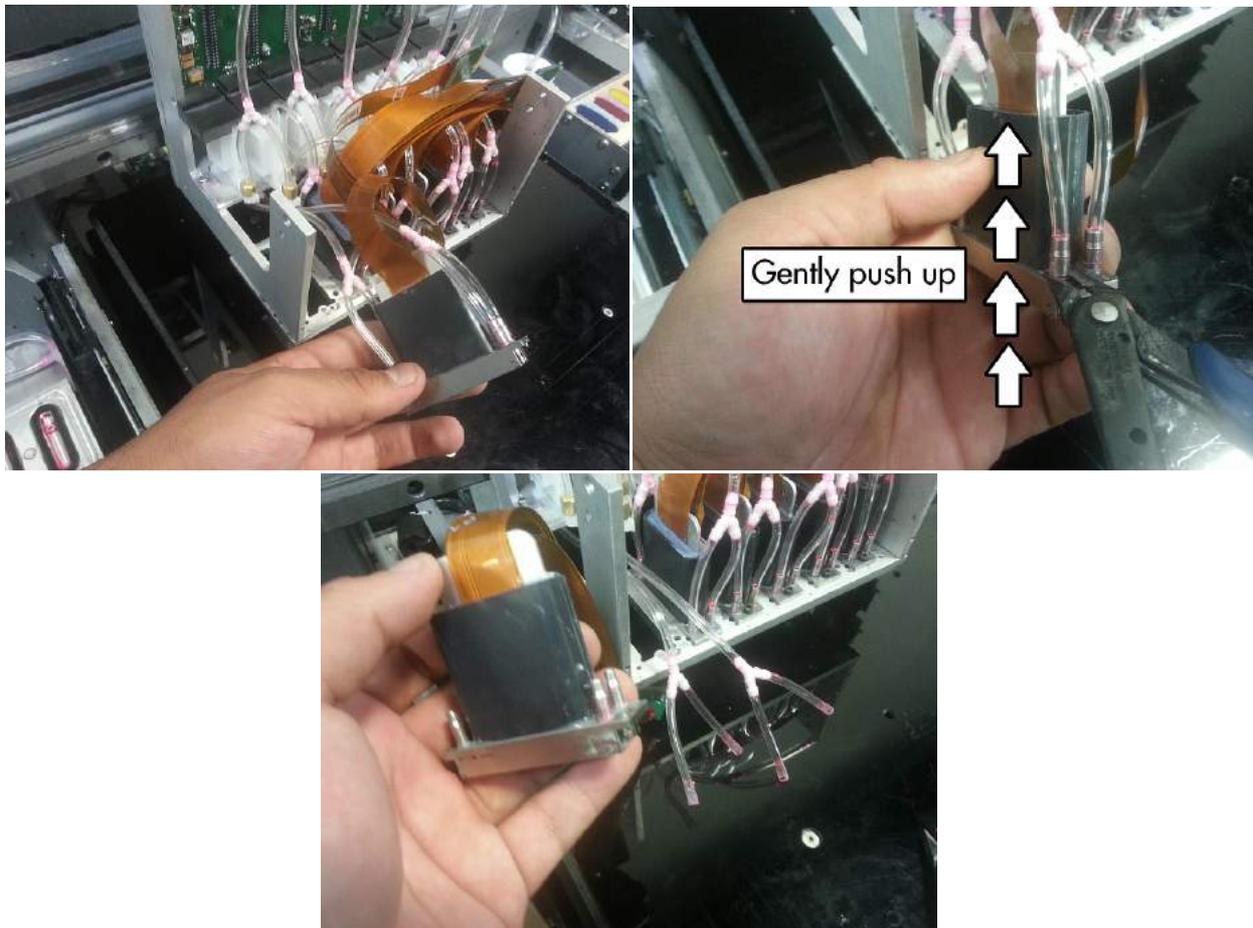


Photo 3.5.2

Replace your print head with a new one, before connecting the tubes cut a small portion of the tubing off. This part of the tubing is now stretched and can cause air to leak into the print heads causing poor ink flow.

Follow these steps backwards to assemble your carriage. Once the machine is powered on we recommend calibrating the print heads and doing 1 heavy Clean.

## 3.6 Ricoh Carriage Controller Board Replacement

### Tools Needed

- Phillips Screwdriver
- Ricoh Gen 4 Carriage Controller (P/N: 51-20003-001)

Ricoh Carriage Controller can be damaged if moisture or ink come in contact with the board. Electrical surges or improper cable connections can also cause the board to become damaged. A red LED light will be on when there is damage to the board.

1. Begin by releasing your carriage and remove your print head cage.
2. Remove all print head boards see section 3.6
3. Unplug all cables from the Ricoh Carriage Board. See photo 3.6.1

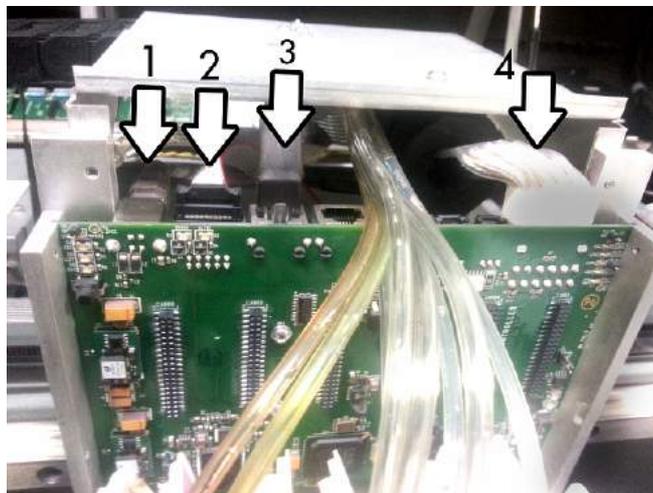


Photo 3.6.1

4. Remove the 4 screws located in the back of the carriage to remove the top carriage cover. One of the screws will have a ground cable connected to it. See Photo 3.6.2

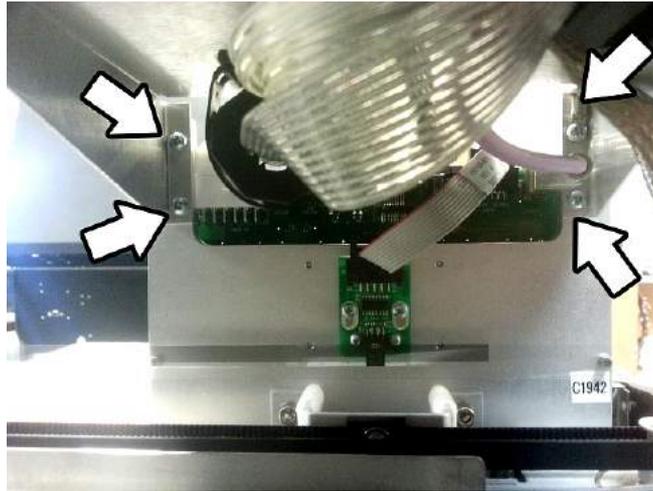


Photo 3.6.2

5. The Ricoh carriage controller board is held by 4 phillip screws. Remove the 4 screws and carefully slide the board upwards. See photo 3.6.3

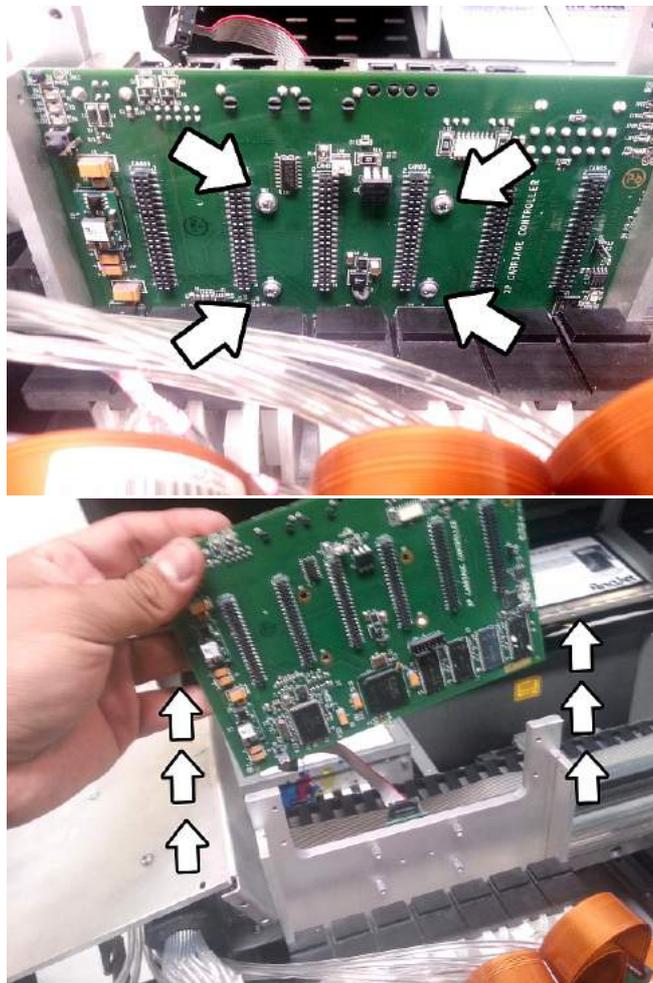


Photo 3.6.3

Replace your old carriage controller and reverse these steps to reassemble your carriage. We recommend calibrating your head voltages once the machine is powered on. Its very important all cables and boards are connected properly to avoid any electrical issues.

