

**AnaJet® mPower™ Digital Garment Printer**

**User's Manual**

**Version 1.5**

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# Chapter 1: Product Information

Congratulations on your purchase of an AnaJet® mPower™ Printer. AnaJet is committed to providing our customers with the best in training materials and through this User Manual it is our aim to get you up and printing in the shortest time possible. We also offer full training in a hands-on classroom environment at our offices in California and highly recommend that you attend. Our AnaJet University enables new users to work directly with our expert trainers and we have found that those who attend get the most out of the system in the shortest amount of time. If you want the most comprehensive training to ensure higher productivity and trouble-free printer operation please contact our offices to schedule your free training at AJU at your earliest convenience. If you are outside the USA, your licensed AnaJet distributor will be happy to provide you the proper training on the use and maintenance of the printer.

## 1. Printer Specifications

<b>Printing Method:</b>	Direct to Garment Inkjet printing
<b>Print Head Technology:</b>	Print on demand piezoelectric inkjet
<b>Printing Resolution:</b>	600 x 300, 600 x 600, 1200 x 600 dpi
<b>Print Channels:</b>	6 (Cyan, Magenta, Yellow, Black and 2 channels of White)
<b>Printable area:</b>	14" x 18" (35.6cm x 45.7cm) Main Print Table
<b>Mechanical:</b>	
Garment loading method:	Hooped Print Table
Garment Path:	Shuttling Print Table
Ink Supply:	Sealed Ink Cartridges
Printer Dimensions:	19.8" x 42.3" x 44" (50.3cm x 107.4cm x 111.8cm)
Table Height Adjustment:	Up to 3" (7.6cm)
Weight:	Approx 180 lbs (81.6Kg)

### Electrical:

Input Voltage Range	90– 245V
Input Frequency Range	50 – 60 Hz
Power Consumption	2.0 A (maximum) 0.65 A (idling)



### 3. System Requirements

AnaJet® printers are designed to be used with a PC running Windows XP, Windows Vista, Windows 7 or Windows 8 Operating System. The programs needed to run your mPower™ printer do not work on an Apple computer system unless it is running Windows emulation software such as Parallels, Bootcamp or others that allow one to run the Windows Operating System on Apple computers. A PC with an operating system other than Windows XP, Windows Vista, Windows 7 or Windows 8 will not be able to run the printer software.

To run the AnaJet mPower printing program and typical graphics programs used for image editing applications such as Photoshop and CorelDraw, the following hardware specifications are suggested.

<b>Minimum System</b>	<b>Recommended System</b>
Pentium 4, running at 1GHz	Pentium 4, running at 3.0+ GHz, or Pentium Duo Core, running at 2.0+ GHz
1 GB of RAM	2+ GB of RAM
10 GB of free Hard Disk space	20+ GB of free Hard Disk space
VGA Monitor	1024 x 768 + Resolution Monitor
USB 2.0 ports	USB 2.0 ports
Ethernet Port (optional)	Ethernet Port (optional)

Please note that the amount of RAM required varies depending on the number and kinds of applications you will be running. The more memory (RAM) you have, the more efficiently your programs will run. Generally speaking, the best value for your computer investment dollar will come from more memory. In a tight budget situation, allocate more money to upgrade RAM. 2 GB or more is preferable for graphic and printing applications.

### 4. Computer Interface Requirements

There are no specific interface requirements except that your computer must be running a Windows operating system and have an available USB 2.0 port to connect to the mPower™ printer.

### 5. Consumables

Inks for printing and Cleaning Solution are the primary consumables use by the mPower™ printer. PowerBright inks are water-based pigment printing inks used for printing on cotton, cotton blends and other common natural fiber materials. PowerBright™ ink is available in five colors: Yellow, Magenta, Cyan, Black and White.

For printing on dark colored garments with PowerBright White Ink, it is necessary to pretreat the area to be

printed with PowerBright™ Pretreatment Liquid.

We offer other treatment solutions that will let you print on many other items like light colored polyester fabrics, wood, glass, tile and more using our PowerBright inks.

This User Manual provides general guidelines for using PowerBright™ ink. But there is a great deal of variation on the way digital inks interact with a specific textile material. The ink performance can vary significantly depending on the exact chemical characteristics of the textile and the way the fabric is woven or knitted. It is not uncommon for garment manufacturers to treat the fabric with special chemicals for various reasons. Thus, the performance of AnaJet® inks on a specific fabric may vary significantly and the ink may not work for a given garment type. AnaJet does not guarantee its inks will work on a specific garment. **If you are printing on an unfamiliar fabric, it is always necessary to test your results before beginning a production run.**

See Appendix 1 for the list of consumables. Keep a reasonable quantity of consumables on hand so as not to run out, but do not stock up too many ink cartridges as they have expiration dates. Use all ink cartridges before the indicated expiration dates. Generally, PowerBright CMYK inks expire 12 months after the manufacturing date that is printed on the cartridge. PowerBright™ White ink expires in 6 months from the manufacturing date. Cleaning Solution and Pretreatment Liquid have much longer shelf lives, typically 3 years. Do not use expired inks as they tend to clump and will clog the ink delivery system and Print Head, thus damaging the printer.

## 6. Customer Training Checklist

Through the use of this manual you will become acquainted with all of the items in the list below to complete your training

- 1) Today's direct to garment printers need the correct operating environment, regular maintenance for trouble-free operation.
- 2) Leveling the Printer and proper Printer Placement for good print quality.
- 3) Loading Garments on the Print Table and Placement of Garment on Print Table in relation to the Graphics program / Print Preview.
- 4) Obstruction (laser) Sensor.
- 5) Print Head Cleaning, Nozzle Check, Print Nozzle Purge, etc.
- 6) The need for Regular Printer Maintenance and Cleaning.
- 7) Accessing Maintenance Station / Moving the Carriage off the Maintenance Station.
- 8) Cleaning Maintenance Station, Nozzle Plate Edges, etc.
- 9) Printer Environment, Humidity and Temperature.
- 10) Waste Ink Drain operation.
- 11) Control Panel Functions and Navigation.
- 12) Proper Black Shirt Pretreatment.
- 13) Printing white shirts / printing black shirts.
- 14) Proper use of RIP program.
- 15) Installing ink cartridges, low ink warnings, replacing ink cartridges.
- 16) How to ship the printer. Charge cleaning solution, use original shipping box and pallet.

## Chapter 2: Startup of a New Printer

### 1. Unpacking the Printer

Before unpacking the printer be sure that you have set up the environment where the printer will be operating. Ensure that you have proper power for the printer, check that the environmental requirements are being met and set up a sturdy, stable and level table to place the printer on.

The printer box should always be placed right side up as indicated by the arrows printed on it. Remove the poly wrapping and the strapping. Remove the top lid, upper foam and separator sleeve. With the help of 4 people, one at each corner of the printer (DO NOT LIFT USING THE INK BAY COVERS), lift the printer from the box. \*Do not attempt to lift the printer alone as it could damage the printer and cause injury.

Place the printer on your table.

**Make certain that you keep all of the packing materials. If the printer needs to be shipped for any reason including warranty repair it cannot be properly protected without them.**

### 2. What's in the Box

- AnaJet® mPower Printer
- Power cord
- USB cable
- AnaJet mPower™ User Manual (this document)
- 1 set of CMYK ink cartridges and 2 white ink cartridges (a total of 6 cartridges)
- 6 cartridges of PowerBright Cleaning Solution
- Cleaning Fluid (2 Oz. bottle) (for Maintenance Station, Wiper Blade, etc.)
- Cleaning Applicators (1 pack)
- Lint-free wipes
- 1 box of AnaJet SoftTouch Heat Press Paper
- 1 bottle of PowerBright White Ink Pretreatment Liquid (64 Oz.)
- Key for Top Cover Latch
- 1 syringe for maintenance procedures

All items other than the printer are packaged in an Accessory Box inside the printer box. Keep all accessory items handy for future use.

### 3. What Else is Needed

The following items will also be needed for your AnaJet printer operation:

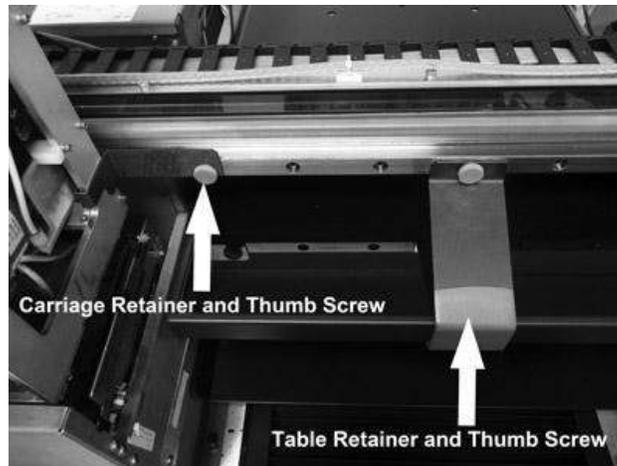
- 12 or 9 inch level (commonly called a “torpedo level”) for installation of the printer.
- Electronic hygrometer/thermometer (to monitor the relative humidity of the room the printer is operating in).
- PC computer with Windows XP, Vista, Windows 7 or Windows 8 operating system.
- Graphics software installed in the PC, such as Photoshop, CorelDraw, Photoshop Elements or Illustrator.

- Heat press or textile oven (for heat curing of the ink).
- Adequate supply of garments to print.
- Paper towels.
- Standard 8.5" x 11" copying or printing paper.
- High Volume Low Pressure (HVLV) electric sprayer or other type of sprayer for applying pretreatment for dark garments.

#### 4. Setting up the Printer

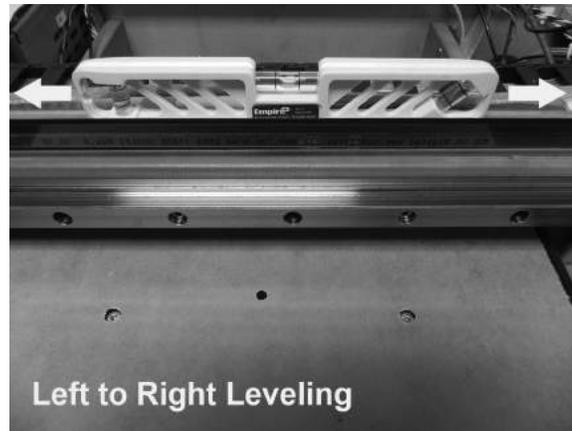
- It is very important that the printer be operated on a stable, sturdy and level table. Ensure that the table is sturdy enough so the printer does not shake or vibrate during operation. Operating the printer on an unstable, uneven or slanted surface will cause poor print quality and could damage the printer.
- Unlatch the Top Cover using the key provided and turning counter-clockwise. Hold the key in this position and lift the cover.
- Locate the Table and Carriage Retainers. (see figure 2.4)  
Remove thumb screws holding the Table and Carriage Retainer in position. (see figure 2.4). **Keep the Retainers and Thumb Screws for future use for printer shipment.**

Now you can move the Print Table manually back and forward to make certain that the Print Table is free. Take a look at all internal mechanisms to make sure that nothing has been damaged during shipping.



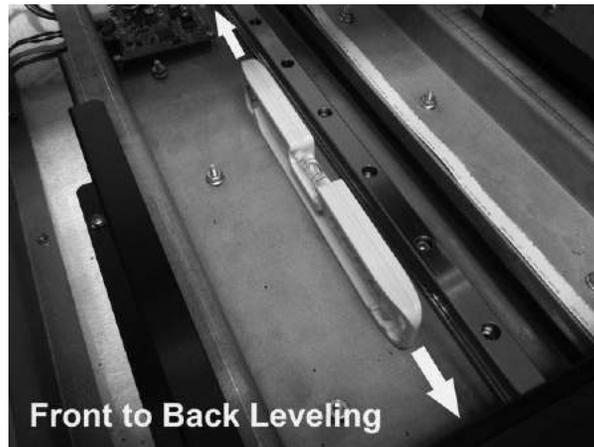
**Figure 2.4: Table Retainer**

- Next it is necessary to make certain that the printer itself is level. There are 6 adjustable feet under the case of the printer. To level the printer on the left to right axis, open the printer's top cover and place a 9" or 12" "torpedo level" on the plate behind the carriage drive belt (see figure 2.4a).



**Figure 2.4a: Leveling the Left to Right Axis of the Printer**

To level the printer on the front to rear axis, open the printer's top cover and place the level next to the rail below and behind the print table. (see figure 2.4b).

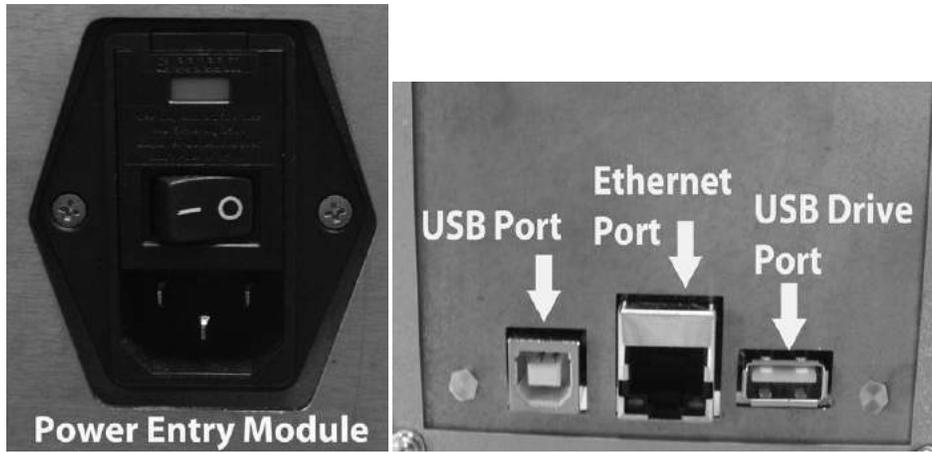


**Figure 2.4b: Leveling the Front to Rear Axis of the Printer**

Double check the left to right axis to confirm that it is still level and then lower the 2 front adjustable feet that are located under the loading table to stabilize the printer.

## **5. Cabling and Power Up**

- Plug in the provided power cord to a surge protector connected to a wall outlet. AnaJet® mPower™ printer power supplies will accommodate voltages ranging from 90 to 250 volts. Next, plug the power cord into the power entry module in the rear of the printer. Do **not** plug the USB Cable into the printer or PC at this time.



**Figure 2.5: Plug in the Power Cord and USB Cables**

- Turn on the power switch on the rear of the Power Entry Module; this will bring power into the printer's power supply. Now press the <POWER> key on the front control panel. The printer control panel LCD display will light up and the printer is now fully powered on and able to do its automatic ink circulation and maintenance. (Please note due to this two-stage power on sequence, that if the printer loses power due to an outage it will not fully power on when the electricity is restored. If you are in an area where your electrical power is inconsistent you may want to invest in an Uninterruptible Power Supply (UPS) that will supply battery backup power to your printer during an electrical outage.



**Figure 2.5a: Printer Control Panel Display**

## 6. Before Filling the Printer With Ink

\*When setting up the printer for the first time we highly recommend that you call Technical Support to walk you through the complete process.

Before we add ink to the printer we will do a quick check to ensure that the printer is operating correctly. To do this we will power up the printer at the control panel and observe that following printer functions are done. After pressing the <POWER> key on the control panel, the control panel display will show the AnaJet mPower flash screen and then it will initialize and finish at the **Jobs Menu**. During this initialization observe the printer movement through the table opening. You should see the print carriage move to the right and then back to its home position and then the print table will move out to its load position.

We now need to check that the wiper blade is functioning, on the Control Panel, press the <MENU> button, then scroll down to **MAINTENANCE FUNCTIONS** and press the <ENTER> key. Scroll down to **WIPE PRINT NOZZLES** and press <ENTER>. Look into the table opening at the left side and you should see the wiper assembly move to the engage position, the print carriage will move across it and then the wiper will return to it's home position and the print carriage will also. If any of these functions are not operating or you are not sure if they are, please contact Technical Support for assistance.

## 7. Filling the Printer with Ink

Your printer was shipped with the ink delivery system partially filled with Cleaning Solution to preserve the integrity of the ink delivery system and prevent the printheads from drying out. The Cleaning Solution has to be removed prior to filling the printer with the printing inks. Follow the procedure below to flush the Cleaning Solution from the system. Do not install the ink cartridges at this time.

The AnaJet® mPower™ printers utilize a fully circulating ink delivery system for the White Ink Channels that uses 2 sets of tubing. The first set is called the Print side and the second set the Purge side.

- Press the <MENU> button, then scroll down to **Maintenance Functions** and press the <ENTER> key. Highlight **Startup Fill** and press the <ENTER> key. Select **Fill Purge Lines** and press <ENTER>.

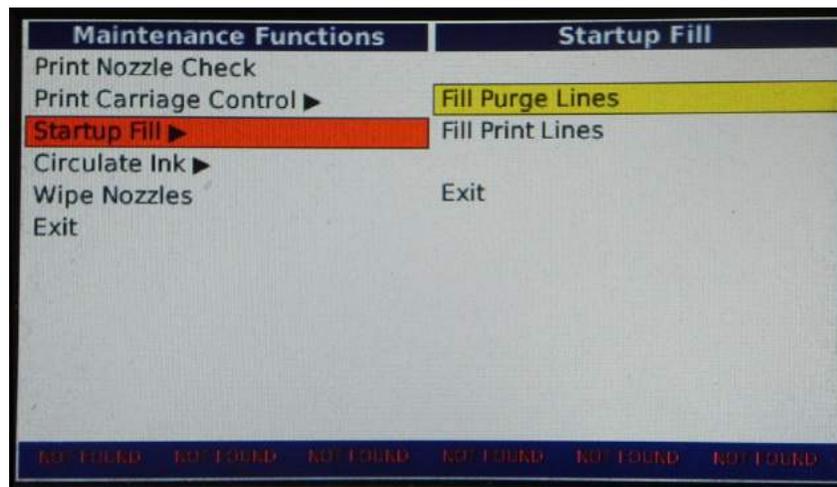
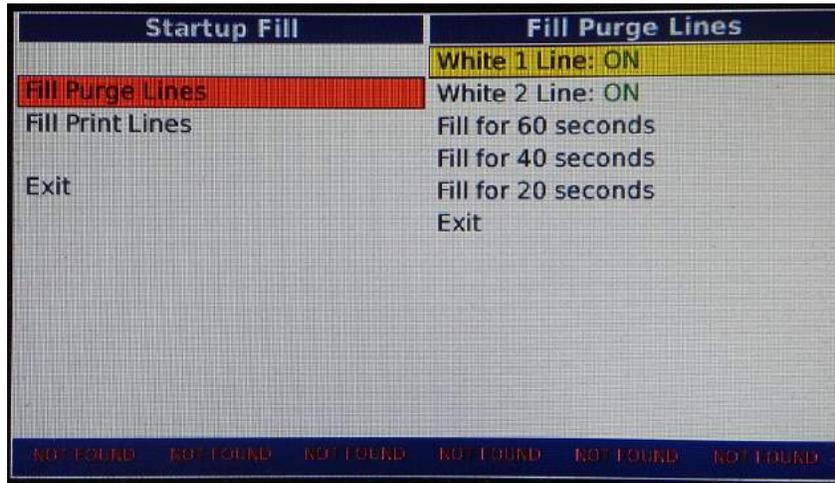


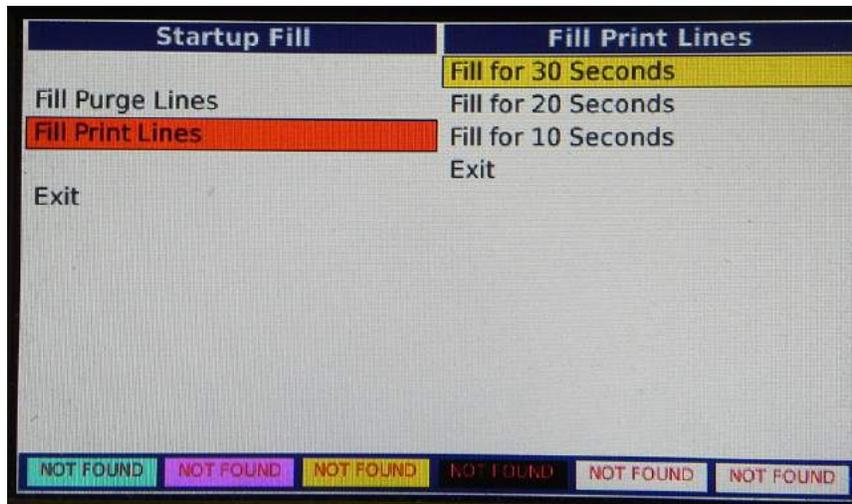
Figure 2.7: Startup Fill Menu

- You will see the following menu.



**Figure 2.7a: Fill Purge Lines Menu**

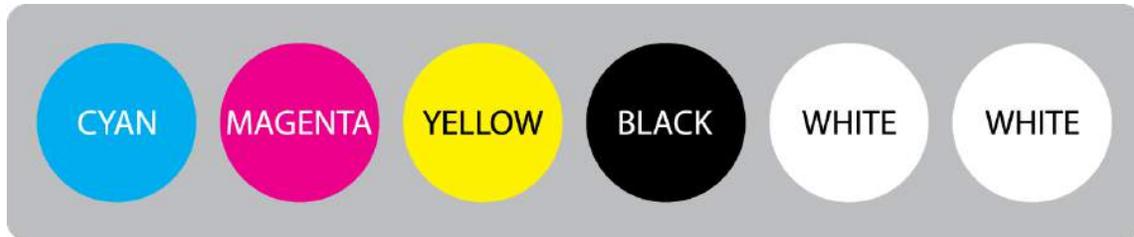
- Be sure that both **White 1 Line** and **White 2 Line** are **ON** and then select **Fill for 60 seconds** and press <ENTER>. When completed select **Fill for 60 seconds** and press <ENTER> to run this fill for a second time. The purge lines now will have adequately been cleared of Cleaning Solution. Select **Exit** and press <ENTER> this will take you back to the **Startup Fill** menu.
- Now select **Fill Print Lines** and press <ENTER>, Select **Fill for 30 Seconds** and press <ENTER>. When completed select **Fill for 30 Seconds** again and press <ENTER>. The print lines now will have adequately been cleared of Cleaning Solution. Select **Exit** and then press the <ENTER> key to return to the **Startup Fill** menu.



