kornit breeze

User Guide

PN: 60-BOOK-0010

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Following the Drop of Success

Kornit Breeze

User Guide

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Table of Contents

Glossary

Term	Definition
Axis/Axes	• Scan (also known as Y or Vertical) • Cross Scan (also known as X or Horizontal)
Bleed	Colors exceed the actual image boundary, causing a slightly blurred effect.
Capping	The maintenance tray closes onto the Printing Head plate, thereby protecting the heads from damage and drying out.
Fixation Liquid	Fixation spray, in liquid form, that is stored in the Fixation Spray tank.
Fixation Spray	Liquid that is sprayed onto the garment before the actual printing process.
Garment	Refers to any fabric that is mounted on the printing pallet and printed on.
Ink Subsystem	Secondary ink tank.
Lint-free Towels	Cleaning towels that are supplied by Kornit. Part number: 01-WIPR-0909.
Magnetic Frame	Metal frame that fits over the edges of the printing pallet and holds the garment in place during the printing procedure.
Media	The material on which you print your Breeze jobs.
Negative air pressure (Vacuum)	Applied to the print heads to prevent unwanted ink from dripping onto the media.

Term	Definition
Nozzle Test	Procedure for determining which, if any, nozzles are not functioning properly.
Orifice Plates	The flat print head surface. Contains 256 nozzles.
Pallet Base	Fixed flat surface that serves as the basis onto which a printing pallet is installed.
Pallet Positions	• Home – For the printing pallet, the backside of the printer; for the print head carriage, the extreme right of the printer. • Loading – On the Cross Scan axis, the position closest to the user and from where you load the garment onto the printing pallet.
Printer Stand	The working surface upon which the Printer is placed.
Purge	Procedure for forcing small amounts of ink out through the nozzles to clear the print heads and/or prepare the print heads for printing.
Spit	Procedure for keeping the print heads unclogged and moist for printing.
Wiping Fluid	Cleaning agent supplied by Kornit and used for cleaning the water-based inks from such delicate printer parts as the print heads. Part number: 50-WIPG-0200.

Chapter 1

Introducing the Kornit Breeze

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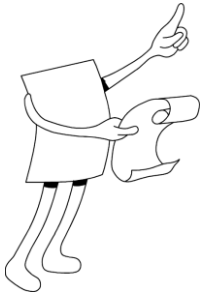


Chapter 1: Introducing the Kornit Breeze

The Kornit Breeze has been designed for inexpensive, high-speed, high-quality, multicolor, direct-on-garment printing. Together with Kornit's specially formulated ink, the easy-to-use Kornit Breeze system enables printing onto a wide range of garment types. The images are vividly colored and photo-realistic and feature high durability, UV resistance, and washability.

Introducing the Kornit Breeze contains the following sections:

1 Overview

Kornit Breeze is a lightweight, compact, print-to-garment digital printer that can be set up on a small table or simple metal frame. The system hooks up to any desktop or laptop computer that meets the standard requirements and can be operated from almost any location.

The Kornit Breeze provides you with:

- An enhanced printing arrangement that simultaneously runs color and white print heads, enabling greater printing speed and higher throughput.
- A Touch Pad screen console for quick and easy machine maintenance.
- An automatic pre-treatment system.
- An automatic pre-treatment, wiping system.
- An automatic maintenance station that saves head cleaning time and improves reliability.
- An integrated degassing system that enables a smooth and uninterrupted ink flow.
- Vertical height adjustment of up to 2 cm, enabling high-quality, non-contact printing for thick garments and such special garment applications as seams, pockets etc.

2 Before You Begin

Getting to know the documentation conventions

The following safety symbols are used throughout all Kornit Breeze documentation. Familiarize yourself with the symbols and their meaning before operating the printer:

WARNING!

A WARNING denotes a hazard. It calls attention to a procedure that, if not correctly performed or adhered to, could result in injury or loss of life. Do not proceed beyond a warning note until the indicated conditions are fully understood and met.

CAUTION!

A CAUTION denotes a hazard. It calls attention to a procedure that, if not correctly performed or adhered to, could result in damage or destruction of the instrument. Do not proceed beyond a caution sign until the indicated conditions are fully understood and met.

NOTE:

A NOTE calls attention to important issues of which you should be aware.

Getting to know the terminology

Some words appearing in this guide are generic to the printing industry while other words are specifically used by Kornit.

Read over the Glossary on page vii to become familiar with these terms.

3 Safety Information

Getting to know the printer hazards

- Moving Parts:
  - Printing pallet, print head assembly, wiper assembly, and the maintenance tray.
  - The front hood, service doors and side guards.

WARNING!

You must set the magnetic frame correctly in place before activating print head and/or the printing pallet movement. If the printing pallet is not in place, you can cause severe damage to the print heads.

- Electrical Parts – Wiring, Circuit Breaker (CB1) on page 14.
- Hot Parts – Print Heads
- Single Print Button

WARNING!