## 3.7 Ink Bay Assemblies

### Removing Ink bay cover

#### Tools needed

- **Phillips Screwdriver**

The ink bay cover needs to be removed in order to replace Needle Plate-Pin shift Assembly also known as the chip reader assembly or if any of the plastic guides need to be replaced. Remove the 5 phillip screws underneath to remove the top ink bay cover. See photo 3.7.1

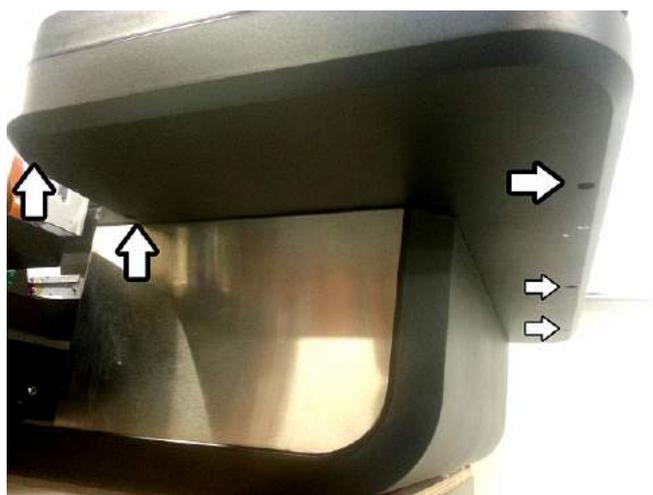


Photo 3.7.1

### 3.7.1 Needle Plate-Pin Shift Assembly Replacement

#### Tools Needed

- **Small flat head screwdriver**
- **Phillips screwdriver**
- **Needle Plate-Pin Shift Assembly (P/N:150479-001)**

1. Begin by removing the ink bay cover. See section 3.7.1
2. Remove the 4 screws holding the metal sheet to the bottom cover. See photo 3.7.2

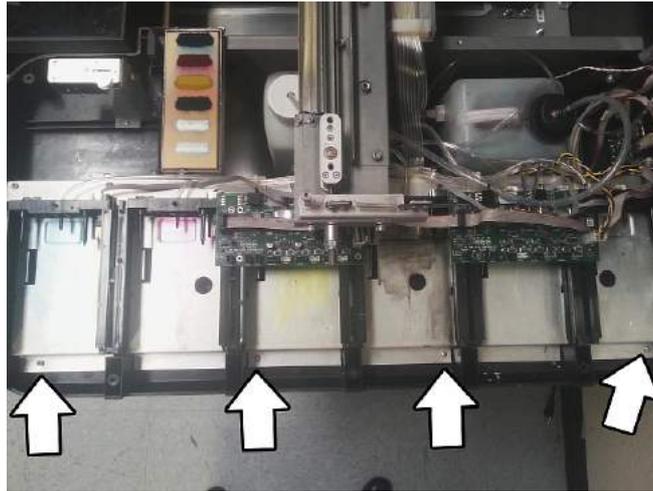


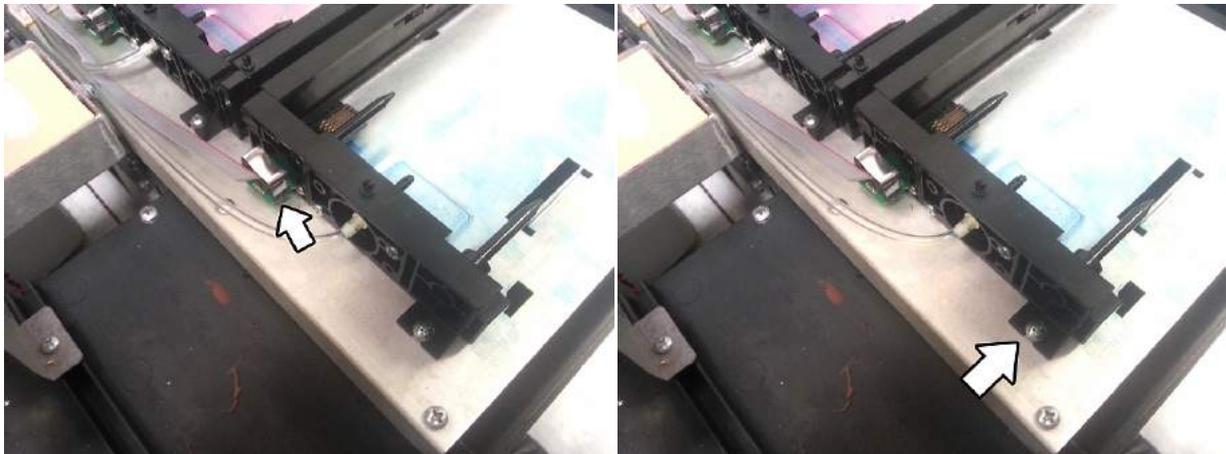
Photo 3.7.1

3. In order to replace the Needle Plate-Pin Shift Assembly also known as the ink chip reader assembly, we must remove the Side black plastic guides first. The first plastic guide will have 1 screw in the front. With the screw removed gently push down on the bottom cover and slide the black plastic guide out. See photo 3.7.2



Photo 3.7.2

4. Unplug the cable connected to the chip reader and the tube as well. The ink chip reader is held by 1 screw. Remove the screw and slide the the chip reader to the left to release it. See photo 3.7.3