**Figure 2.7b: Fill Print Lines Menu**

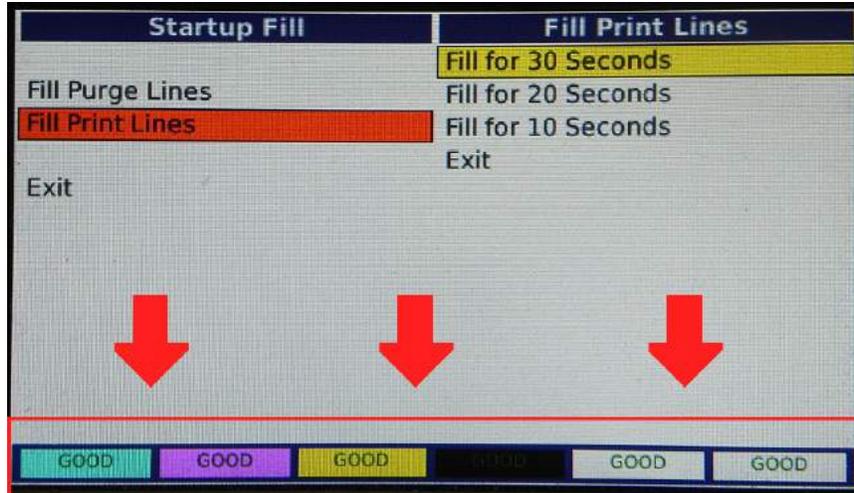
We will now install the ink cartridges. The ink cartridge bay is located on the right-hand side of the printer. A new printer is shipped with 6 PowerBright™ ink cartridges: 1 of each color: cyan, yellow, magenta, and black plus 2 white. Remove the cartridges from the box and protective bag and gently shake a few times before installing them into the ink bays.

It is very important that the correct color ink cartridge gets installed in the correct bay as shown below in Figure 2.6. If you install a cartridge in the wrong bay the Control Panel will indicate this with a **Mismatch** error on the Control Panel display, however, it can contaminate the ink delivery system..



**Figure 2.7c Ink Cartridge Bay Configuration**

Once you insert the ink cartridges, check the Control Panel display that all of the ink bays show as **GOOD**. If it does not, pull out the ink cartridge and reinsert it into the ink bay. If you still do not see the **GOOD** message, contact Technical Support. The printer can now be filled with ink.



**Figure 2.7d: Ink Bay Status**

- The White Ink Purge tubes need to be filled first. To fill these lines Select **Fill Purge Lines** from the **Startup Fill** menu. Be sure that both **White 1 Line** and **White 2 Line** are **ON** and then select **Fill for 60 seconds** and press <ENTER>. By opening the cover of the printer you will see white ink filling the purge tubes from the ink bays. The ink will flow in a move then stop pattern through the tubes. When the 60 second fill is completed select **Fill for 40 seconds** and press <ENTER> to run this fill for a second time. when you see white ink coming up the tubes and the front of the white channel print heads inside the print carriage cage you will know that the purge lines filled. (Using a

flashlight may make this easier to see.) (Figure 2.6e) If you do not see the ink in the print carriage, continue running fills from the menu until you do. When filled select **Exit** and press <ENTER> this will take you back to the **Startup Fill** menu.



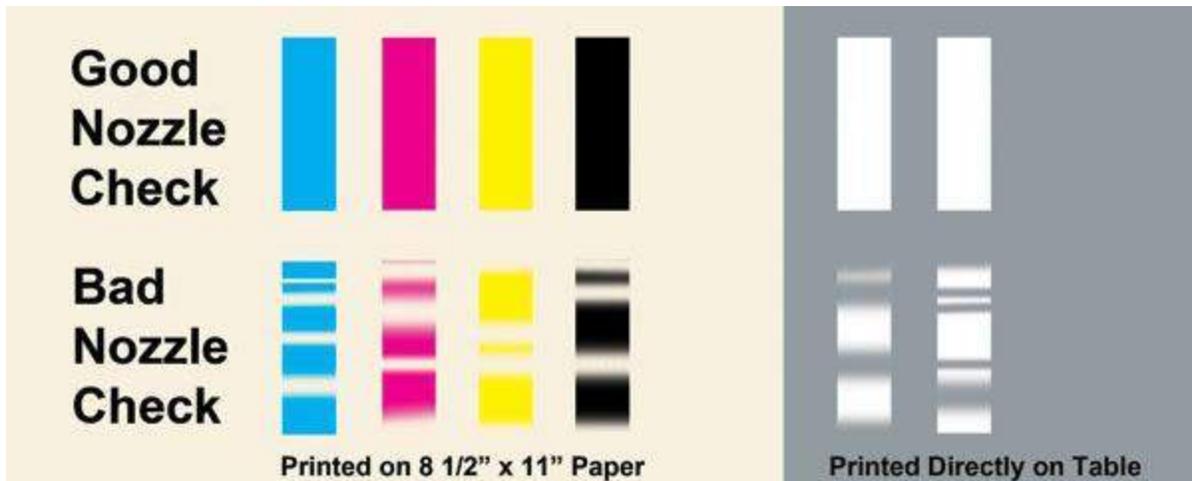
**Figure 2.7e: Ink Line Filling Point**

- Next we will fill the Print Lines by selecting **Fill Print Lines** and pressing <ENTER>, select **Fill for 30 Seconds** and press the <ENTER> button. Open the printer top cover to see the ink moving through the tubes from the ink bay. Once all of the ink lines (CMYK +2 White) have passed down into the Printhead Carriage, look into the front of the print carriage cage to check that all of the ink channels have reached the printheads. Repeat the fill procedure using the smaller time intervals until all of the ink channels have reached the printheads and you see no gaps in the ink tubes. Once completed, select **Exit** from the menu and press <ENTER>. Press the **Cancel** key until you are at the **Maintenance Functions Menu** and select **Wipe Printhead Nozzles** and press the <ENTER> button.

## 8. Performing a Nozzle Check

Now that the lines have been filled with ink you will need to perform a Nozzle Check. First we need to set the table height by pressing the <Height> button. This will lower the table, move it into the printer and raise it until it triggers the obstruction sensor laser. It then slightly lowers the table to set the correct printing height

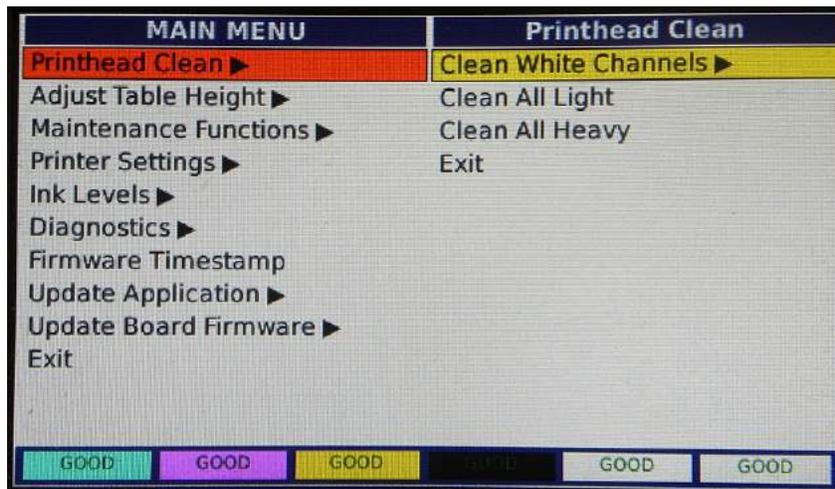
To print a Nozzle press the <NOZ CH> button. Position a sheet of letter sized paper on the lower right corner of the print table as shown on the display, (Note that the print table edge closest to you is the top and therefore the preview on the display will appear rotated 180°). and press the green <PRINT> button. The print table will now move in and print the nozzle check.



**Figure 2.8: Printhead Nozzle Check**

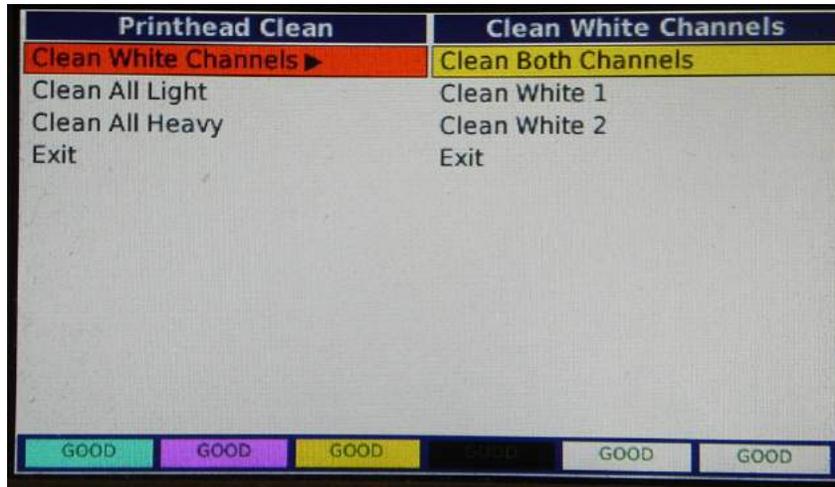
If the Nozzle Check Pattern looks good then you are finished with the initial printer setup. If it does not you will to do a print head clean. This process is not uncommon when first filling the printer with ink.

A Print Head Clean is performed from the Printer Control Panel under the Main menu. Press the <MENU> button and select **Printhead Clean** and press <ENTER>. You will see the following menu of options.



**Figure 2.8a: Printhead Clean Menu**

If your nozzle check only shows that the white ink channels are not firing fully then select **Clean White Channels** and press <ENTER>, you will see the following menu.



**Figure 2.8b: Printhead Clean White Channels Menu**

You can then select to clean both of the white ink channels or only one of them. When the clean is completed select **Exit** and press <ENTER>.

If you need to clean any of the CMYK channels, select either **Clean All Light** or **Clean All Heavy** determined from the quality of the nozzle check and press <ENTER>. When the clean is completed select **Exit** and press <ENTER>.

You now need to perform another Nozzle Check to check the status of your print nozzles. If the check is still not good, repeat the Printhead Cleans until it is. If the Nozzle Check Pattern looks good then you are finished with the initial printer setup.

## 9. Printer Software Program Requirements

Once the ink cartridges are installed and ink flow has been established, it's time to install the AnaJet® mPower AnaRIP software onto the PC. Your PC must have Microsoft Windows XP Windows Vista, Windows 7 or Windows 8 operating system, or on a MAC, some kind of Windows emulation must be running such as Parallels or Boot Camp. The computer also needs to have an USB 2.0 port.

## 10. AnaRIP Printer Software Program Download and Installation

When you purchase your printer you will receive email from our customer care team. This email will provide your registry information and support site login. If you did not receive this information you can contact our care team by email at [AJCustomerCare@Anajet.com](mailto:AJCustomerCare@Anajet.com) or by phone at 877-626-2538 ext 158.

When you complete Warranty Registration login to the Technical Support site and go to the **Program Download** section located in the left column and select the latest version of the AnaRIP software for your printer model and download the program to your desktop. Double click the downloaded program icon and follow the onscreen instructions to install the software. When the software is installed double click the

AnaRIP icon to launch the software and then connect the printer to the computer using the provided USB cable. Do not use a USB cable longer than 10 feet or use an unpowered USB Hub since data transmission loss can occur. After the cable is installed place an image into the software by going to **File** and then **Place an image**. You will then notice that the **Print** button at the lower right of the software window will be available, this means that the computer and printer are communicating. If the print button does not become available, unplug the USB cable and plug in back in.

Before proceeding to Printer Operations, get familiarized with the Printer Controls in Chapter 3.

## Chapter 3: Printer Controls

### 1. Power Switches

The power is controlled by two switches: The main power switch and control panel <POWER> button. The main power switch is on the rear left side. Switch the power on.

When the main power switch is turned on, it powers the printer's power supply control board. Now press the <POWER> button on the control panel; this fully powers up the printer. The control panel will display a splash screen and then the main menu.

To power down, simply press the Control Panel power key and then turn off the main power switch on the rear of the unit. If the carriage is not in home position over the maintenance station and the capping plate is not sealing against the nozzle plates, turn the unit back on to initialize the unit and then power down again.

It is recommended that the printer is fully powered on (Back and front) at all times, even when the printer is not used. Keeping the power on enables the printer to perform periodic minimal self maintenance routines that help prevent the print head from drying out.

### 2. Control Panel

The AnaJet mPower™ Control Panel consists of a graphic LCD display, 13 keys and 3 LED indicator lights. The control panel layout is shown below in (Figure 3.2).



Figure 3.2: Control Panel

### 3. Buttons



The <TABLE> button moves the Print Table back and forth. Pressing it while the Print Table is moving will stop the table. Pressing it again will move the table in the opposite direction. When the Print Table reaches either front or rear limit, the table will stop automatically.



The <PRINT> button initiates the printing operation of the job shown in the Current Job page display. The current print job usually is the last job sent from the computer, or selected from Jobs List, or loaded from USB drive. When the green Print Ready LED next to the <PRINT> button lights up, the printer is ready to print. Press the <PRINT> button, the table will start moving into the printer to initiate printing operations. When the Print Ready LED is not lit up, pressing the Print button does not perform any function.



The <UP> and <DOWN> Arrow buttons are used to move the cursor position in the LCD display.



The <LEFT> and <RIGHT> Arrow buttons are used to change values of certain selected menu items.



The <MENU> button brings up the MAIN MENU page.



The <ENTER> button is used to confirm or enter the menu item currently displayed in the LCD. Every menu operation at every step requires entering the <ENTER> key.



The <CANCEL> button is used to cancel an operation, usually the Print operation or Print Table movement. Pressing the <CANCEL> button during LCD menu navigation backs up to one level higher in the menu tree.



The <JOBS> button will list all the jobs saved in the printer, as well as allowing access to jobs saved on external media such as Flash Drives and SD cards.



The <NOZ CH> button invokes Nozzle Check Pattern operation.

The <PRINT> button must be pressed to start printing the Nozzle Check.

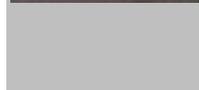


Pressing the <HEIGHT> button will automatically adjust the table height to the optimal print height.

#### 4. LED Lights



The **INK/ERR** LED will be **ON** when one or more of the ink cartridges are missing or improperly installed in the ink bay. All cartridges must be installed to print. a **BLINKING** LED means one or more of the ink cartridges are low.



The **USB/SD** LED is **ON** when there a USB drive with properly formatted job data inserted into the printer.

## Chapter 4: Printer Operation

### 1. First Time Start Up Sequence

When you first setup the printer, please refer to the procedures in **Chapter 2: Start Up of a New Printer**.

### 2. Power up Sequence

The power up sequence consists of two power switches.

- First turn on the main power switch on the rear of the printer.
- Next press the Control Panel <POWER> button to turn on the printer. A splash screen will appear on the display showing the AnaJet® logo and the power up sequence will begin. The Print Table will move forward to the Load Position. When the power up sequence is properly completed, the following display (in Figure 4.1) will show in the LCD.

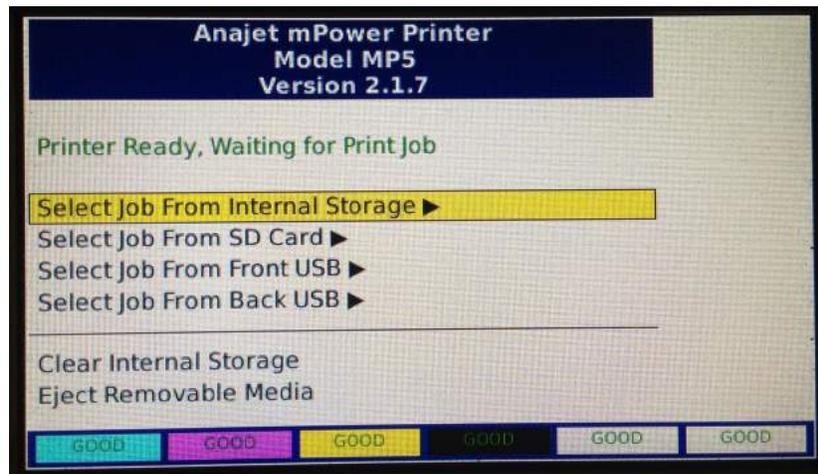


Figure 4.2: LCD When Power Up Sequence is Complete

### 3. Power down Sequence

The power down sequence is the reverse of the power up sequence.

- Make sure the Print Head Carriage is over the Maintenance Station. If it is not power the Printer off in the back and restart to return all components to home position.
- Power the printer down from the Control Panel power key and then the power switch located on the back.

It is recommended that the printer be kept powered on at all times when ink is loaded in the system, even if the printer is not used, unless the printer is filled with cleaning solution and is in storage. Keeping the printer powered on prevents the Print Head from drying. A minimal amount of ink is used to keep the Print Head

wet. If the Print Head dries up, the Head Cleaning operation to restore it will consume more ink than keeping the Print Head wet during idle times. In certain cases the dried Print Head may not recover.

#### 4. Moving Print Table

Pressing the <TABLE> key on the Control Panel will move the Print Table in one direction. Pressing the <TABLE> key while the Print Table is moving stops it. A third pressing will move the Print Table in the opposite direction. The forward most position is called the Load Position where garments are loaded. The far rear position is called the Home Position or Print Start Position. If the printer is shut down, the Print Table will rest in the Home Position.



Figure 4.4: Print Table Positions at Each End

#### 5. Adjustment of Print Table

The Print Table height is adjustable up to 3 inches. The proper height should be set depending on the thickness of the garment or substrate being printed on. Proper Print Table height adjustment is very important. If the garment's surface is too far from the Print Head Nozzle Plate, the print quality will be fuzzy and ink over-spray may be visible. If it is too close to the Nozzle Plate, an obstruction error may occur or worse the garment could scratch and damage the Printhead Nozzle Plate coating.

The optimal distance between the lowest point of the Print Head Nozzle Plate and the top surface of a loaded garment is in the range of .06-.12 inches (1.5-3 mm)

The Print Table height is adjusted automatically by pressing the <HEIGHT> button on the mPower™ Control Panel. First place the material to be printed on the print table, use of the table hoop is recommended. Press the <HEIGHT> button, the table will drop down and move forward into the printer, when it has moved in approximately half way, the table will rise up until it triggers the height adjustment laser sensor and then back down to the correct height. If you are doing a run of the same type garments it is not necessary repeat the height adjustment for each garment. You can also manually adjust the table height by turning the height adjustment knob located under the front edge of the print table. (Figure 4.5)



**Figure 4.5: Manual Table Height Adjustment Knob**

## 6. Basic Printing Operation

- Prepare the print file Using your image editing software and send it to the printer through your mPower® AnaRIP program. Refer to Chapter 5.3: Printing on Light Garments' for detailed instruction on using AnaRIP software.
  - The actual printer operation is a quite simple and straightforward process. However for those who are not familiar with at least one graphics application, it may be challenging to use a graphics program at the beginning. We recommend that the operator be somewhat familiar with at least one graphics application program by taking a seminar, an online instructional course or a CD-based tutorial. Of the more popular graphics programs, Photoshop Elements may be a simpler and lower cost program which one can learn to use with very little study. This program however is limited in its ability to do design work, but its simplicity allows a quick start for those who are new to graphics programs.
- Load the garment on the Print Table, and spread it flat. If the garment is not flat, the printer's Obstruction Sensor laser will detect it and will stop printing until the obstruction or wrinkles are removed. Place the Hoop over the garment to secure the garment if desired. For most garments, the use of a Hoop is recommended.
- Use the AnaRIP software to position, size and adjust your image file and send the print job from the computer to the printer. You may also save your ripped file to a USB Drive or SD memory card and install it into the printer. If you save the ripped file, insert the storage media it was saved on into the printer, select your image from **LOAD FROM USB FRONT, USB BACK or SD** on the the mPower Control Panel. Images that have been saved to the Control Panel can also be printed from the **SELECT FROM INTERNAL STORAGE** function.

- When the green Print Ready LED lights up, the printer has received a sufficient amount of data to start printing. Press the <PRINT> button. The Print Table will move to the Home Position.
- When the Print Table reaches the Home Position (the Print Start position), the printing will start. Upon completion, the Print Table will move to the Load Position and the printer will beep.
- Remove the [Hoop and] garment from the Print Table, be careful not to touch the printed area or let the garment fold. The printed area is still wet with ink.
- Cure the ink onto the garment, using a heat press or textile oven.

## 7. Canceling a Print Job

If you want to stop a printer operation press the <CANCEL> button. If a job is printing it will stop immediately and return you to the **Jobs Menu**. Pressing the <CANCEL> button during LCD menu navigation backs up to one level higher in the menu tree.

## 8. Obstruction Sensor

The Obstruction Sensor detects any obstruction on the Print Table, such as wrinkles on the shirts, which can damage the print heads. On the left-hand side of the printer, there is an Obstruction Laser Diode, which generates the laser. On the right-hand side, there is the Obstruction Laser Sensor.

**WARNING:** Although the laser used in the mPower printer is low power, exercise care so that the laser does not shine directly into any sensitive areas of the body such as eyes. The laser can cause injury.

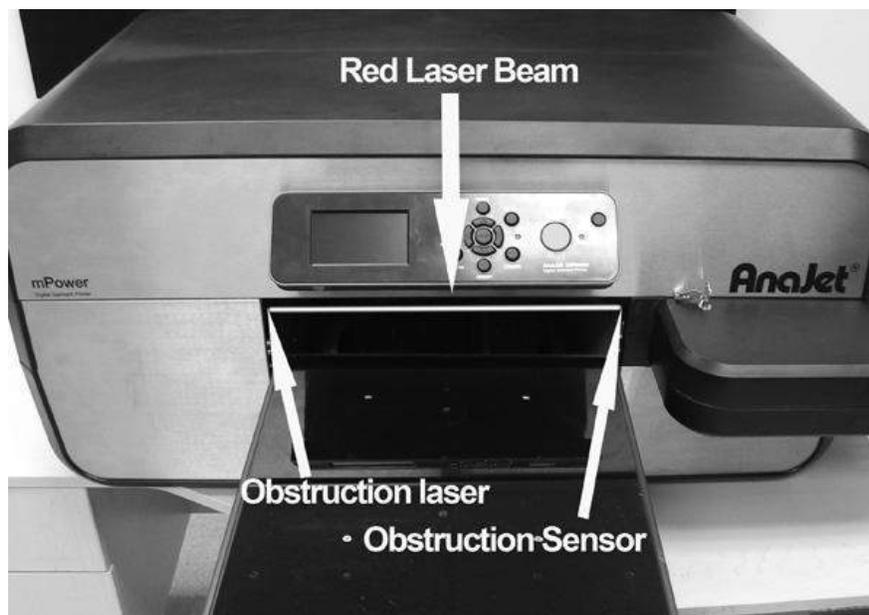


Figure 4.8: Obstruction Laser and Sensor

The Obstruction Sensor is active only while the Print Table is retracting to the Home Position (Print Start position) after the PRINT button is pressed or when setting table height. It is deactivated when the Print Table reaches the Home Position. Normally the Obstruction Laser Diode is off.