This printer has a single green Start button. Keep your hands clear of all moving parts when you press the button to start the printer.

4 Model Description

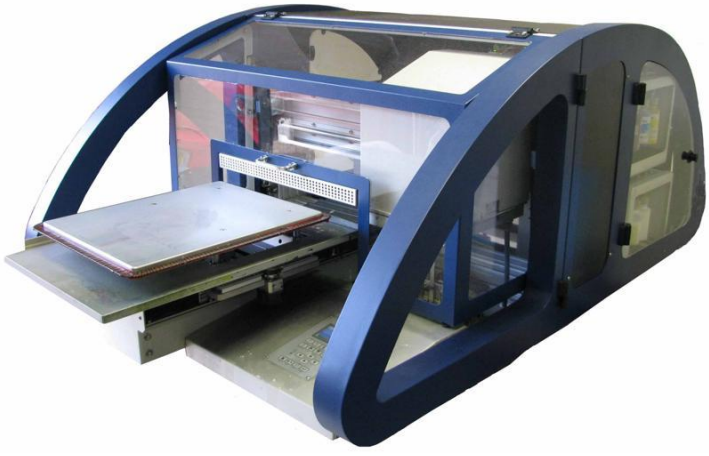


Figure 1: Breeze Digital Printer

The Model Description section describes the various printer views:

- External Front of the Printer on page 6.
- Internal Front View on page 8.
- Internal Left Side View on page 9.
- Internal Rear View on page 10.
- External Right Side View on page 11.
- Internal Right Side View on page 12.

In addition, the Model Description section describes:

- Printer Table (Optional) on page 13.
- Safety Features on page 14.
- Technical Specifications on page 16.

4.1 External Front of the Printer

Figure 2: Front View

From the front of the Kornit Breeze, when the front hood is closed, you can see the following elements:

- Front Hood – Clear, plastic cover that protects the ink, pneumatic, motion, and electronic systems from unwanted dirt and contact.
- Printing Pallet – Surface onto which you place the garment for printing.
- Start Button – Single green button that starts the printing process.
- LCD Maintenance Panel – Provides you with an ongoing visual report of the system and allows you to perform various maintenance activities.
- Emergency Stop Button – Enables you to immediately stop printer activity.

4.2 Internal Front View

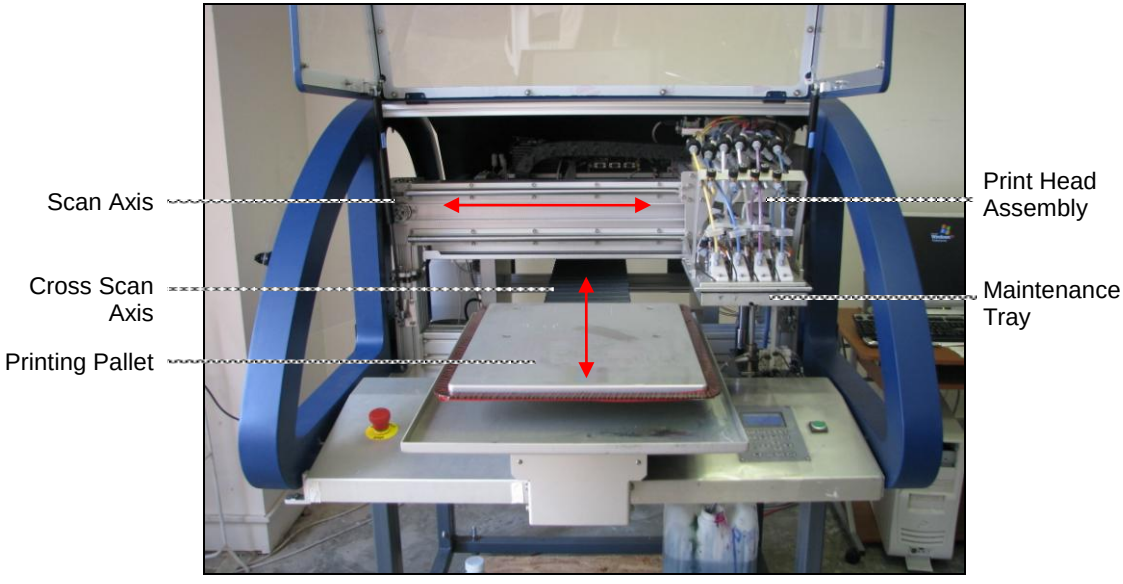


Figure 3: Internal Front View

Inside the front of the Kornit Breeze, you can see the following elements:

- Print Head Assembly - Injects the ink onto the media.
- Maintenance Tray – Collects all excess ink and directs it to the waste ink container. In addition, the maintenance tray enables performing such maintenance activities as capping, and purge and wipe.
- Scan Axis – Axis along which the print head assembly moves.
- Cross Scan Axis – Axis along which the printing pallet moves.