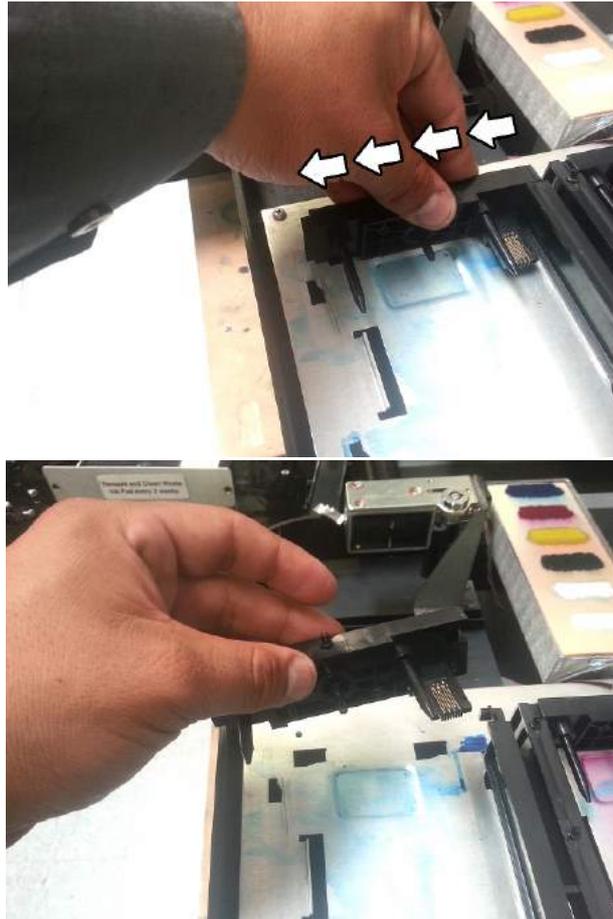


Photo 3.7.3

5. The rest of the black plastic guides will have the screws in between them. See photo 3.7.4

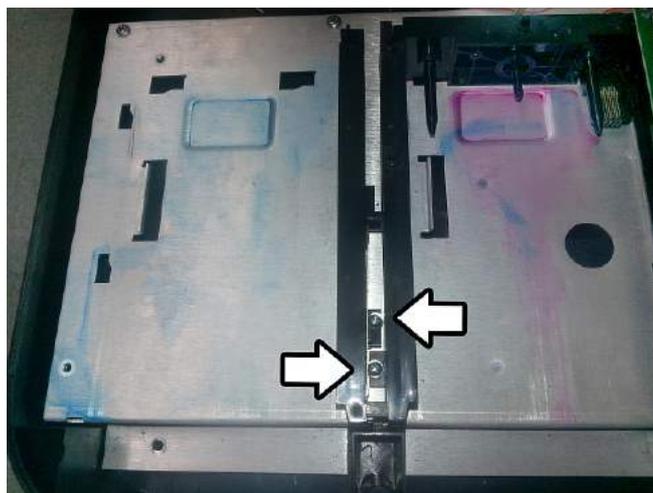


Photo 3.7.4

6. When you reach yellow and the first white you will see the ink slot board attached to it. Remove all cables connected to it and gently push up on the board. The board is only attached to 4 small tabs located on the black plastic guides. See photo 3.7.5

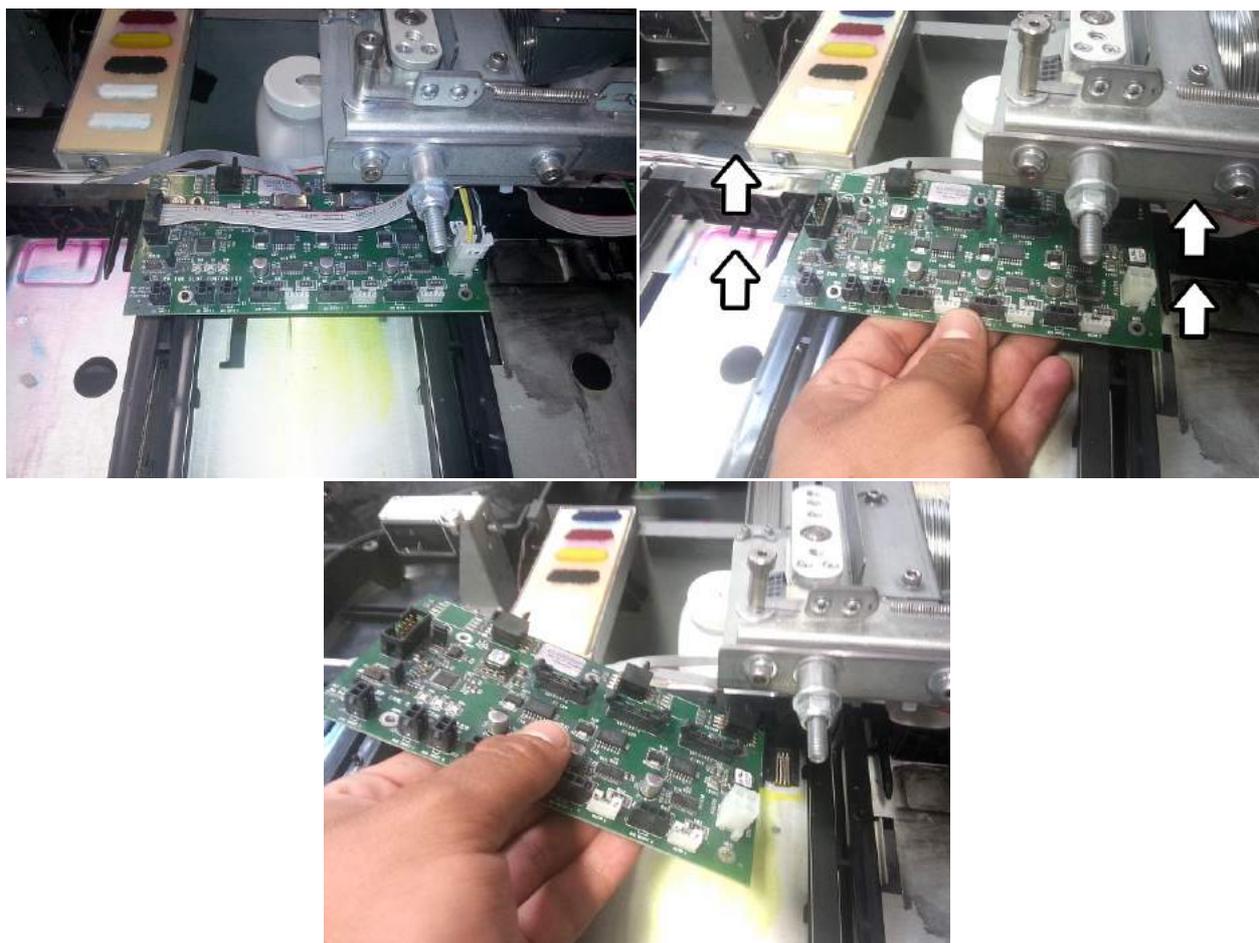


Photo 3.7.5

## Contact Block Replacement

The contact block can be damaged if ink or moisture is on the contacts resulting in a bad cartridge read out or error message. This can also affect the ink consumption calculation within the printer.

Each cartridge reader assembly will have a contact block chip. Newer model printers will have a quick release option while older machine will require to replace the entire assembly.

1. The chip will have two small tabs one on each side. Use a set of small tweezers to push on the tabs and slide the chip out. See photo 3.7.6

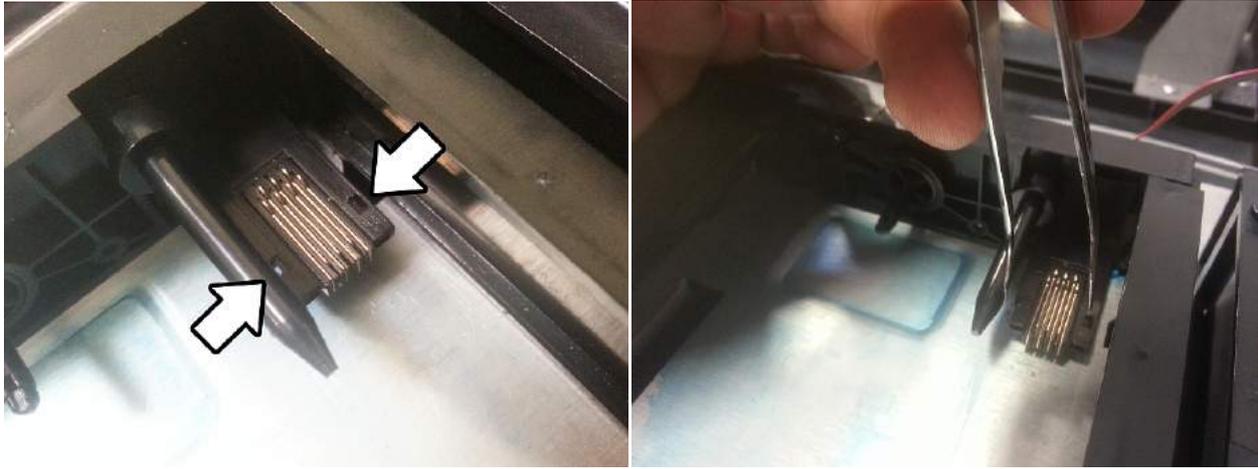


Photo 3.7.6

Replace with your new chip and insert cartridge once powered up to verify that its working. See photo 3.7.7



Photo 3.7.7

## 3.7.2 Ink Needle Replacement (CMYK)

### Tools Needed

- **Small flat head screwdriver**
- **Phillips screwdriver**
- **Needle Flate Fitting Assy (mP-i series) (P/N: 150582-0001)**

Ink needles can be clogged with improper maintenance or inactivity. Ink will dry within the needle resulting in bad ink flow and poor printing results. Depending on which needle you are replacing you may need to remove the ink bay cover. See section 3.7 for ink bay removal.

