OMNIPRINT

User Manual v1.91

OmniPrint i2 Overview and Operation

- Overview
  - OmniPrint i2 Features & Benefits
  - Digital Image Workflow for the OmniPrint i2
  - Printer Anatomy
- Operation
  - Primary Controls
  - Printer Startup
  - Ripping & Printing
  - Printer Shutdown
  - Routine Periodic Maintenance

Features & Benefits

The OmniPrint i2 is engineered for both high speed and high quality

Features	Benefits
Two i3200 printheads	Fast, single-pass printing ● 12”x12” in 55 sec on white / 90 sec on dark
Autoscan height adjustment & check before print	Head strikes are virtually impossible
Large 16”x20” print area	Full-sized XL shirt prints
High-capacity bulk ink bottles	Lower cost & more prints before refilling
Integrated white ink stirring & circulation	Minimize waste & need for priming
Rip software ‘*Environment*’ presets, by shirt type	Jump-start image configuration with a few clicks

Technical Specifications

Numbers of Print Heads	2 Print heads (4 channels per print head)
Color Configuration	Yellow, Magenta, Cyan, Black, and White
Printing Resolution (dpi)	600x600, 600x1200, 1200x1200, 1200x1800, and 1200x2400
Printing Mode	Uni/Bi directional printing Single pass printing / Layer mode printing
Ink type	Textile water based pigment ink
Printing Size	16inx20in (400mm x 500mm)
Interface	USB 3.0 & Ethernet
Weight	250 Lbs. approx.
Dimension	56" x 39" x 24"
Voltage/Power	AC 110 / 220V Selectable
Operating system	Windows 10/11 64 bit, i2 UI and Rip software
Environment	Temp. : 10 - 35 C。Humidity : 20 - 80% (no condensation)

Digital Image Workflow

Image Creation

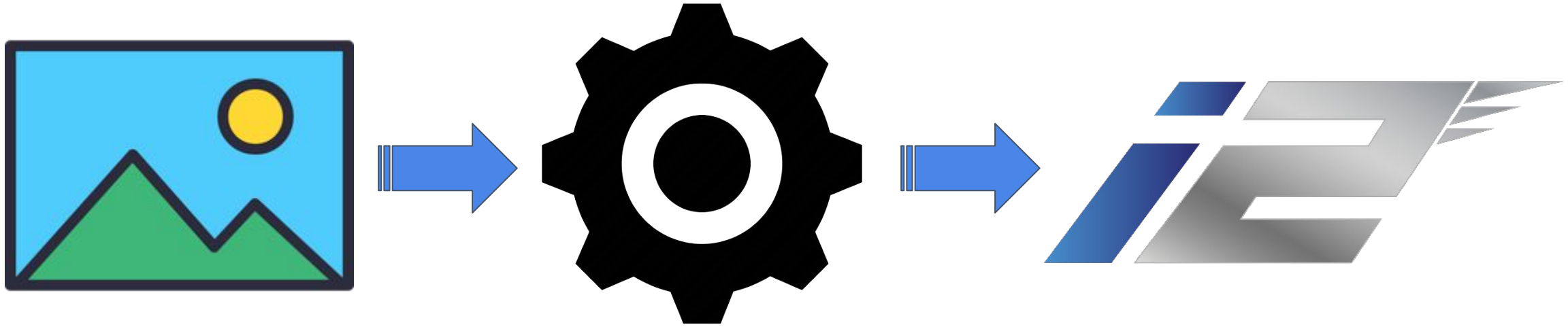
Create or purchase a high-quality digital image

Print Pro

Configure print parameters & Convert the format for DTG printing

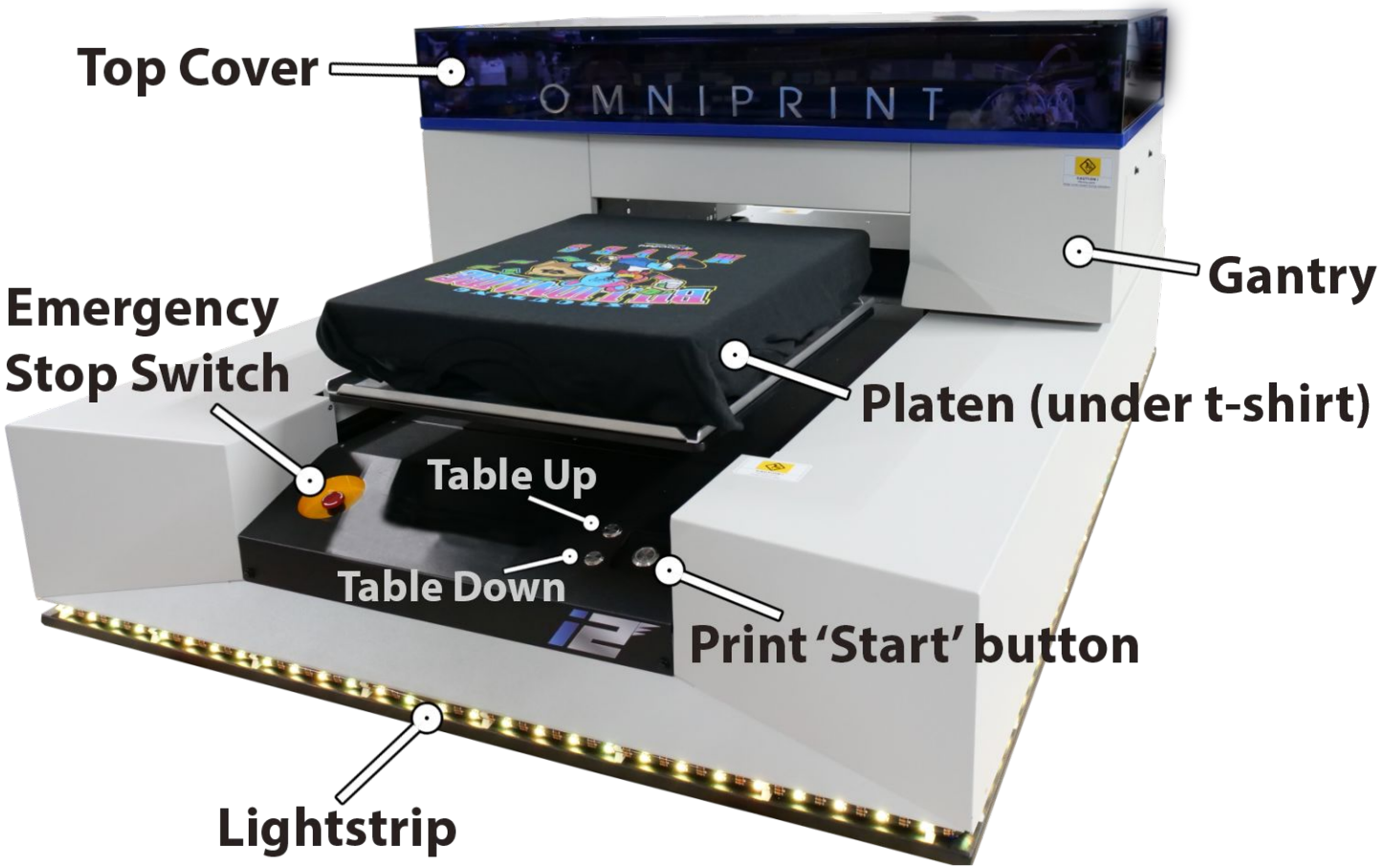
OmniPrint i2 app

Define the image's placement on the garment and print!



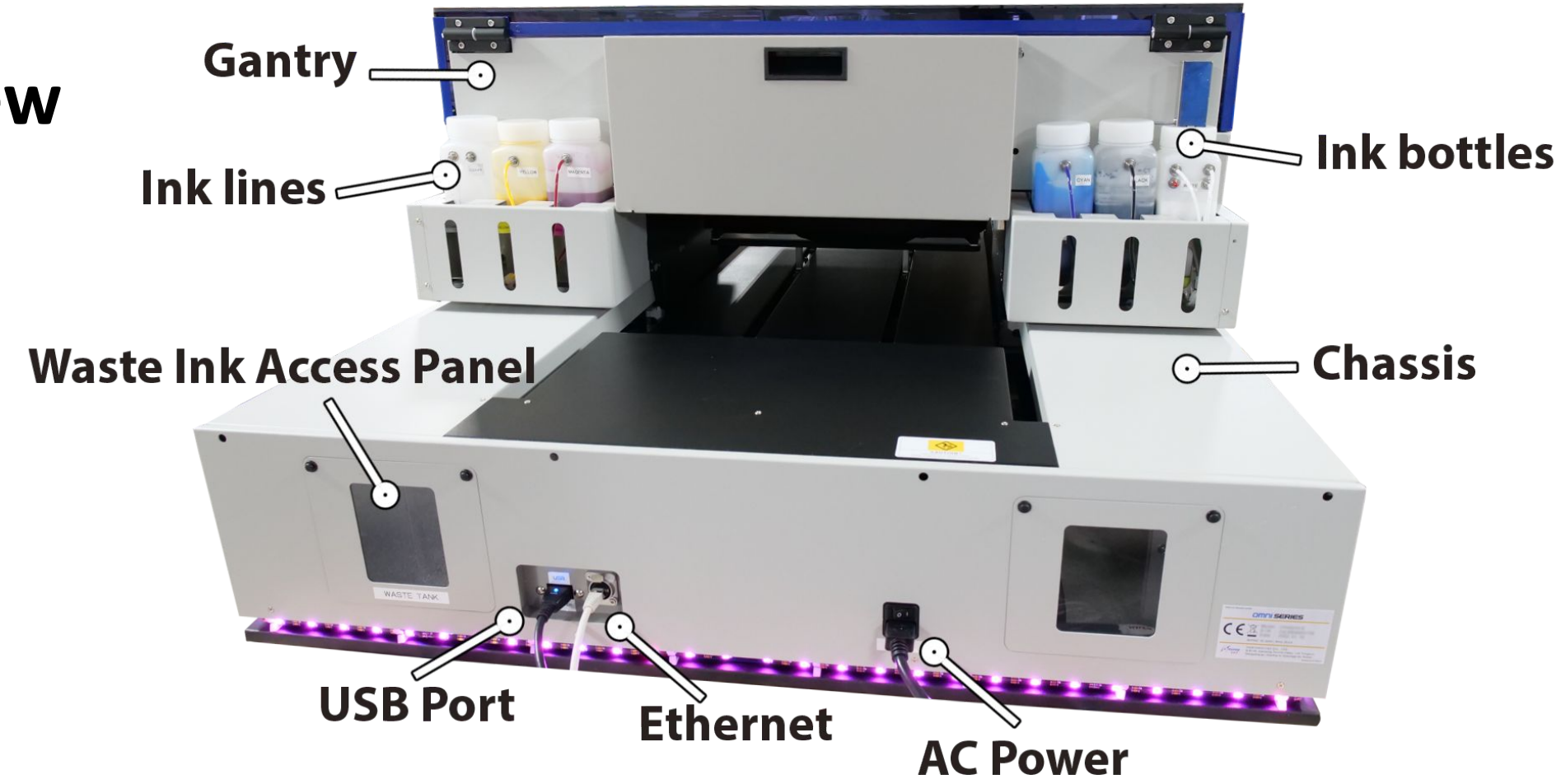
Anatomy

Front View



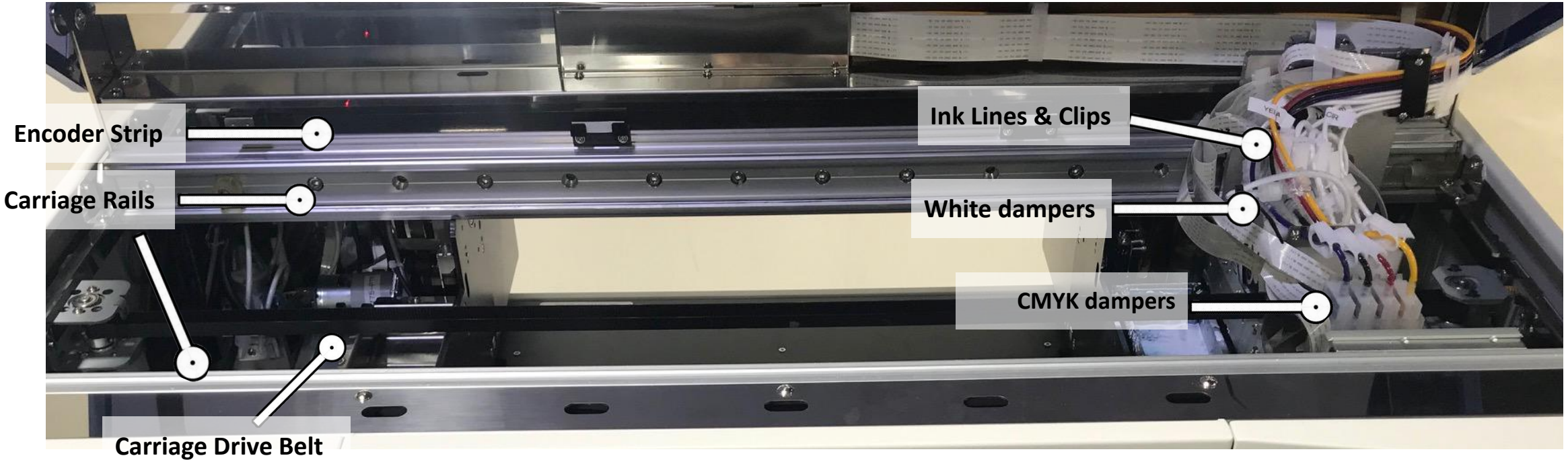
Anatomy

Rear View



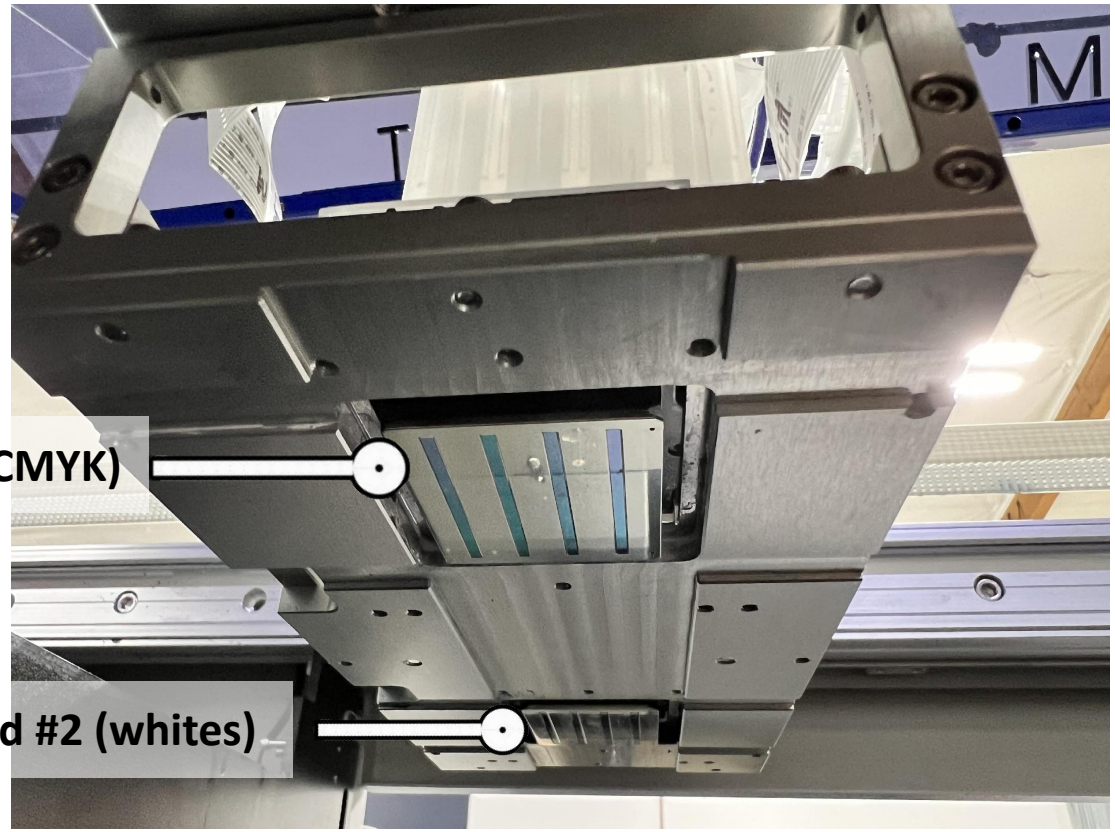
Anatomy

Gantry Interior (carriage)