4.3 External Left Side View

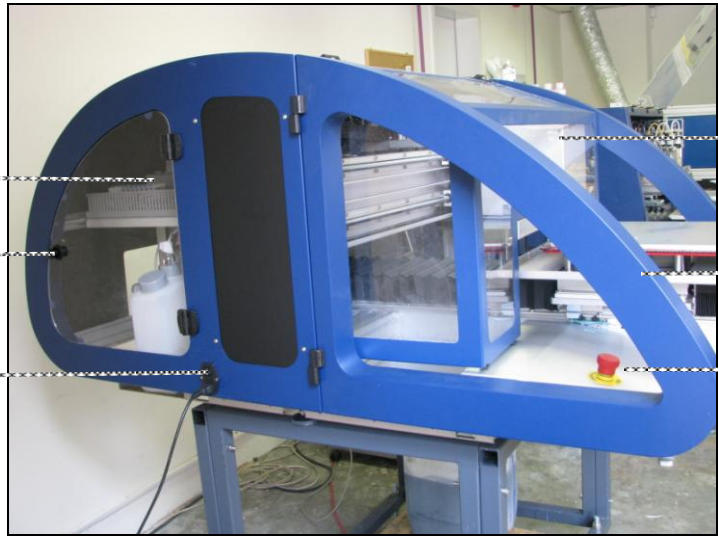


Figure 4: External Left Side View

From the left side of the Breeze, you can see the following elements:

- Left service door and door latch.
- Main switch and power connection.
- Front hood.
- Left guard.
- Emergency stop button.

WARNING!

After pressing the Emergency Stop button, the power supply is still active.

4.4 Internal Left Side View

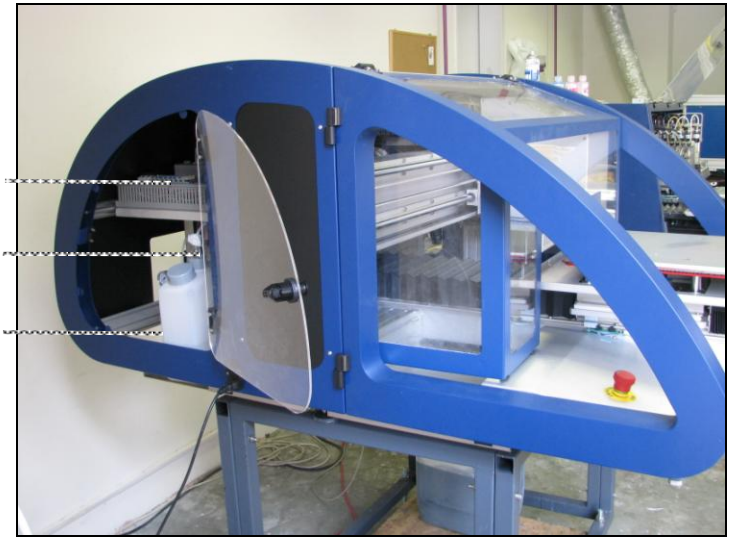


Figure 5: Internal Left Side View

From the left side of the Kornit Breeze, through the left service door, you can see and access the following elements:

- Circuit Breaker (CB1) – Main power circuit breaker.
- Pneumatic Assembly – Includes such pneumatic and spray components as pumps, valves, gauges, etc.
- Fixation Spray Bottle – Container holding the fixation liquid that is sprayed onto the garment before printing.

4.5 Internal Rear View

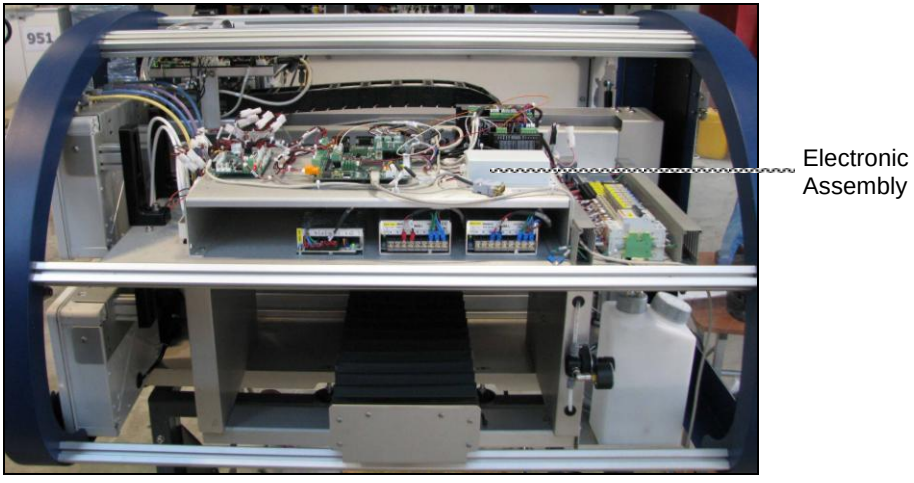


Figure 6: Internal Rear View

The back of the printer is covered and access is limited to technicians only. Inside the rear of the Breeze, you can view the electronic assembly, which includes such electrical components as electronic cards, drivers, power supply etc.