- If any obstruction is detected while the Print Table is moving to the Home Position (Print Start position), the Print Table stops. An audible warning signal as well as the following LCD display will appear. At this point the job will not be cancelled.

**Obstruction Detected!**

**Please clear obstruction and press Print**

- After you clear the wrinkles or other obstructions on the garment, press the <OK> button and the the <PRINT> button. The Print Table will resume its travel to Print Start position. If necessary you can use the TABLE key to bring back the Print Table to the load position so that you can clear the obstructions.

## Chapter 5: Light Garment Printing Process

### 1. AnaRIP Raster Image Processor

AnaJet® mPower™ AnaRIP printing software is provided for online download after you register your printer's warranty. AnaRIP is a raster image processor (RIP), it is software which converts the graphic design to bitmap data suitable for printing. In the process, smoothing or interpolation algorithms are applied to the graphic data, ink drop size and exact placement of inkjet ink drops are determined. Thus the quality of the RIP program used greatly affects the quality of print. Generally RIP programs are difficult to learn and operate in a production environment. AnaJet has created a powerful RIP program with AnaRIP that is optimized for apparel printing.

### 2. Printer Performance

Before you start a print job you will want to make sure you have proper ink flow and print quality to assure the best results. This will require that you perform a Nozzle Check, possibly followed by a Print Head Clean if needed. Before printing make sure that you have gone through all of the setup procedures before this chapter.

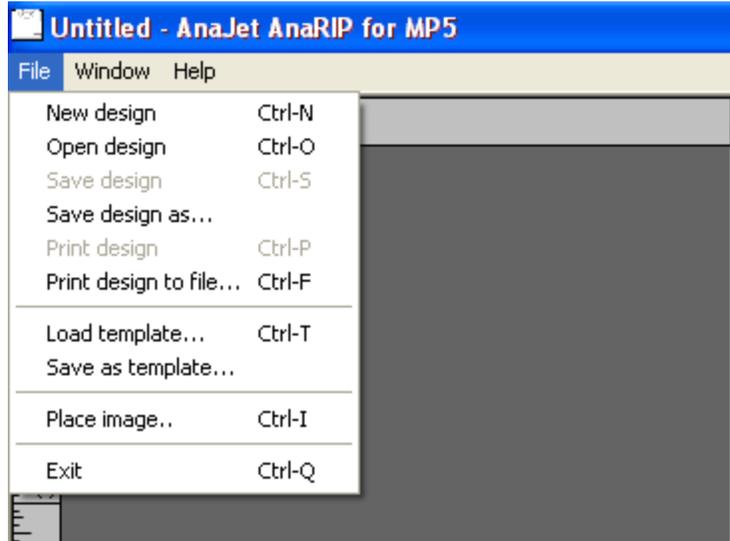
- This first thing you will need to do is a Nozzle Check. (see chapter 2, section 8). The Nozzle Check is going to show you how the Print Head Nozzles are performing and if it will require any Print Head Cleans to restore nozzles that are missing. Each color channel must be showing at least 90% of the total nozzles to be acceptable. Having a good Nozzle Check will give you the best quality prints. Missing nozzles and a poor Nozzle Check will result in low quality prints.
- If the Nozzle Check is good then you can now begin printing. If the Nozzle Check is bad you will need to perform a Print Head Clean. (see chapter 2, section 8) This will then be followed by another Nozzle Check to ensure the performance print head nozzles. If the performance is still not acceptable repeat this process.

### 3. Using the mPower™ AnaRIP Program for Printing Light Garments

The definition of a light garment is any print that does not use white ink. The general rule to determine if you need white is if the colors of the image you are printing are darker than the color of the substrate you are printing on, white ink is not required.

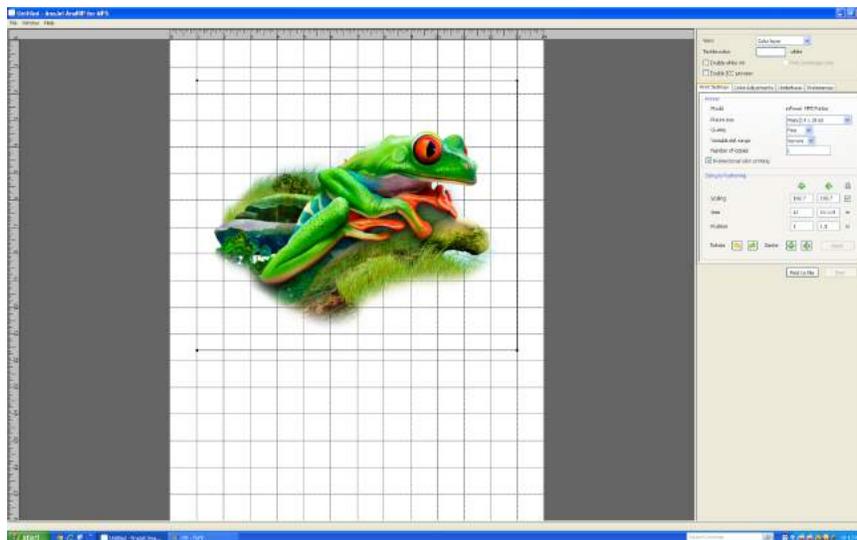
You will now need to have a graphic that is ready to be placed into the AnaRIP software. You should design your images at the full size that they will be printed with a resolution between 100-300 DPI. The AnaRIP software has a limited number of possible file types you can use. They are JPG, GIF, PDF, PSD, AI, TIFF, PNG, BMP. We recommend that you prepare your images as TIFF or PNG file types. The TIFF and PNG formats both support transparencies generally required for dark shirt printing and use lossless compression that will keep your file high quality. It is also good practice to avoid saving images as JPG or GIF. These are compressed file formats originally designed for internet use only that lose quality every time they are re-saved. If you are using the native Adobe file formats of AI or PSD you must flatten all of the layers of your image and save this version for printing your complete image.

- Open the mPower™ AnaRIP program from your desktop.
- Once the program is open you can now place the graphic you would like to use by selecting **Place Image** under the **File** drop down in the upper left corner of the program. You may also drag and drop a graphic into the program by clicking on the file and dragging it onto the preview area of the AnaRIP software.



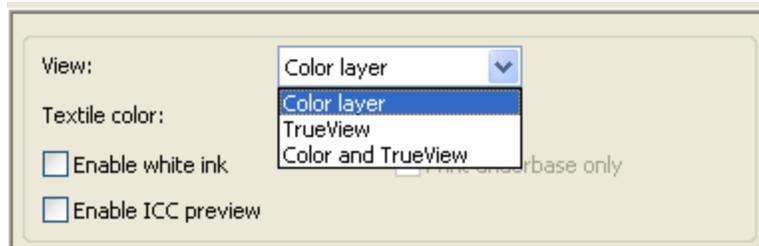
**Figure 5.3a: Place Image Menu**

- You should now see your graphic in the preview screen. (see figure: 5.3b)



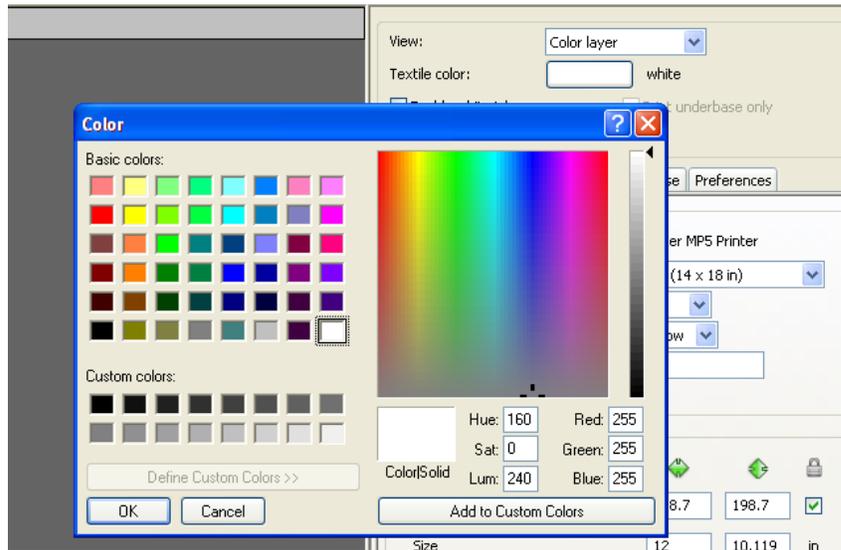
**Figure 5.3b: Loading Graphic into RIP**

- At the right top of the settings you will see a drop down select for View. When printing a light garment you will see 3 choices.



**Figure 5.3c: View Menu**

- **Color Layer:** This view will show your original image as it was brought into the software.
- **True View:** This view will show what the image will look like when printed. Since the CMYK are somewhat transparent the color of the garment will affect the final look of your printed image. To demonstrate this click the Textile color drop down and select a different color.



**Figure 5.3d: Textile Color Selection**

- As you can see below, the garment color effects the final print color of your image. True View is a very powerful feature of AnaRIP and will assist you in determining whether or not you will need to use white ink.

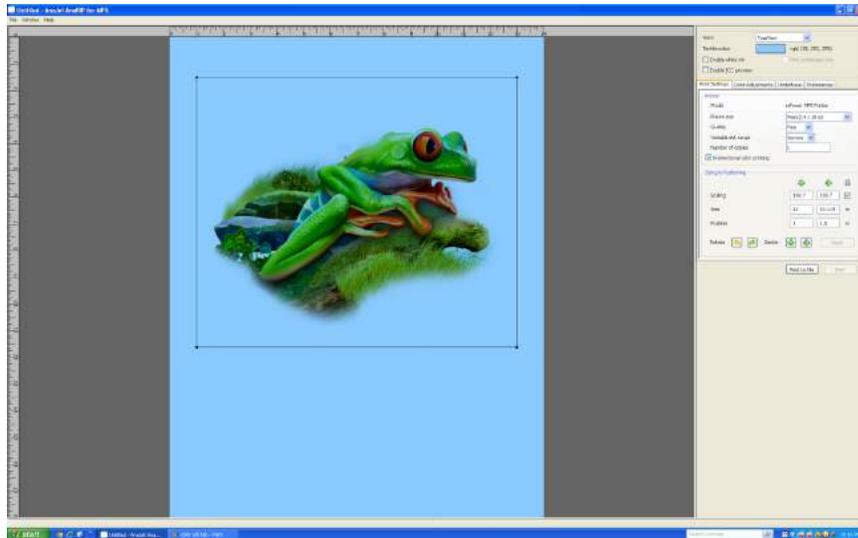


Figure 5.3e: True View on Different Textile Color

- **Color and True View:** This view shows both views in the display.

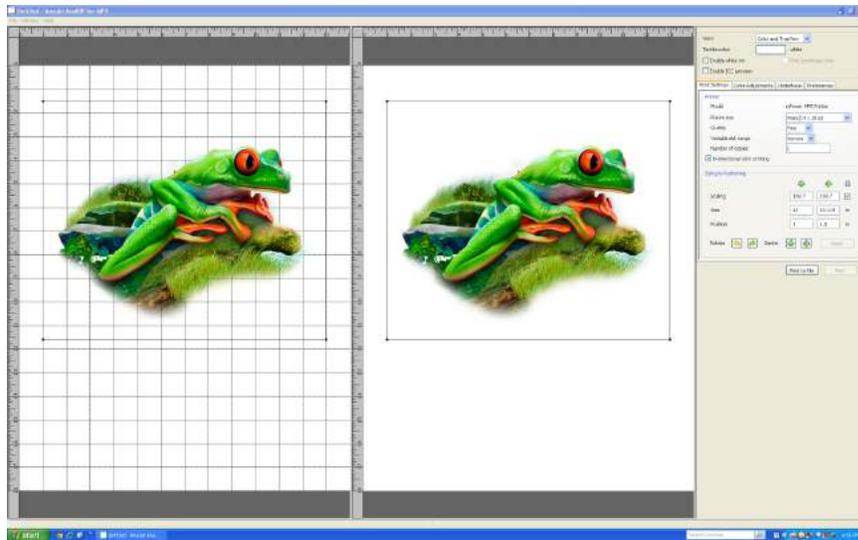
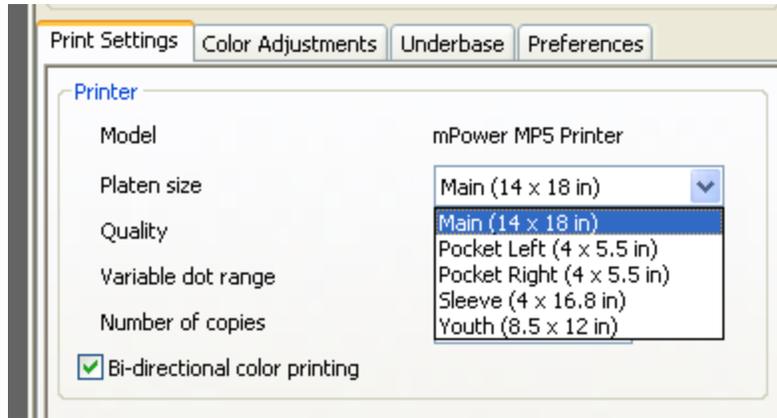


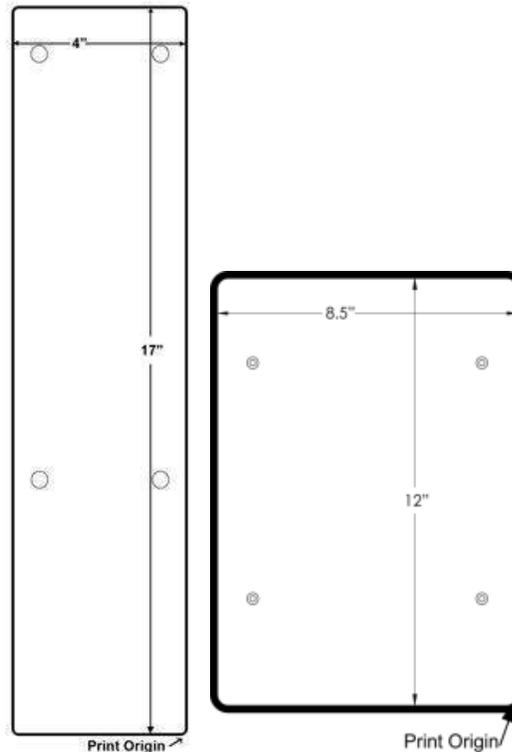
Figure 5.3f: Color and True View

- The first Tab will be the open default view, this tab is called Print Settings. The preview will match the table platen size you have selected. The default Platen setting is **Main (14 x 18 in)**, if you are using a different table the table size can be changed in the program under Platen Size and the preview print area will change to this tables dimensions. ( see figure: 5.3g)



**Figure 5.3g: Platen Size**

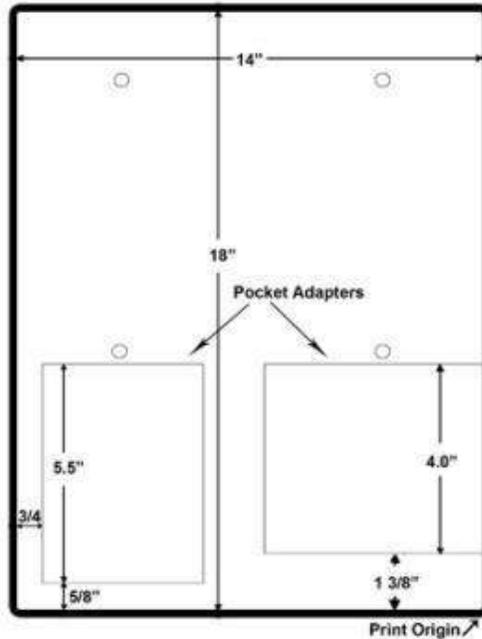
- Most printing will be done using the Main platen which measures 14” x 18”. For printing youth size shirts and sleeves, you can install the Youth Print Table which is 8.5” x 12” in size, AnaJet P/N 150197, or the Sleeve Print Table which is 4” x 16.8” in size, AnaJet P/N 150196. (see Figure 5.3h). When using these tables, choose the corresponding platen size. Doing so will change the application’s preview window to correspond to the narrower print area as well as automatically adjust the print origin.



**Figure 5.3h: Sleeve and Youth Size Print Table and Print Origin**

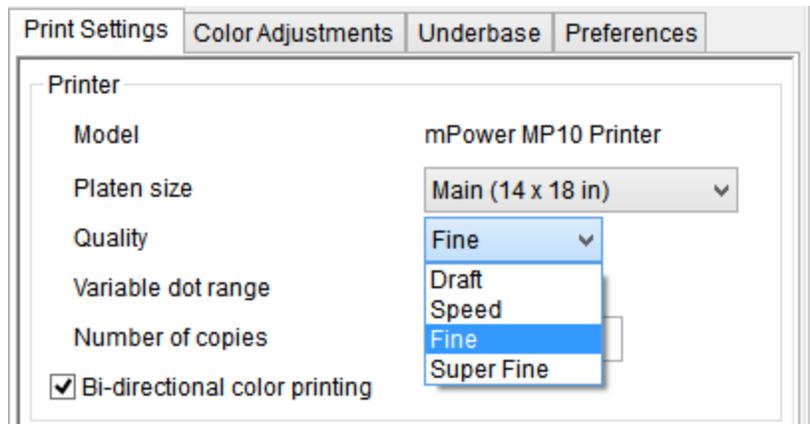
- When printing pocket drop graphics, AnaJet’s Pocket Adapter, AnaJet® P/N PKT-1, can be used to simplify the process. The 5.5” x 4.0” Pocket Adapter can be placed portrait or

landscape on top of either side of the front of the Print Table. The exact offset measurements of the Pocket Adapter are shown in Figure 5.3i. When printing with the Pocket Adapter, remember to adjust the Print Table's height. You can select either Left or Right portrait orientation Pocket Platens from the Platen size selection in AnaRIP.



**Figure 5.3i: Print Table with Pocket Adapter Layout and Print Origin**

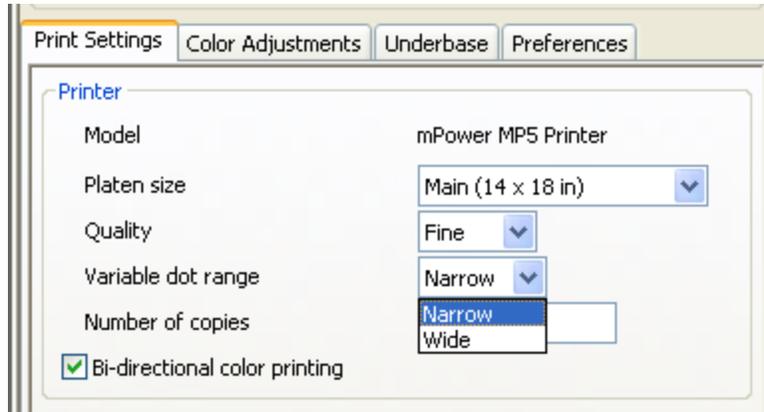
- The Print Quality will be set to Fine by default. This will be the best overall setting for light garment printing. The other Print Quality settings are Draft, Speed and Super Fine. (Figure 5.3j)



**Figure 5.3j: Quality selection**

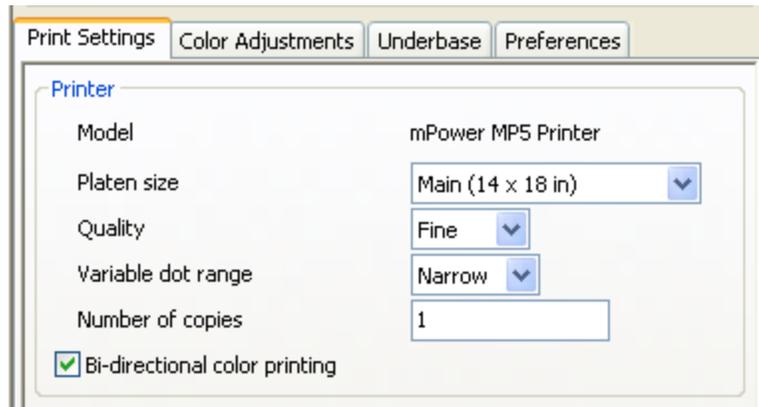
Draft mode is a utility that lays down a very light amount of ink for printing on paper for use to help position items to print. The Speed, Fine and Super Fine modes print the image using the same volume of ink but they print using smaller steps according to the higher quality which can produce better image quality. Please note that the print speed will be affected by the higher settings.

- You will now need to select a Variable Dot Range, the default setting is Narrow. The Variable Dot range will control the amount of ink saturation on a print. The Variable Dot range can also be adjusted when printing on different types of garments. A Narrow Variable Dot Range for a thin material and a Wide Variable Dot Range for a sweatshirt for example. (see figure 5.3k)

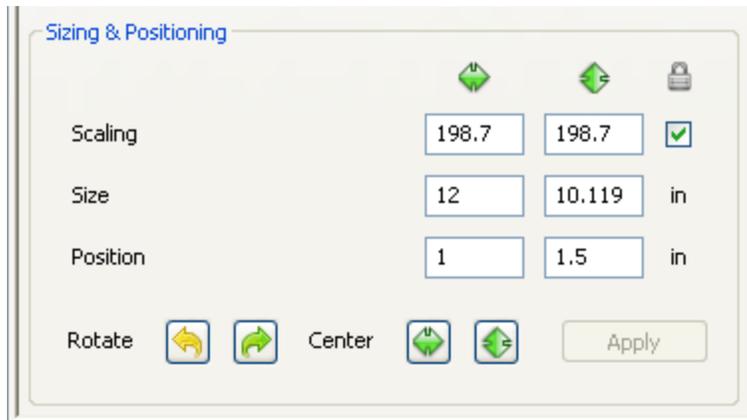


**Figure 5.3k: Variable Dot Range**

- Number of Copies is where you enter the amount of prints you would like to sent to the printer. This can also be changed from the Control Panel if needed before printing.
- Make sure that the Bi-directional color printing checkbox is checked. In most cases you will want to use Bi-Directional Printing, the Print Head will print when moving both directions and make print speed much faster. If your image is very small fast printing may cause puddling or running ink, if this is the case you can uncheck this box to slow the amount of ink delivered.