Anatomy

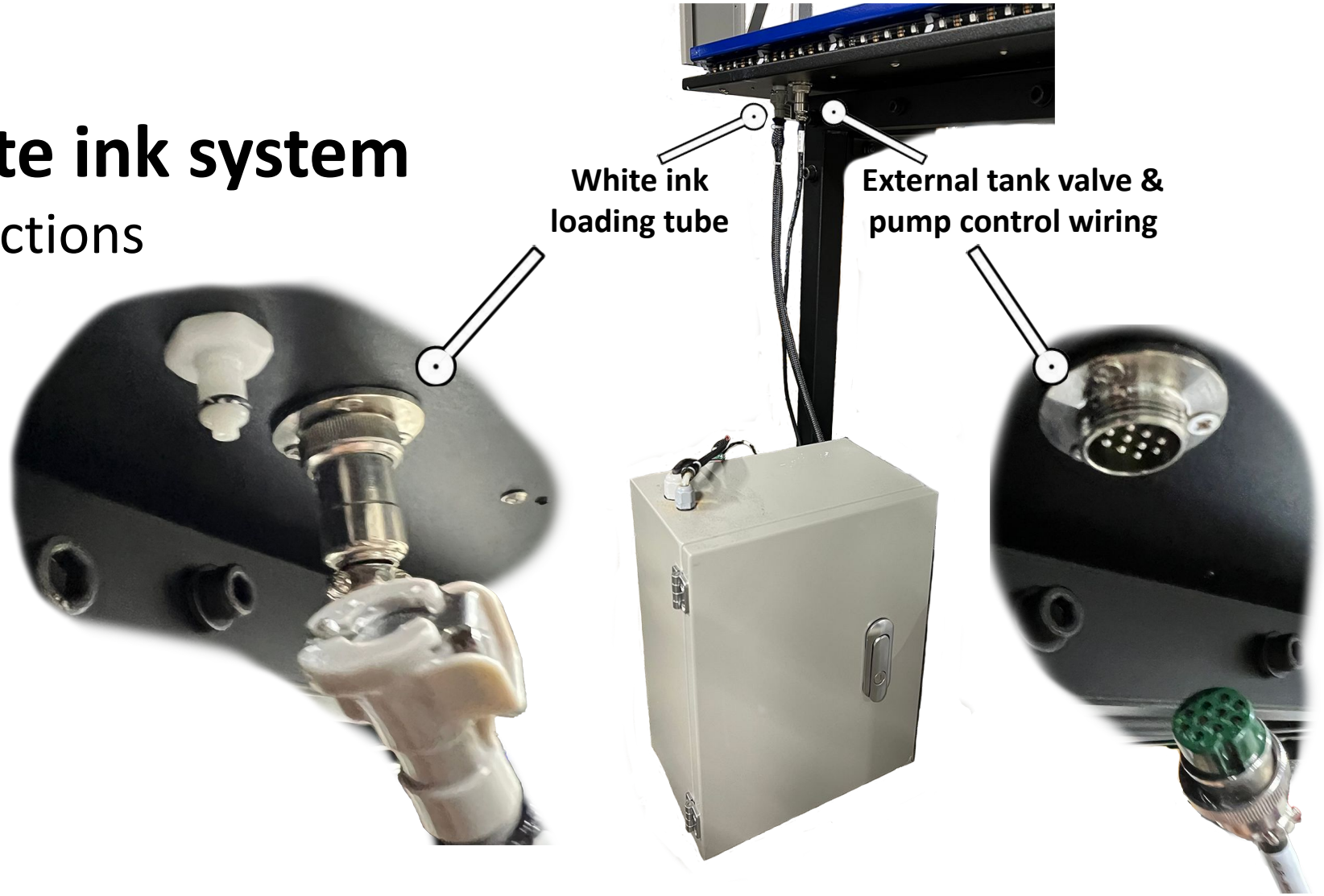
Printheads



Anatomy

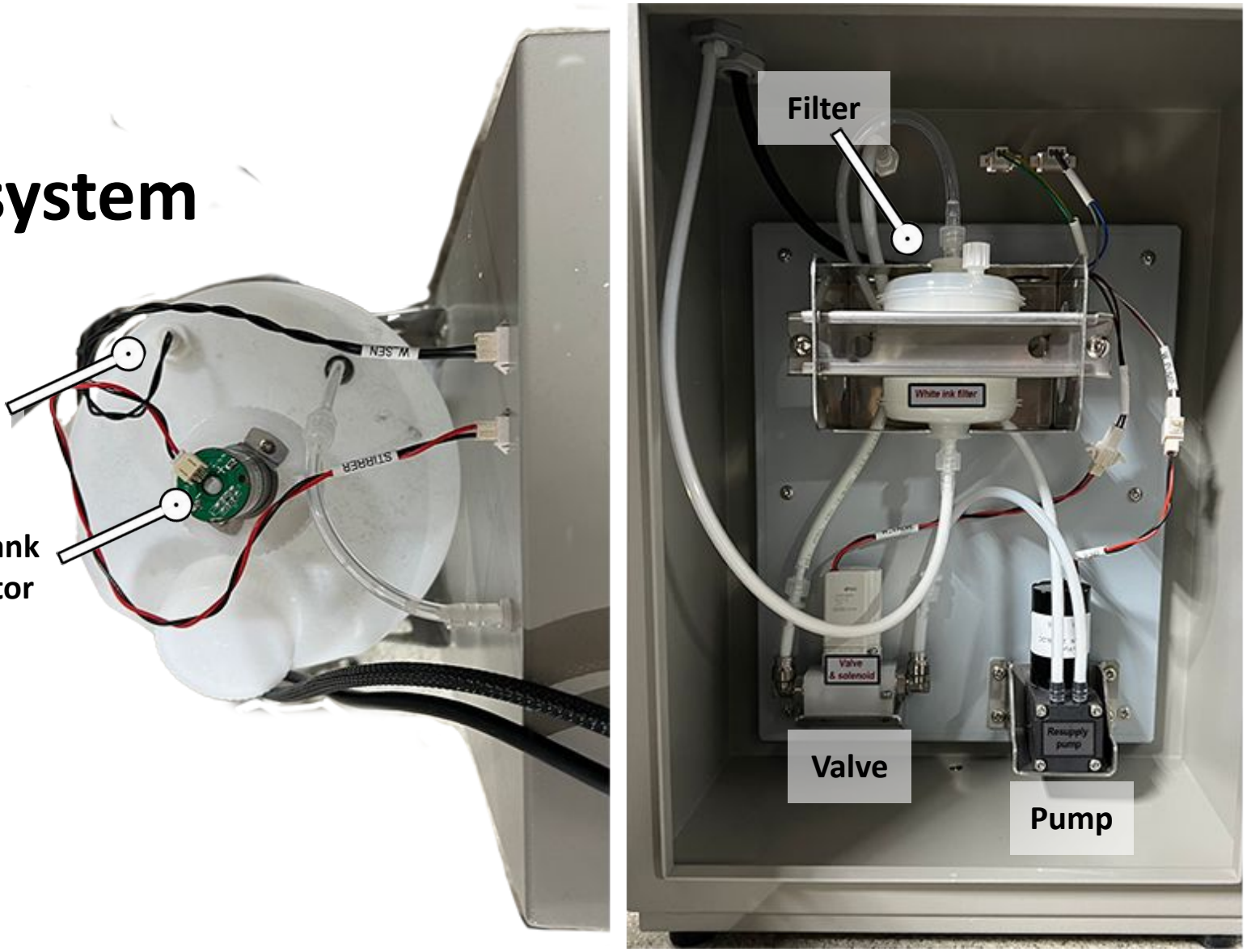
External white ink system

- Printer connections



Anatomy

External white ink system



Printer Operation

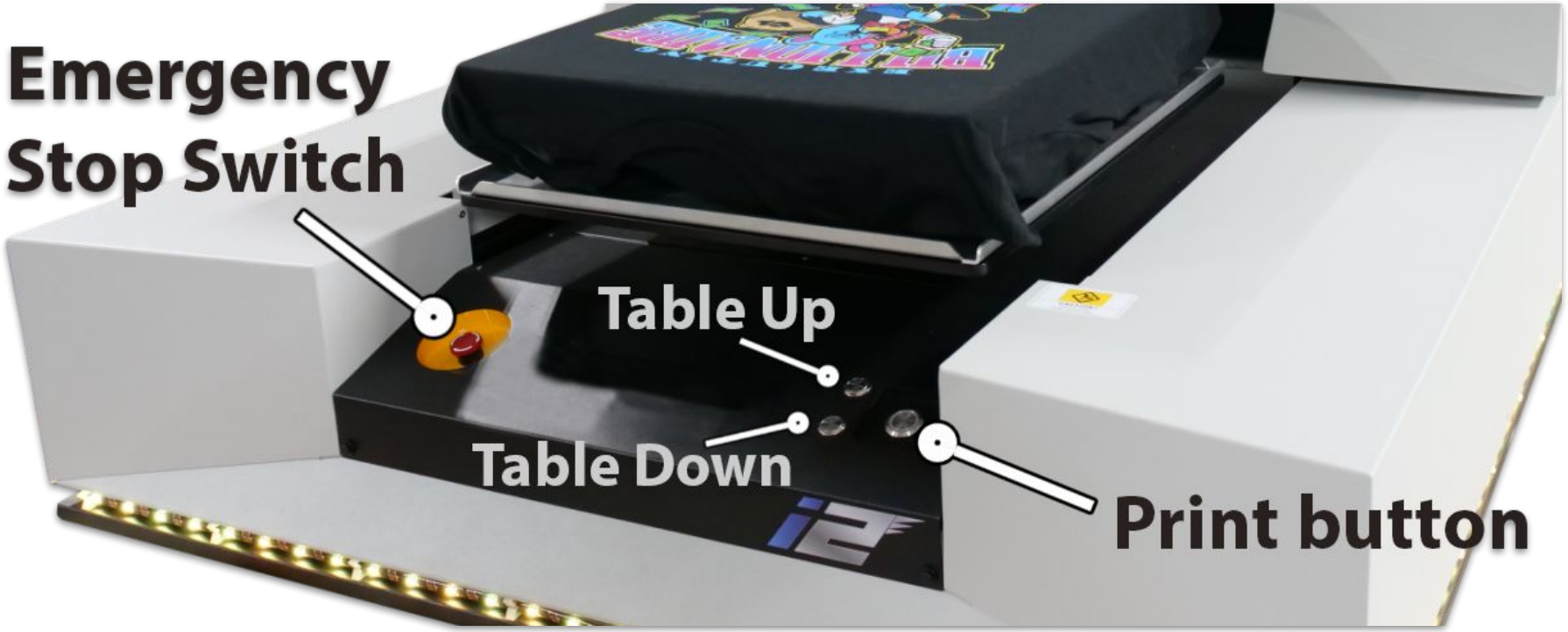
- Primary Controls
- Startup Process
- RIP Process
- Print Process

Primary Controls

All i2 communication & most mechanical controls are operated exclusively through the *i2 User Interface* Windows program.

Primary Controls

The only controls on the printer itself are these four buttons on the front of the i2. Only the Print button is needed for normal operation.

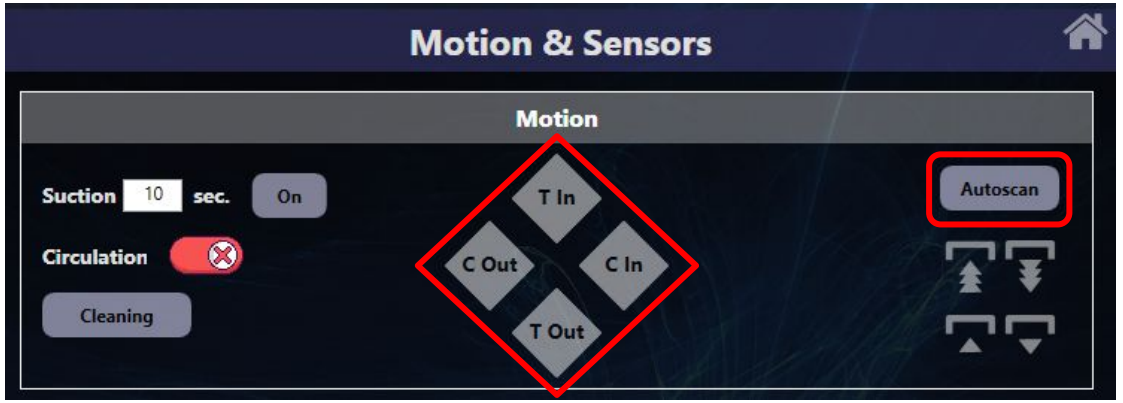


Primary Controls

Setting up a print job (from a pre-ripped file) is handled in the *Job Setting area.*

Controls for the printer's mechanics are at the top of the *Motion & Sensors* page.

More on these and other controls will follow with details of operation.



Startup Process

- Power up the printer
- Check all ink bottle levels & mix white ink
- Check waste ink bottle level
- Load the i2 app
- Circulate white ink
- Open the ink clips
- Prime the white ink, if needed
- Run a head clean
- Run Autoscan
- Print a nozzle check

Power On Sequence & Timing

- After turning on the printer power, wait 20 seconds before launching the i2 program. This ensures that the printer is ready to begin communicating with the PC.
- After switching on the power we perform two other routine steps before launching the software.

Check the ink levels & mix white ink

Check and refill the ink bottles, as needed. Refill before the level drops below 200ml, but don’t fill beyond 400ml.

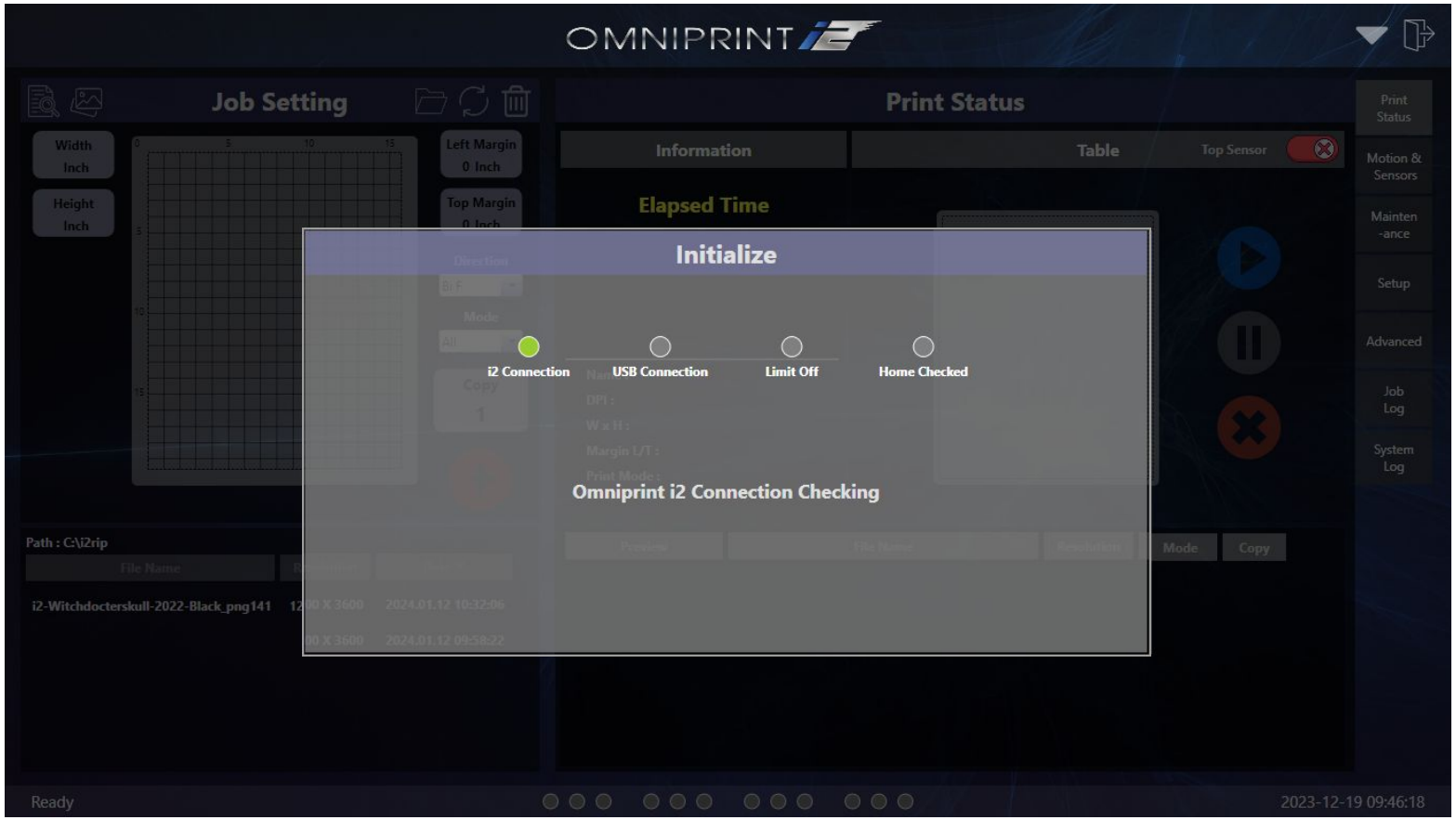
Shake or stir the white ink to mix the pigment thoroughly to ensure printing an opaque white underbase.