4.6 External Right Side View

Figure 7: External Right Side View

From the right side of the Breeze, you can see the following elements:

- Right service door.
- Waste ink tube – Transports ink wastes from the maintenance tray to the waste ink container.
- Waste ink Container – Collects ink wastes from the maintenance tray through the waste ink tube.

4.7 Internal Right Side View

Figure 8: Internal Right Side View

From the right side of the Breeze, you can see:

- The Ink Service Compartment – Houses the ink bottles.

4.8 Printer Table (Optional)

Figure 9: Table Assembly

The printer stand assembly consists of the following parts:

- Rectangular legs.
- Table levelers.
- Nut and bolt sets.
- Print Placement Points – Six location points for fitting the printer legs.

4.9 Safety Features

The printer has been designed with the following safety features:

- Circuit Breaker (CB1) on page 14.
- Emergency Stop on page 15.
- Protective Covers on page 15.
- Interlock on page 15.

4.9.1 Circuit Breaker (CB1)

The circuit breaker (CB1) is located at the rear-left of the printer. All system operation immediately shuts down when the circuit breaker shuts off.

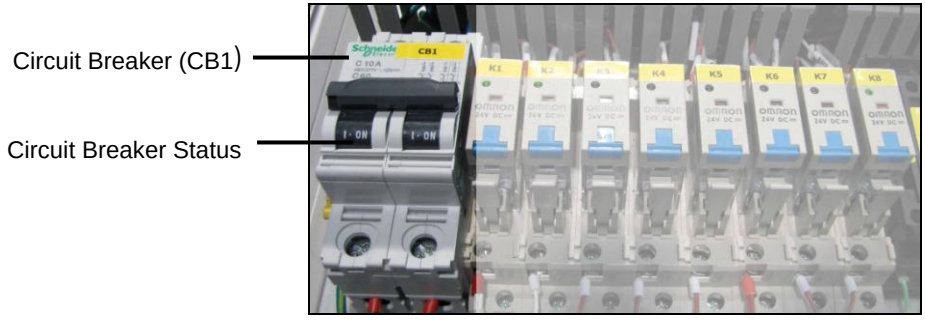


Figure 10: Circuit Breaker

➢ **To restart the circuit breaker:**

1. On the left service door, press the door latch button; the door latch handle pops out.
2. Pull on the handle to open the service door.
3. Carefully reach your hand up to the circuit breaker. Make sure that you do not touch anything else in that compartment.
4. Push up the circuit breaker switch; I.ON appears in the circuit breaker status window.
5. Close the service door and press the door latch button to lock the door.

4.9.2 Emergency Stop

The Emergency Stop button is located on the front printer panel, to the left of the printing pallet. Press the Emergency Stop button to immediately stop machine operation.

Figure 11: Emergency Stop Button – On Position

Figure 12: Emergency Stop Button – Off Position

4.9.3 Protective Covers

The printer is equipped with the following protective covers:

- Front Hood – Hinged and supported by two gas springs. Attached to an interlock. See Interlock on page 15.
- Left and Right Side Guards – Hinged to enable opening and/or removing during repairs and maintenance.
- Back Cover – Closes the back side of the printer. Can only be opened by a technician.
- Left and Right Service Doors – Transparent plastic and opened using a pop-handle locking system.
- Print Head Assembly Cover – Completely covers and seals the print head assembly. Only technicians are allowed to open the cover in order to service the print head assembly.

4.9.4 Interlock

The printer is equipped with an interlock on the Front Hood. All system operation is immediately shut down when the Front Hood is opened.

4.10 Technical Specifications

Type	Description
Printing Method	Drop-on-Demand, Direct-to-Garment: Computer to Garment
Ink Type	Proprietary pigmented water-based ink
Print Heads	Spectra Piezo Electric, 6 heads, 5 colors, 256 nozzles per head
Image Print Size	Up to 14"x18" (35x45cm)
Colors	4 CYMK colors for light and dark garments, and white for dark garments
Resolutions	600dpi x 1600dpi, 600dpi x 1200dpi, 600dpi x 800dpi, 600dpi x 600dpi
Printed Media	Cotton, Polyester, Cotton-Polyester blends, Lycra, Viscose, Silk, Leather, Denim, Linen, Wool and more
File Preparation and RIP	QuickP
Operating System	Windows XP, Windows 7
Image Data	Input: All conventional graphic file formats (e.g. TIFF, PNG, JPG, PSD etc.) Output: TIFF, PPI, TIFF, and BITMAP
Throughput (for A4 image size)	Light Garments: Up to 40 shirts per hour Dark Garments: Up to 25 shirts per hour
Interface	Network (Ethernet TCP/IP)
Power Requirements	Electrical supply: Single phase 220-240V / 110-120V, 50/60 Hz
Operating Conditions	Temperature: 18^{o}c-30^{o}c, Humidity: 45%-90%.
Dimensions	1.14m length x 1.5m width x 0.70 m height.
Weight	Approx. 210 kg/463 lbs.
Number of Operators	1

5 Graphical User Interface Description

The Graphical User Description section describes the major windows found in the Kornit Breeze software and includes:

- Main Window on page 18.
- File Details Window on page 22.
- Setup Editor on page 26.
- Technician Window on page 44.
- Menu Bar Navigation Chart on page 51.