1. Use a small flat head screwdriver to gently push out the tube connected and gently pull on the tube to release it. See photo 3.7.2-1



Photo 3.7.2-1

2. The needle is held by 2 Phillip screws remove the screws and slide out the needle assembly. see image below.

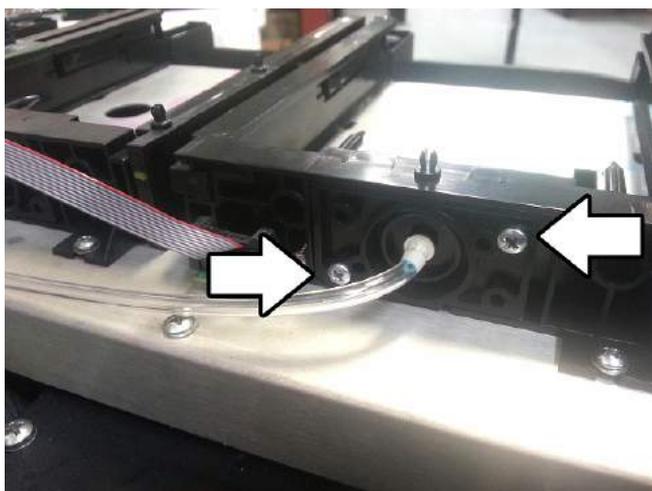




Photo 3.7.2-2

When connecting the tube back we recommend cutting the tip of the tube since it has been stretched. Connect the tube making sure it reaches the very end of the needle.

### Ink Needle Valve Replacement (White)

#### Tools Needed

- **Small flat head screwdriver**
- **Black needle assy. (mP-i series) (P/N: 150581-001)**

1. The white ink needle valve will have 2 tubes connected to it. Use a flat head screwdriver to remove the tubing. See photo 3.7.2-3

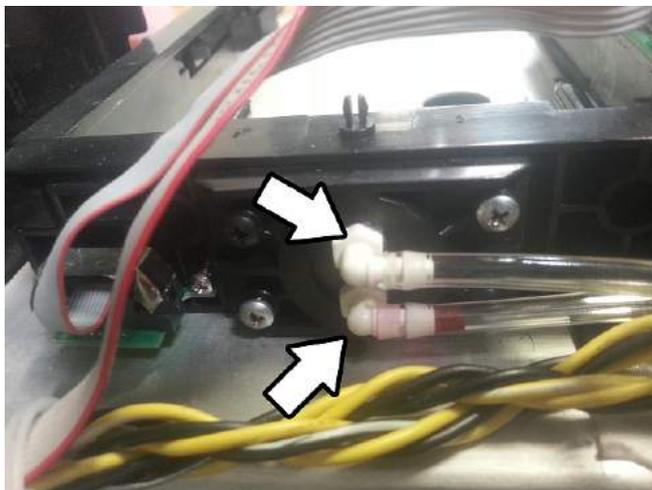


Photo 3.7.2-3

2. The Ink needle valves will have two phillip screws holding it down. Remove the chrome screws only to slide out the ink needle valve. See photo 3.7.2-4

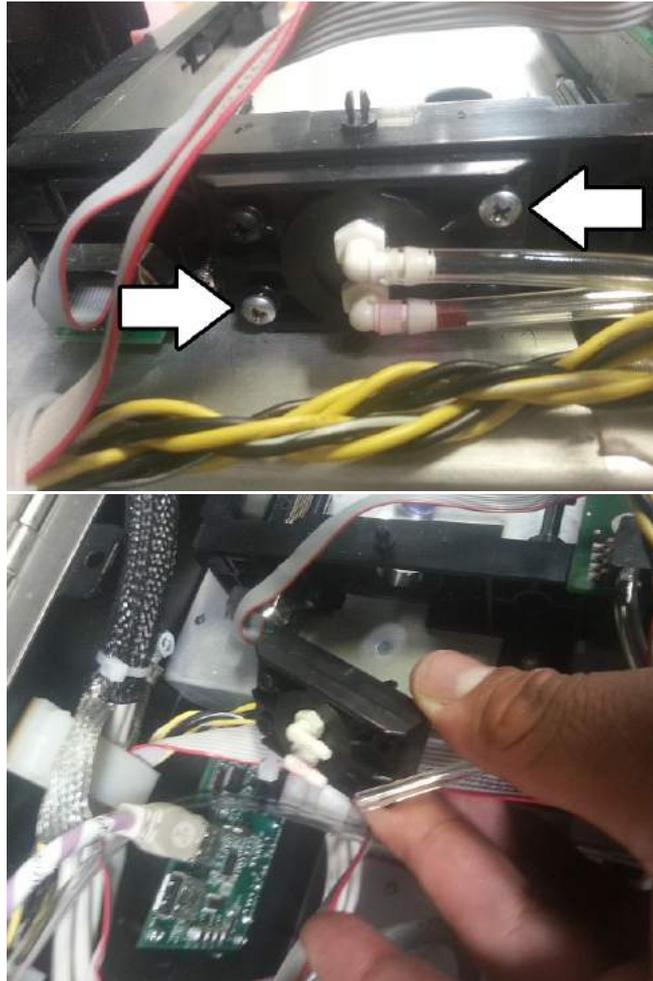


Photo 3.7.2-4

When connecting the tubes back we recommend cutting the tip of the tubes since it has been stretched. Connect the tubes making sure it reaches the very end of the needle.

## 3.8 Ink Slot Controller Board Replacement

### Tools Needed

### **Ink Slot Controller Board (CMY-Front Board P/N:51-20010-001) (BWW-Back Board P/N: 51-20010-002)**

The ink slot controller board can be damaged if ink or moisture is on it. Improper cable connections or contact can cause a short on the board resulting in bad cartridge read outs or error messages. The ink slot board will have a red light flashing or no lights indicating it is damaged or there is an error.

1. Begin by removing all the cables connected to the board. See photo 3.8.1

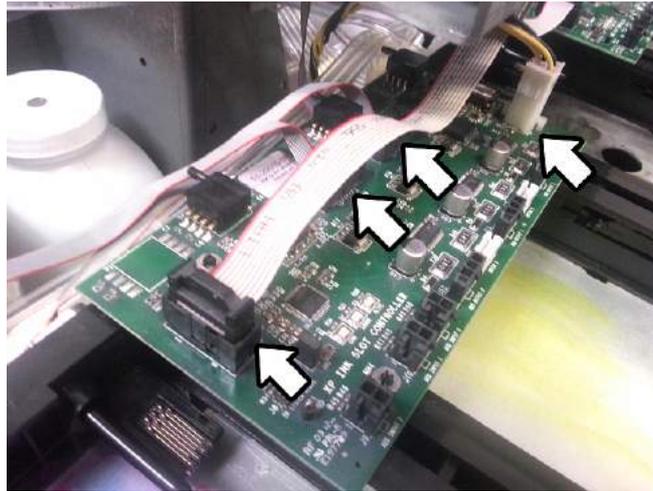


Photo 3.8.1

2. The board is only held by 4 tabs, gently push up on the board to release it. The tabs are located on the black cartridge slot guides. See photo 3.8.2