Check the waste ink bottle

The waste ink bottle should be checked during the startup process and emptied as needed to avoid interruptions during production printing, even though it does sound an alarm when nearly full.

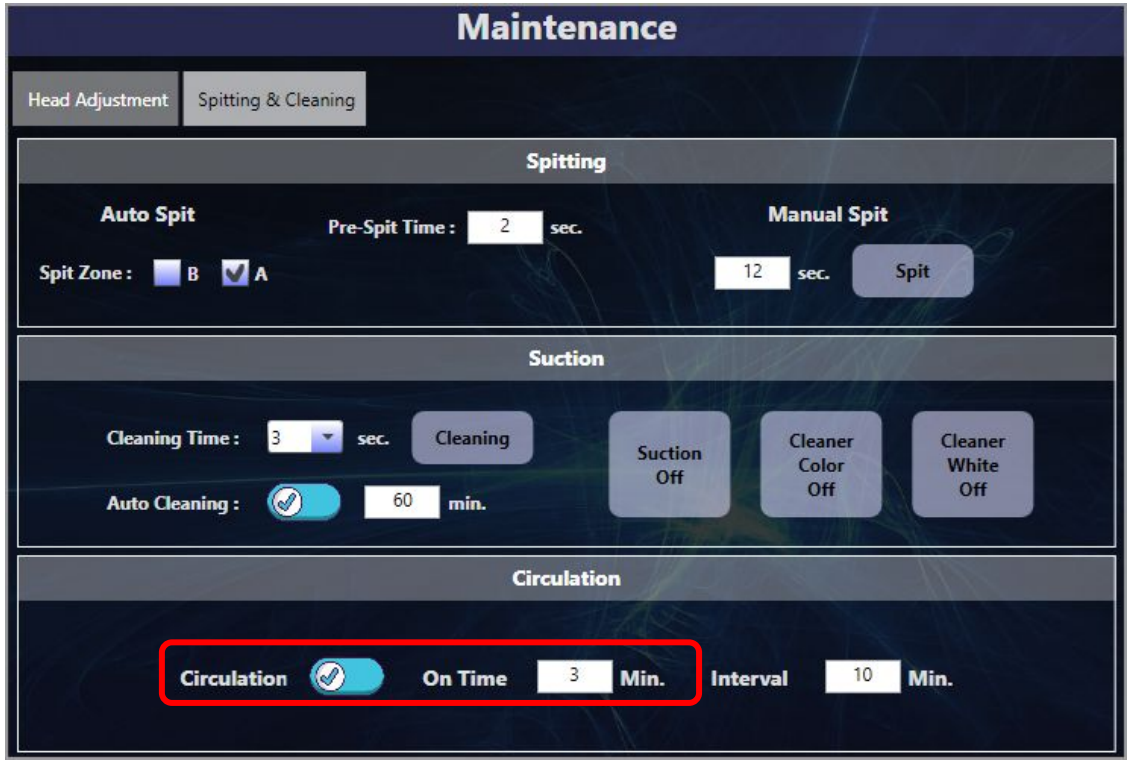
Load the OmniPrint i2 User Interface *(UI)*

Communication tests run, then the carriage, gantry, and platen table are initialized.



Circulate the white ink

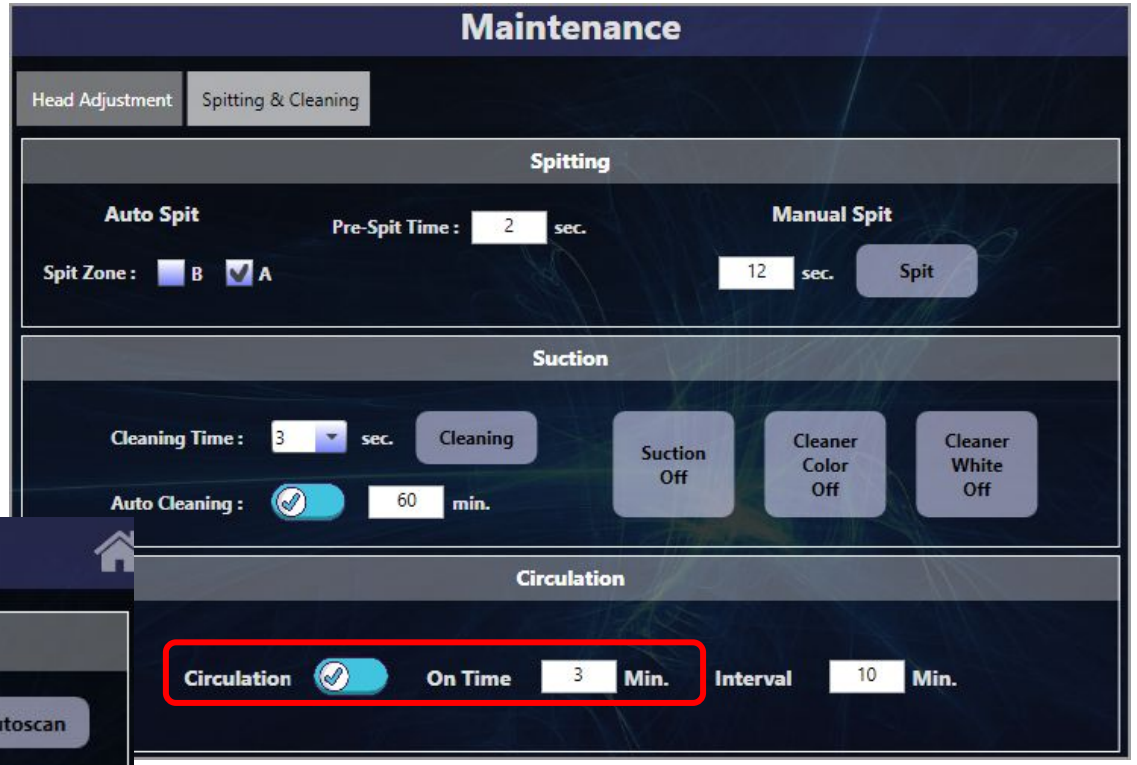
Circulation *duration* is set from the *Maintenance* screen's *Spitting & Purging* tab

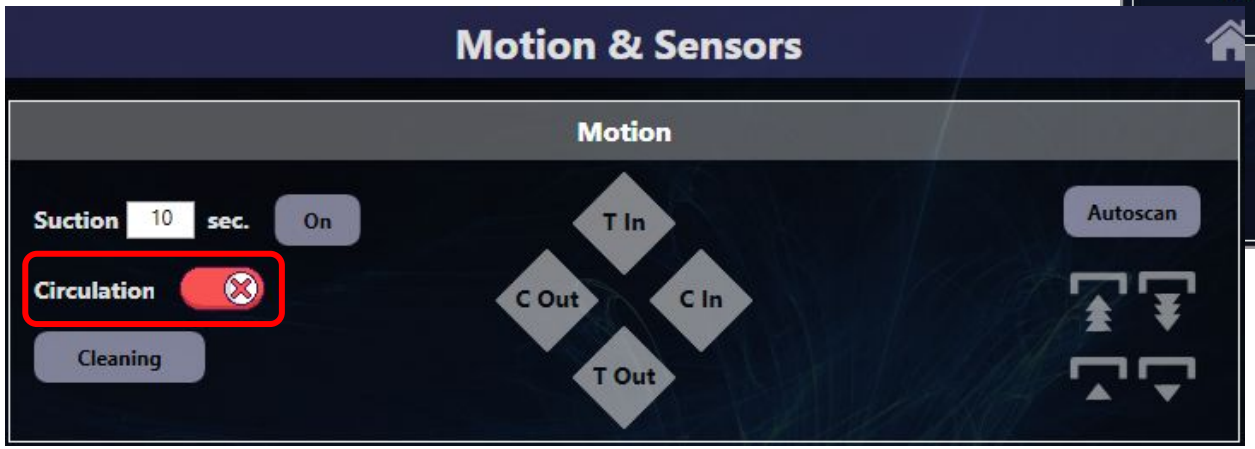


- Circulation repeats at the set interval until switched off.
- Confirm the white ink clips are closed before turning on circulation.
- Circulate the white ink for 3 minutes.
- After circulation completes, turn the *Circulation* switch OFF (red).

Circulate the White Ink

Circulation (and other functions) can be turned on & off from both the *Maintenance* > *Spitting & Cleaning* and the *Motion & Sensors* screens

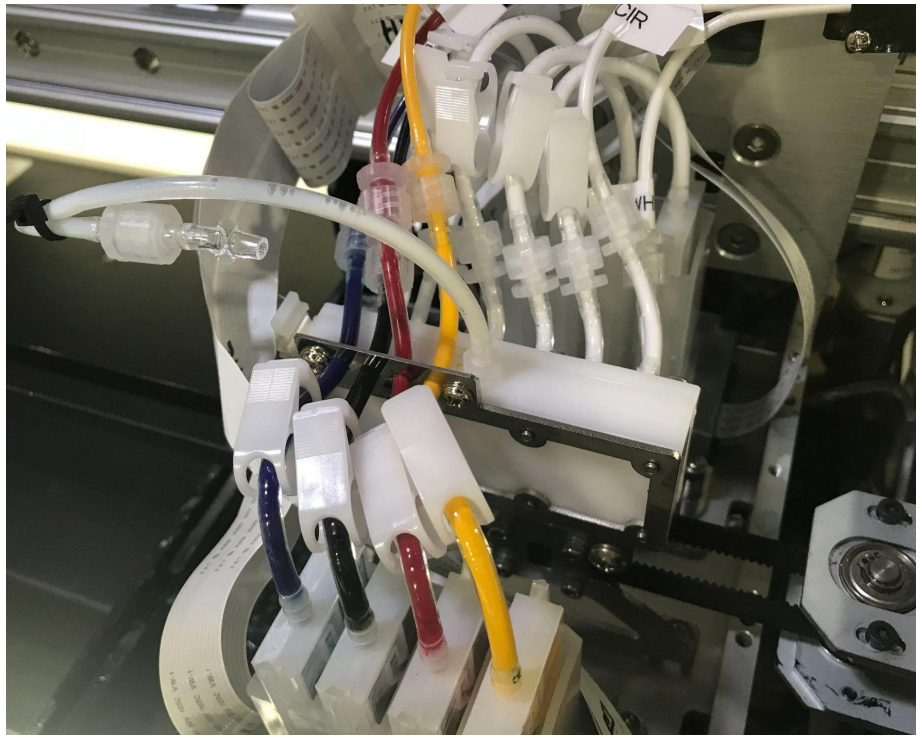




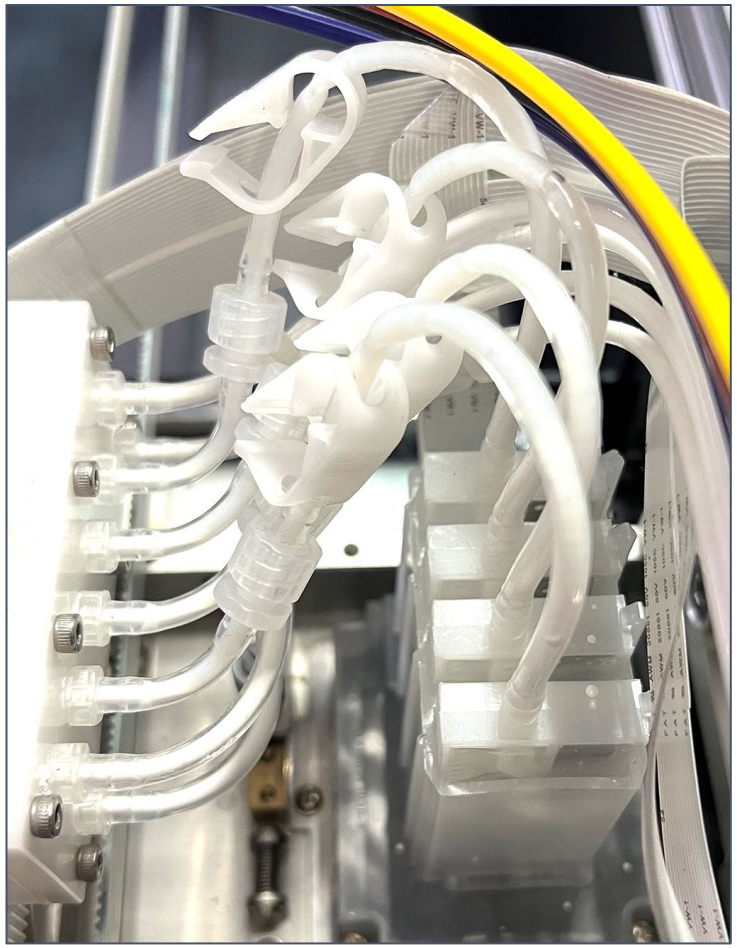
Open & Reposition Ink Clips, Massage Tubes

Open all 8 ink line clips *after* circulation is turned off.

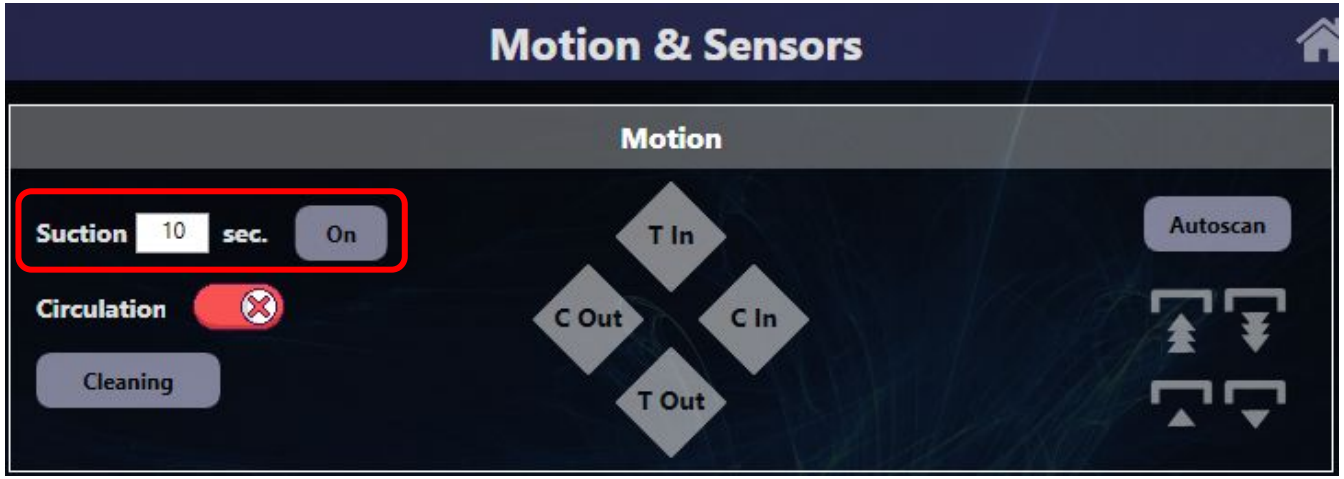
Then slide the ink clips up or down on the ink tubes, then roll each tube between a thumb and forefinger to remove any kinks and round out the tubing.