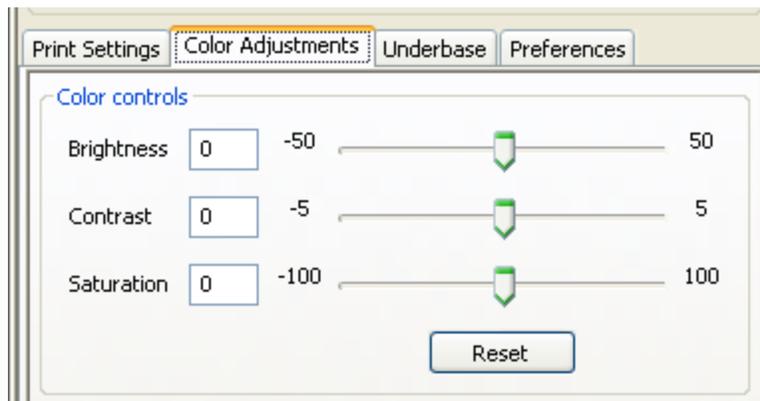


**Figure 5.3l: Number of Copies / Bi-directional Color Printing**



**Figure 5.3m: Sizing and Positioning**

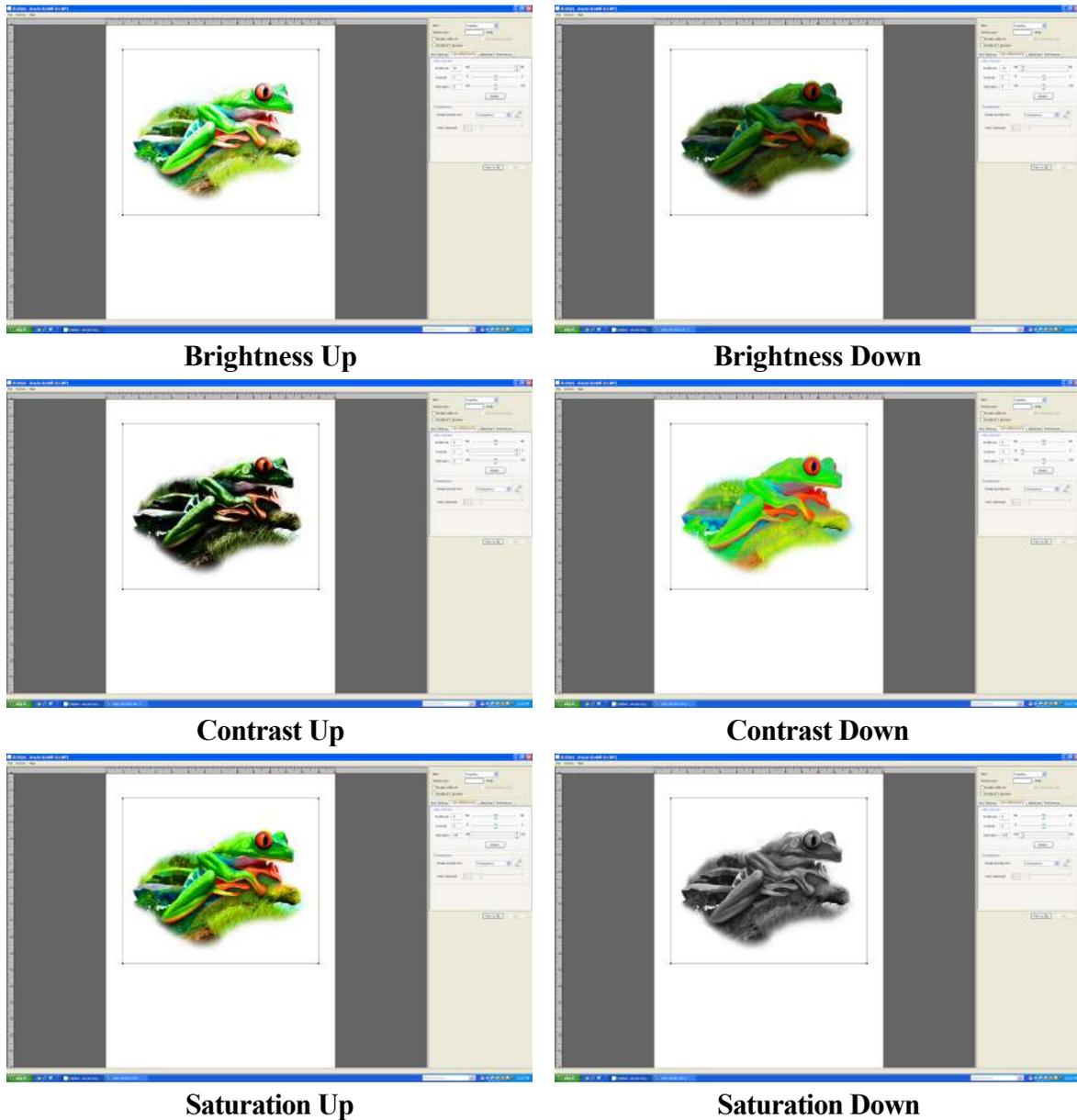
- Scaling will adjust your image Horizontal and Vertical size by a percentage. If the lock is clicked on, the aspect ratio of the image will stay the same so the image will not become distorted in size.
- Size will affect the images size in specific measurements horizontally and vertically. If the lock is clicked on the aspect ratio or the image will stay the same so the image will not become distorted in size.
- You can also change the image print size by clicking on and dragging on the image frame in the preview area. I you drag the corners the aspect ration will be maintained. I you drag the tops or sides you will stretch or compress your image.
- Position is for placement of your graphic into a specific area of the Print Table. This will be used to move a graphic higher or lower vertically or left to right horizontally. The image can also be moved by dragging the image with your mouse in the preview screen. If you want to center your image on the print table horizontally or vertically, the Center button for each can be used. Using the Rotate buttons will rotate your image in 90 degree increments left or right.



**Figure 5.3n: Color Adjustments Tab**

- The Color Adjustments Tab will allow you to make adjustments to the graphics Brightness, Contrast and Saturation. The Color Controls effect will be visible in the preview screen when they are

adjusted. (see figure 5.3o)



**Figure 5.3o: Color Adjustments Previews**

- Because we are printing light garments, the Underbase Tab will not be used at this time.
- Once you have made all of your adjustments to the printing Size, Position, Quality, Variable Dot Range and Color Adjustments you are ready to save your design or print your image.
- To save the design for later changes select **File - Save Design**. Saving the design will save your settings as well as a link to your image file. (Be sure not to move or delete that image file or when you open the design file it will not be able to locate it.)

- You also have the option to save a Template, this will just save the settings and when a new design is started these setting can be applied to the new design.
- At this point you can also press Print or Print to File. Pressing print will sent the job directly to the internal memory of the printer, The Job information will show on the printer's display and the print Ready LED on the control panel will light up when the printer is ready to print. Don't press the button yet, we will show the procedures for loading a garment in the next section.
- Choosing the Print to File option will allow you to rip and save the file to your computer, an USB drive or SD card. Once the file is saved onto the media device it can be taken to the printer and placed into the appropriate slot on the side of the Control Panel for loading and printing. (see figure 5.3p)



**Front USB and SD Slots**



**Rear USB Slot**

**Figure 5.3p: USB and SD Card Input**

- To print a file from a USB drive or SD card press the <JOBS> button and select where your rip file is located. select **Select Job From Front USB**, **Select Job From SD** or **Select Job From Back USB** (Figure 5.3q) from the Jobs Menu and press Enter. You can now scroll through all the print jobs and select the file you want to print and press <ENTER>. The specific job file will come up in the display, adjust the **Copies to Print** and then press the <PRINT> button to print the print job.

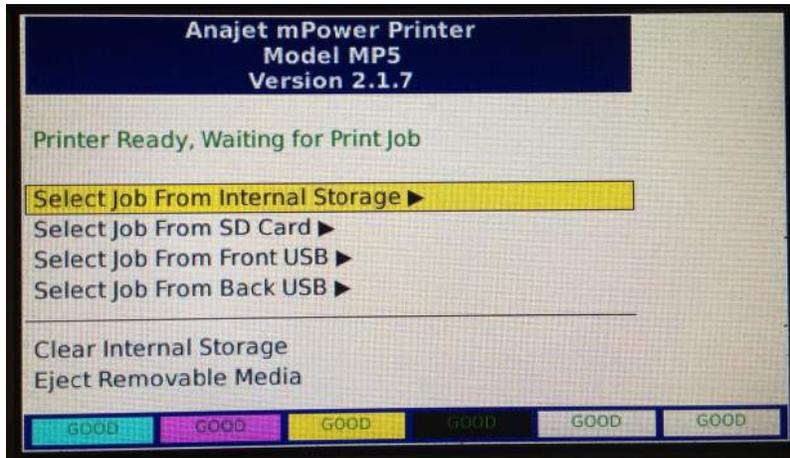


Figure 5.3q: The Jobs Menu

- A file that has been previously been sent directly to the printer can be retrieved from the printer's Internal Storage for reprinting. press the <JOBS> button and select **Select Job From Internal Storage**. You can now scroll through all of the print jobs and select the file you want to print and press <ENTER> (Figure 5.3r). The specific job file will come up in the display, adjust the **Copies to Print** and then press the <PRINT> button to print the print job

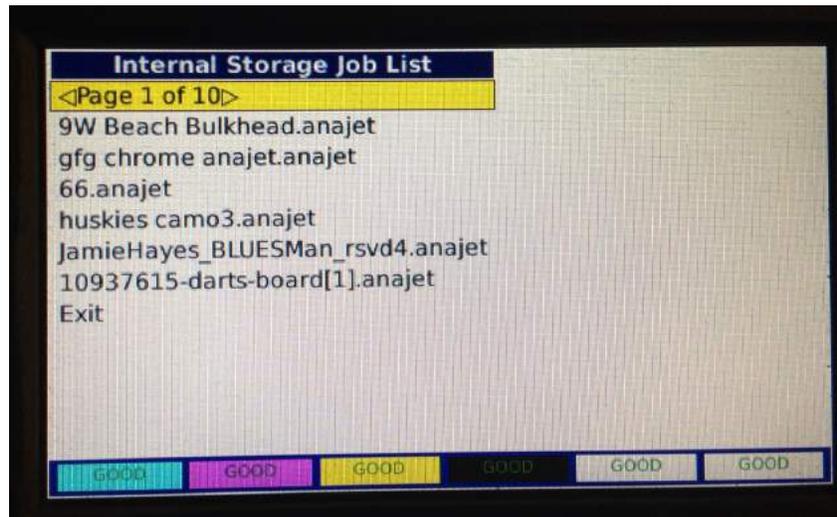


Figure 5.3r: Select Job From Internal Storage

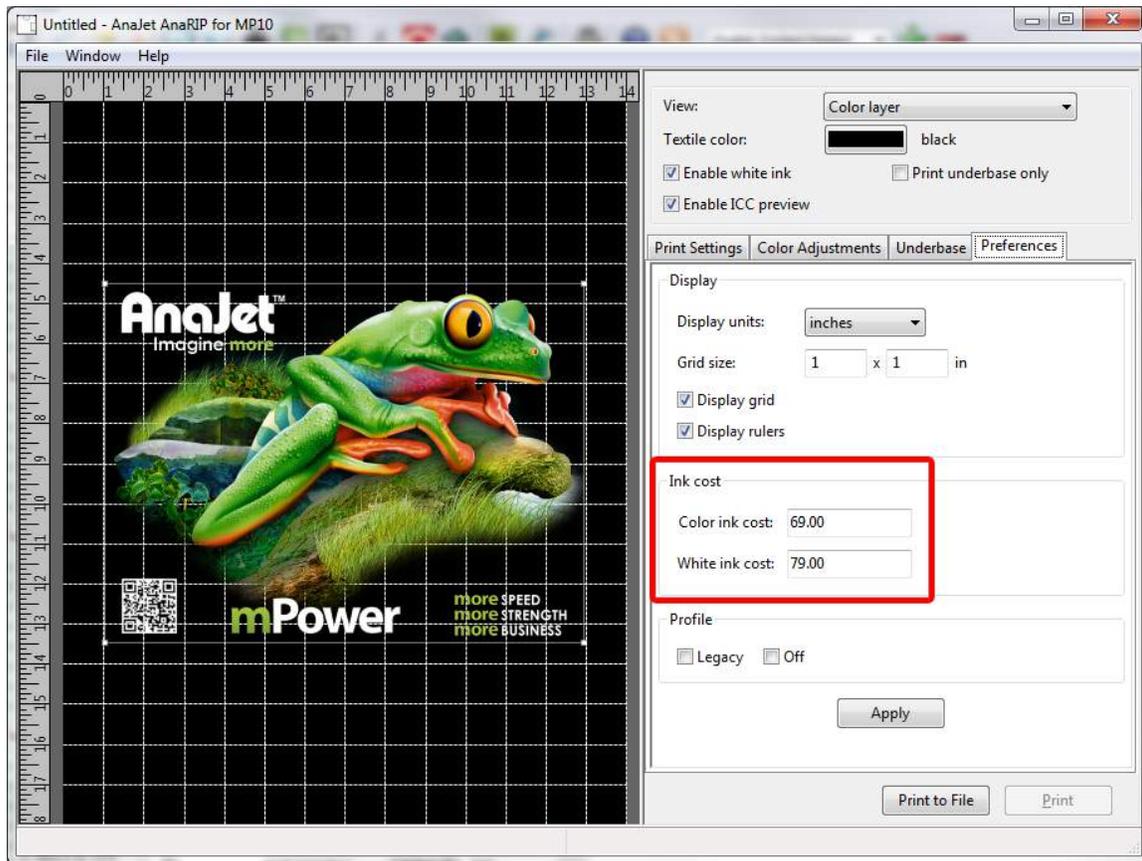
#### 4. AnaRip Advanced features.

Cost of printing using the AnaRIP Software.

- When designing new jobs or printing orders it is important you understand your cost of printing so you can set a fair price and ensure your profit margins are covered.
- We have a built in function that will indicate the cost of printing before you actually print the job. The way this works is the RIP software calculates the cost by the graphic settings you've supplied and the

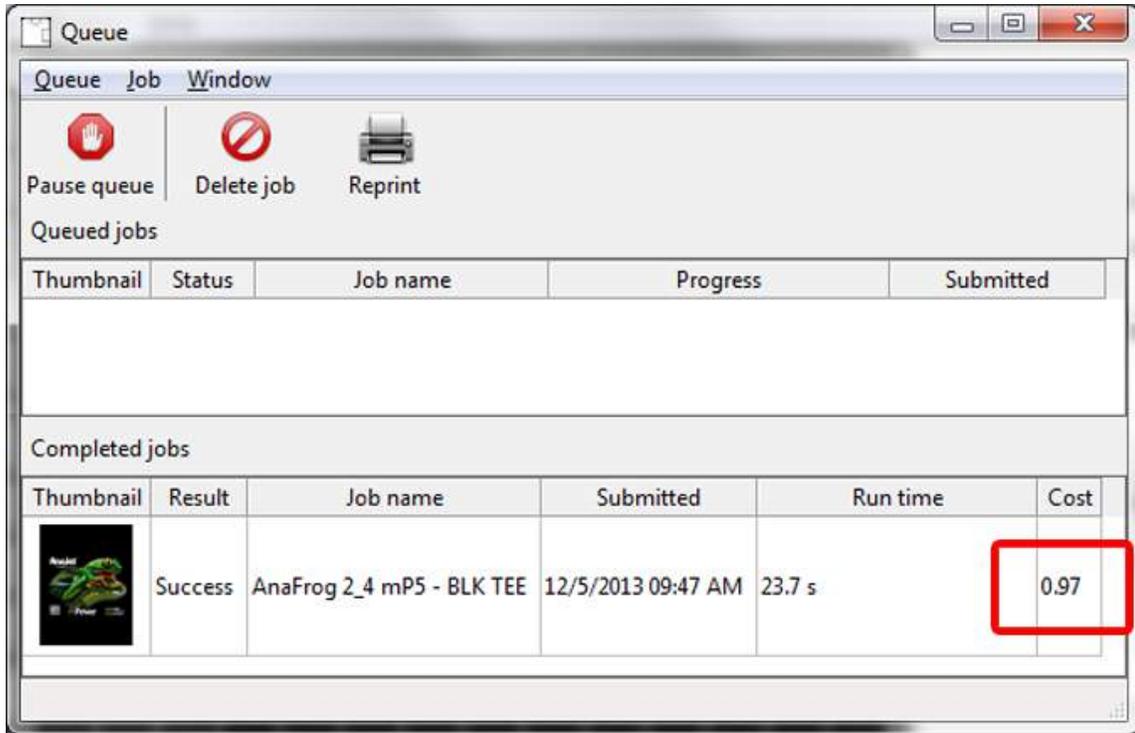
cost you enter under the preferences tab indicated below in the picture.

(Figure 4.1) Ink cost input under preferences tab



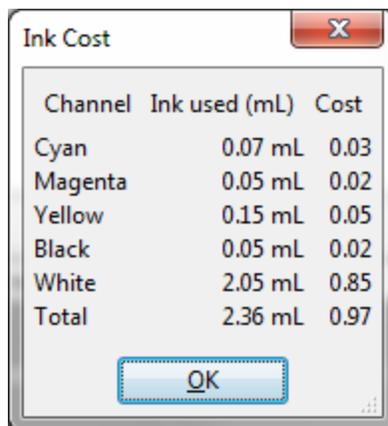
- Now that you've input the cost of your ink cartridges, go ahead and process the job through the print queue. Once the job is completed you will see the screen below.

(Figure 4.1a) Locating the Cost in the Queue.



- The cost is indicated on the far right of the Queue screenshot above. If you right click this area you will also be able to view the breakdown of ink consumed for each color used in this print job. This is a good way to determine if you have enough ink to complete larger jobs. For example if you are printing 100 black shirts, this would indicate the amount of white ink for each shirt. You can now buy your supplies in advance to ensure no shortage. Please see example below:

(Figure 4.2b) Locating the Cost in the Queue.

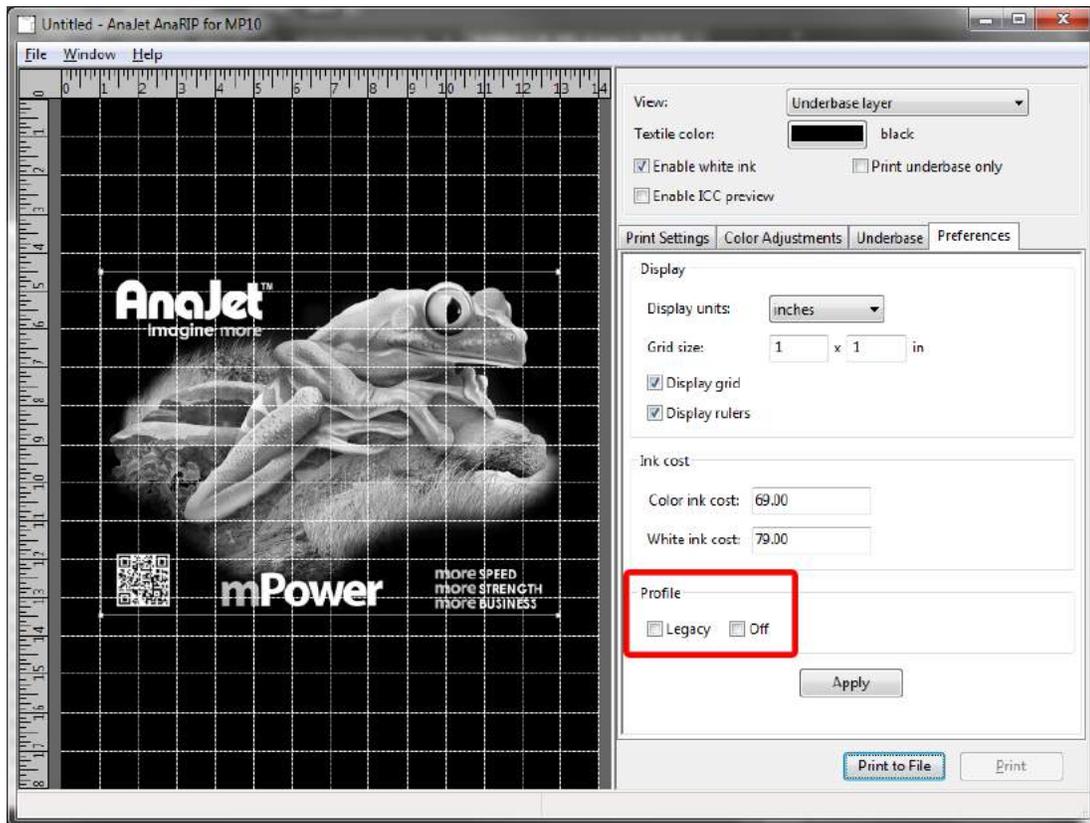


Understanding ICC profiles, how to use our preset profiles and how to update your own profiles within our AnaRIP software.