NOTE:

You can only open a single Kornit Breeze application at any one time.

5.1 Main Window

Figure 13: Main Window

The Main window immediately appears when you open the Breeze application.

The Main Window is composed of the following elements:

- Job Queue on page 19.
- Menu Bar. See the Menu Bar Navigation Chart on page 51.
- Messages Area on page 20.
- Spray Level Indicator on page 20.
- Preview Area on page 20.
- Job Information Panel on page 20 .
- Command Buttons on page 20.

5.1.1 Job Queue

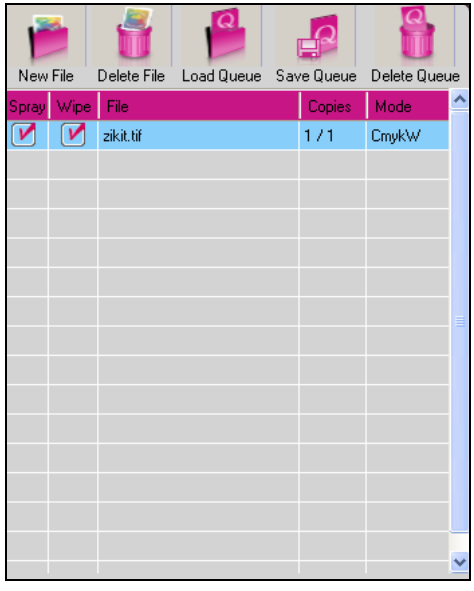


Figure 14: Job Queue

The job queue lists the job files that have been loaded to the workstation and indicates the processing status of each file. From the job queue, you can:

- Upload and delete job files.
- Rearrange the order of the job files in the queue.
- Load lists of files into the queue.
- View and enable/disable the spray and wipe procedures.
- View the following preset file properties:
  - File Name.
  - The number of copies being printed.
  - The selected media to be used.

5.1.2 Messages Area

The Messages area displays a variety of system messages while the printer is operating.

5.1.3 Spray Level Indicator

The Spray Level Indicator shows whether or not there is sufficient spray to treat the next several garments. When the spray level is low, the indicator appears as an empty spray tank.

5.1.4 Secondary Ink Tank, Ink Level Indicators

The Secondary Ink Tank, Ink Level Indicators show the current level of the ink in each Secondary Ink Tank.

 – Indicates that there is sufficient ink, in the specific Secondary Ink Tank, to perform printing procedures.

 – Indicates that there is insufficient ink, in the specific Secondary Ink Tank, to perform printing procedures.

5.1.5 Preview Area

The Preview Area enables you to preview the image before printing.

5.1.6 Job Information Panel

The Job Information Panel displays the following information:

- Job Setup information:
  - Setup – Setup name. See Modifying File Detail Parameters on page 23.
  - Media – Media name. See Modifying the Job Setup on page 25.
- Pallet information:
  - Pallet – Printing pallet name.
  - Height – Distance (in mm) between the print heads and the media as defined in the Media DB and according to the Media Name selection.

5.1.7 Command Buttons

The Command Buttons are:

- Print – The Print button starts the printing process. You can also start the printing process by pressing the green print button on the printer.

NOTE:

Start printing only after you have configured the printing parameters for the specific job and have placed the garment on the printing pallet.

- Stop – The Stop button aborts the printing process; the print heads move into the service area and the printing pallet moves back (towards you) to the loading position.

5.2 File Details Window

To print a job, you must first upload one or more image files to the job queue. When you upload an image file to the job queue, the File Details window appears.

➢ **To access the window:**

1. From the Main Window, in the job queue, click **New File**; the Open window appears.
2. Select the appropriate job file and click **Open**; the File Details window appears.

Figure 15: File Details Window

From the File Details window, you can perform:

- Modifying File Detail Parameters. See page 23.
- Modifying the Job Setup. See page 25.