Check white ink for separation



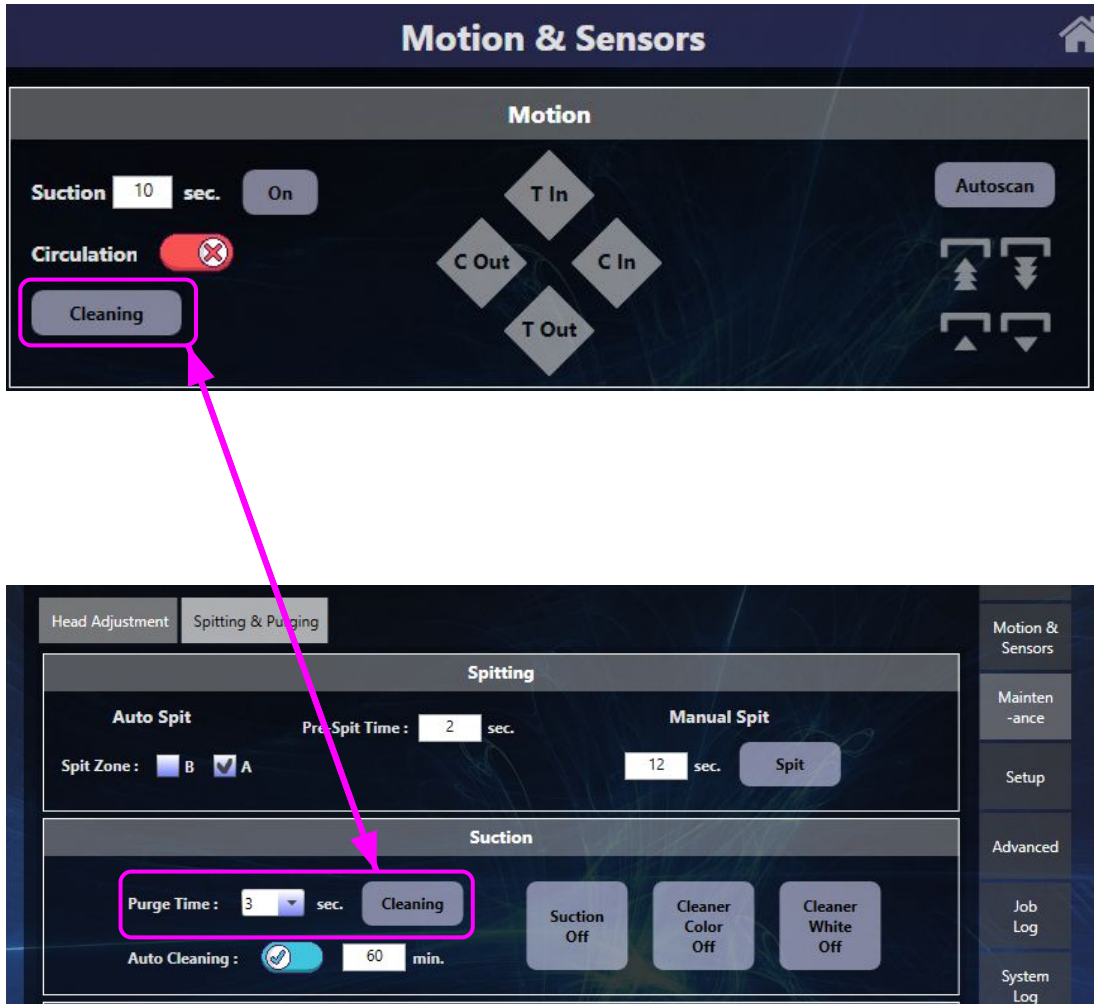
If the white ink in the tubes connecting the manifold to the dampers is not fully opaque, run *Suction* for 3-10 seconds.



Run a Printhead Cleaning

Run a *Cleaning* for 3-5 seconds.

- The *Cleaning* buttons on both the *Motion* and *Maintenance* > *Spitting & Purging* screens have identical functions so either can be used to start a printhead cleaning.



Printing a Nozzle Check

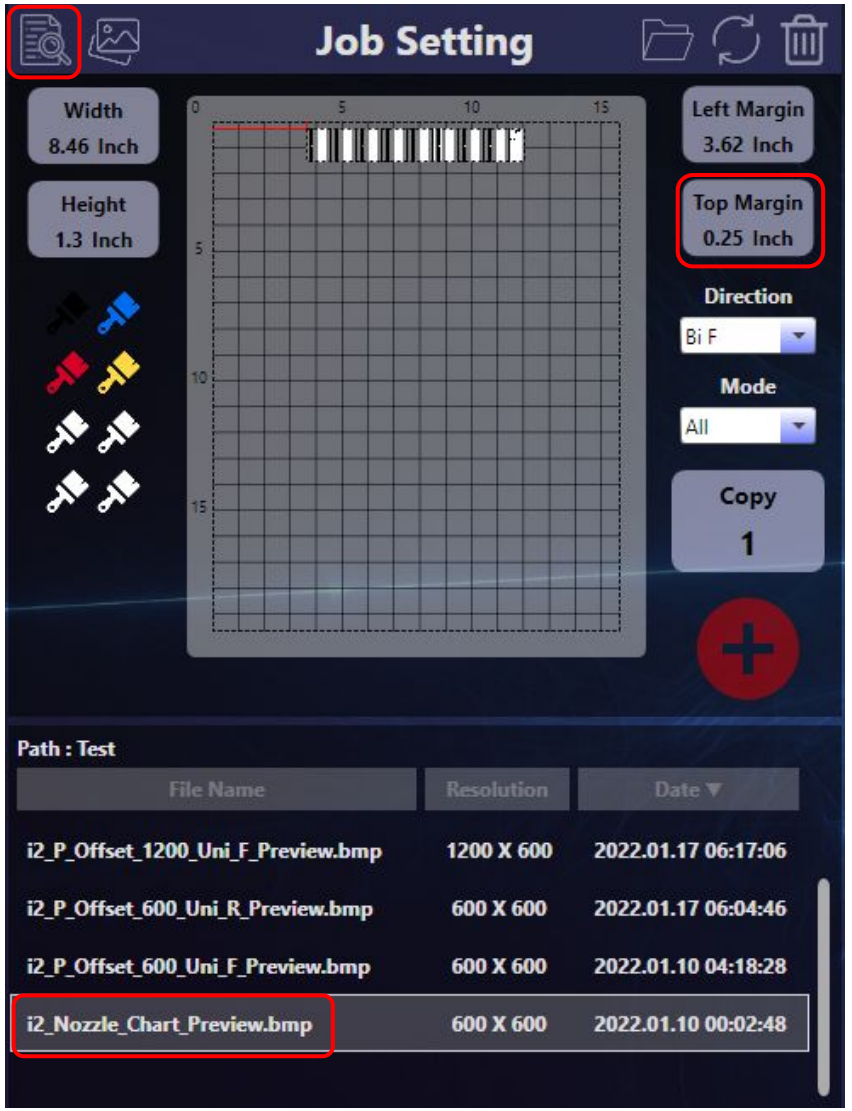
- Place a transparent sheet on the platen
- Set the platen height using Autoscan
- Load the nozzle check test image
- Set the desired print position
- Print the test image

Printing a Nozzle Check

- Place a transparent sheet on the platen
- Set the platen height by clicking *Autoscan* on the *Motion & Sensors* screen
  - Run *Autoscan* whenever a new medium (fabric or film) has been placed on the platen, before running a print.
  - This prevents head strikes and obstruction errors while printing.

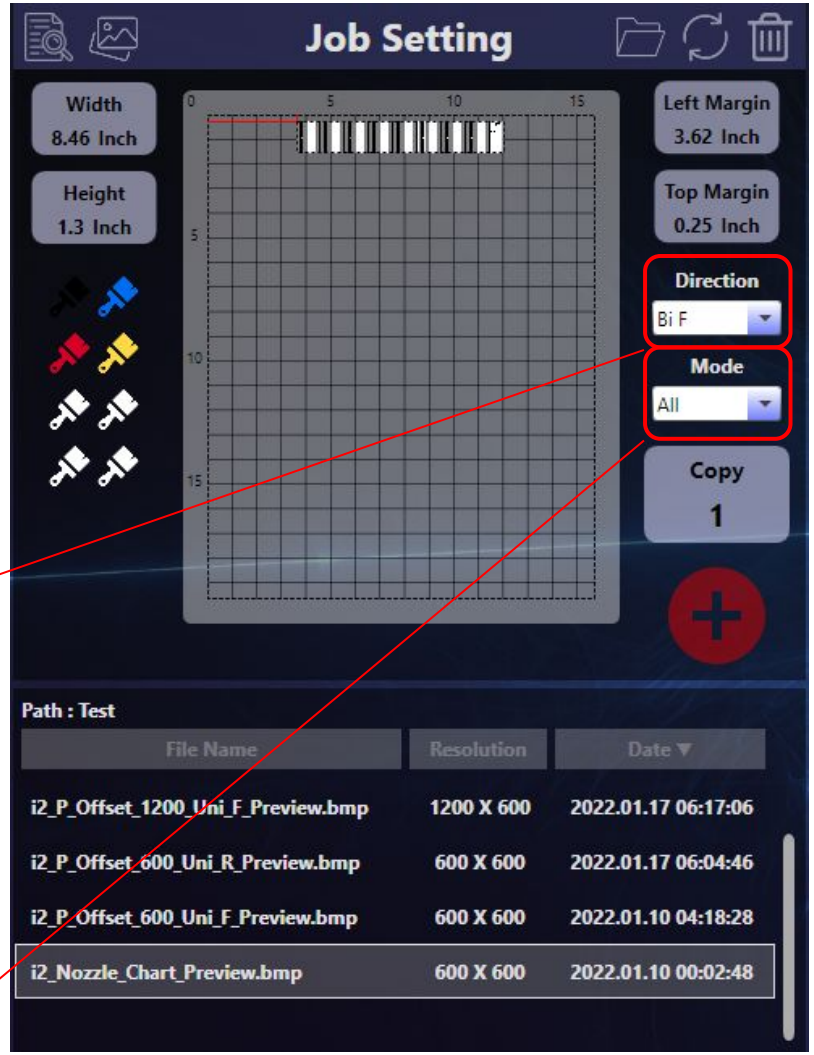
Printing a Nozzle Check

- Load the nozzle test image
  - Load the test files list (top-left icon)
  - Select the nozzle check file (i2_Nozzle_Chart_Preview.bmp)
- Position the test image as desired by setting margins
  - Click the Top & Left Margin buttons to edit their settings
  - Default position is centered, horizontally & vertically



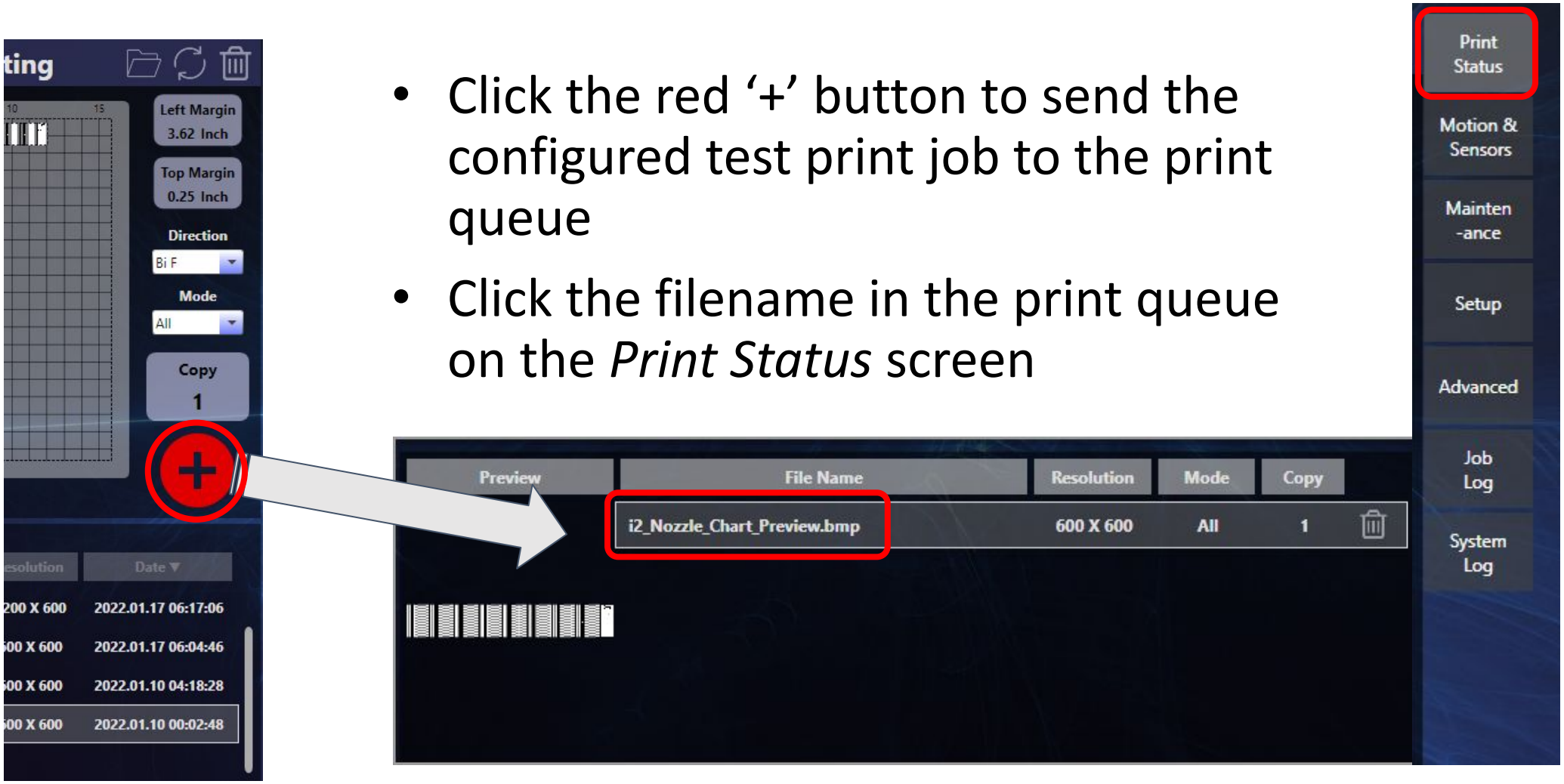
Job Setting Options

- Direction = '*Bi F*' (bidirectional printing) unless troubleshooting a horizontal registration issue.
- Mode = *'All'* unless printing DTF or doing a specialized type of print.



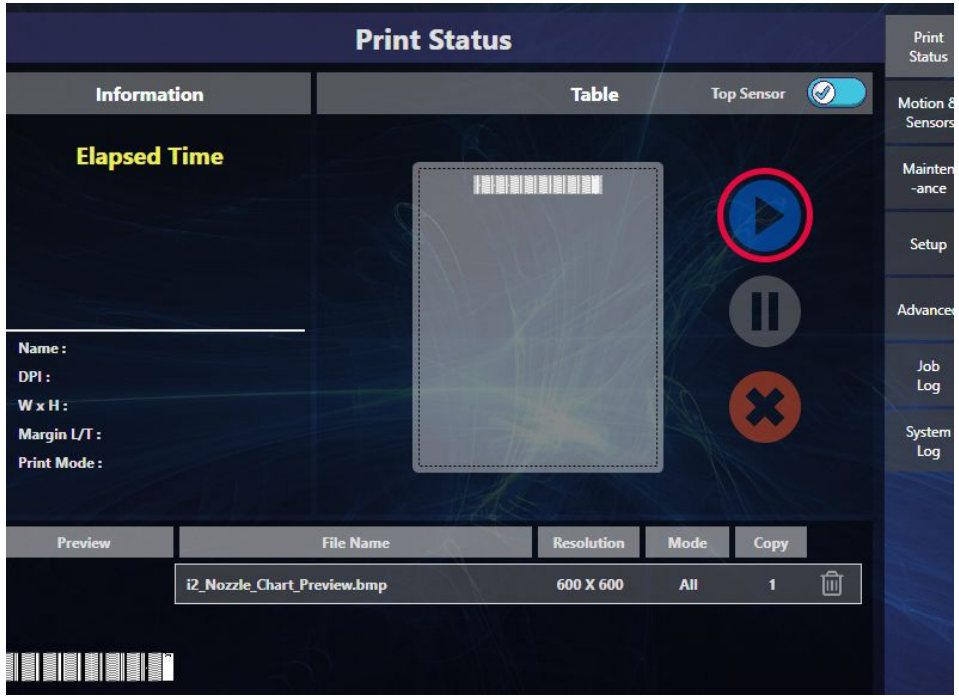
Printing a Nozzle Check

- Click the red ‘+’ button to send the configured test print job to the print queue
- Click the filename in the print queue on the *Print Status* screen



Printing a Nozzle Check

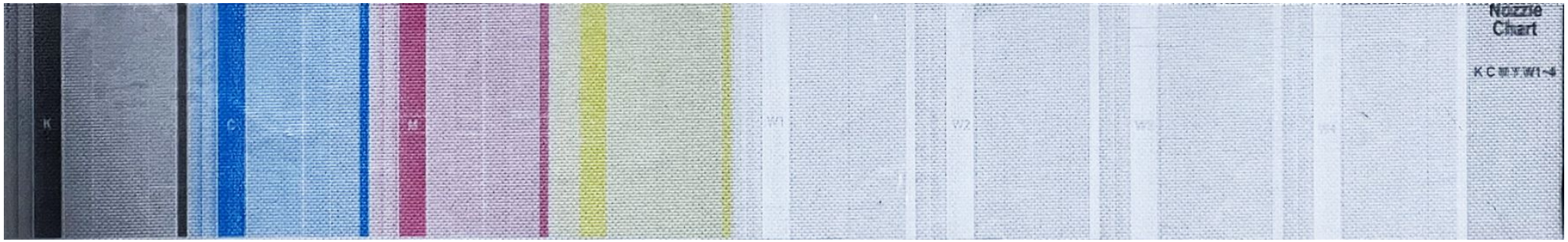
- Click the blue *Play* button to send the job to the i2



- After the i2 beeps, press its flashing blue *Start* button to run the print

Printing & Evaluating a Nozzle Test Print

- Nozzle check test pattern



- If the nozzle check test pattern is 90% complete or better, run another *Cleaning*, then print another nozzle test.
  - If the test pattern still isn't 90% or better on each channel, try a longer *Cleaning* duration (for example, 7 or 9 seconds).