- If you do not completely understand how to make or manipulate ICC profiles we suggest you use our preset profiles. If you open the AnaRIP software under the preferences tab seen below, this is

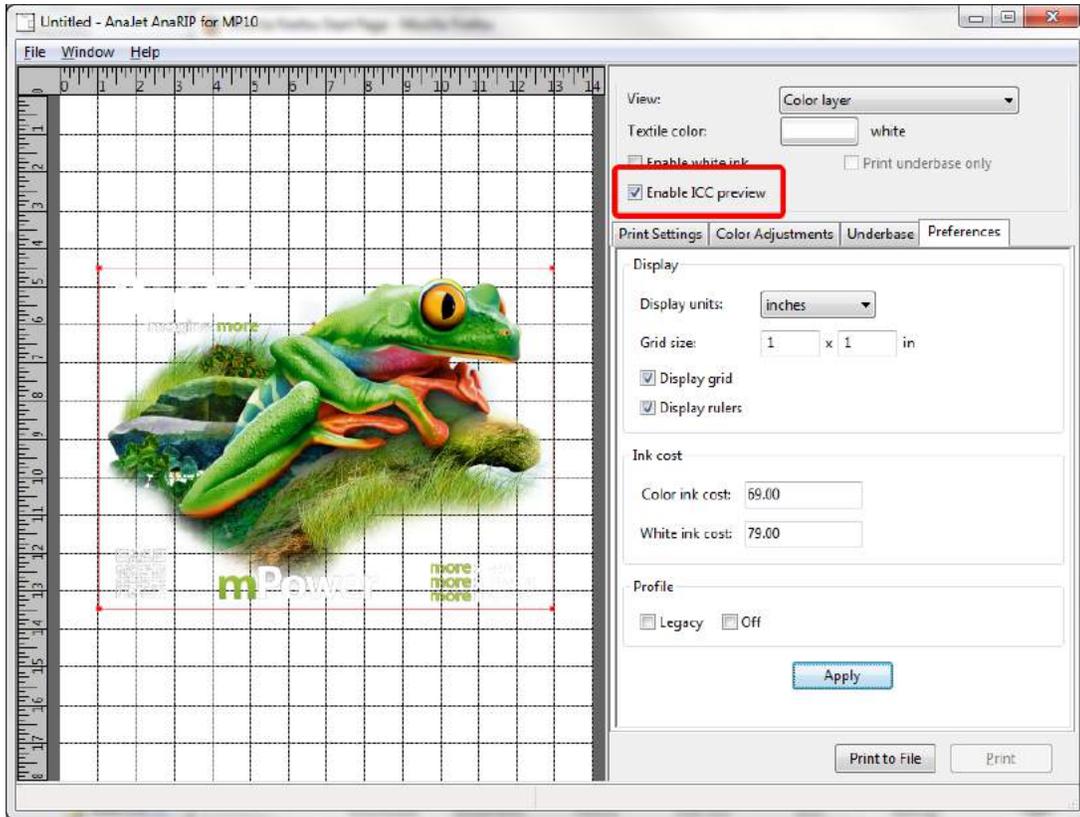
where you enable or disable our preset profiles.

(Figure 4.3c) Selecting different color profiles



- Remember to press the Apply button so the changes are saved for the next print job.
- When you Enable ICC preview within the AnaRip, this is modifying the current screen settings on your computer to display our color profile used for the output of our AnaRIP color profile. This function will not change the output of the printer. It will help you see the true color profile rather than the preselected color profile on your monitor. This feature will help achieve color accuracy once you start your production. You can find this feature selected below in the picture.

(Figure 4.4d) Selecting different color profiles



## 5. Loading Garments on the Print Table

- To load a t-shirt for standard front/center printing first remove the hoop from the print table.
- Place the t-shirt face up on the table with the top collar closest to you and pull the collar off the end of the table so that it just falls off the edge of the table. (Figure 5.4)



**Figure 5.4: Shirt Placement**



**Figure 5.4a: Hoop Placement**

- Lift the sides of the shirt to see if the shirt is centered on the print table.
- Smooth the shirt and replace the hoop. (Figure 5.4a)
- Pull on the edges of the t-shirt that extend past the hoop to flatten any bumps or wrinkles.
- Tuck the shirt under the table and into the garment tray to prevent the garment from catching on any interior parts of the printer.

## 6. Removing Garments from the Print Table

- After the printing has completed, remove the hoop from the table. Do not touch the image as the ink is still wet at this point.
- Remove the garment from the table being sure that the printed image is facing you when it is removed. Do not let the shirt fold or touch itself as this could cause ink transfer to other parts of the garment.
- Take the garment to your heat press or conveyer dryer fix the ink to the garment.

## 7. Set the Image with Heat

In order to cure the ink so that your images will be color-fast when washing, it is necessary to heat treat the image so that the image bonds with the garment.

- If you are using a heat press place the garment on the heat press platen with the printed side up. Pull by the edges to ensure proper placement and that it is flat on the heat press, minding not to touch the wet ink. Cover the garment with a sheet of AnaJet® SoftTouch heat press paper, AnaJet® P/N HPS-50. For PowerBright™ ink. Close the press and heat the printed garment for 40 seconds at 356°F or 180°C. The pressure applied by the heat press when close should be in the light to medium range. When the time is completed open the heat press and remove the heat press paper immediately. AnaJet® SoftTouch heat press paper can be reused several times. Instead of SoftTouch, a Teflon sheet or Kraft Paper Cover Sheet can be used. When reusing the SoftTouch paper make sure there are no wrinkles as these will transfer to the garment. If this is the case use a new sheet. The printed garment is now completed. If you are also printing dark shirt images you need to reduce the heat press temperature and increase the time, however the settings for dark garments of 330°F or 165°C for 90 seconds will also work for light garments.
- If you are using a textile oven or conveyor dryer, please test the temperature of the printed image when it exits the dryer to assure that it has reached 330°F or 165°C. Also please do a wash test of your first attempts to be sure that the inks have cured properly and washability has been attained.

<b>PowerBright™ Ink</b>	<b>Temperature</b>	<b>Time</b>
Light Shirt with Heat Press (1)	356 °F or 180 °C	40 seconds
Light Shirt with Heat Press (2)	330 °F or 165 °C	90 seconds
Light Shirt with Conveyer Dryer (1)	Printed image must reach 330 °F or 165 °C	Varies

**Figure 5.6: Heat Curing Temperature and Time Variations for Light Garments**

## Chapter 6: Printing on Dark Garments

### 1. Basic Dark Garment Printing Process

Before you start any print job you will want to make sure you have proper ink flow and print quality to assure the best results. This will require that you perform a Nozzle Check, possibly followed by a Printhead Clean if needed. Performing a Nozzle Check is further detailed in **Chapter 2 Section 8**. Before printing make sure that you have gone through all of the setup procedures before this chapter.

The definition of a dark garment is any print that uses white ink. The general rule to determine if you need white is if the colors of the image you are printing are lighter than the color of the substrate you are printing on, white ink is required. (Figures 6.1, 6.1a, 6.1b)



**Figure 6.1: Image Darker Than Garment- White Ink Not Needed**



**Figure 6.1a: Image Lighter Than Garment- White Ink Needed**



**Figure 6.1b: White Ink Added**

The dark colored garment printing principles are essentially the same as light garment printing with added procedures. Refer to the basic white garment printing process prior to learning the black garment printing process. This chapter addresses only those features unique to black garment printing. The basic process is as follows:

- Pre-treat the garment with AnaJet® Pre-treatment Liquid. You only need to pretreat the area you will print on.
- Allow the pre-treatment to dry.
- Before printing press garment for 5 seconds to flatten and stray fibers and remove wrinkles.
- Place the dark garment on the Print Table.
- Send the print job from the PC, using the AnaJet® mPower™ AnaRIP program or load the print job from a USB drive or SD card.
- Press the <PRINT> button when the Print Ready LED lights up to print the white ink Undercoating.
- When white ink undercoating is completed the printer will then automatically print the color layer.
- Upon completion of the print, fix the ink onto the garment with a heat press or conveyer dryer.

Dark garment printing with white ink is a more involved process than light garment printing. This is particularly true with the print image preparation and print settings. **It is very desirable for the operator to practice printing dark garments before he starts using the system for commercial printing of dark garments.**

## 2. Maintenance of White Ink

Although PowerBright™ white ink performs better than any other competitive products for printing dark shirts and the AnaJet® mPower™ printers require less maintenance compared to other printers, today's direct to garment white inks still require a fair amount of maintenance. (See the Technical Notes in Section 3 below.)

The garments should never touch the Printhead or Nozzle Plate as it can scratch the Nozzle Plate Coating or cause clogging of the nozzles. This is particularly true when printing with black garments sprayed with Pre-treatment Liquid. Check the Print Table height before printing to ensure that the garments will not touch the Printhead Nozzle Plates.

Printer maintenance takes on added importance when the printer is used for dark garment printing. The white ink contains a higher percentage of solids than colored inks, resulting in more ink residues accumulating on and around the Printhead, Wiper Blade and Maintenance Station. When white ink is used, the white residues accumulating around the Maintenance Station and Nozzle Plate may cause the Maintenance Station not to seal properly during cleaning cycles. This accumulation of foreign materials will tend to clog the Printhead and shorten its life unless they are maintained regularly.

### 3. Scheduled Maintenance

It is very important to follow the printer maintenance schedule. If neglected, it may become necessary to ship the unit back to AnaJet® and put the printer through an extensive and expensive refurbishment process. These maintenance procedures are presented in a detailed manner in **Chapter 7: Maintenance and Transportation**.

### 4. Pre-treatment of Dark Colored Garments

*Pre-treatment Liquid is to be used with care. Do not let it contact your eyes. Do not breathe in the vapor or mist. Thoroughly wash your hands after handling it. If your clothing gets contaminated, wash it before reuse. If an accident happens please follow the Caution and First Aid instructions on the Pre-treatment Liquid bottle label. We recommend that all users apply pre-treatment using gloves and a dust mask. Follow the instructions on the label.*

For dark garment printing, the most critical process is proper application of Pre-treatment Solution onto the garments. Spotty or improper application of the Pre-treatment or improper drying will result in white ink not bonding properly with the garment fabric. This in turn will cause poor image quality and premature wash out of the image.

You will need the following for Pre-treatment Application.

- A well ventilated room. Good ventilation is essential for worker comfort and health. Application of Pre-treatment Liquid outdoors is not recommended on windy days as it can cause uneven application. It is recommended that a room away from the printer be dedicated to the application of pre-treatment so that the spray will not affect your printer.
- Our recommended process for applying the Pre-treatment Liquid is to use a High Volume Low Pressure (HVLP) spray gun. These spray guns are commonly used for applying paints and are available from paint supply stores or home improvement stores. The Wagner Control Spray Gun (Figure 6.4) and Campbell Hausfeld Paint Sprayer are good choices.



**Image 6.4: Wagner Control Spray Gun**

### Pre-treatment Application Procedure:

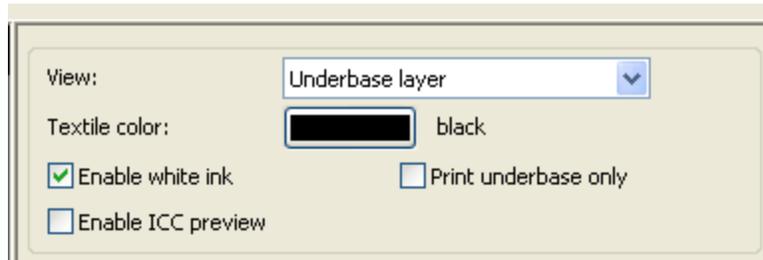
- Dilute the PowerBright™ Pretreatment Liquid with an equal amount of distilled water (50/50 mixture). Fill the sprayer reservoir with the mixture. It is very important to use distilled water as city water, well water or filtered water may have mineral content that can affect the performance of the pre-treatment.
- Hang the garments or lay them down on a flat spray table. Make the garment even and flat.
- Apply the pre-treatment mix with the sprayer. Apply an adequate and even amount to where the material has an even wet sheen. Remember you only need to apply the pre-treatment to the areas that will be printed on.
- Going in only one direction use a plastic squeegee to help spread the pre-treatment evenly after spraying. This also flattens any fabric fibers that may have risen due to the application of the wet pre-treatment.
- Dry the garment, You can achieve an excellent result by letting the garments air dry or you can use a heat press in the hover position (This means the heat press is not closed but has a 1 to 1/2 inch gap to allow the steam to escape), blow dryer or a heat tunnel. Do not dry your garments in a tumble dryer. These dryers are full of lint and since the pre-treatment is wet and somewhat sticky you will end up with lint stuck to the pre-treatment.
- Once the garment is dry to the touch you can print on it. If you plan on storing the garments for later use, be sure that they are completely dry beforehand to prevent mildew.
- When first attempting the pre-treatment process test with a few shirts to determine how much to spray. Too much pre-treatment can leave dark areas on the garments. Too little pre-treatment can make the prints look dull. **The performance of white ink is highly dependent on proper application of pre-treatment.**



**Figure 6.4a Poor Pre-Treatment Can Be Seen at the Bottom of this Image**

## 5. Dark Garment mPower™ AnaRIP Settings

Import and set up your image as described in the previous chapter (see Chapter 5: Light Garment Printing Process) When printing onto a dark garment or any garment that needs white ink to be printed the **Enable white ink** checkbox needs to be checked in the mPower™ RIP program.



- When you enable white ink three things will happen. First the background will switch to black, unless you have a different Preview Color selected, secondly the Underbase Tab will be brought up and thirdly the view will change to Underbase. (Figure 6.5)

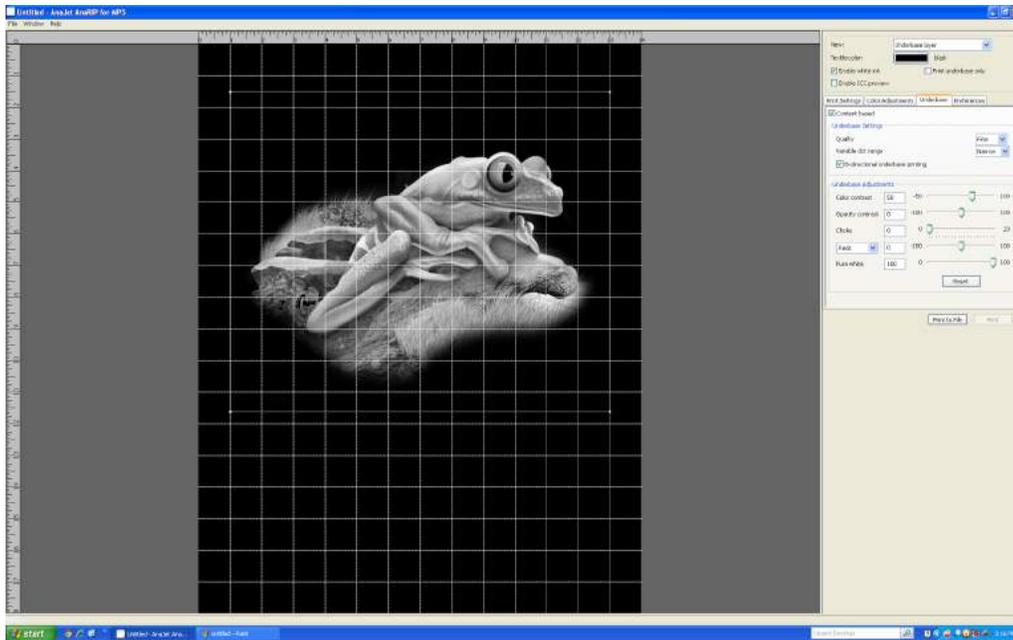
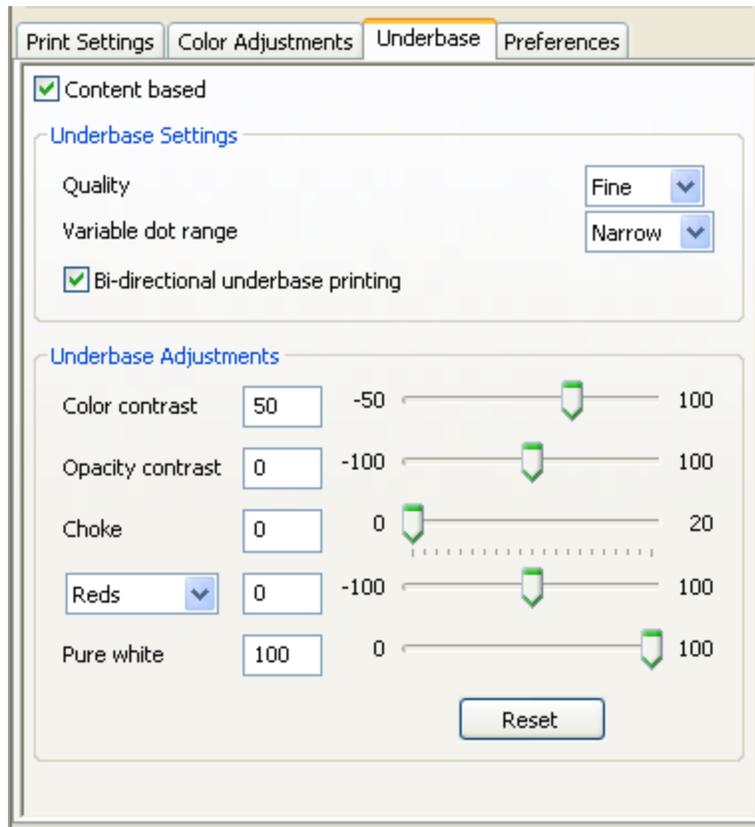


Figure 6.5: View After Enabling White Ink



**Figure 6.5a: Underbase Tab Settings**

- By default the Content based checkbox will be checked and your Quality should be set to Fine. the Variable Dot Range will be set to Narrow. The Bi-directional underbase printing checkbox will be checked for optimum speed when printing the underbase . (Figure 6.5a) Content based is a tool to help minimize costs by using less white ink by putting less white in under the darker colors of your image. To create a solid white ink underbase click off the Content Based checkbox. The more white ink is behind the colors the brighter the colors will be on your printed image, (Figure 6.5b and Figure 6.5c) but it is not necessary to have solid white behind all of the colors to produce a commercially acceptable finished product.

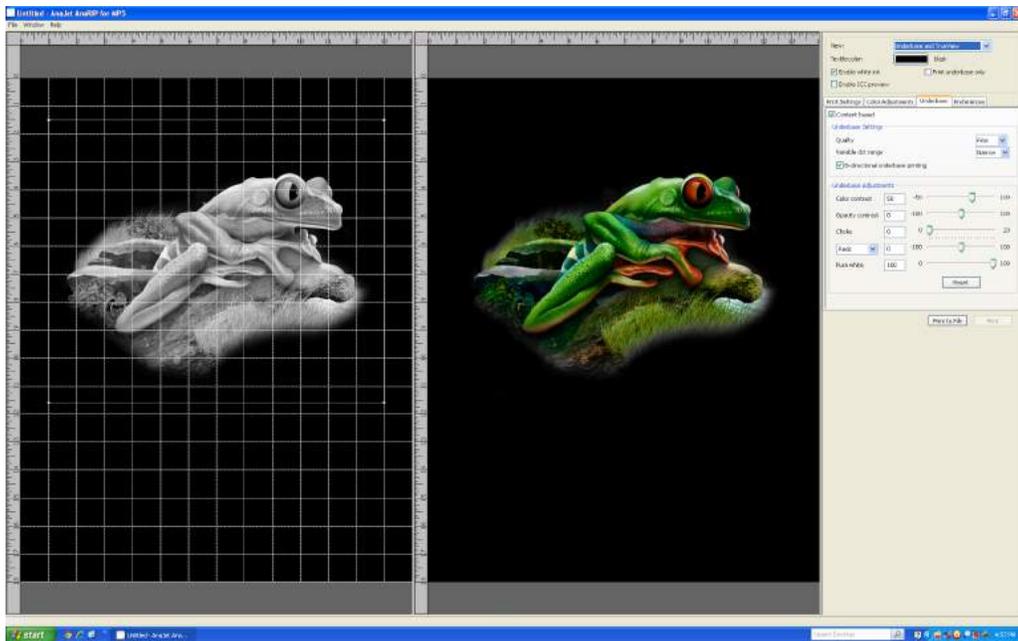


Figure 6.5b: Content Based Checked

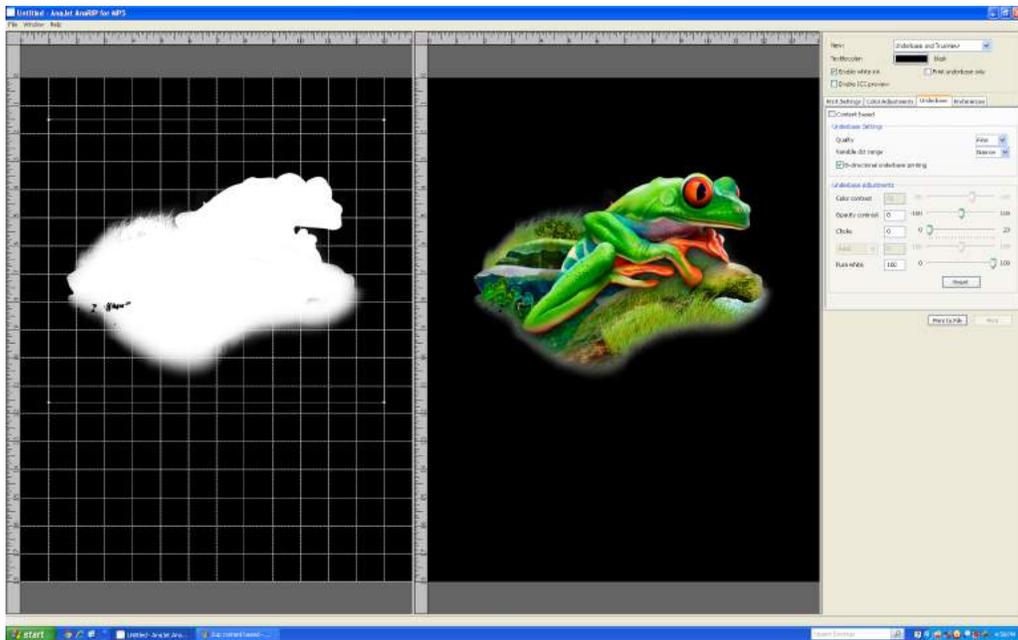
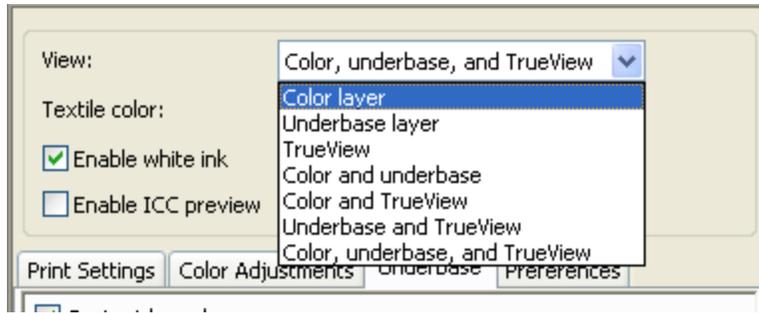
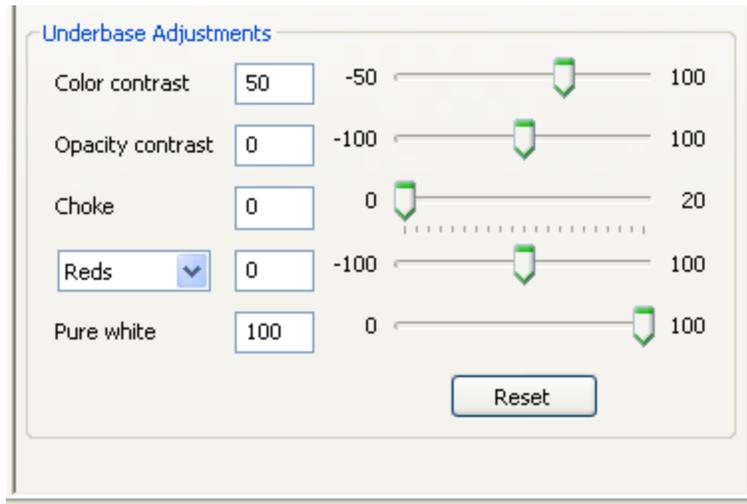


Figure 6.5c: Content Based Unchecked



**Figure 6.5d: White Ink Enabled View Options**

- Using the View selection you can monitor how your adjustments to the underbase will affect your printing results by selecting the Underbase and TrueView option (Figure 6.5d). The Underbase and TrueView images should now be visible in the preview screen. There are five ways to adjust your white underbase, Color Contrast, Opacity Contrast, Choke, Individual Color Adjustments and Pure White (Figure 6.5e). Note, some of the are disabled when Content Based is not checked.