5.2.1 Modifying File Detail Parameters

Every printed garment and job has specific characteristics that require different treatment. To deal with these differences, you can modify the following File Details parameters:

- Setup Name – The name that signifies the specific setup. When you change setup parameters, the system enables you to name the new setup. See Setup Name on page 28.
- Copies – The number of garments to be printed with this specific image.
- X and Y Offset – The position of the image in the Preview pane. This will be the position of the print on the garment.
  - Select the Center checkboxes to center the image along the X and Y axes of the Preview area.
- Width and Height – The size of the image in the Preview pane. This will be the width and height of the print on the garment.
  - Select the Keep the Ratio checkbox to maintain relative width/height proportions when changing either the width or the height.
- Rotate and Mirror:
  - Rotate the image clockwise 90 degrees.
  - Rotate the image clockwise 180 degrees.
  - Create a mirror image of the original image.
- Spray Amount – The amount of fixation spray to be applied to the garment.
  - Select the Spray checkbox to apply the fixation spray before printing.
  - Select the Wipe checkbox to wipe the garment after applying the fixation spray.

- White Print and Highlight Mode – See White Print and Highlight Mode on page 32.

NOTE:

The File Details window includes the following tools that can assist you when modifying the setup parameters:

- File Details Pane – Displays all of the selected setup properties and values.
- Preview Pane – Displays the uploaded image.
- Preview Options Panel – Enables viewing changes to the parameters without specific color layers.

After defining the file detail parameters, you click **OK** to save the parameters and to continue with the print procedure.

NOTE:

Changes to Spray, Wipe, Copies, and Mode parameters are displayed in the job queue.

5.2.2 Modifying the Job Setup

Use the File Details window to adjust the file detail parameters of the specific job only. Use the Setup Editor to create new job setups or to modify existing job setups. See Setup Editor on page 26.

File Detail parameters include:

- White Print Mode options:
  - None – White colors are not printed
  - Single – One layer of white color is printed.
  - Double – Two layers of white color are printed.
- Additional Layer – An additional layer of white color is printed, as a highlight.
- White Color Adjusters. See Defining White and Highlight Layers on page 33.

NOTE:

- When selecting a WhiteT setup name for a light-color garment, all of the White Print Mode options will appear as 'Disabled'.
- When you select "None" as the White Print Mode option, all opacity options are disabled.
- When you move a slider, all sliders below it move together with it.

After defining the File Details parameters, click **OK** to save the parameters and to continue with the print procedure.

5.3 Setup Editor

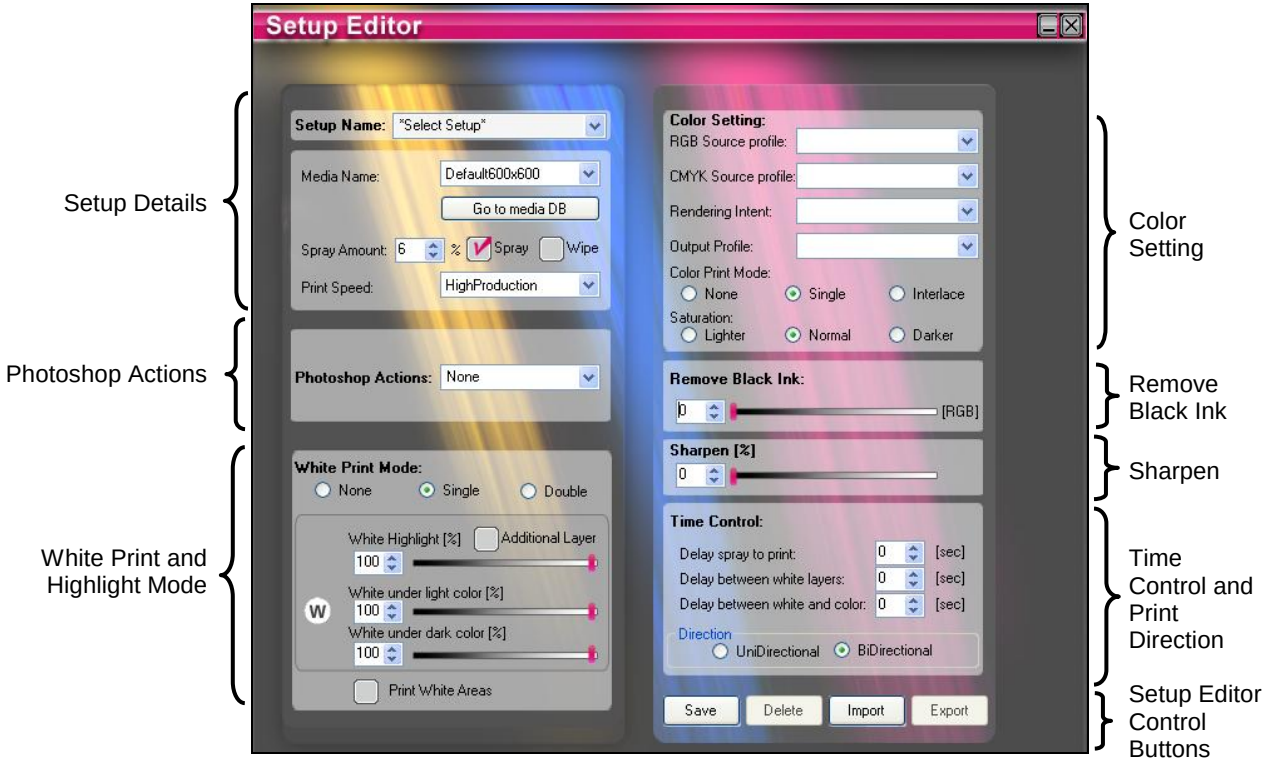


Figure 16: Setup Editor Window

The Setup Editor enables creating and saving new job setups.