Startup Review

- ✓ Power up the printer
- ✓ Check all ink bottle levels & mix white ink
- ✓ Check waste ink bottle level
- ✓ Load the i2 app
- ✓ Circulate white ink
- ✓ Open the ink clips
- ✓ Prime the white ink, if needed
- ✓ Run a head clean
- ✓ Run AutoScan
- ✓ Print a nozzle check

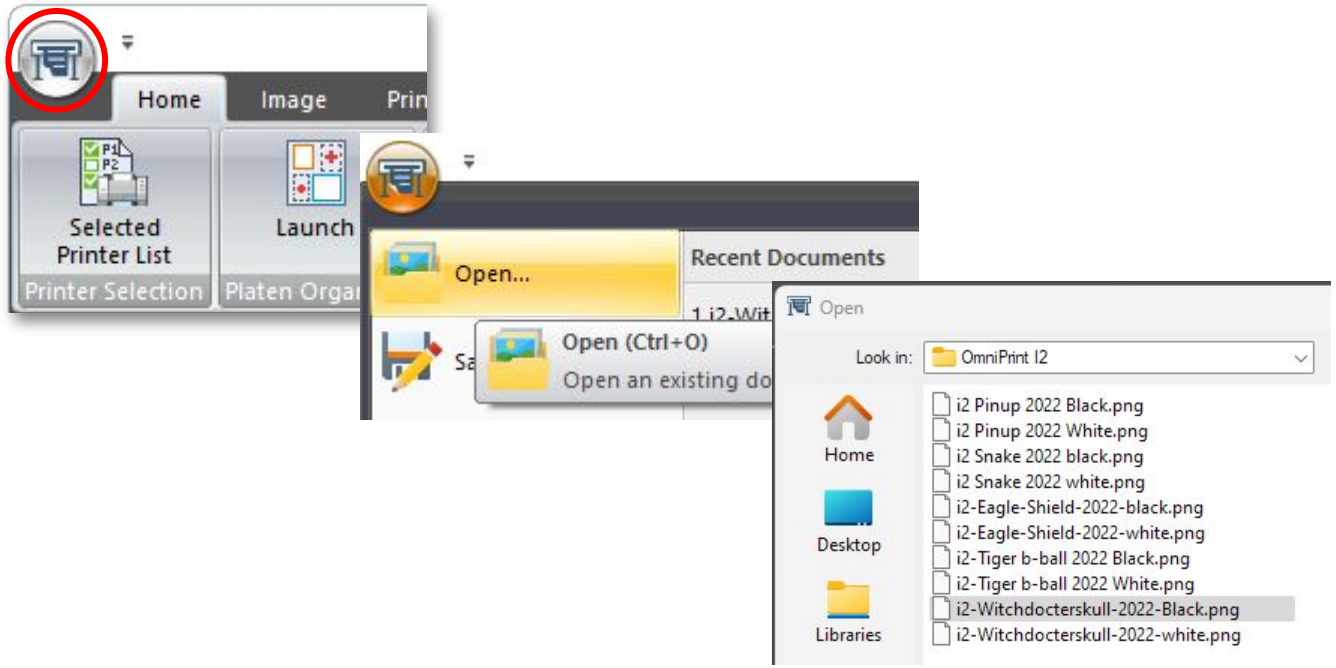
Setting up a print in Print Pro

Setting Up a Print Job in Print Pro

- Load an image file
- Select an Environment (presets)
- Set the print size
- Position the print location (always Top-Left)
- Set a white underbase choke (unless printing a white shirt)
- “Print” the configured image
  - Print Pro is configured to print to a file
- Select the printing device (i2) when prompted

Loading an image file

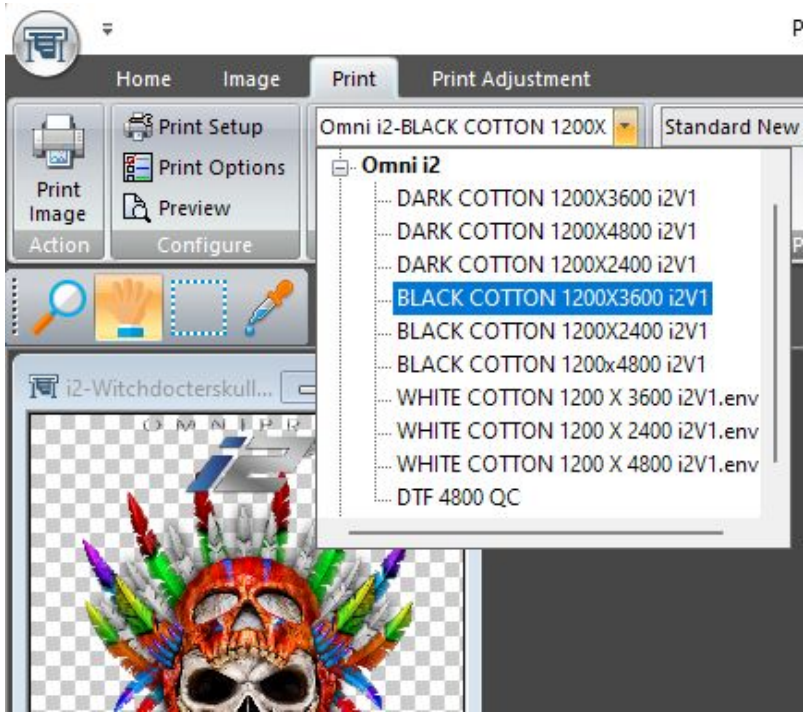
- Click the Print Pro icon in the top-left corner and select ‘Open…’ to navigate and select an image file to be printed



- Double-click on the filename to load the image

Select an Environment

1. Select the *Print* tab
2. Select an Environment

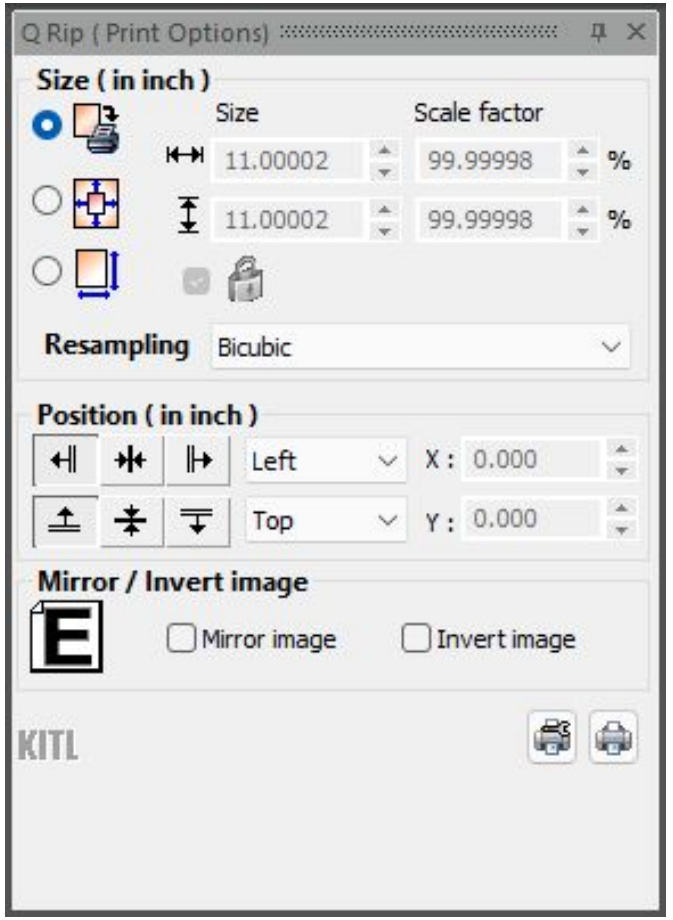


- The *Environment* selection defines presets to simplify the printing setup process
  - Environment selection is based on:
    - Desired resolution
    - Medium type (fabric or film for DTF)
    - Shirt color (for DTG)

Print Job Setup: Print Size & Placement

The *Q Rip* sub window is where you'll set your print *Size* and *Position*.

- The image's *native* size (the size defined when the image was created) appears as the default *Size* option
- The print Position defaults to *Left* and *Top*

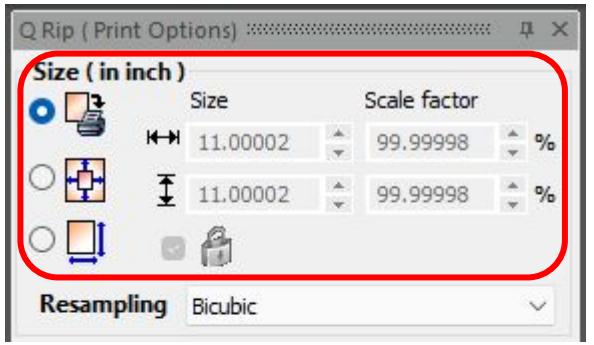


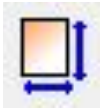
Print Job Setup: *Q Rip Settings* - Print Size

- The *Size* setting defines the dimensions to be *printed*

The top selection picks the size of the image as created.

The middle size selection expands the height & width of the image to fill the full platen size, so is seldom useful because it distorts the image.



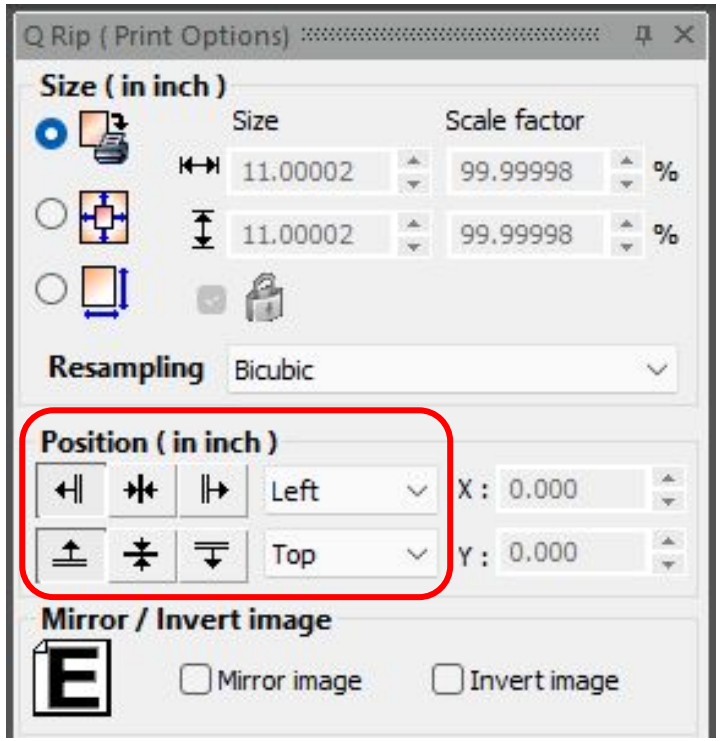


The bottom size selection option is used to resize the image to different dimensions, and is best used to reduce the size. Expanding an image beyond a 100% scale factor can result in pixelization or jaggy curves.

Put a check mark in the box next to the padlock icon to lock the aspect ratio and prevent distortion when resizing

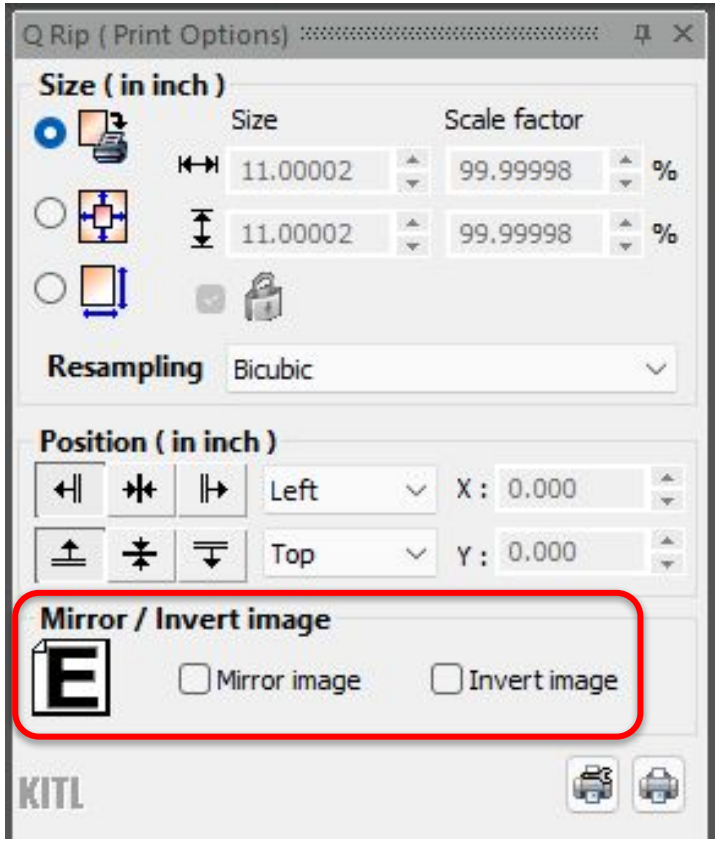
Print Job Setup: *Q Rip Settings* - Print Position

- The *Position* setting is set to *Left* & *Top*
  - The print's actual position on the shirt will be defined in the i2 app



Print Job Setup: *Q Rip Settings* - Mirror/Invert

- The *Mirror/Invert Image* settings define if the image should be flipped horizontally (*Mirror Image*) or the image converted to its "negative" colors.
  - The *Mirror image* option is used for DTF print jobs.
  - The *Invert image* option has no common use in DTG and DTF printing.



Print Job Setup: *White Underbase Choke*

- The white underbase choke is used to counteract a potential “halo” effect around the printed artwork, since the white ink goes down first and can spread slightly outside the design’s borders.
- Reducing the outer dimensions of the white layer slightly (2 pixels) eliminates that risk.