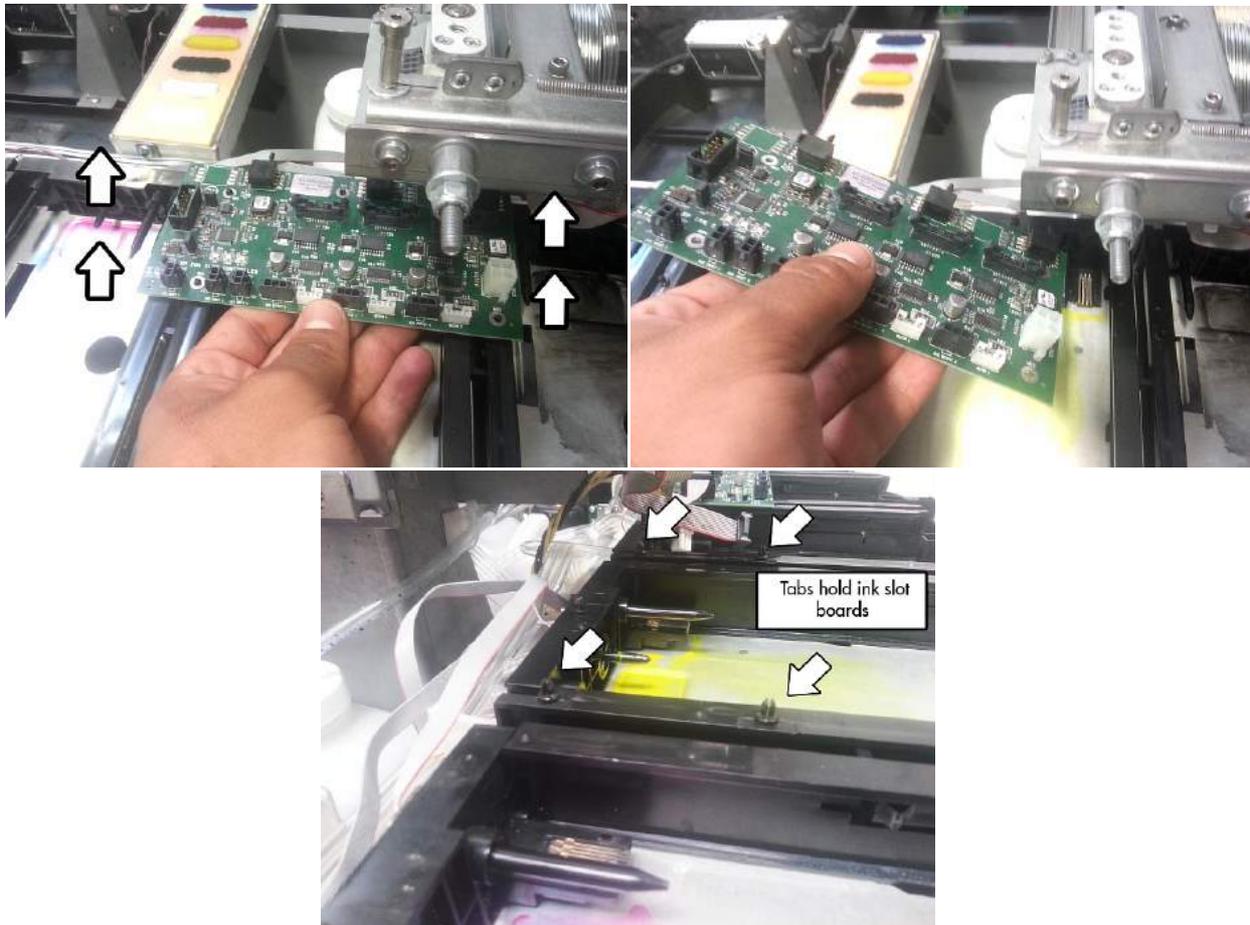
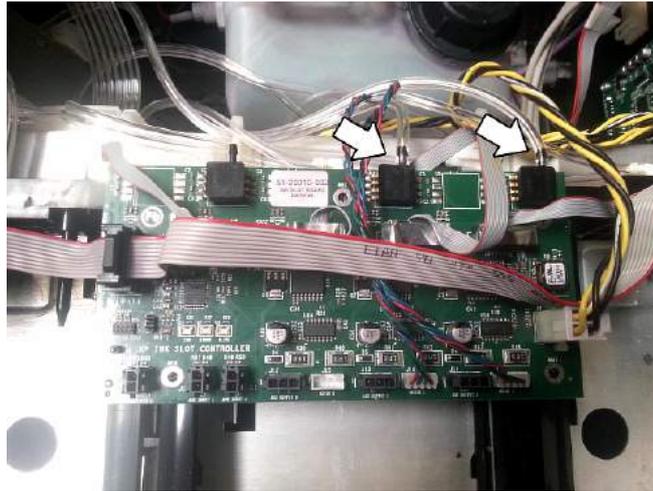


Photo 3.8.2

The Back ink slot board will be the same except you will have two pressure tubes connected to them. Use a small flat head screwdriver to gently push out the tubing



Replace your ink slot board and follow these steps backwards to put back your board.

### 3.9 USB-ETH-CAN Switch Board Replacement

#### Tools Needed

- Phillips screwdriver
- USB-ETH-CAN board ( P/N: 51-20020-001)

Ink or moisture can damage the board resulting in no communication of the printer or the carriage crashing. The board will show a red or no light if the board is damaged or if there is an error. Always check cable connection before replacing the board. The USB-ETH-CAN switch board will be located in the far right behind the waste ink tank. See photo 3.9.1

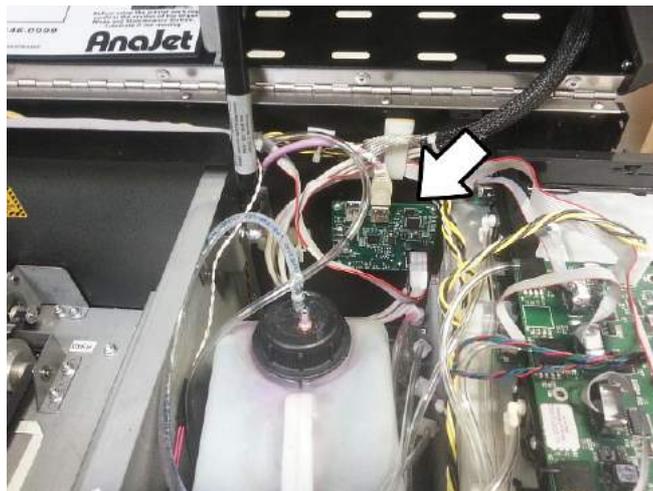


Photo 3.9.1

1. Begin by unplugging all the cables connected to the board. You will have 3 cables to disconnect. See photo 3.9.2

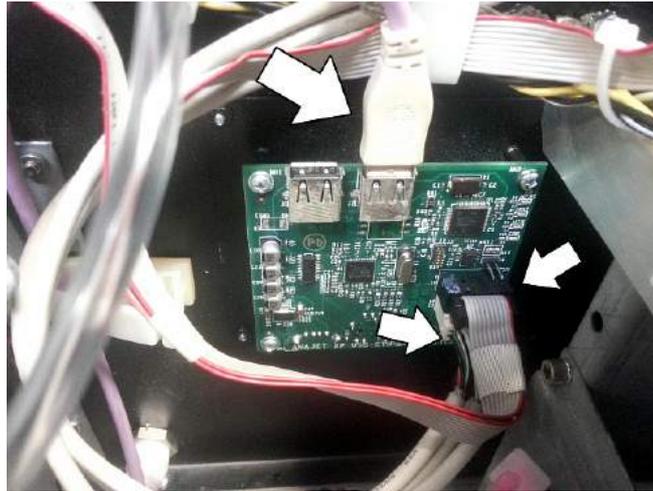


Photo 3.9.2

2. The board is held by 4 phillip screws. Remove the 4 screws and remove your board. See photo 3.9.3

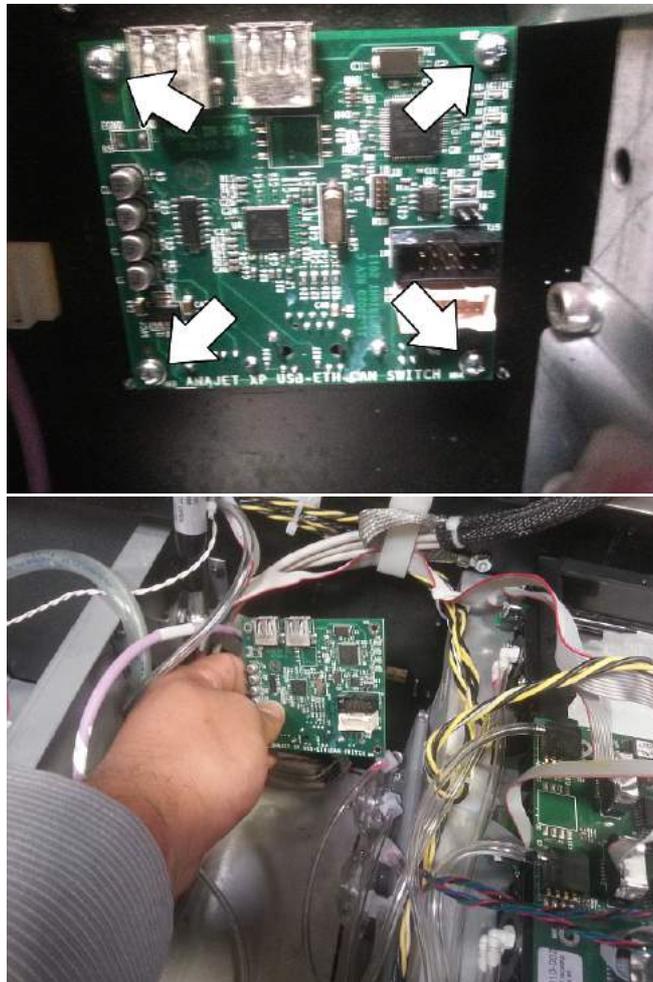


Photo 3.9.3

Replace your board and follow these steps backwards to reassemble your USB-ETH-CAN board.