**Figure 6.5e: Underbase Adjustments**

- **Color Contrast** will affect the amount of white used in the image and can be adjusted with the Color Contrast slider bar. Moving the Brightness slider bar all the way to the right to 100 will give you a more solid white ink underbase and in turn brighter colors (Figure 6.5f). Moving the slider bar left towards -100 will create more of a grey scale white underbase and less vivid colors (Figure 6.5g).

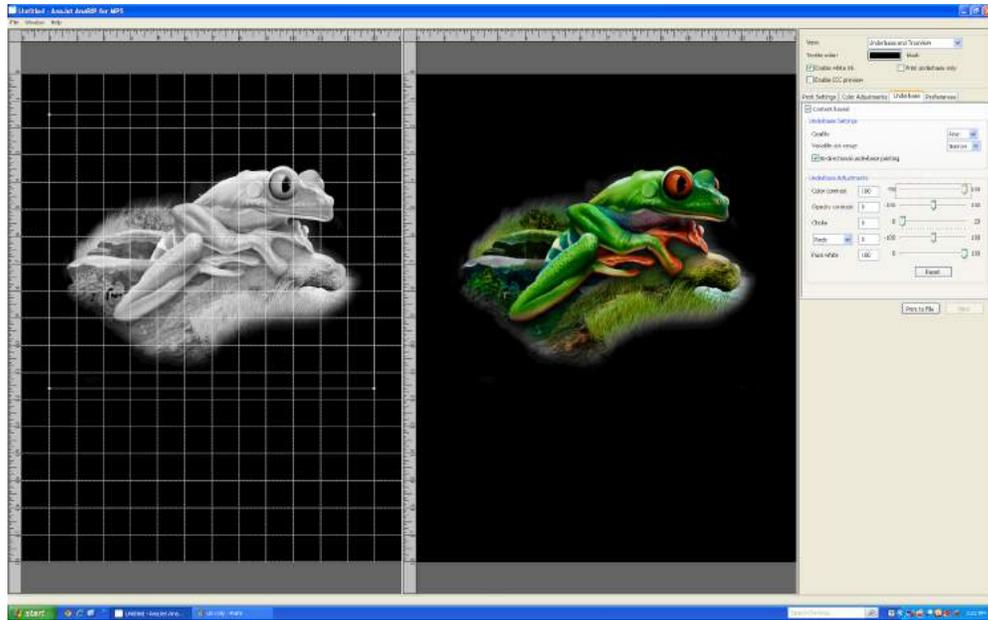


Figure 6.5f: Color Contrast Slider Up

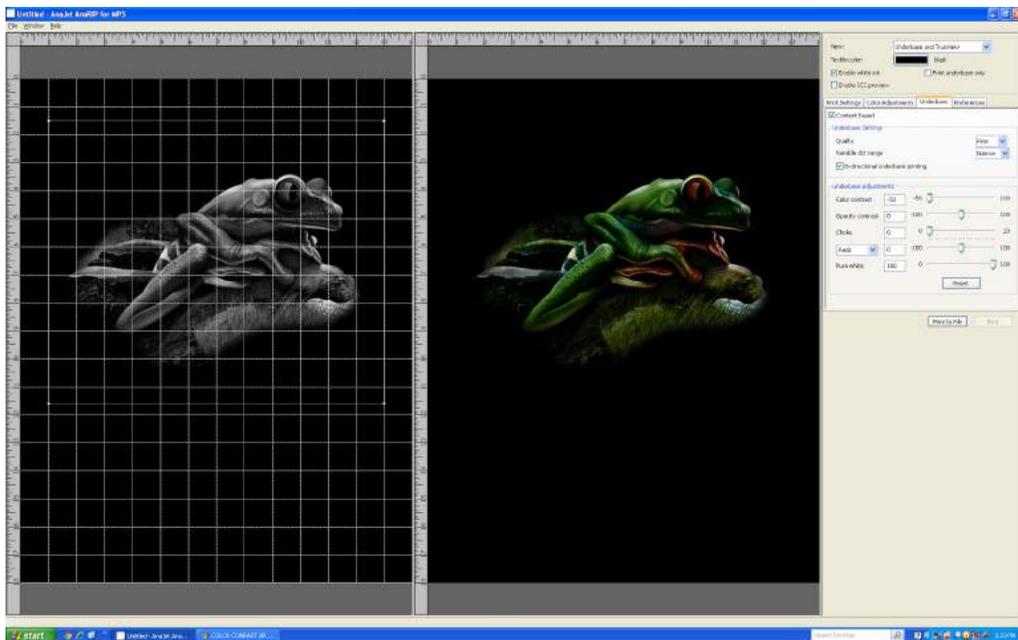


Figure 6.5g: Color Contrast Slider Down

- **Opacity Contrast** is only active when your image has a soft or semi-transparent edge or the image has semi-transparent colors in it. Moving the slider bar to the left will reduce the amount of white underbase beneath these area to help create a smoother blend. (Figure 6.5h and Figure 6.5i)

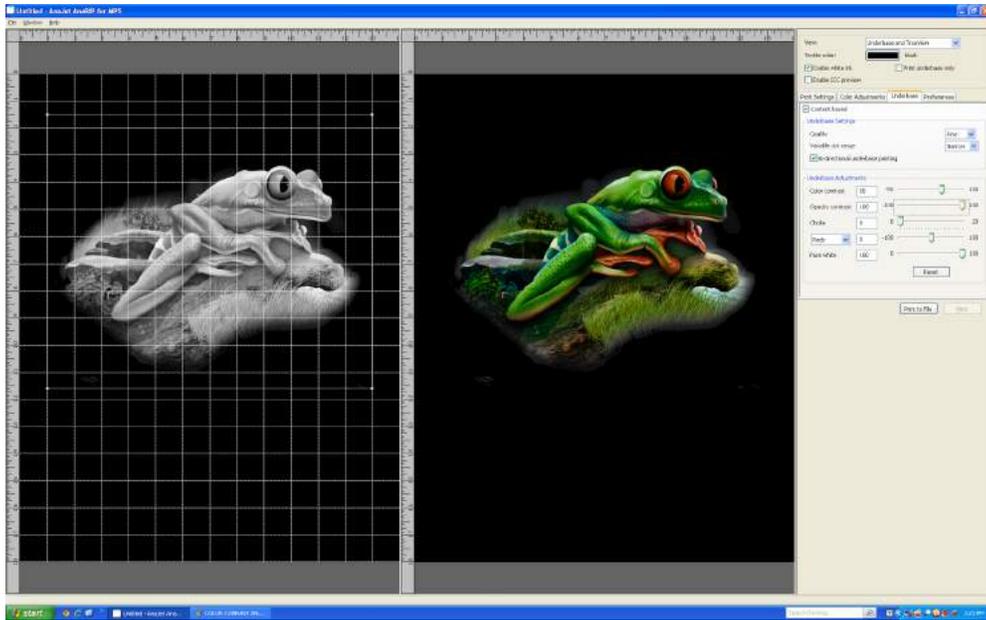


Figure 6.5h: Opacity Contrast Up

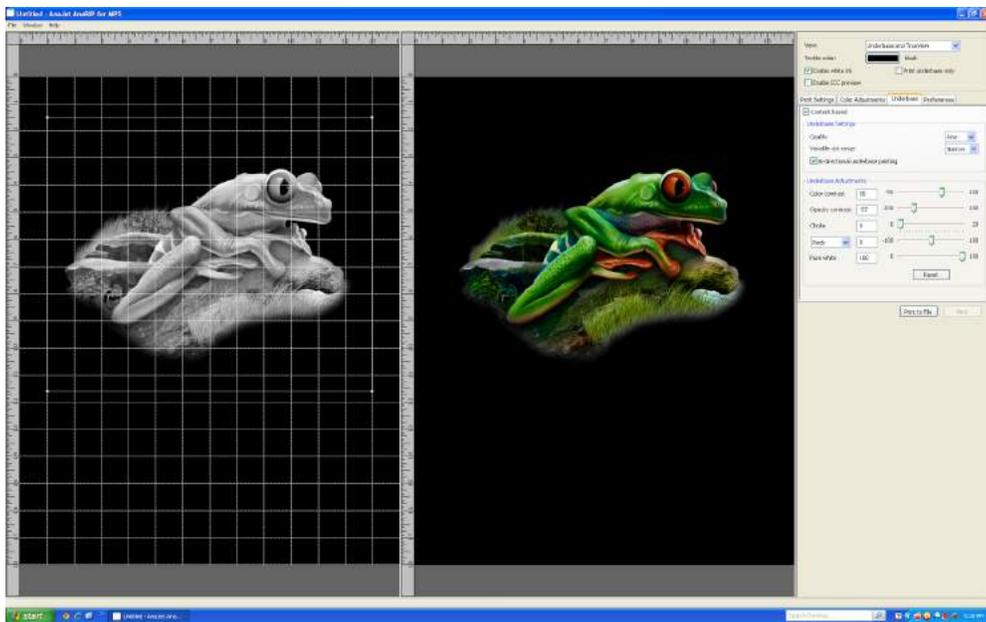


Figure 6.5i: Opacity Contrast Down

- Choke** combats the phenomena that when printing the White ink underbase onto a garment will expand and swell. This is the same for any type of garment printing including screen printing. The Choke setting slightly reduces the outside dimensions of the underbase so that white ink does not appear outside the prints edges of the final color pass. (Figure 6.5j) Under the Choke setting use the default value of 2 on a full size print, you will lower this if your image is small. If you see any white around the edges of your final print you will want to increase the choke value. (see image 6.5i)

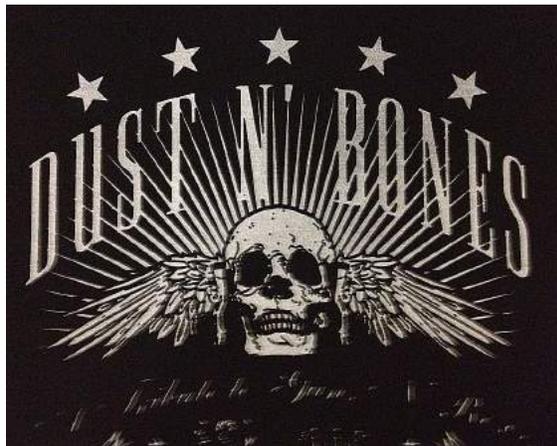


**Figure 6.5i: Choke Needed**

- If you are printing an image that is only white you will need to set the Choke to 0 to prevent parts from dropping out completely. (Figures 6.5j and 6.5k)



**Figure 6.5j:  
Only White Image - No Choke**



**Figure 6.5k:  
Only White Image - Choke Applied**

- **Individual Color Adjustments** By selecting a color from this drop down menu you are able to increase or decrease the amount of white ink underbase that will print under that color. This will help you bump up or bring down certain colors in your final print. You can multiple different colors using this setting. (Figure 6.5l and 6.5m)

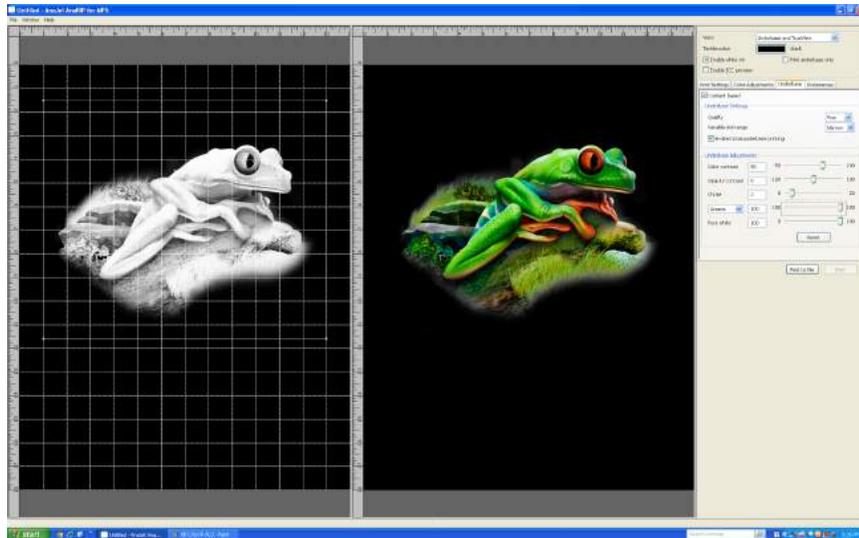


Figure 6.5l: Color Adjusted Up

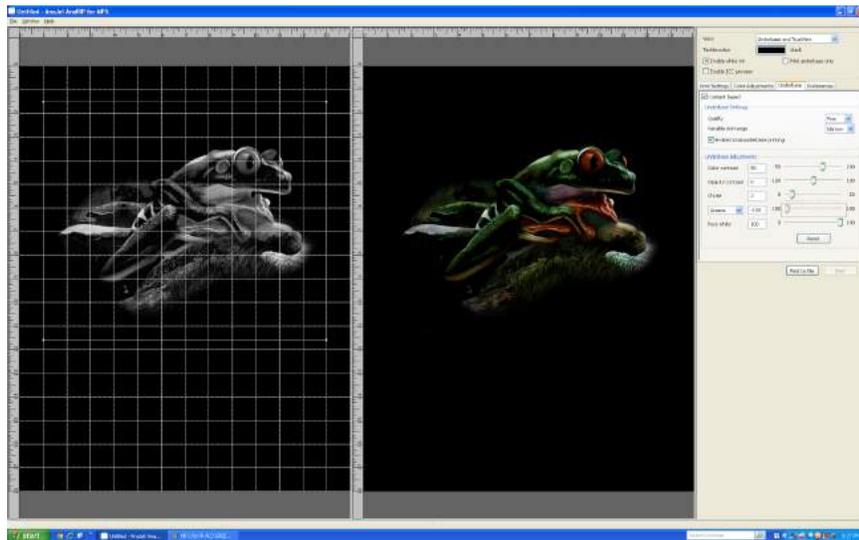
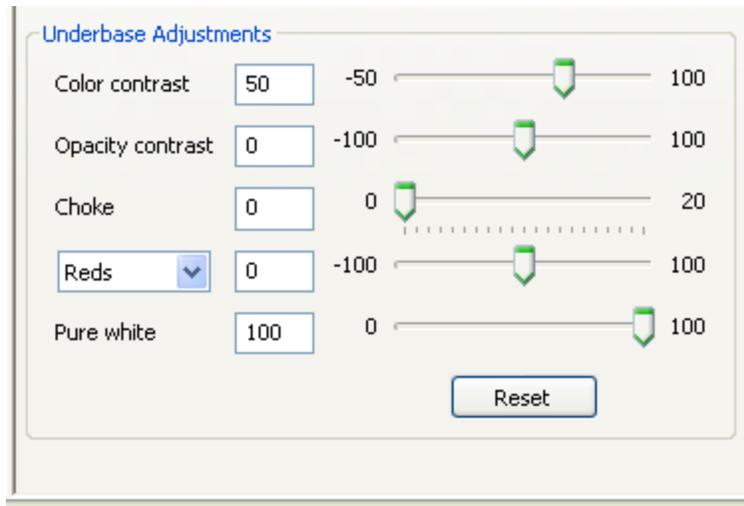


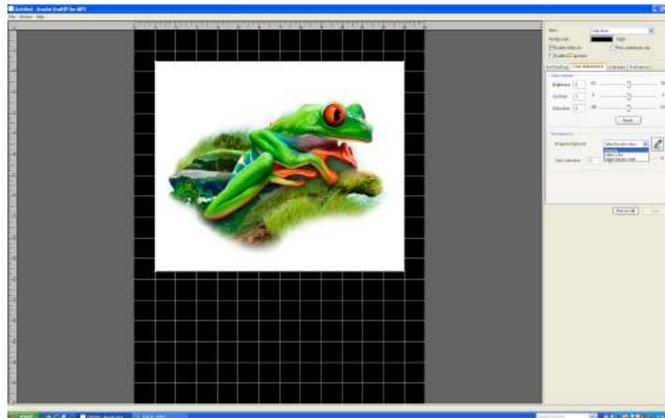
Figure 6.5m: Color Adjusted Down

- **Pure White** is set at 100 by default to print the most white ink in the pure white areas of your image. If desired this can be lowered here. (Figure 6.5n)

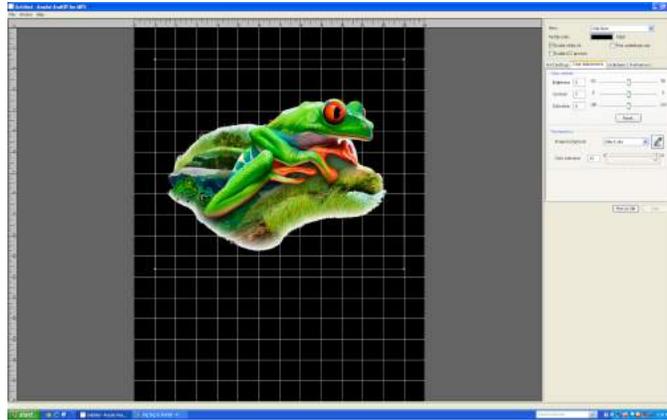


**Figure 6.5n: Pure White Adjustment**

- Remember you can still further adjust your image by changing the settings on the Color Adjustments Tab. Also located on that tab is the Transparency window that will let you remove a color range from your image to create a transparency. *This feature is limited so you may achieve better results using your image editing software.*
  - To remove all of a color range select Select Color. (Figure 6.5o) Then click the color you want to remove from your image. The selected color will be removed from all of the image. You can increase the range of the color removed by adjusting the Color Tolerance slider. (Figure 6.5p)



**Figure 6.5o: Select Color to be Removed**

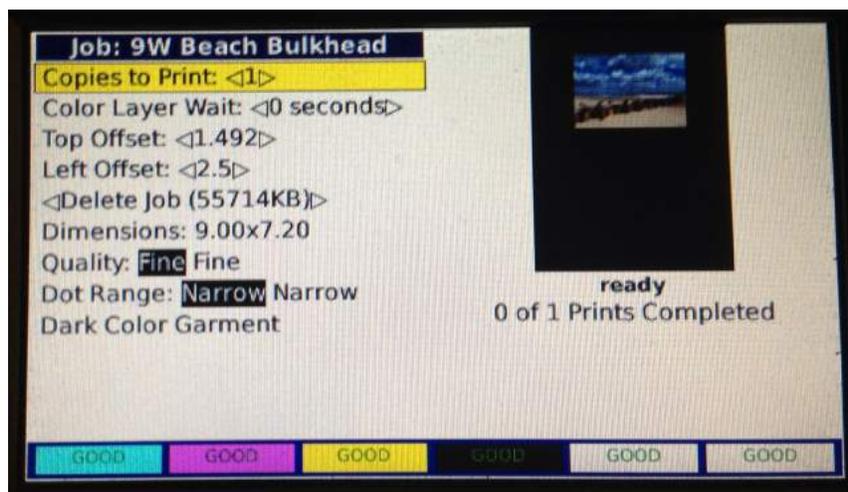


**Figure 6.5p: Color Removed**

- You can also select to remove a Border color. This remove a contiguous color up to when it changes to another color. Please note that better results will be achieved by using your image editing software to create transparencies.

Once you have completed your settings and adjustments you can now send your image to the printer by pressing Print or save the graphic to your computer, an USB drive or SD card by selecting Print to file.

The Printer will first print the White layer, once completed the printer will print the Color Pass. Since the white underbase layer may not be dry enough to receive the color layer, there is an adjustment on the printers job window to set a wait time before the color layer is printed. By default it is set to 0. (Figure 6.5q) By pressing the <LEFT ARROW> button you can set it to Manual. (Figure 6.5r) This means that you will need to press the <PRINT> button to have the color layer print. By doing this on your first print of a particular jobs you will be able to determine the wait time if any that will be needed to produce an acceptable print. You can then adjust the color layer wait time by pressing the <RIGHT ARROW> button to the needed setting.



**Figure 6.5q: Color Layer Wait set to 0 Seconds**

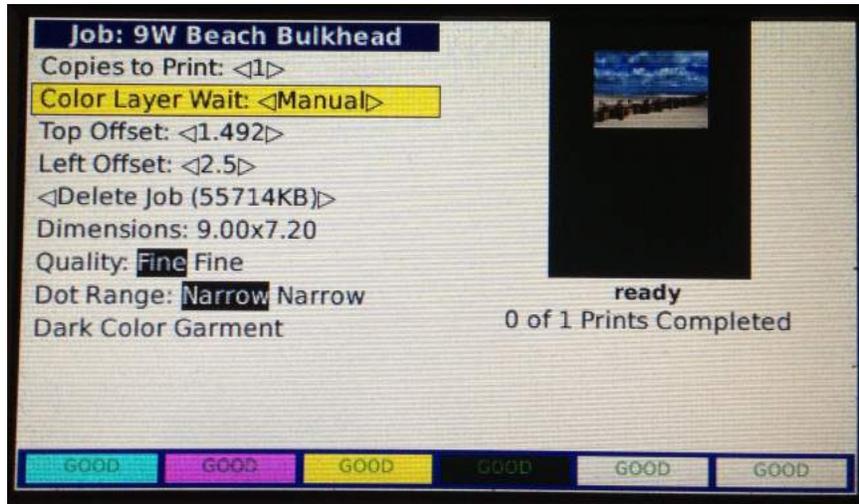


Figure 6.5r: Color Layer Wait set Manual

## 6. Set the Image with Heat Treatment

In order to cure the ink so that your images will be color-fast when washing, it is necessary to heat treat the image so that the image bonds with the garment.