Print Job Setup: *White Underbase Choke*

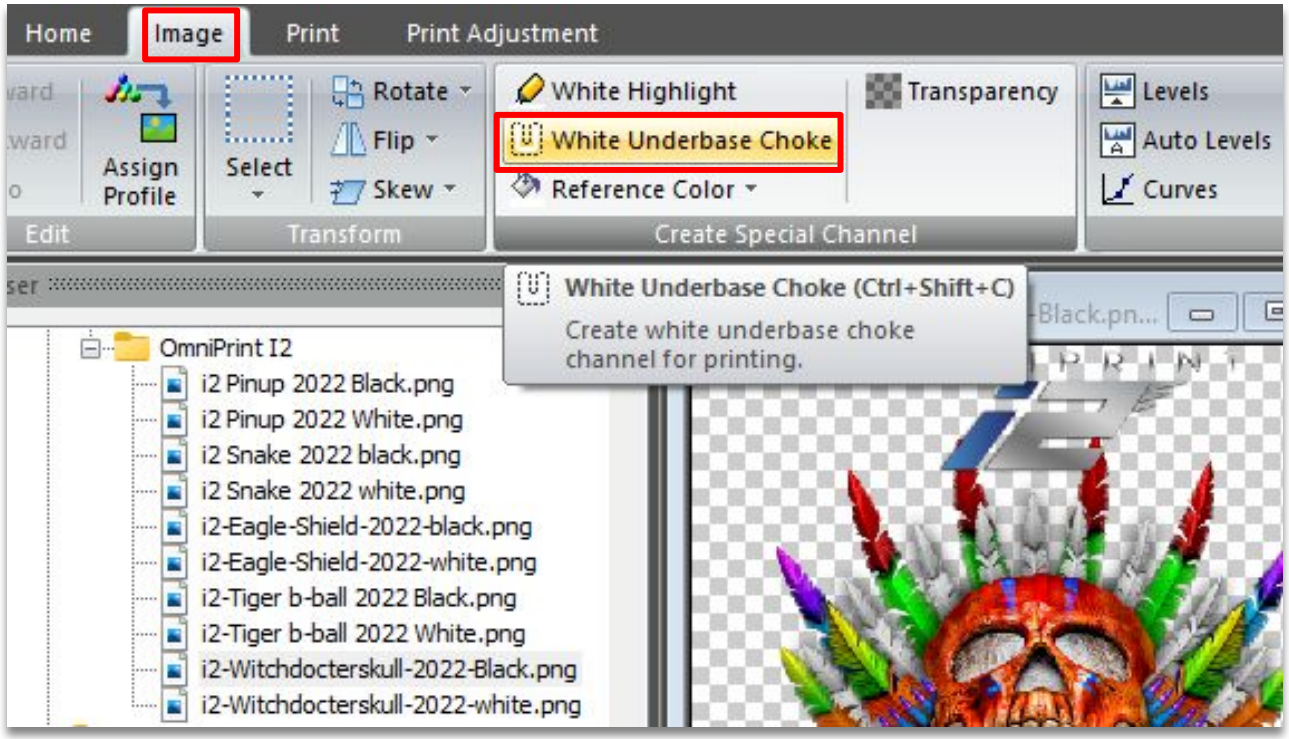
Print appears as intended with white underbase choke implemented

No white underbase choke results in white ink “halo” around borders

Print Job Setup: *White Underbase Choke*

Adding the White Underbase Choke

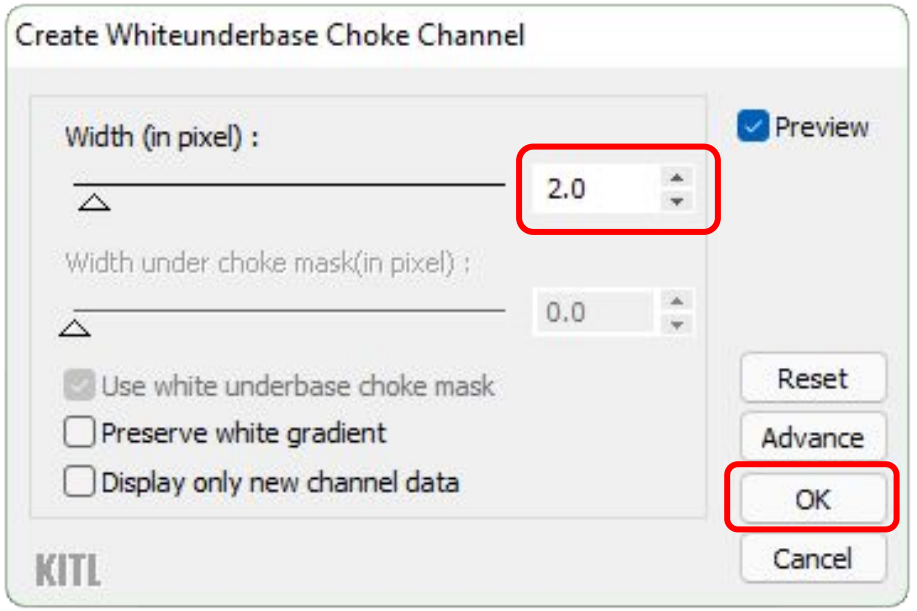
- Click on the ‘Image’ menu.
- Click on White Underbase Choke’.



Print Job Setup: *White Underbase Choke*

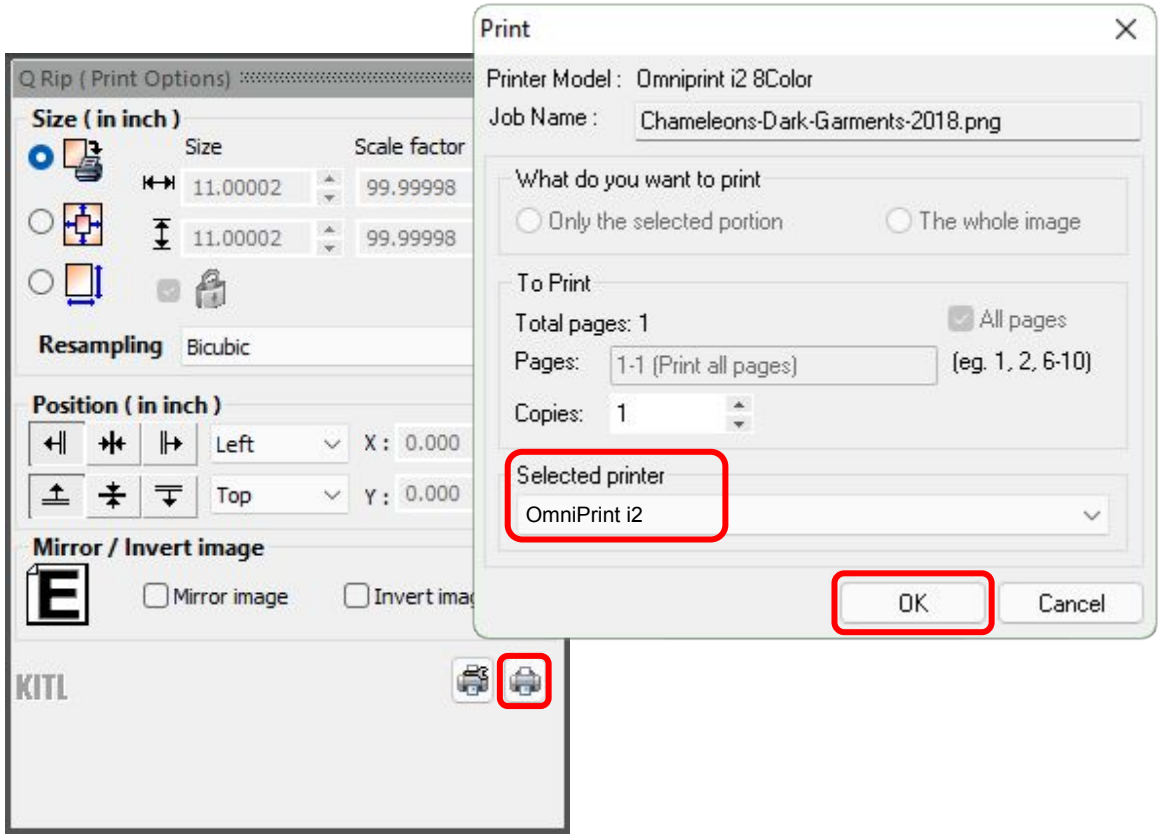
Adding the White Underbase Choke

- Accept the default *Width (in Pixel)* setting of of “2.0” by clicking the ‘OK’ button.
- If your prints have a white border on all sides that isn’t in the design, increase the choke.



Print Job Setup in Print Pro Completed <preliminary>

The print job is now set up in Print Pro and is ready to be printed (to a file) for use by the *i2 UI* program.



- Click the ‘Print’ icon in the *Q Rip* window or type ‘Ctrl’ + ‘P’.
- Confirm the selected printer, then click the ‘OK’ button.
- The ripped image file will now be created & saved for printing in the *i2 UI* program

Setting Up a Print Job in Print Pro Review

- ✓ Load an image file
- ✓ Select an Environment (presets)
- ✓ Set the print size
- ✓ Position the print location (always Top-Left)
- ✓ Set a white underbase choke (unless printing a white shirt)
- ✓ “Print” the configured image
  - Print Pro is configured to print to a file
- ✓ Select the printing device (i2) when prompted

Running a print from the *i2 UI*

Running a Print from the *i2 UI*

- Mount a pretreated garment onto the platen
- Set the platen height with *Autoscan*
- Select & configure a ripped design to print
- Print the design
- Cure the print

Mounting a Garment onto the Platen

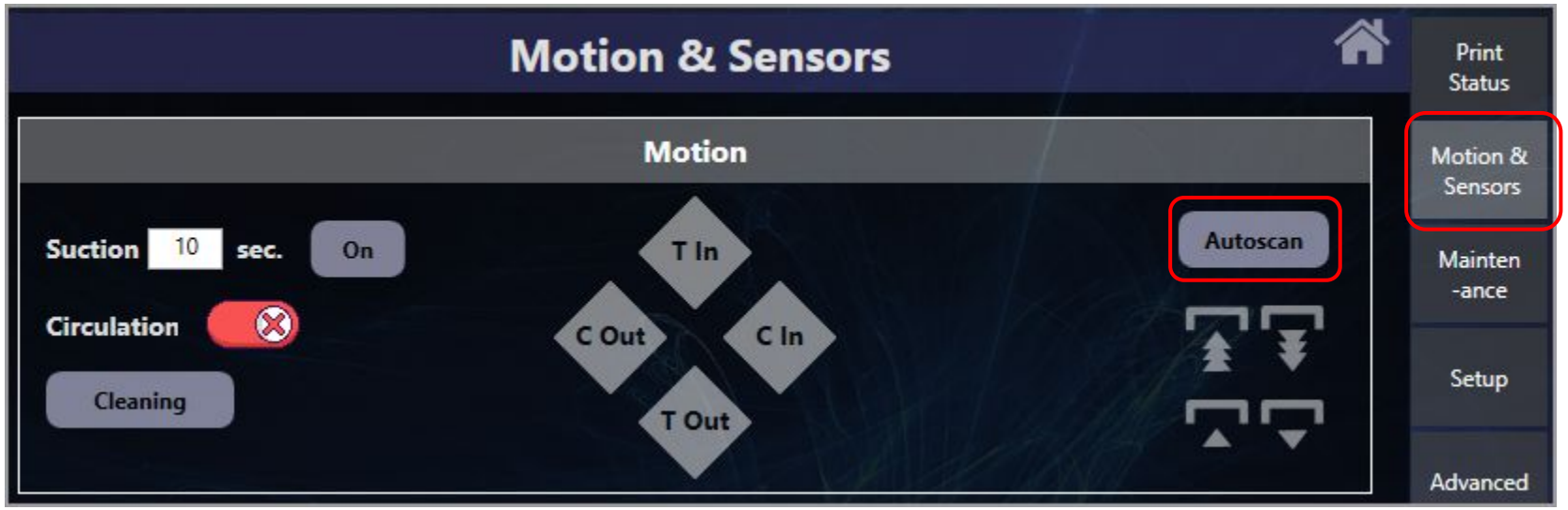
When mounting a garment onto the platen:

1) Make sure it sits flat for consistent print quality, with no seams or wrinkles on the print area.
2) Position it properly on the platen.
   - Hang the collar off the front of the platen.
   - Use the TucLoc(R) rubber pads to secure the garment in place.
   - Confirm there are no seams, wrinkles, or any high spots on the platen.

Best Practice Tip: Heat press the garment immediately before printing to steam out any residual moisture and eliminate any wrinkles in the print area.

Set the Platen Height with *Autoscan*

- Select the *Motion & Sensors* screen
- Click the *Autoscan* button



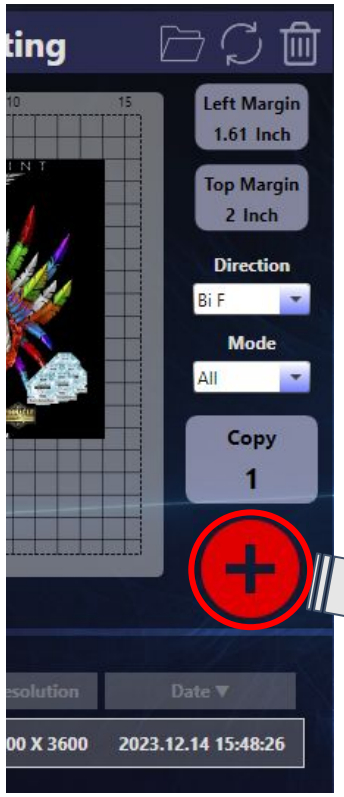
Select, Position, and Configure a Rip to Print

- Load an image from the file list
  - Click the stacked images icon (Path:C\i2rip)
  - Select the desired filename, or click the refresh button if a newly ripped file doesn't appear in the list.
- Position the image as desired by setting margins
  - 2" is the industry standard Top Margin
  - No Left Margin change is needed (centered by default)
- Set Direction to 'Bi F'
- Set Mode

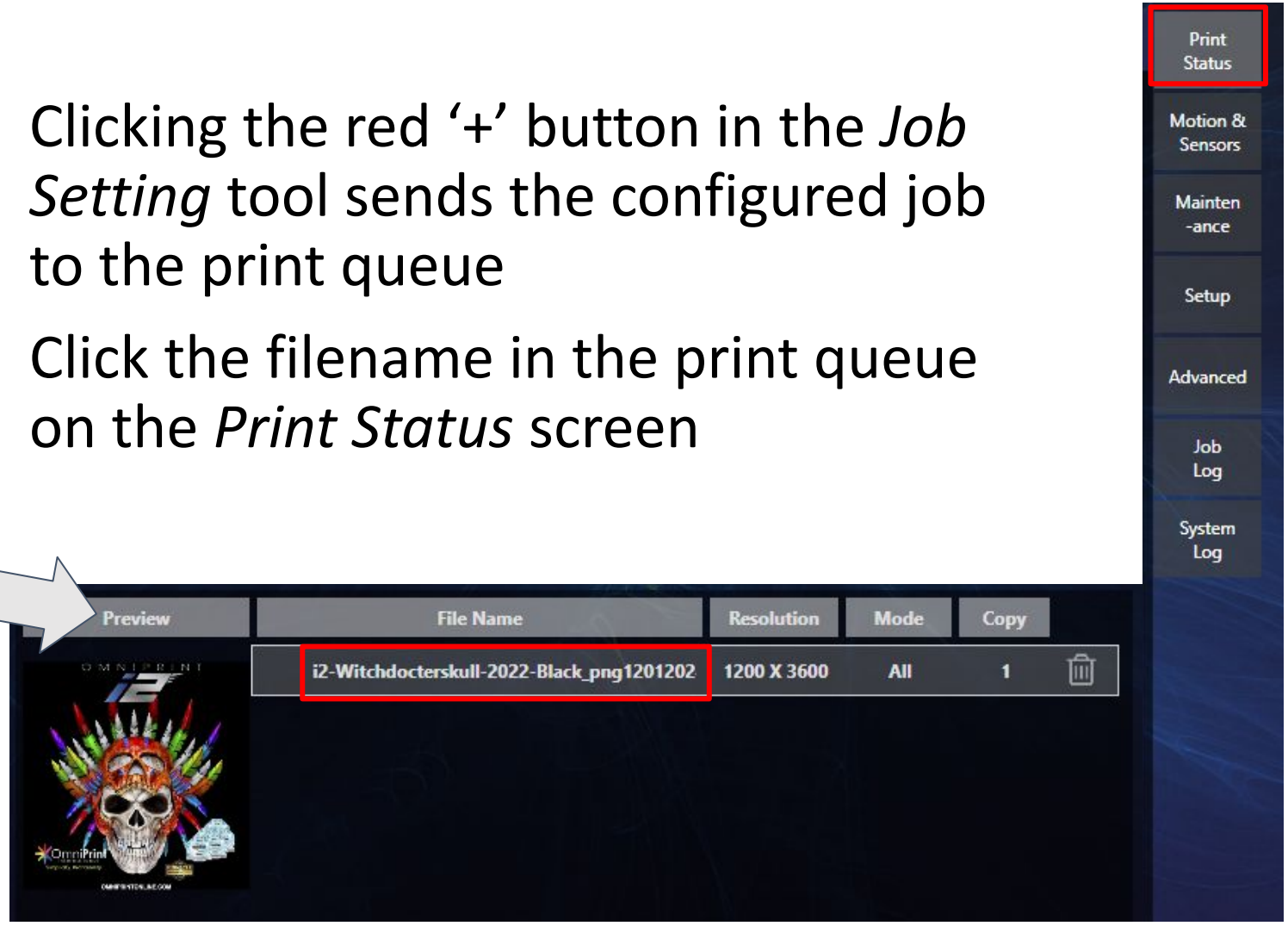
All – One-pass printing - white layer then color layer.
Color – Prints only the color layer.
White – Prints only the white layer.
Layer M1- Two-pass printing **-** Prints white layer first, then press the printer's 'Start' button to print the color layer on top of the white layer.
All DTF - One-pass DTF printing - color layer then white layer.
Layer DTF - Two-pass DTF printing - color layer then white layer.