## 3.10 Table Motion Control Board Replacement

### Tools Needed

- Phillip Screwdriver
- Table Motion Control Board (P/N: 51-20007-001)

Ink or moisture can damage the board resulting in no movement of the table or bad and rough movement. The board will show a red or no light if the board is damaged or if there is an error. Always check the cable connection before replacing the board. The table Motion Control board will be located in the far end of the table railing.

1. Begin the disconnecting the 4 cables below. The last cable is easier to disconnect once the board is removed. See photo 3.10.1

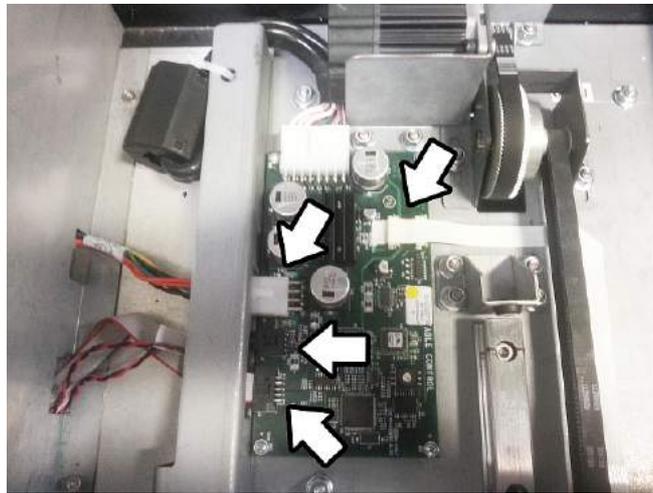


Photo 3.10.1

2. Remove the 4 screws one on each corner to remove the board, this will now give you easier access to unplug the remaining cable. See photo 3.10.2





Photo 3.10.2

Replace your new board and plug in the last cable first before securing the board down. Follow these steps backwards.

## 3.11 Carriage Motion Control Board Replacement

### Tools Needed

- Phillip Screwdriver
- Carriage Motion Control Board (P/N: 51-20007-002)

Ink or moisture can damage the board resulting in the carriage crashing, bad or rough carriage movement. The board will show a red or no light if the board is damaged or if there is an error. Always check the cable connections before replacing the board. The Carriage Motion Control Board will be located in the far left in front of the power supply. See photo 3.11.1



Photo 3.11.1

1. Reach in and disconnect all the cables connected to the board there will be a total of 4 cables connected. See photo 3.11.2

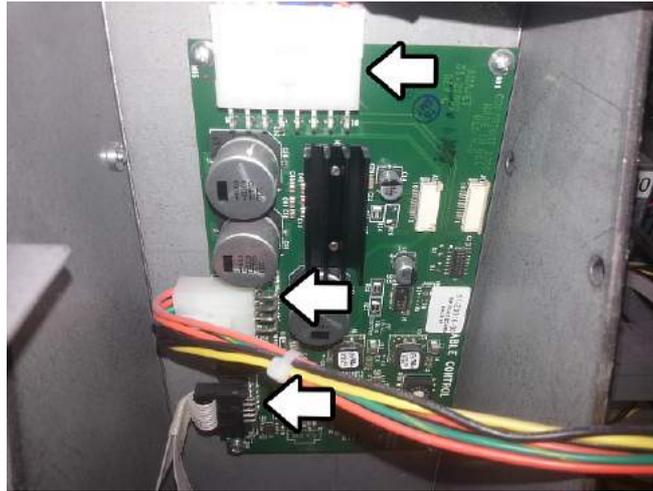


Photo 3.11.2

2. Use a small screw driver to remove the board. The board will have 4 phillip screws 1 on each corner. See photo 3.11.3

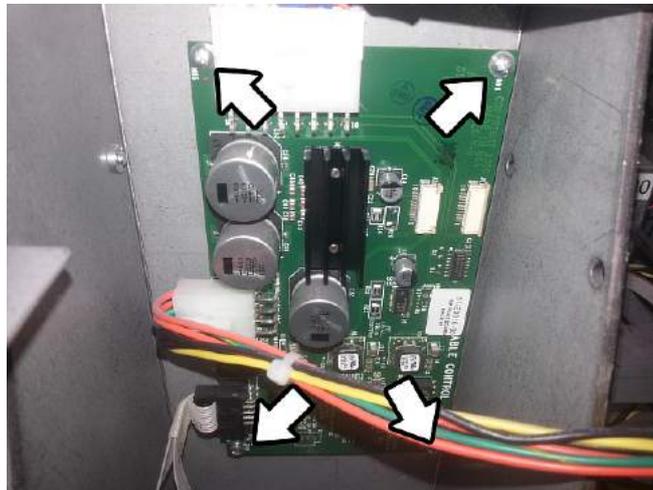


Photo 3.11.3

Replace your board and follow these steps backwards.

## 3.12 Power Supply Replacement

### Tools Needed

- 3/32 hex key/Allen Key
- Power supply box (P/N: ANA-A-223)

The power supply can be damaged from excessive moisture or ink over spray build up. Power spikes can damage the power supply we always recommend having a UPC (uninterruptible power supply) or a surge protector connected to the printer. A red light inside power supply will indicate an error. If the machine is receiving no power and cannot be turned on we must replace the power supply. The power supply box will be located in the far left corner of the printer. see image below.

1.Begin by unplugging all the cables connected to the power supply box. See photo 3.12.1

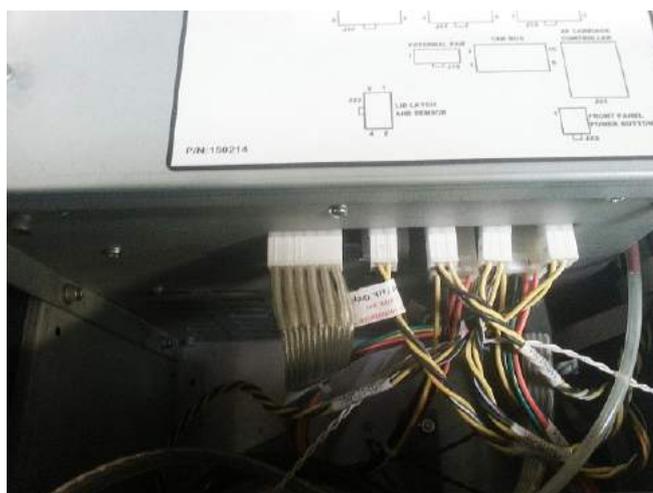


Photo 3.12.1

2. The power supply will have 4 hex screws in the back. Use a 3/32 hex key to remove the screws. Inside the printer you will have 2 more hex screws to remove. See photo 3.12.2



Photo 3.12.2

3. Your power supply should now slide forward and out. See photo 3.12.3



Photo 3.12.3

Replace your power supply box and follow these steps backwards to reassemble your power supply. On the lid of the power supply you will see a diagram showing you where the cables connect back into.

## 3.13 Control Panel Assembly Replacement

### Tools Needed

- **Phillips Screwdriver**
- **Control Panel Replacement (MP5 Control panel P/N:150240-001) (MP10 Control Panel P/N:150239-001)**

Control panel can become damaged due to electrical surges or improper cable connections. A black screen, bad buttons or bad usb/sd card connections are common symptoms of a damaged control panel.