- Place the garment in your heat curing machine image side up set to the correct settings found below. (Figure 6.6)
- If you are using a heat press bring the top down to within 1 inch of being closed and hover the heat press over the image for 15 seconds. This hovering step prevents the mixing of the white and color layers. Both layers are still wet and need to set up a little before applying pressure. This step is needed to produce the best final result when using a heat press.
- Re-open the heat press and cover the image with AnaJet® SoftTouch heat press paper. Instead of SoftTouch, a Teflon sheet or a Kraft Paper Cover Sheet can be used. If you use a Teflon pad it will leave a semi-glossy look to the prints.
- Close the heat press and let the ink cure for the prescribed time. (Figure 6.6)
- When the time is completed open the heat press, remove the heat press paper and your printed garment is complete.
- If you are using a textile oven or conveyor dryer, Please test the temperature of the printed image when it exits the dryer to assure that it has reached 330°F or 165°C. Also please do a wash test of your first attempts to be sure that the inks have cured properly and washability has been attained.

<b>PowerBright™ Ink</b>	<b>Temperature</b>	<b>Time</b>
Dark Shirts with Heat Press (1)	330°F or 165°C	90 seconds
Dark Shirts with Heat Press (2)	325°F or 162°C	2 minutes
Dark Shirt with Conveyer Dryer (2)	Printed image must reach 330°F or 165°C	Varies

**Figure 6.6: Heat Curing Temperature and Time Variations**

## 7. Dark Garment Washing

A properly printed dark garment can last dozens washes without noticeable fading if washed properly. Remember that the most important process for a long lasting dark garment print is **heat treatment**. If there are repeated problems with the durability of dark garment prints, review your heat treating process. We suggest that our customers include the following washing instructions for the garments printed with white ink.

### **Washing Instructions for Longer lasting prints.**

- a. Turn the shirt inside out.
- b. Wash in cold water.
- c. Dry on delicate cycle.

## Chapter 7: Maintenance and Transportation

### 1. Technical Notes on White Ink Maintenance

Virtually all white inks used in digital apparel printers today use Titanium Dioxide for pigment. This pigment is a relatively heavy material. For direct to garment printers using Titanium Dioxide based White Inks, the following three conditions have to be met to ensure proper ink flow continues in the inkjet printer system:

- The inks must be agitated daily. This involves gentle shaking of the cartridges.
- The inks must flow through the ink delivery system frequently. This involves daily printing with white ink or daily Nozzle Checks followed by Printhead Cleans when Nozzle Checks are below 90%
- The inks must not touch open air; otherwise the Titanium Dioxide based ink will agglomerate and clog the ink delivery system and Printhead. AnaJet printers use sealed ink cartridges protect inks. Open ink bottles or refillable bulk ink cartridges will expose the ink to open air causing agglomeration.

The AnaJet® mPower™ uses a Closed-Loop Ink Delivery system with sealed ink cartridges which when properly maintained prevents inks' exposure to air. However, the system operator still must shake the ink cartridges daily, and make the inks move through the ink tubes daily. mPower's Auto circulation function reduces the manual maintenance tasks, but the operator needs to perform frequent nozzle checks and also provide the necessary additional manual maintenance.

### 2. Maintenance Schedule

#### DAILY:

- Using the AnaJet mPower™ Control Panel, print a Nozzle Check daily (see chapter 2: section 8). Perform printhead cleans as needed. Usually one or two Printhead Cleans will clear the nozzles and achieve a good Nozzle Check Pattern. Generally each of the ink channels must have 90% or better Nozzle Check Patterns to achieve acceptable print quality.
- Wipe the wiper blade clean at the beginning of the day. See **Section 4 Cleaning Maintenance Station and Nozzle Plate**.
- Remove the 2 white ink cartridges and shake them a few times gently to keep the pigment in solution. Replace them in the same ink bays.
- If you do not use white ink often or use the white ink heavily, it may be necessary to do the weekly maintenance on a daily basis or more frequently than once or twice a week.

#### WEEKLY:

- Check the Wiper Blade, Maintenance Station and Printhead Nozzle Plate for ink residue and clean them as needed with AnaJet® Cleaning Solution. (You may need to clean these area more than once

or twice a week depending on your usage pattern.) See **Section 4. Cleaning Maintenance Station and Nozzle Plate.**

**BI-WEEKLY:**

- Check the right and left Drip Pan Foam for excessive buildup or saturation and replace pads or clean as necessary.

**MONTHLY:**

- Check the Wiper Blade for wear and replace if needed.
- Check the Wiper Holder Track for build up and clean if necessary.
- Check the Waste Ink Tank and drain as needed.

**EVERY 3 MONTHS:**

- Replace all ink cartridges with Cleaning Solution cartridges and perform the Startup Fill function from the control panel until all the ink in the tubes is replaced by Cleaning Solution. Let it sit overnight. Reinstall the ink cartridges and perform the Startup Fill functions until the Cleaning Solution is completely replaced by ink in the tubes.

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If a printer is not going to be used for more than one week, it is recommended to replace the ink with Cleaning Solution. Please contact technical support if you are unclear these idle time precautions.

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The printer firmware at times may need to be updated. Check for updates on the AnaJet® Technical Support web site and contact AnaJet® Tech Support for more information.

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Print and use the MAINTENANCE CHECKLIST included in Appendix 2.

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### **3. If You Cannot Perform Daily Regular Maintenance**

Do not be concerned if you cannot perform the daily white ink maintenance over the weekend. If you are not able to do the recommended regular maintenance for more than 4 days in a row, due to holidays, vacations or emergencies, replace the inks in the printer with Cleaning Solution and flush the ink delivery system of ink. When you return, replace the Cleaning Solution with inks.

### **4. Required Maintenance**

- Inkjet printers used for apparel printing require a higher level of maintenance than those used for

document printing. The greater rate of ink flow, lint from garments, ink pigments and low humidity all contribute to accumulation of foreign elements in the Maintenance station, Wiper Blade, and Printhead areas. If not cleaned regularly, these residues will allow air to come in contact with these areas, and interfere with ink flow, resulting in lower quality prints and shorter life of the Printhead. If desired wear powder-free latex or rubber gloves during cleaning.

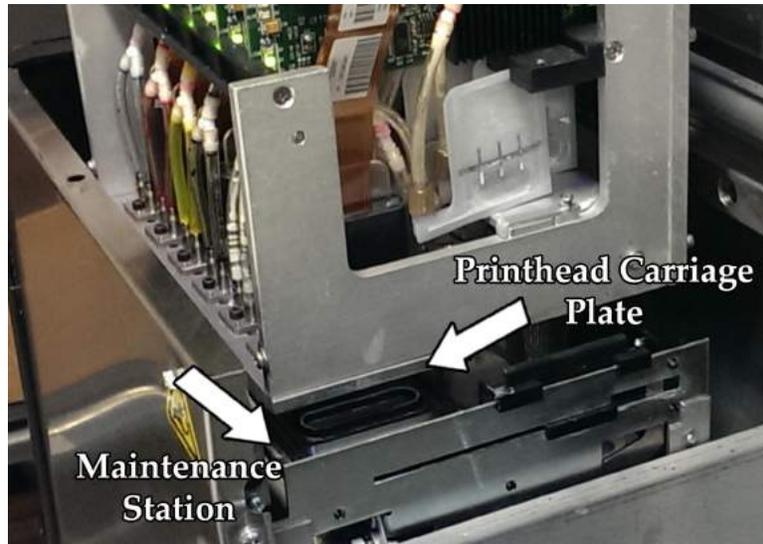
- Record your maintenance using the maintenance checklist included in Appendix 2 The entire cleaning operation will take no more than 10 to 15 minutes. Do not take a break during this process as you will be exposing the Printheads to air for an extended time.
- Before the cleaning operation, obtain the AnaJet Cleaning applicators. These are low lint urethane cleaning swabs made for AnaJet Maintenance cleaning. Use AnaJet P/N CA-WD1 (wide tips, and/or CA-NR1 (narrow Tips) Discard Soiled Cleaning Applicators after use. We also recommend some lint free wipes P/N 150204-001, Cleaning Solution P/N CF-FT125, and lubricant P/N 150646-001.



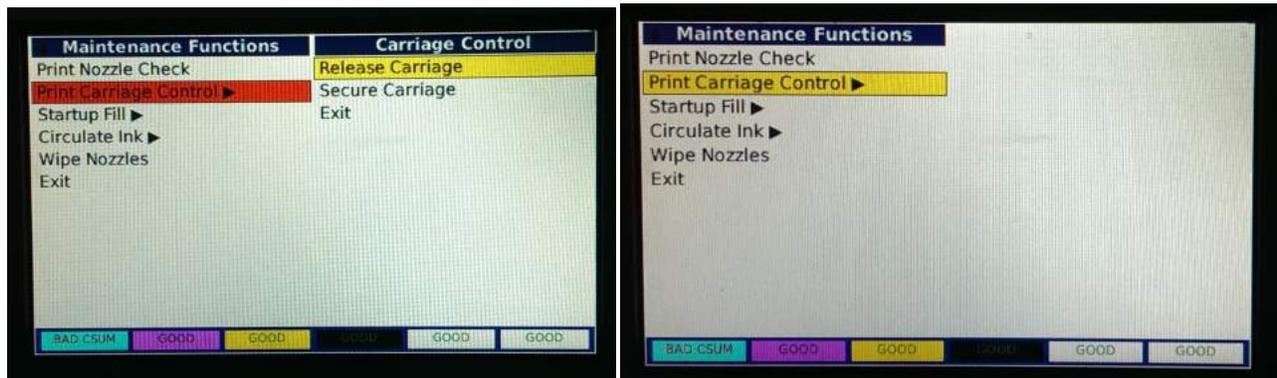
**Figure 7.4: Cleaning Supplies**

**Cleaning Procedures:**

- Locate the Printhead Carriage and the Maintenance Station. (Figure 7.4a)



**Figure 7.4a: Carriage and Maintenance Station**



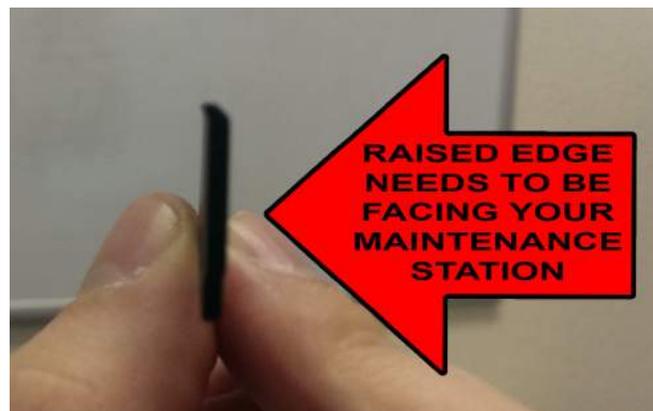
**Figure 7.4b: LCD Display Maintenance Menu**

- From the Maintenance Functions menu select Print Carriage Control and press <ENTER> then select Release Print Carriage and press <ENTER>. (Figure 7.4b) This will lower the Maintenance Station and move the Printhead Carriage to the far right of the printer.
- Using Cleaning Applicators, gently clean around the Maintenance Station. It is important to clean the edges of the Maintenance Station Capping Rings which couple with the Printhead Nozzle Plates to form an airtight seal during idle time. DO NOT be over aggressive in trying to remove ink from the gaskets. The station will seal okay with some ink on the rings. Applying too much force may result in damage to the rings. (Figure 7.4c) Remove as much of the accumulated ink residue as possible.
- The cleaning Applicator can be dipped in Anajet Cleaning Solution (Anajet P/N CF-FT125) if there are stubborn dried ink deposits in the area. To avoid contamination, never dip soiled Cleaning Applicators in the Cleaning Solution bottle. Do not use any sharp objects or solvent based cleaners like alcohol to remove dried ink deposits around the Capping Rings as this could damage them or dry them out and cause them to crack.



**Figure 7.4c: Clean Highlighted Areas with Swabs.**

- Remove the Wiper Blade by grasping its top edge and gently pulling up. (Figure 7.4d ) Clean both sides and the top edge of the Wiper Blade to remove any dried ink.
- Replace the wiper blade back into the slot taking care that its orientation is correct. (Figure 7.4e) The wiper blade will need to be replaced when it starts to feel flimsy and no longer holds its shape.



**Figure 7.4d: Wiper Blade Location  
Orientation**

**Figure 7.4e: Wiper Blade  
Orientation**

- The Printhead Nozzle Plate is located below the Printhead Carriage. Center the Carriage on the carriage rail and using a small mirror to see your progress gently clean the Nozzle Plate between the printhead edges with a new Cleaning Applicator or Lint Free wipes. Do not use any solvent based cleaners as they may not be compatible with the ink. Remove any ink residue accumulated on the Nozzle Plate. (Figure 7.4f) When clean you should see the bare metal of the plate. Use care when cleaning the Nozzle Plate so as not to scratch or touch the Printheads. If dented or scratched, the Printheads become unusable.



**Figure 7.4f: Printhead Nozzle Plate**



**Figure 7.4g: Cleaning Printhead Nozzle Plate**



**Figure 7.4h: Flushing the Maintenance Station**

- When flushing the maintenance station we will need to activate the maintenance station pump while the carriage is released.
- To turn on the pump we will be using the startup fill function. First press <MENU> then select maintenance Functions and press <ENTER> Now select Startup fill and press <ENTER>
- Select fill Purge lines and press <ENTER>, this will turn on the maintenance station pump. DO NOT select any further option on this menu.
- Now that the pump is on use a syringe to put cleaning solution into each gasket on the maintenance station. It is only necessary to put 5ml or half a syringe through each color channel. We recommend 10ml or one full syringe through the white channels. If you notice any one channel drains slower it may be necessary to put more fluid through this channel.



**Figure 7.4i: Cleaning the Wiper Slider Assembly**

- To Clean the wiper assembly we will utilize the wipe nozzle function in the printer maintenance functions menu. To start this process first clean the front side of the wiper assembly shown above.
- We recommend using some cleaning applicators or lint free wipes with Cleaning Solution to remove any dried ink in this area.
- Use the control panel to select Maintenance Functions and press <ENTER>. Next select Wipe Nozzles which will slowly bring the wiper forward and move the carriage to the right. It is important to be

cautious of the carriage during this process. Once the carriage begins to move past the wiper blade quickly apply some cleaning solution with the applicator directly to the slider rail. Now repeat the Wipe Nozzles function and use a lint free wipe to quickly wipe the rail free of any cleaning solution.



**Figure 7.4j: Lubricating the Wiper Slider Assembly**

- Take a clean applicator and apply lubricant to the applicator.
- Use the applicator to spread the lubricant on the front side of the wiper slider track shown in (Figure 7.4j)
- Once you have lubricated the front side of the slider track, use the control panel to select Wipe Nozzles listed in the maintenance functions. Repeat this three times so the lubricant can be spread along the rail.
- Finish by Securing the Carriage. The maintenance routine is now complete and you can continue printing or leave the printer idle.

## 5. Replacing Ink Cartridges

When an ink cartridge low or empty a message will display on the control panel. The LCD panel will display on the affected ink channel, **“INK LOW, VERY LOW, EMPTY”**

The ink cartridge should be replaced as soon as the LCD display reads **“VERY LOW”**. If the LCD display changes to low during a print job, the current job can be finished without any problem. When the cartridge is low the **INK LOW** warning will appear when 20% of the ink is left. This will give you time to order ink if you do not have a replacement cartridge. Once an ink cartridge reads **EMPTY** the printer will not print until that cartridge is replaced.

If the LCD control panel display still reads **“NOT FOUND”** after a new cartridge is installed, it may be installed improperly. Pull out the cartridge and insert it carefully but fully until it stops. Do not force the cartridge to avoid any damage to the printer. Please note that without installing all 6 cartridges, the printer will

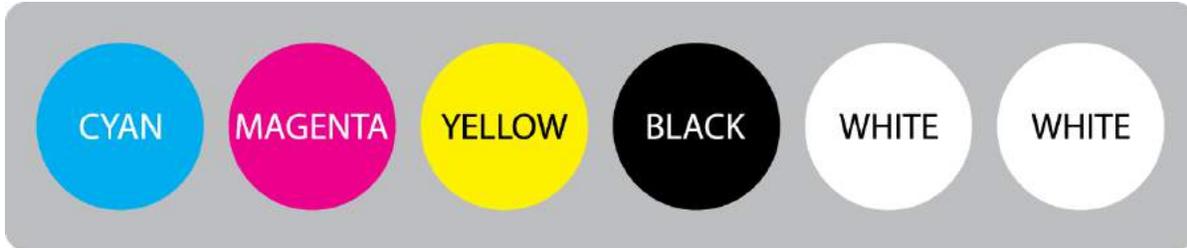
not print.

Even when you do not use the printer for an extended period of time, do not remove the ink cartridges from the printer. Even if the ink cartridges are empty, keep the cartridges installed to help keep air away from the ink delivery system. For Printer storage for an extended time period, it is recommended to replace the inks with Cleaning Solution. See section **6. Switching from Ink to Cleaning Solution Using the Startup Fill Function**

AnaJet® recommends the use of genuine AnaJet® PowerBright™ ink cartridges which have been specifically developed for the mPower printer. **Use of other inks or tampering of the ink cartridge will not only produce poor quality prints, it may cause damage to the printer which may not be covered by your AnaJet® warranty.** If you do not have a replacement cartridge, leave the old cartridge in the printer until you are ready to replace it with a new one.

### To replace ink cartridges:

- Once the LCD control panel has indicated a cartridge is low or empty replace using the correct color into the correct ink bay slot. Cartridge color assignment is located above the ink bay with a matching colored circle. (Figure 7.5)



**Figure 7.5: Ink Bay Cartridge Order**

- Carefully pull the empty cartridge straight out of the Ink Bay. (Figure 7.5a) The LCD on the control panel will read “NOT FOUND.” for the missing cartridge



**Figure 7.5a: Pull the Cartridge Straight Out**

- Make sure the replacement ink cartridge is of the correct color and has not expired. Colored inks expire one year from their manufacturing date, white ink in six months from the indicated manufacturing date. The manufacturing date is found on the cartridge. Do not use expired inks since they can clog the Ink Delivery System and may produce incorrect and less vibrant colors. The Cleaning Solution cartridges expire three years from the manufacturing date.
- Gently shake the PowerBright™ ink cartridge a few times to assure that the pigment is in solution. Note, Cleaning Solution cartridges should not be shaken as it may cause foaming.
- Hold the cartridge with the proper orientation, noting the “This Side Up” warning on the cartridge label and the arrow pointing in the direction of installation. (Figure 7.5b) Carefully insert it into the proper Ink Cartridge Bay slot. Push it in all the way. When the ink cartridge is properly installed, the LCD control panel will read “GOOD.”



**Figure 7.5b: Push a New Cartridge Straight In**

- Discard the used cartridges per your local regulations. Never dismantle, tinker with or attempt to refill the used ink cartridges. Refilled ink cartridges can clog the Ink Delivery System and Print heads and possibly void your warranty.

If you need to store partially used ink cartridges place them vertically with the outlet valve upward.

## **6. Switching from Ink to Cleaning Solution Using the Startup Fill Function**

There are times when you might need to flush the ink in your printer. Some examples are:

- Switching from PowerBright™ ink to Cleaning Solution when preparing the printer for storage for an extended period of no use.
- Switching from Cleaning Solution to PowerBright™ ink when first receiving the printer or after being away and removing the ink from the printer

### **The Replacement Process**

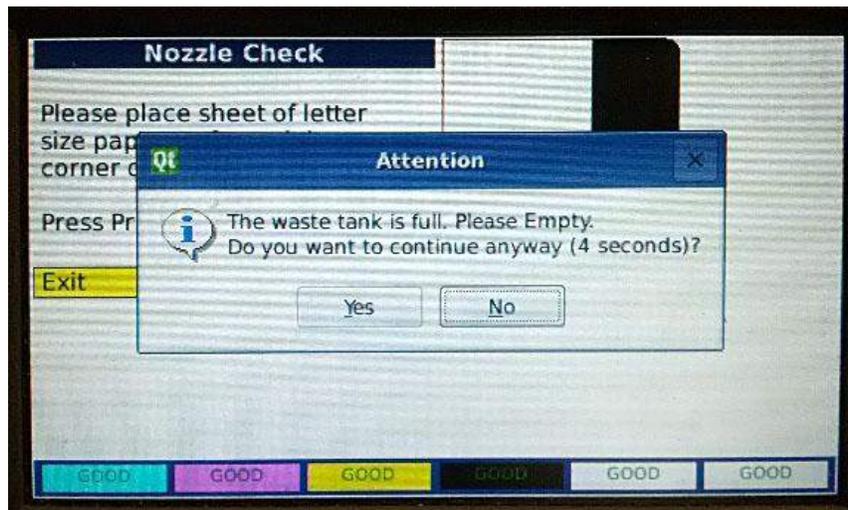
- Replace all Ink Bays with Cleaning Solution cartridges.
- Using the printer's **Startup Fill** function found under **Maintenance Functions** in the Control Panel **Main Menu**, fill the ink tubes with cleaning solution or ink as needed. You may review this process in **Chapter 2, Section 7 "Filling the Printer with Ink"**.
- Perform a **Printhead Clean** and **Printhead Nozzle Check** to verify that all the Cleaning Solution or ink has been replaced through the Printhead.
  - Print the Nozzle Check onto a sheet of paper to view colors, the white ink will print directly onto the table to view its performance. See **Chapter 2, Section 8. Performing a Nozzle Check**

- If Nozzle Check Pattern shows ink or cleaning solution is still in the ink delivery system, repeat Step 2.
- If the Nozzle Check Patterns shows the replacing ink or cleaning solution is printed solid, the switching process is complete.