NOTE: For DTF printing, the image must have been *Mirrored* in the rip software.

Print the Design

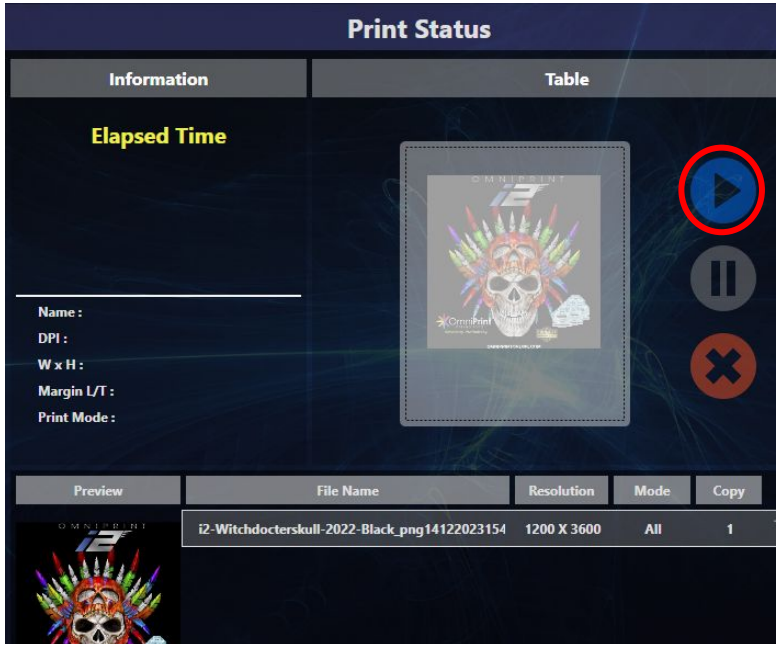


- Clicking the red '+' button in the *Job Setting* tool sends the configured job to the print queue
- Click the filename in the print queue on the *Print Status* screen

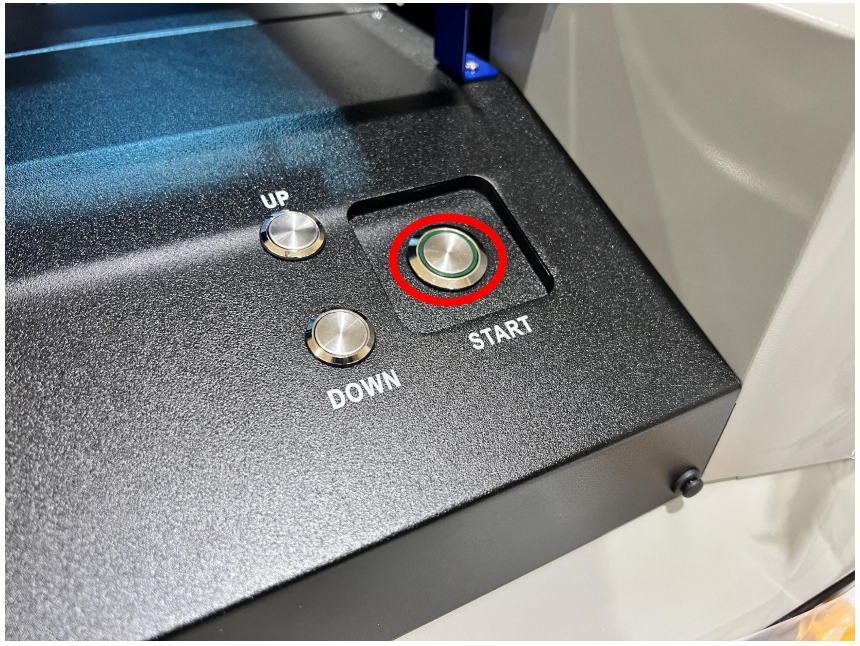


Print the Design

- Click the blue *Play* button to send the job to the printer.



- After the i2 beeps, press its flashing *Start* button to run the print.



Curing the Ink

Until the ink is cured by heat, your print will be vulnerable to ink being smeared or transferred by anything that contacts it

- Remove the garment from the platen and transfer it to a heat press or oven dryer, being careful to not let the garment fold onto itself where there is ink

Curing the Ink

Use the following parameters to cure ink on a heat press

- Pressure: Light (0-1 on a Stahl's heat press)
- Temperature
  - White/Light Polyester: 220-degrees Fahrenheit
  - Black/Dark Polyester: 240-degrees Fahrenheit
  - White/Light Cotton: 300-degrees Fahrenheit
  - Black/Dark Cotton: 320-degrees Fahrenheit
- Press count & duration
  - White cotton or poly (1-layer prints): One ('1') 90-second press
  - Dark/Colored or Black cotton or poly (2-layer prints): Two ('2') 90-second presses

NOTE: Proper curing of the ink using the above parameters is critical to achieve good washability

Printing a Garment Review

- ✓ Mount a pretreated garment to the platen
- ✓ Set the platen height with *Autoscan*
- ✓ Select & configure a ripped design to print
- ✓ Print the design
- ✓ Cure the ink

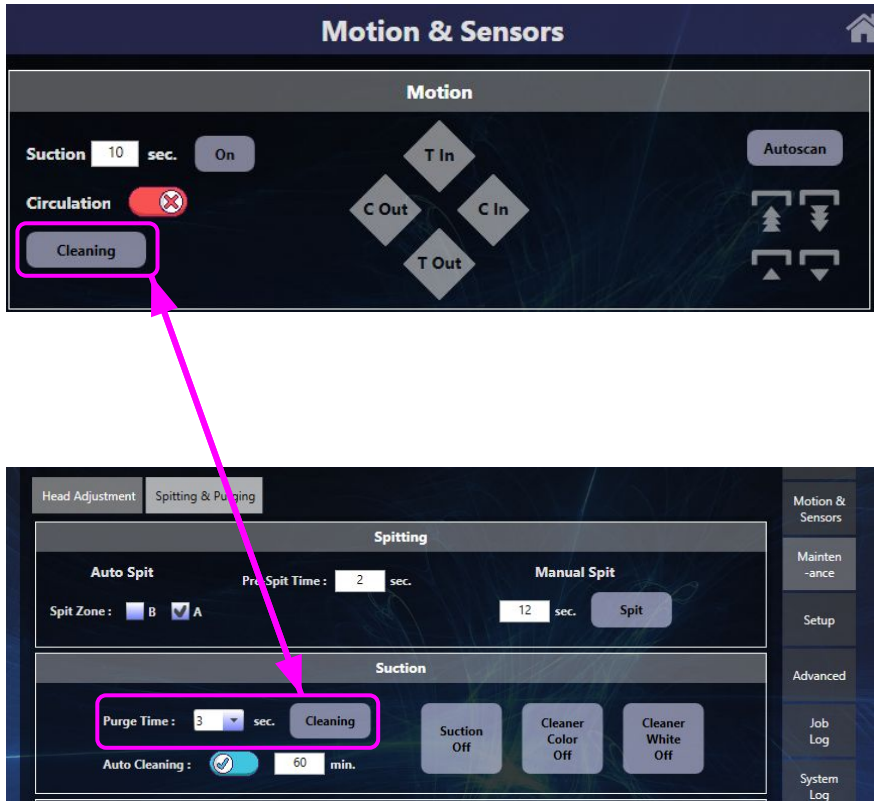
Shutting Down the *i2*

Shutting Down the *i2*

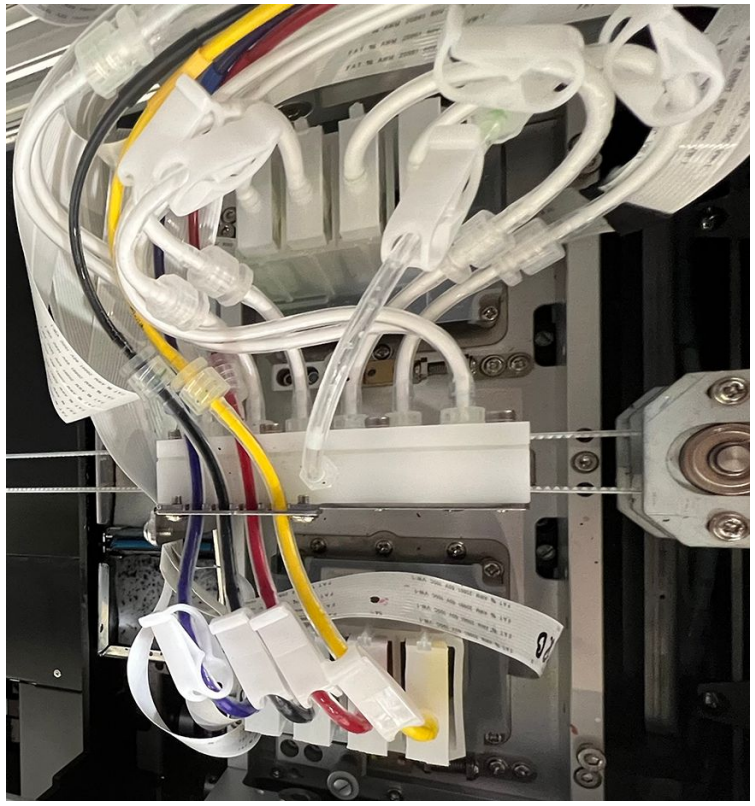
- Run a head cleaning
- Close the ink clips
- Clean the wiper blades & capping stations' seals
- Clean the printheads' undercarriage
- Flush the capping stations & wet cap the printheads
- Clean up any ink under the capping stations
- Close the *i2 UI* program (optional)
- Shut off power from the rear switch (optional)
- Empty the waste ink bottle

Shutting Down the *i2*

- Run a head cleaning

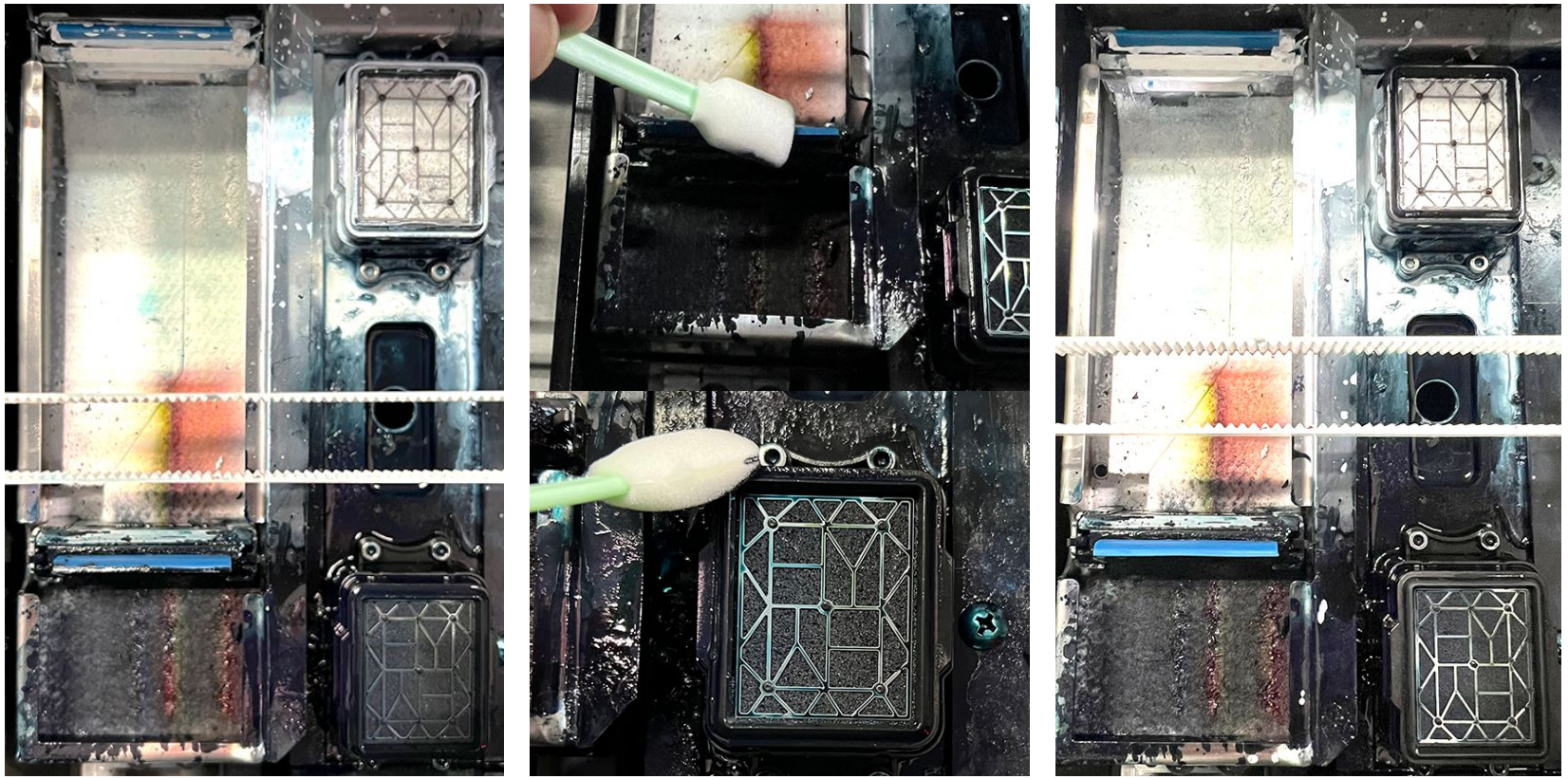


- Close the ink clips



Shutting Down the *i2*

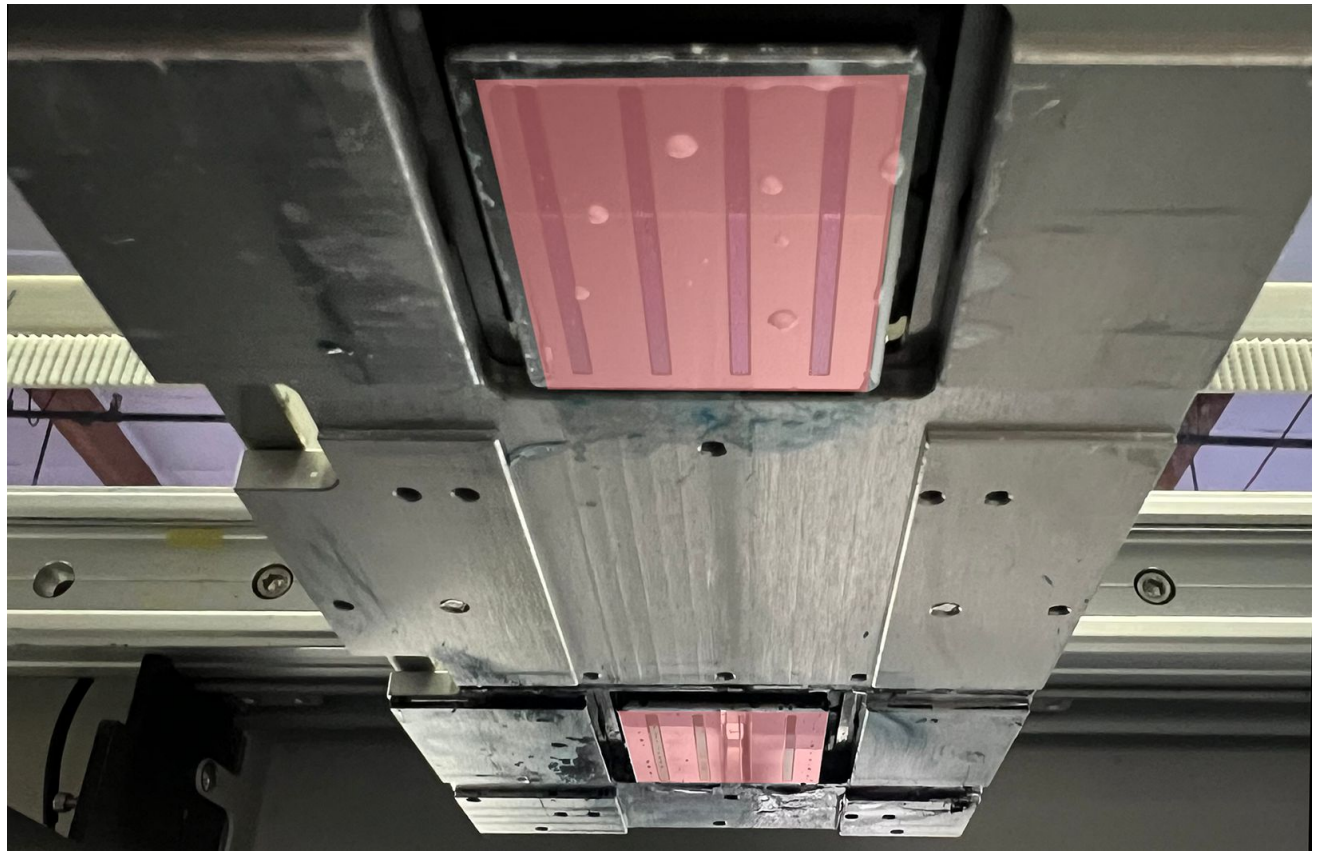
- Clean the wiper blades & capping stations' seals



Shutting Down the *i2*

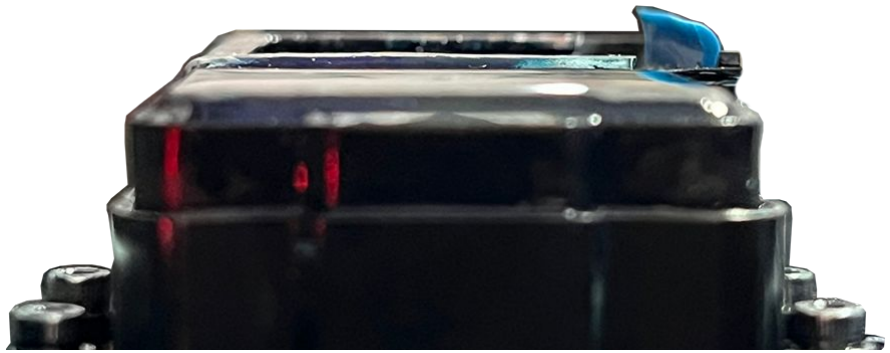
- Clean the bottom of the printheads' carriage

  Remove ink from all areas around the printheads except the nozzle plates shown here with a red hue.