1. The control panel is held by 2 phillip screws located on the inside of the front cover. See photo 3.13.1

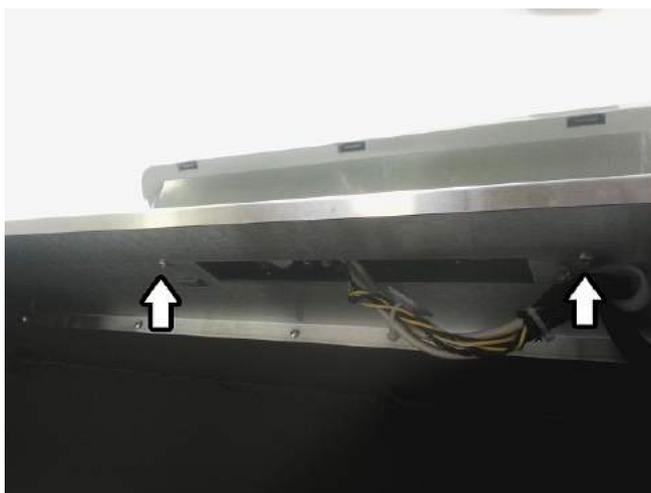


Photo 3.13.1

2. Once its been removed disconnect the 4 cables connected. See photo 3.13.2



Photo 3.13.2

Replace your control panel and reverse these steps. See photo 3.13.3



Photo 3.13.3

### 3.13.1 Control Panel O-MAP Board Replacement

#### Tools Needed

- Phillips Screwdriver
- O-MAP Board (P/N: 51-20019-001)

1. Control panel O-MAP board is held by 4 screws. Use a small wrench (3/16) to remove the screws and the board. See photo 3.13-1



Photo 3.13.-1

The Control Panel Mother board will have a small connection underneath, when replacing your board make sure this connection is plugged in. See photo 3.13-2

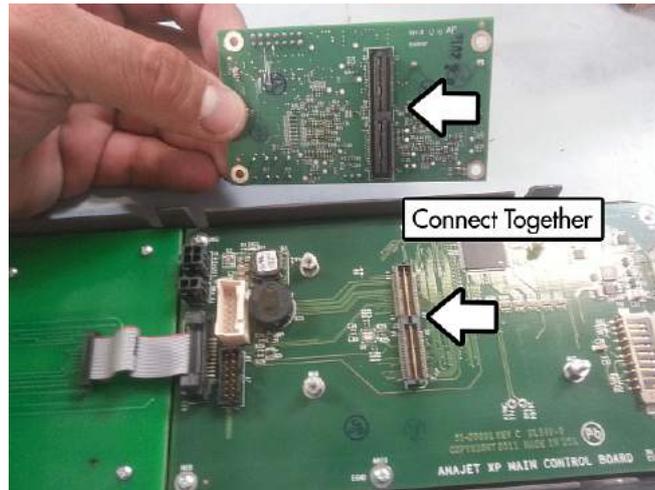


Photo 3.13-2

## 3.13.2 Control Panel I-O Board Replacement

### Tools Needed

Phillips screwdriver

I-O Board (P/N: 51-20001-001)

1. Remove the control panel see section 3.13 and the O-MAP board see section 3.13.1
2. Unplug the single cable located to the left of the board. See photo 3.13.2-1

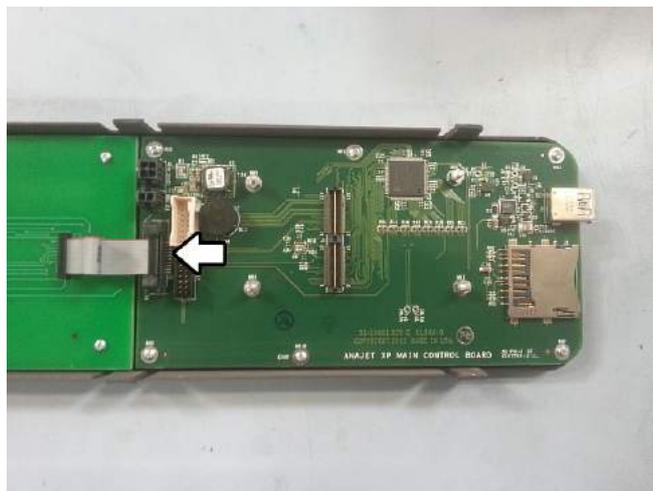


Photo 3.13.2-1

3. The board is held by 6 phillip screws. There will also be a small ribbon cable connected underneath. DO NOT pull on the board just yet. See photo 3.13.2-2

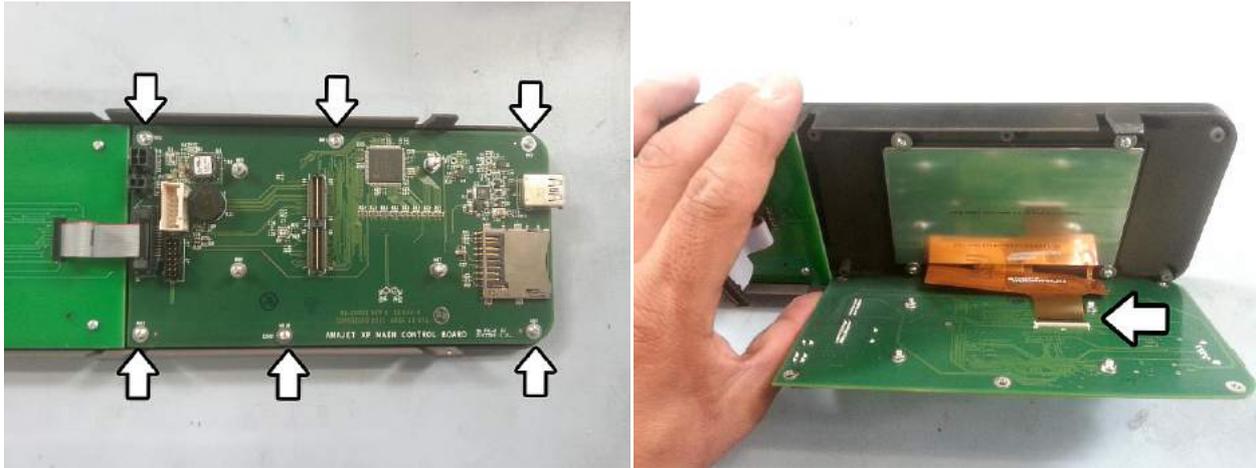


Photo 3.13.2-2

4. There will be a small black tab on the connector, move the tab upwards to release the cable. See photo 3.13.2-3



Photo 3.13.2-3

### 3.13.3 Replacing LCD Screen

#### Tools Needed

**Phillips Screwdriver**  
**LCD Screen (P/N: 150828-001)**

Pixels can be damaged from over heating or physical damage to the LCD will require a replacement.

1. Begin by removing the control panel see section 3.13 and remove the I-O board see section 3.13.2
2. The LCD is held by 4 small phillip screws. Remove the screws to release the LCD. See photo 3.13.3-1

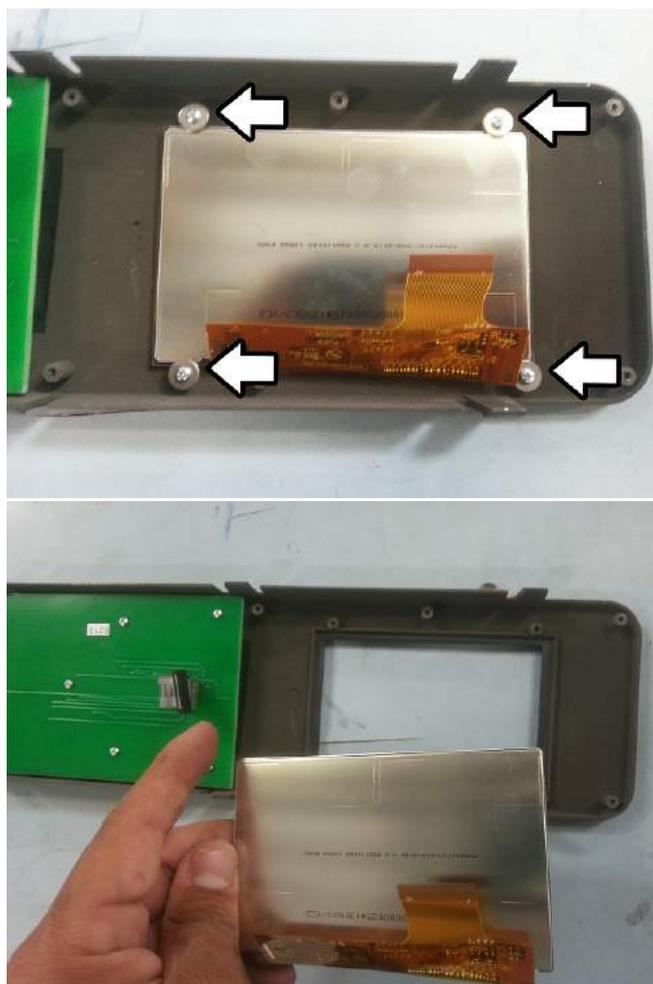


Photo 3.13.3-1

Replace your LCD and follow these steps backwards. Its very important that the LCD ribbon cable is properly connected. If the ribbon cable is not making good contact your LCD screen will not work.