## 7. Waste Ink Tank and Ink Drip Foam

### Emptying the Waste Ink Tank

The printer's waste inks are collected in the Waste Ink Tank, located at the inside back right of the printer. When it needs to be emptied a message will appear on the display when you send a print job or printhead clean. (Figure 5.7). At this time you may select **No** and empty it then or select **Yes** and empty the tank later. Waste ink is emptied through the Waste Ink Drain on the back of the printer. Follow the procedure below to remove the waste ink:

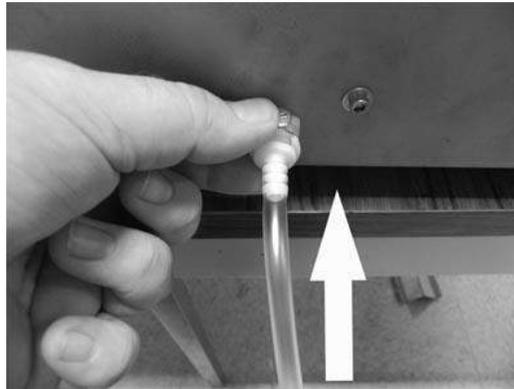


**Figure 5.7: Waste Tank Full Message**

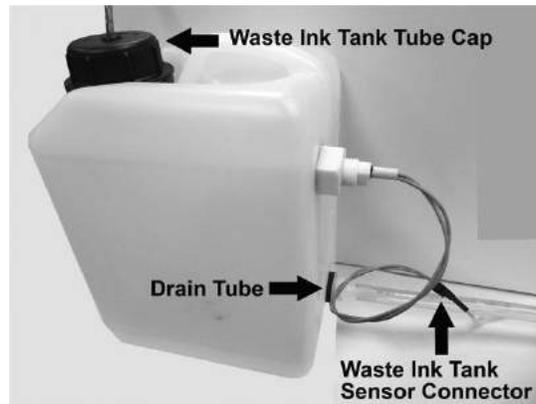
- Remove the Waste Ink Drain Tube from the storage area located inside the printer.
- Find a receptacle to hold the waste ink and place the non-coupler end of the waste ink tube and place it inside. Insert the Waste Ink Drain Tube coupler into the Waste Ink Drain, on the back of the printer. (Figure 7.7) It will click and lock into position.
- Loosen the Black Plastic Cap on the top of the Waste Ink Tank. The waste ink will flow out of the Waste Ink Drain Tube. If the ink does not flow tilt the tank forward to help ink flow.
- After draining, re-tighten the Black Plastic Cap on the top of the tank and remove the Waste Ink Drain Tube coupling by pressing down on the Waste Ink Drain release tab. Place a paper towel under the coupling when releasing to catch any ink left in it.

- Return the Waste Ink Drain Tube to the storage area.
- Dispose the ink according to your local regulations. Do NOT discard the waste ink into the city sewer.

Depending on your usage pattern, you should check the Waste Ink Tank level regularly, at least once a month. **It is very important to empty the Waste Ink Tank before moving, transporting or shipping the printer.**



**Figure 7.7: Insert Waste Ink Drain Tube into Waste Ink Drain**



**Figure 7.7a: Waste Ink Tank**

It is a good practice to clean the Waste Ink Tank every 6 months and replace it once a year. The white waste ink pigment will settle at the bottom of the tank, and reduce the Waste Ink Tank's capacity. To replace or clean the Waste Ink Tank, follow the procedure below, referencing Figure 7.7a.

- Drain the Waste Ink Tank, (see Section 7) then lift the Waste Ink Tank up and out of the printer. The tank is secured with Velcro to the floor of the printer, so a bit of force will be needed to separate the Velcro.
- Locate the Waste Ink Sensor (located in the side of the tank) and follow its signal cable up until you find the black sensor connector. Disconnect the sensor connector.

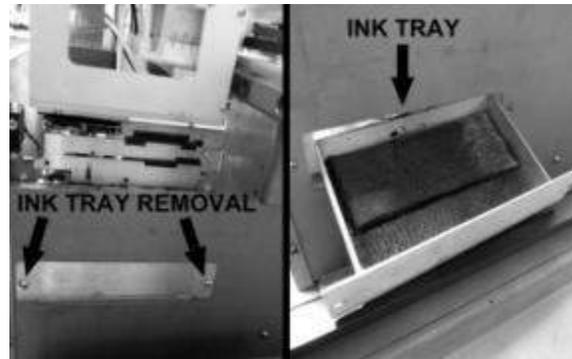
- Locate the Waste Ink Tank ink tube cap (located at the top of the tank). Unscrew it from the tank and remove it from the waste ink tank along with the tube from the Maintenance Station
- Locate the drain tube (located on the bottom side of the tank). Release the drain tube from the tank by pulling the tube. The Waste Ink Tank should now be completely disconnected from the printer.
- Rinse out the tank with warm water. The settled white ink should rinse completely out.
- Once the Waste Ink Tank has been thoroughly rinsed, replace it into the printer.
  - Reconnect the drain tube to the bottom side of the tank..
  - Reconnect the Waste Ink Tank ink tube cap and tighten down.
  - Reconnect the Waste Ink Tank sensor connector.
  - Seat the Waste Ink Tank into the space at the back of the printer.

### **Checking and Replacing the Drip Pan Foam**

Check the Ink Drip Foam located on the left and right sides of the printer regularly. (Figures 7.7b and 7.7c) Replace them as needed when they are soaked with ink or excessive ink residue builds up. If you use a lot of white ink, you will have a more rapid buildup of ink residue. If you do not have a new Ink Drip Foam to replace, you can re-use the Ink Drip Foam by washing it with warm water. Dry the foam thoroughly before reinstalling it.



**Figure 7.7b: Right Side Ink Drip Foam**



**Figure 7.7c: Left Side Ink Drip Foam Tray**

- The Drip Pan Foam on the left side of the printer is located under the Maintenance Station, The foam tray must be removed for inspection or replacement. (Figure 7.7c)
- To remove the left drip pan tray, the table must be moved all the way out to the home position and the 2 screws must be removed so the tray can be pulled out.

## **8. Cleaning the Printer**

Clean the printer a few times a year to keep the printer operating properly.

- While cleaning, be careful not touch or soil any of the pulleys, the belt and the Carriage Encoder Strip located behind the Printhead Carriage movement area.
- Never use any solvent to clean the printer. These chemicals can damage the printer components.
- Do not use a hard or abrasive brush.
- Do not lubricate the inside of the printer. Unsuitable oil or lubricants can damage the mechanisms. Contact AnaJet® Technical Support, your AnaJet Distributor or a qualified AnaJet service technician if lubrication is needed.

### **The Printer Cleaning Process**

- Turn off the print engine power using the <POWER> key on the Control Panel. When the print engine power down sequence is completed, turn off the Main Power Switch at the rear of the printer.
- Open the printer top cover.
- Using a soft brush, clean away any dust and dirt inside the printer.
- Clean the Maintenance Station, Wiper Blade and around the Nozzle Plate with AnaJet® Cleaning Applicators as described in section 4 of this chapter.

- Drain the Waste Ink Tank as needed. Refer to section 7 of this chapter.
- Close the printer top cover.
- If the outer cover is dirty, clean it with a soft damp cloth with mild detergent. Make sure the water does not seep into the printer's mechanisms.
- Using a damp cloth, clean the Print Table with mild detergent. Do not use ammonia based glass cleaners such as Windex as the ammonia can dry and damage the Printhead.

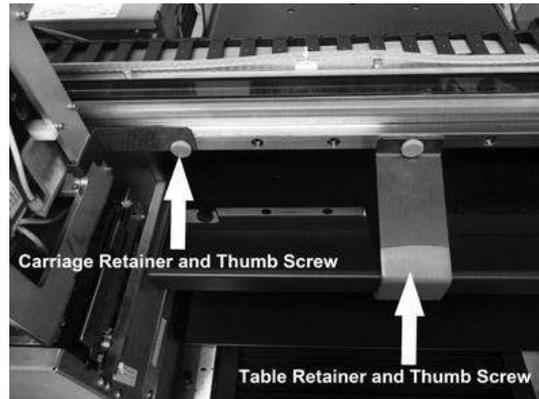
## 9. Transporting the Printer

### Very Short Distance Move

To move the printer a very short distance, with the printer remaining at a horizontal position, follow the steps below. An example of such a move would be moving the printer within a building. If you need to move the printer a longer distance or ship it through a common carrier, follow the instructions for Short Distance or Long Distance.

- Turn off the print engine by pressing the <POWER> key on the Control Panel. When the print engine completes its power down sequence, switch off the printer Main Power Switch on the rear of the printer.
- Drain the Waste Ink Tank. (See Section 7 of this chapter)
- Remove both the power cord and USB cable.
- The ink cartridges should remain in place. Removing ink cartridge may cause ink dry-out in the ink delivery system.

- Install the Carriage and Table Retainers that were with the printer when it arrived. Use the Thumb Screw to tighten the table retainers. (see figure 7.9)



**Figure 7.9: It is important to place the Table and Carriage Retainer before Transport.**

- Move the printer carefully (four people are required). Keep the printer horizontal. Only move the printer on its side when moving through a doorway.
- When you reach the new destination, make certain the printer is placed on a stable, sturdy and level table. Make sure the printer is level using a “torpedo level” as described in **Chapter 2: Startup of a New Printer, Section 4: Setting up the Printer.**
- Make sure that the environment of the new location meets to the printer’s requirements. See **Chapter 1: Product Information, Section 2. Operation Environment Requirements.**

### Short Distance Move

A short distance move involves moving the printer by a vehicle under your supervision, The actual travel time should not take more than an hour or two.

- If traveling through a high temperature or very low humidity area, or if there is a large altitude change, replace all of the ink with Cleaning Solution. (See Section 6 of this chapter).
- If you are moving the printer in the original printer box replace all of the ink with Cleaning Solution. (See Section 6 of this chapter). This is necessary because the cartridges must be removed for the printer to fit into the box.
- Drain the Waste Ink Tank. (See Section 7 of this chapter)
- Keep the ink cartridges in place. Do not leave the printer without the ink cartridges or Cleaning Solution in place. Otherwise replace ink with Cleaning Solution. (See Section 6 of this chapter)
- At the new destination, replace the ink if needed. (See Section 6 of this chapter) and check the printer performance. Perform a Printhead Nozzle Check and clean the Printhead as needed to restore good

ink flow. (See **Chapter 2 Startup of a New Printer, Section 8. Performing a Nozzle Check**) Leaving the printer for a long time without restoring good ink flow may cause difficulties with the ink flow later.

## Long Distance Move

Please contact AnaJet Technical support to walk you through this process.

- Replace all of the ink with Cleaning Solution. (See Section 6 of this chapter)
- Drain the Waste Ink Tank. (See Section 7 of this chapter)
- Turn off the print engine with the Control Panel <POWER> key. When the print engine completes its power down sequence, switch off the printer Main Power Switch at the rear of the printer.
- Remove all of the Cleaning Solution cartridges.
- Restrain the Print Table and Carriage with Retainers. (see figure 7.8)
- Remove both the power cord and USB cable.
- Package the printer in the original shipping boxes before shipping. Handle the printer with the help of a second person to avoid damage. **DO NOT PLACE ANY OTHER ITEMS IN THE PRINTER BOX** accept the original accessory box. **IF NECESSARY, USE A SECOND BOX FOR ACCESSORY ITEMS.** Keep the printer level while handling and transporting.
- After transporting the printer, go through the new printer setup procedures described in **Chapter 1: Start Up of a New Printer.**

If you are shipping the printer through a common carrier, the printer box must be placed on a pallet. Secure the printer box onto the pallet. Ship via a trucking or air freight company with **FRAGILE** instructions.

## Chapter 8: Troubleshooting

### 1. The Print Engine Does Not Turn On

During the print engine power up sequence, the Control Panel Power LED will blink and LCD will display a splash screen.

When the print engine properly completes the powered up sequence and the blinking Power LED becomes steady on, the Print Table will move forward to the Load Position. The LCD displays the Main Menu.



If the Control Panel LCD does not power up

- Make sure the main power switch located on the back of the printer is turned on.
- Make sure the printer is plugged in.
- Make sure the power outlet works and is not controlled by a wall switch or timer.

### 2. The Printer Does Not Print Anything

When a job is sent from the PC, the job will be loaded into the printer and shown on the LCD screen. If this does not happen, the printer did not receive the job or did not receive a job properly. The problem is likely to lie in the computer communication to the printer.

- Turn off the printer. Make sure the USB cable is securely plugged into both the computer and printer. Then power the printer back on.
- Make sure that the USB cable is shielded and no longer than 10 feet (3 meters).
- Make sure the USB cable is directly connected to the computer without passing through other devices, such as a USB hub.

### 3. Horizontal Banding

Since the printer creates images using a linear print process, if there are issues with nozzles not firing, these will show as bands of lighter or darker color across the image. (Figure 8.3) To eliminate banding follow the procedures below.



**Figure 8.3: Example of Horizontal Banding**

- Run a Nozzle Check. (See **Chapter 2 Startup of a New Printer, Section 8. Performing a Nozzle Check**) If needed perform the necessary Printhead cleaning
- Check the LCD Control Panel and check for low or empty ink cartridges if any are low or out of ink, replace with a new ink cartridge.
- Open the printer cover, and check the Ink Tubes. If any of the tubes have gaps in them, it will be necessary to do a Printhead Clean. (See **Chapter 2 Startup of a New Printer, Section 8. Performing a Nozzle Check**)
- Adjust the Print Table height to the correct level. (See **Chapter 4: Printer Operation, Section 5, Adjustment of Print Table**).

### 4. Incorrect or Missing Colors

If the colors you are trying to print are wrong or not printing, try the solutions below.

- Run a Nozzle Check. (See **Chapter 2 Startup of a New Printer, Section 8. Performing a Nozzle Check**) If needed perform the necessary Printhead cleaning
- Make sure that you are using genuine PowerBright™ ink.
- Check the LCD Control Panel and check for low or empty ink cartridges if any are low or out of ink, replace with a new ink cartridge.
- Check that all of the ink cartridges are installed correctly with the right color in the right cartridge bay. The Control Panel will indicate to you if this has been done.

- Adjust the color settings in your graphics application program and printing program.

Please note that when you see an image on a computer screen it is created using light in an Red-Green-Blue (RGB) color mode. When you see an RGB image created with light it will always appear more vibrant and bright than a printed image using Cyan- Magenta- Yellow- Black (CMYK) ink. This is the nature of the CMYK process color printing method.

## 5. Prints are Faint and there are Gaps

- Make sure that the Ink Level setting in the mPower™ RIP program is not too low for the media being printed on. If printing with a Narrow Variable Dot Range switch to Wide.
- Make sure that the ink cartridges are not passed their expiration date.
- Run a Nozzle Check. (See **Chapter 2 Startup of a New Printer, Section 8. Performing a Nozzle Check**) If needed perform the necessary Printhead cleaning.
- Adjust the Print Table height to the correct level. (See **Chapter 4: Printer Operation, Section 5, Adjustment of Print Table**).

## 6. Blurry or Smeared Prints

- Adjust the Print Table height to the correct level. (See **Chapter 4: Printer Operation, Section 5, Adjustment of Print Table**).
- Make sure that the image you are printing is of a high enough resolution or dpi.
- The Ink volume may be too high. If printing with a Wide Variable Dot Range switch to Narrow.
- Make sure the garment being printed on is dry.
- Ink may have leaked inside the printer. Open the printer cover and wipe the inside of the printer with a soft, clean and lint free paper or cloth.
- Run a Nozzle Check. (See **Chapter 2 Startup of a New Printer, Section 8. Performing a Nozzle Check**) If needed perform the necessary Printhead cleaning.

## 7. Color Image is Printing in Black Only

- Make sure the color data setting of your image is set to RGB in your image editing software.
- Check in the AnaRIP software that under the Color Adjustments tab that the Color Saturation is up high enough.
- Make sure you are using PowerBright™ inks from AnaJet.

## 8. Printing is too Slow

- Verify the Quality mode you are printing in. The three modes available are Draft, Speed, and Fine. The Speed and Fine modes increase the printing resolution and lay down more ink, and increase the printing time.
- Do not run too many programs on your computer at the same time. Close any application programs not related to running the AnaJet® printer.
- Delete unnecessary files to make room on your hard disk drive.
- Check your graphics application programs to see if there is any setting which may slow down the computer. Close graphic files and applications that you are not currently printing.
- Reboot your computer to free up resources.
- The computer may not have enough memory. If the problem persists, consider increasing the RAM in the computer.
- The computer may not have sufficient capacity to run the application and/or RIP program. If this is the case, consider upgrading your computer to one with higher speed and capacity.

## 9. When the <PRINT> Button is Pressed, the Obstruction Sensor is Triggered

Remove everything on the Print Table, and send a short print job from the computer. When the Print Ready LED lights up, press the PRINT button. If the Obstruction Sensor is triggered immediately, the Obstruction Sensor may be faulty or the Print Table may be set too high. Try one or more of the following solutions.

- Adjust the Print Table height to the correct level. (See **Chapter 4: Printer Operation, Section 5, Adjustment of Print Table**).
- Contact AnaJet® Tech Support.

## 10. Print Table Does Not Travel All the Way to the Front or Rear

- Fully power down the printer off and move the Print Table by hand. Move the table all the way to the front (Load Position) and then push it all the way to the rear (Home Position). Pull and push firmly but do not force it. Check behind the table when it is out for obstructions. If lubrication is needed, do not attempt to lubricate it without the assistance of AnaJet® Technical Support or your dealer.

## 11. The Printhead Nozzles Get Clogged Too Often

The AnaJet® mPower printer, with its Closed-Loop Ink Delivery System and sealed ink cartridges, is designed to operate without nozzle clogging. But occasional nozzle clogs are inevitable with any inkjet apparel printer. Depending on the environment and pattern of printer usage, it will be necessary to perform

Printhead cleaning, more frequently.

Under optimal conditions, the printer can retain perfect Nozzle Test Patterns even if the printer is not used for several days. It is, however, recommended that the printer be used at least several times a week for optimal maintenance. It is also necessary that the Printer and Control Panel be powered on at all times so the auto circulation be able to run.

If your printer nozzle clogging is excessive, try one or more of the following solutions.

- Make sure you only use PowerBright® inks.
- Verify that the humidity around the printer is above 45% RH. Low humidity dries out the inks and can cause nozzle clogging.
- Keep the Maintenance Station Capping Rings, Wiper Blade and Printhead Nozzle Plate clean by regular cleaning. See **Chapter 7: Maintenance and Transportation, Section 4: Cleaning Maintenance Station and Nozzle Plate**.
- The white ink used for dark garment printing tends to settle. If the nozzle clogging problem is mainly for white inks, it may be due to ink settling. You must gently shake the installed white ink cartridges once or twice a week. You need to pull the white ink cartridges out of the cartridge bay, shake them gently and reinsert them. You can prevent an ink spill while shaking by wrapping the cartridges in a paper towel.
- Check and make sure the inks, particularly white ink, have not expired. Expired inks agglomerate and clog the Ink Delivery System and nozzles. The ink manufacturing date is indicated on the cartridge. The colored inks expire in one year after manufacturing, and white ink in six months.
- For unused white ink cartridges in storage, try to turn them over once every few days until they are used. You can also gently shake the unopened white ink cartridges. This will prevent the white ink components from settling.

## 12. How to Get Additional Help

AnaJet® provides technical support for the installation, setup, operation and troubleshooting of AnaJet® Printers, mPower™ AnaRIP printing software and PowerBright™ inks while they are under warranty free of charge. AnaJet® system owners should register their warranty as soon as possible to avoid delays in attaining support. For Warranty Registration, go to [www.AnaJet.com](http://www.AnaJet.com) and click Registration. Upon registration, you will receive an email informing of your Customer Number, User Name [your registered email address] and Password. Do not share your Password with anyone outside your company as your security can be compromised.

Once registered, you can log into the AnaJet® Tech Support pages to access documents and videos and download updated program files, etc. You can also email technical support questions to [tech1@AnaJet.com](mailto:tech1@AnaJet.com). Please be sure to include your name, business name, telephone number and Customer Number if you know it. We will not respond to any email, without proper identification of the sender. If you have already been

assigned a case number, include it in the message as well. Please be complete and concise in your questions. You can also call AnaJet® Technical Support at 877-626-2538 during the hours of 7:00 AM to 6:00 PM Pacific Time, Monday through Friday

Those who have registered their warranty can also sign-up for the **AnaJet® Users Forum**, accessible from the AnaJet® website. In this forum, you can interact with other AnaJet owners and AnaJet® staffers to share information. It is a wonderful resource if you have questions about your printer or garment decoration business.

We are not able to provide support for problems relating to your computer, Windows operating system, or non-AnaJet® software. Please direct support issues for these products to the appropriate makers and vendors.

## Appendices:

### Appendix 1

#### AnaJet® mPower Consumables Recommended Stock Level

Description	AnaJet Part Number	Recommended Stock Level
PowerBright™ Ink Cartridge (Yellow)	MPI-YL1	2 or two week supply
PowerBright™ Ink Cartridge (Magenta)	MPI-MG1	2 or two week supply
PowerBright™ Ink Cartridge (Cyan)	MPI-CY1	2 or two week supply
PowerBright™ Ink Cartridge (Black)	MPI-BK1	2 or two week supply
PowerBright™ Ink Cartridge (White)	MPI-WH1	8 or two week supply
PowerBright™ Cleaning Solution Cartridge	MCF-GW1	8 (no less than half full)
PowerBright™ Pretreatment Liquid (64 oz bottle)	MPI-PRE1	2 or two week supply
mPower Poly Primer	MPI-PM1	1 bottle
Maintenance Station Cleaning Solution (4 oz bottle)	CF-FT125	1 bottle
Cleaning Applicator (25 Wide tip)	CA-WD1	
Cleaning Applicator (25 Narrow tip)	CA-NR1	
Cleaning Applicator (25 Wide tip and 25 Narrow tip mixed bag)	CA-MX1	1 bag
Lint Free Wipes	150204-001	Pack of 50 - 4" X 4"
Drip Pan Foam (left side)	ANA-P-319	1 (can be reused)
Drip Pan Foam (right side)	ANA-P-320	1 (can be reused)
Maintenance Station Wiper Blade	150522-S	2

- \* Ink Cartridges specify the manufacturing date. Use before expiration date.
- \*Colored ink useful life: one year after the indicated manufacturing date.
- \*White ink useful life: six months after the indicated manufacturing date.
- \*Cleaning solution: three years after the indicated manufacturing date.
- \* Pretreatment liquid useful life: one year after the indicated manufacturing date.

**AnaJet® mPower Recommended Non-Consumable Items**

<b>Description</b>	<b>AnaJet® Part Number</b>	<b>Remarks</b>
Print Table Platen 14" x 18"	ANA-P-457	Replacement Print Table Plastic (same as original unit)
Print Table Hoop 14.00" x 18.00"	150147-001	Replacement Print Table Hoop
Youth Size Print Table 8.5" x 12.00" (Hooped)	150197-001	For youth shirt printing.
Sleeve Print Table 4" x 17"	150196-001	For sleeve printing.
Hat Platen	150511-001	For hat printing..
Wagner Pretreatment Sprayer	WCS1	For applying pretreatment