Setup Editor comprises the following panels:

- Setup Details on page 27.
- Photoshop Actions on page 30.
- White Print and Highlight Mode on page 32.
- Color Setting on page 36.
- Remove Black Ink on page 38.
- Image Sharpener on page 38.
- Time Control and Print Direction on page 38.
- Setup Control Buttons on page 39.

5.3.1 Setup Details

Figure 17: Setup Details Panel

The Setup Details panel comprises the following elements:

- Setup Name – Dropdown list for selecting a predefined job setup that is stored in the Setup database. See Setup Name on page 28.

NOTE:
The setup reflects all of the parameters defined in the Setup Editor.

- Media Name – Dropdown list for selecting a predefined media that is listed in the Media database.
  - When you select a media name, you also select the associated Dark Media, Spray Amount, and LUT (which includes resolution) settings that you set in the Media Database window.
  - See Media Name on page 29 and Configuring Media Database Operation Parameters on page 118.
- Go to Media DB button – Accesses the Media Database window and enables creating and modifying media parameters.
- Print Speed:
  - High Production – For printing on light-colored garments, using CMYK colors.
  - Production – Default, recommended speed.
  - High Quality – For printing small images (e.g. on pockets and hats).
- Spray Amount – Enables selecting the amount of spray to apply to the garment, in a percentage.

- Spray and Wipe checkboxes – Enable applying and wiping the spray.

NOTE:

When you clear the Spray checkbox, the Wipe checkbox is also cleared.

Setup Name

A setup name represents a predefined job setup file stored in the Setup database.

Kornit provides the following list of default job setup files which can be used as is or which can serve as the base for new job setup files tailored to your specific needs.

For Black T Shirts:

- BlackTDefault – For RGB transparent images, 600x600, High Production, Double White, 50% Sharpen **with ICC profile**.
- BlackTManual – For CMYK-WH images, 600x600, High Production, Double White, 50% Sharpen, **no action, no ICC profile**.
- BlackT_BlackBackground - For RGB transparent images, 600x600, High Production, Double White, **10% Remove Black Ink**, 50% Sharpen with ICC profile.

For White T Shirts:

- WhiteTDefault – For RGB images, 600x600, High Production, 60% Sharpen with ICC profile.
- WhiteTInterlace - For RGB images, 600x600, High Production, Including Interlace, 60% Sharpen with ICC profile.
- WhiteTManual - For CMYK images, 600x600, High Production, 60% Sharpen, **no action, no ICC profile**.

For Calibration:

Calibration – For printing 1 Bit images of the calibration wizard.

Media Name

Jobs can be printed on a wide selection of media definitions and these definitions are stored in the Media Database (see Managing the Media Database on page 120). Your system has been installed with a number of ready-made media definitions, which you can use, or you can create new definitions, as required.

When creating new definitions, we recommend that the Media Name indicate the specific elements that make up the selected media.

For example, name new media definitions according to:

- The type of media.
- Specific elements in the media (e.g. spray amount, LUT, Light or Dark Media).

5.3.2 Photoshop Actions

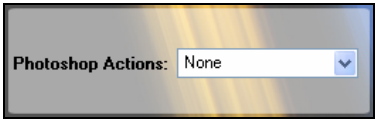


Figure 18: Photoshop Actions Panel

The Photoshop Actions panel comprises a dropdown list of all pre-defined Photoshop actions, stored in the Photoshop Actions Database.

NOTE:

- Photoshop must be installed on your computer to use this option.
- When selecting a Photoshop Action, all Color Setting options are disabled.

Photoshop Actions are activities performed sequentially in Photoshop software which is running in the background of the Breeze application.

The name of the Photoshop Action indicates the various activities that are performed within the action.

Photoshop Action name example: **BlackTMidFullFrameStroke**

	Name Element	Indicates
1	LightT	Does not prepare a white layer.
	DarkT	Prepares a uniform white layer under the CMYK colors.
	BlackT	Creates a gradient white layer according to the details in the image.
2	Skinetone	For photorealistic and high detail images. Best for portrait and skin tones.
	Normal	Preserves the details and original colors, optimizes the colors to suit the Kornit printer.
	Mid	Optimizes the colors, while attempting to preserve the original details. Most suitable for bright colors.
	High	Optimizes the colors (more than Mid), while attempting to preserve the original details. Most suitable for bright colors.
3	FullFrame	For non-transparent files such as .jpg. Suited to full frame pictures, landscape, family, etc.
	Stroke	Prints a two pixel sideline around the image, to sharpen the image and cover white layer edges.