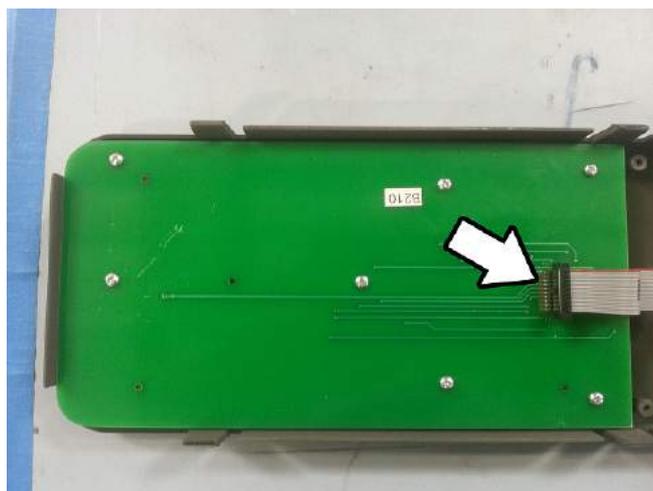
## 3.14 Button Assembly Replacement

### Tools Needed

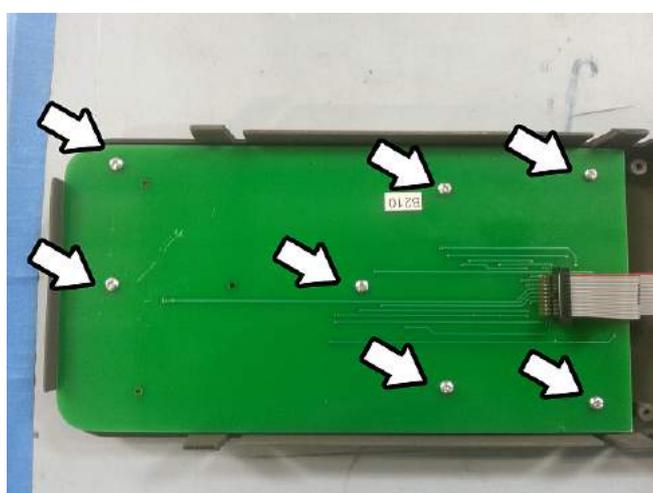
**Phillips Screwdriver**  
**Button assembly (P/N:**

If a button is damaged or is no longer working the button assembly must be replaced.

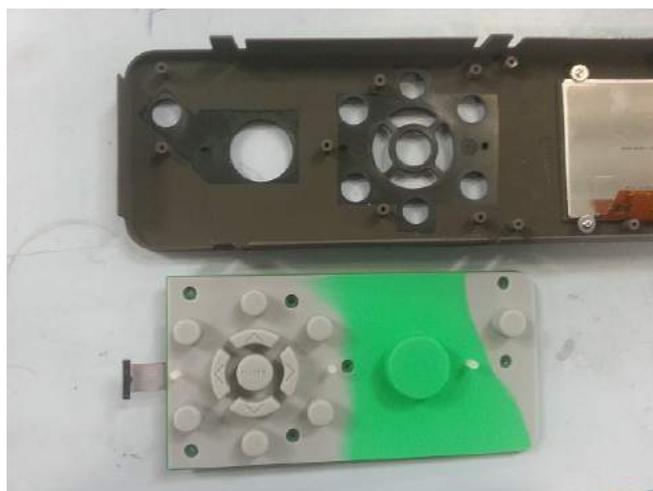
1. Remove the control panel and the control panel cover see section 3.14
2. Unplug the cable connected to the board see image below.



3. The button assembly is held by 7 small phillip screws. Remove the screws to release the button assembly see image below



4. Reverse these steps to assemble your control panel back into your printer.



## Part #

Damper (mP5) (single)	150385-001
Damper Double High Capacity (mP10) (Single)	150551-001
Damper Sub (MP-5i)	150552-001
Damper Sub High Capacity (MP10)	150553-001
Y-Fitting Valve Assembly	150591-001
Check Valve Assy	150583-001
Y Splitter	150529-001
Wiper Blade (set of 2)	150522-S
Bottom Head Plate Mp10	150123-001

<b>Bottom Head Plate Mp5</b>	<b>150183-001</b>
<b>Maintenance Station (MP5-I)</b>	<b>150601-001</b>
<b>Maintenance Station (MP10-I)</b>	<b>150601-002</b>
<b>Printhead</b>	<b>150200-001</b>
<b>Main tube set feed (print lines)</b>	<b>150205-001</b>
<b>Tubeset ( purge lines)</b>	<b>150207-001</b>
<b>TUBE NUT 7MM &amp; O-RING 4MM (1 set)</b>	<b>150386-001</b>
<b>PurFlo 25mm Dia Capsule Filter</b>	<b>150377-001</b>
<b>Back Needle Assy (mP-i series)</b>	<b>150581-001</b>
<b>Needle Plate Fitting Assy (mP-i series)</b>	<b>150582-001</b>
<b>Circulation pump</b>	<b>150358-001</b>
<b>Control Panel Assembly (mP10)</b>	<b>150239-001</b>
<b>Control Panel Assembly (mP5)</b>	<b>150240-001</b>
<b>USB high flex cables (purple)</b>	<b>150413-001</b>
<b>Can-Bus Cable 185" (Grey Cable to All Boards)</b>	<b>150160</b>

<b>USB Hub – Main Control Cable</b>	<b>150178</b>
<b>Ethernet high flex cables</b>	<b>150414-001</b>
<b>Cable, 51-20010 to 51-20018</b>	<b>150422-001</b>
<b>Cable, 51-20010 to 51-20018 (long)</b>	<b>150423-001</b>
<b>Wiper Slider Assembly</b>	<b>150600-001</b>
<b>Needle Plate-Pin Shift Assembly (T-Board Inc)</b>	<b>150479-001</b>
<b>Contact Block Assembly</b>	<b>150575-001</b>
<b>Ricoh Gen 4 Carriage Controller</b>	<b>51-20003-001</b>
<b>Ricoh Gen 4 Print head Controller</b>	<b>51-20004-001</b>
<b>Carriage Motion Control PCBA</b>	<b>51-20007-001</b>
<b>Table Motion Control PCBA</b>	<b>51-20007-002</b>
<b>Cartridge Slot PCBA (CMY) Front</b>	<b>51-20010-001</b>
<b>Cartridge Slot PCBA (KWW) Back</b>	<b>51-20010-002</b>
<b>XP Maintenance Station PCBA</b>	<b>51-20012-001</b>
<b>USB-ETH-CAN Switch</b>	<b>51-20020-001</b>

<b>Power Supply (Mpower)</b>	<b>ANA-A-223</b>
<b>Table Y Axis (whole assembly)</b>	<b>ANA-A-430</b>
<b>Encoder strip</b>	<b>ANA-P-199</b>
<b>Drain tube - MP</b>	<b>150154-001</b>
<b>Thrust Bearing (Table Lift)</b>	<b>150330-001</b>
<b>Wiper Arm</b>	<b>150574-001</b>
<b>Table Belt</b>	<b>150297-001</b>
<b>Carriage Belt</b>	<b>150297-001</b>
<b>Motor Nema (no pulley)</b>	<b>150294-001</b>
<b>Maintenance Station Pump</b>	<b>150595-001</b>
<b>Auxiliary Waste Tank Spare (Overflow Tank)</b>	<b>150480-001</b>
<b>Gauge - Carriage Height Tool</b>	<b>150567-001</b>
<b>Flag Gauge</b>	<b>150620-001</b>
<b>Table Gauge</b>	<b>150621-001</b>
<b>Laser Gauge</b>	<b>150622-001</b>

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<b>Wiper Gauge</b>	<b>150617-001</b>
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<b>Lube Oil 4oz Bottle</b>	<b>150646-001</b>
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<b>Pink Lubrication Solution</b>	<b>150619-001</b>
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<b>Syringe Kit</b>	<b>100774</b>
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<b>Service Repair Tool Kit</b>	<b>SERV-KIT</b>
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