Shutting Down the *i2*

- Flush the capping stations & wet cap the printheads
  - Fill the capping stations with Super Cleaner.
  - Run *Suction* to flush out the capping stations.
  - Repeat until the loose ink is rinsed out.
  - Refill the capping stations with *Suction* OFF.
  - *Home* the carriage to wet cap the printheads.

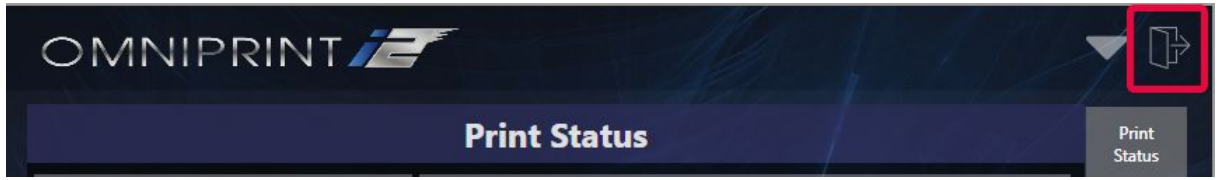


Shutting Down the *i2*

- Clean up any ink under the capping stations
  - Remove the right side access panel with the printhead carriage moved aside to improve visibility.

Shutting Down the *i2*

- Close the *i2 UI* program (optional)
- Shut off power from the rear switch (optional)
- Empty the waste ink bottle



Shutting Down the *i2* Review

- ✓ Run a head cleaning
- ✓ Close the ink clips
- ✓ Clean the wiper blades & capping stations' seals
- ✓ Clean the printheads' undercarriage
- ✓ Flush the capping stations & wet cap the printheads
- ✓ Clean up any ink under the capping stations
- ✓ Close the *i2 UI* program (optional)
- ✓ Shut off power from the rear switch (optional)
- ✓ Empty the waste ink bottle

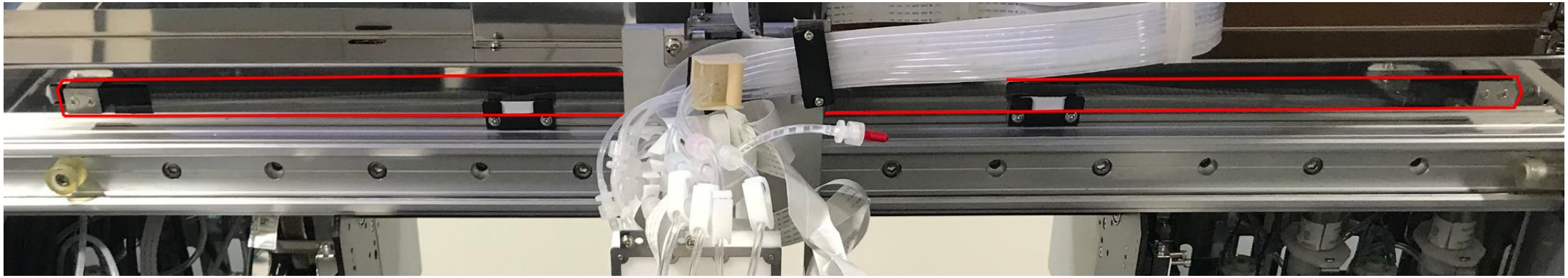
Routine Periodic Maintenance

Routine Periodic Maintenance

- Clean the carriage encoder strip
- Clean and lubricate the carriage rails
- Clean the spit trays

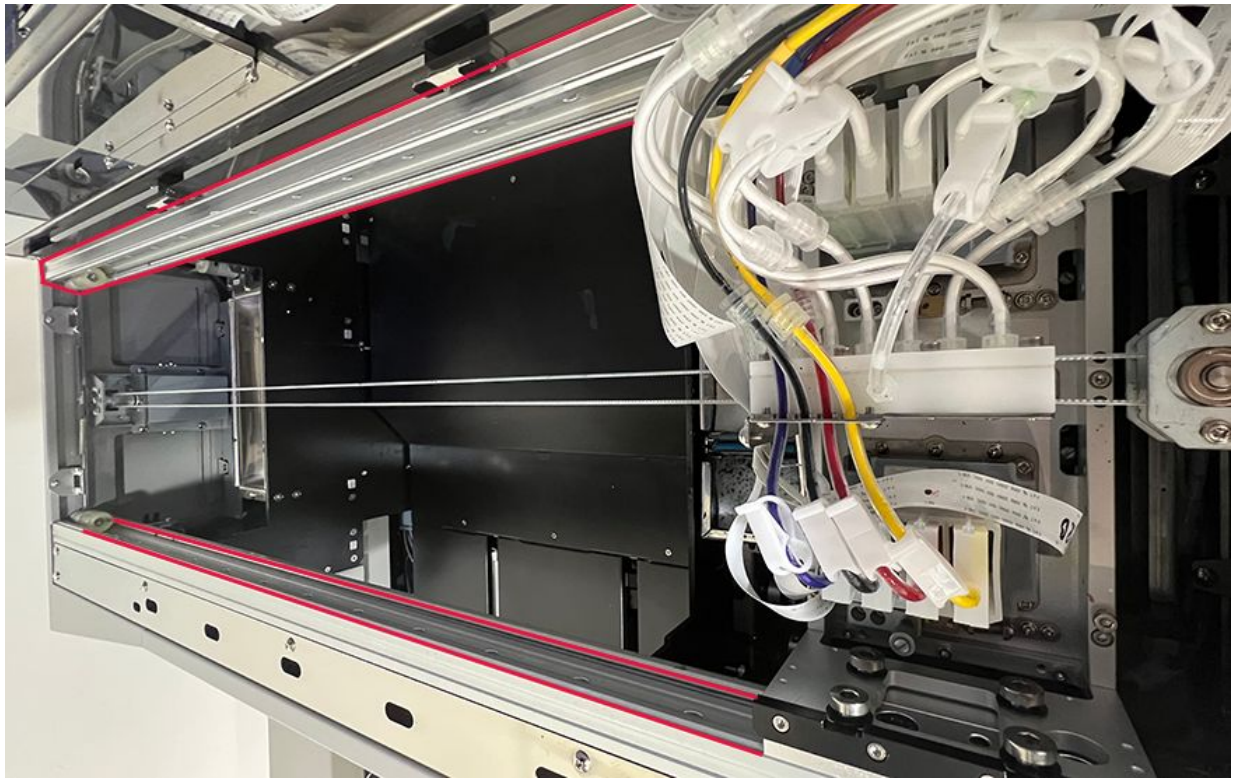
Clean the Carriage Encoder Strip

- Release the printhead carriage from its Home position
- Clean the exposed section of the encoder strip with a lint-free cloth and 70% isopropyl alcohol
- Reposition the printhead carriage to the left and wipe the remaining section of the encoder strip
- Return the printhead carriage to its Home position



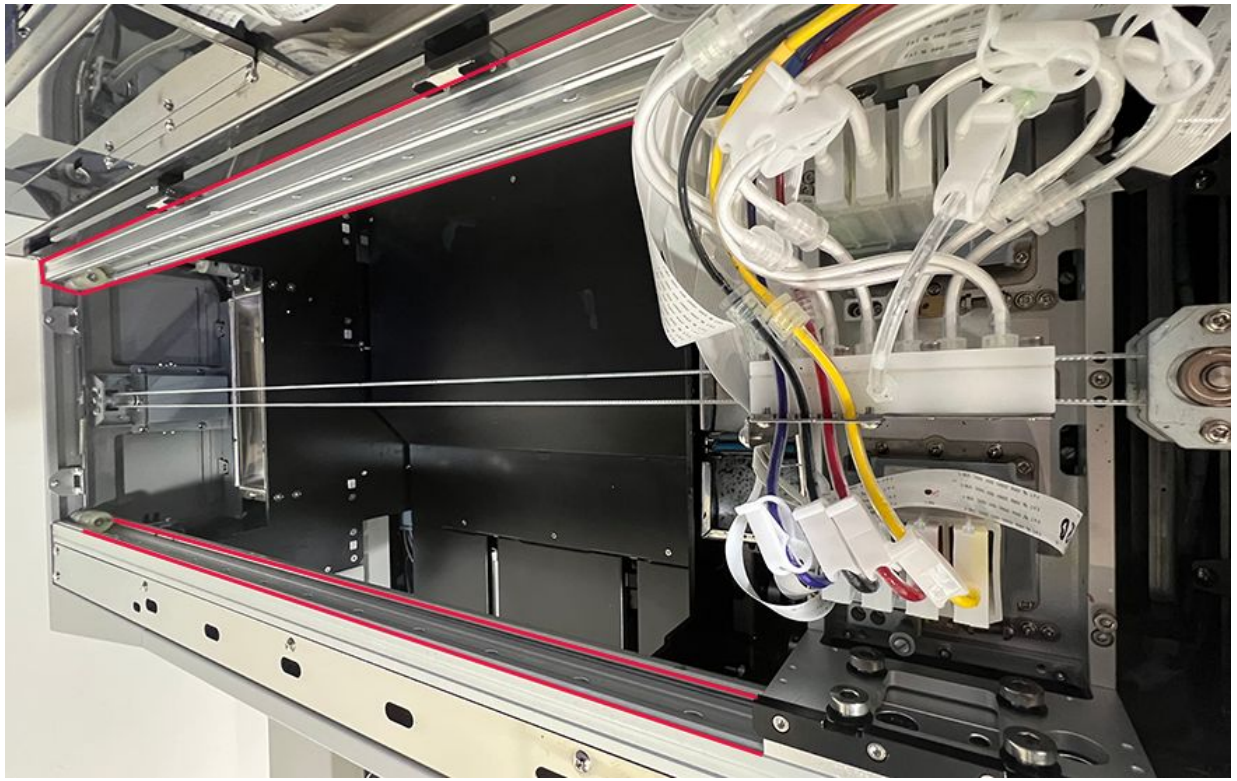
Clean & Lubricate the Carriage Rails

- Release the printhead carriage from its Home position
- Wipe the exposed section of the front & rear carriage rails with a clean, dry, lint-free cloth
- Reposition the printhead carriage to the left and wipe the remaining sections of the carriage rails



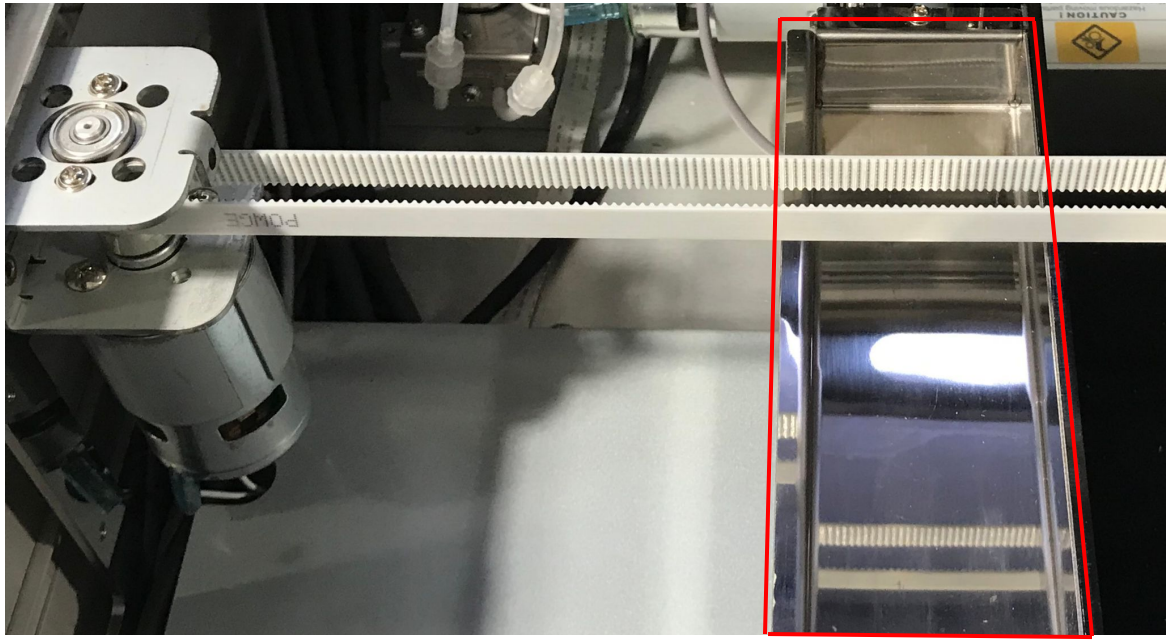
Clean & Lubricate the Carriage Rails

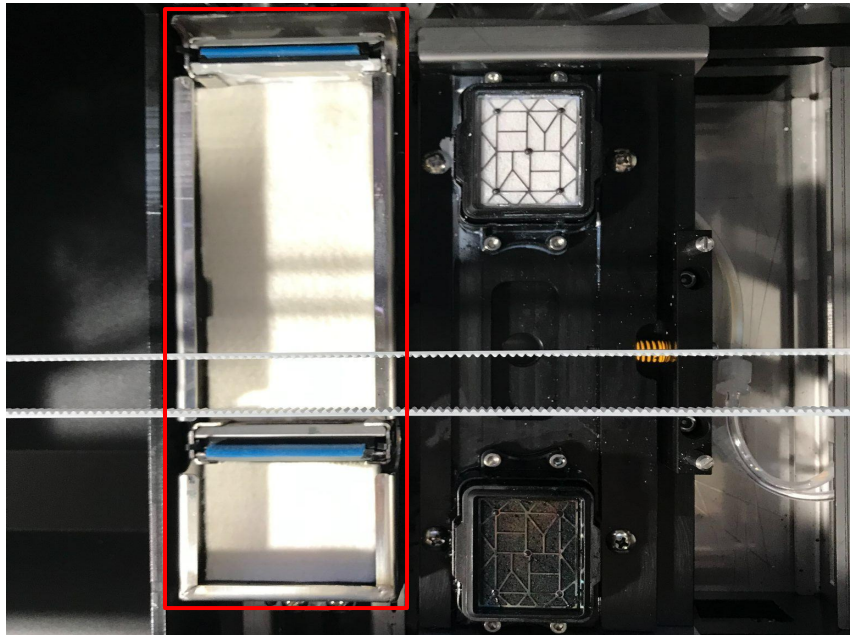
- Apply dabs of blue grease to the top, bottom and face of the front & rear rails, and move the carriage back and forth to distribute the grease
- Return the printhead carriage to its Home position



Clean the Spit Trays

- Clean the left & right ink spit trays and replace soak pad, as needed





Routine Periodic Maintenance

- ✓ Clean the carriage encoder strip
- ✓ Clean and lubricate the carriage rails
- ✓ Clean the spit trays