5.3.3 White Print and Highlight Mode

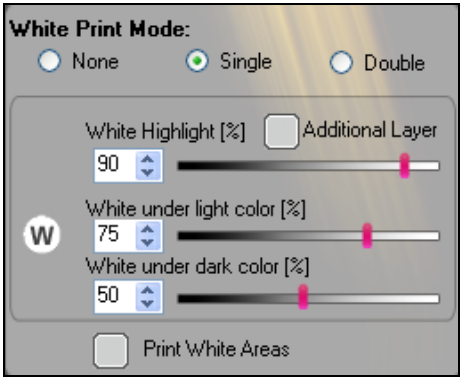


Figure 19: White Print and Highlight Mode Panel

White print and highlights are defined in the Job Setup. The White Print and Highlight modes panel enables you to optimize the quality of your image on a dark or black-colored media, when there is need (e.g. when changing the media).

White Print Mode comprises the following elements:

- White Print
  - None – White colors are not printed.
  - Single – One layer of white color is printed.
  - Double – Two layers of white color are printed.

NOTE:
When you select "None" as the White Print Mode option, the White Highlight [%] are disabled.

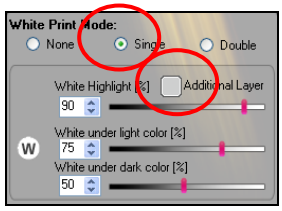
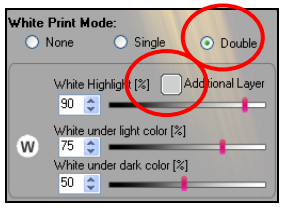
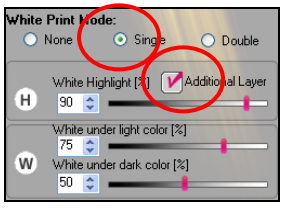
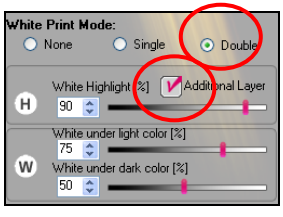
- White Color Adjusters – Adjust white color opacity.
- Additional Layer – Add an additional layer of white is printed as a highlight.
- Print White Areas option – Select to print visible white areas.

➢ **To work with the White Print Mode, see the following descriptions:**

- Defining White and Highlight Layers on page 33.
- Adjusting White Opacity – Without an Additional Highlight Layer on page 34
- Adjusting White Opacity – With an Additional Highlight Layer on page 35.

Defining White and Highlight Layers

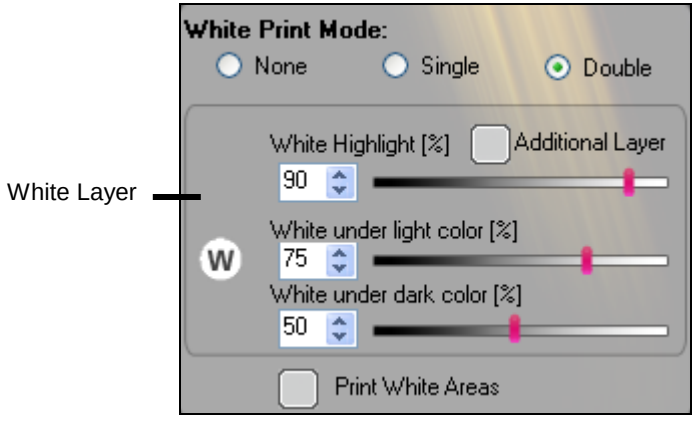
Use the following chart to help in selecting the number of white and highlight layers.

Purpose		Select Settings	Results
Single White • High production printing • Normal quality		3. Single White Print Mode	One printed layer: 1. White and CMYK
Double White (Default) • Production printing quality		4. Double White Print Mode	Two printed layers: 1. White 2. White and CMYK
Single White and Highlight • Production printing quality		• Single White Print Mode • Additional White Highlight Layer	Two printed layers: 1. White 2. Highlight and CMYK
Double White and Highlight • Low production • High quality		• Double White Print Mode • Additional White Highlight Layer	Three printed layers: 1. White 2. White 3. Highlight and CMYK

Adjusting White Opacity – Without an Additional Highlight Layer

When you clear the "Additional Layer" option, the white highlight layer is combined with and printed as part of the white layer. Use the sliders to control white color opacity.

- The White Highlight (%) slider controls the opacity of the white areas beneath CMYK colors of 0-5% opacity.
- The White Under Light Colors (%) slider controls opacity of the white layer that is printed underneath light colors.
  - The White Under Light Colors slider position determines the maximum amount of white that can appear under a light CMYK color that has 5-100% opacity.
- The White Under Dark Colors (%) slider controls opacity of the white layer that is printed underneath dark colors.
  - The White Under Dark Colors slider position determines the minimum amount of white that can appear under a dark CMYK color that has 5-100% opacity.



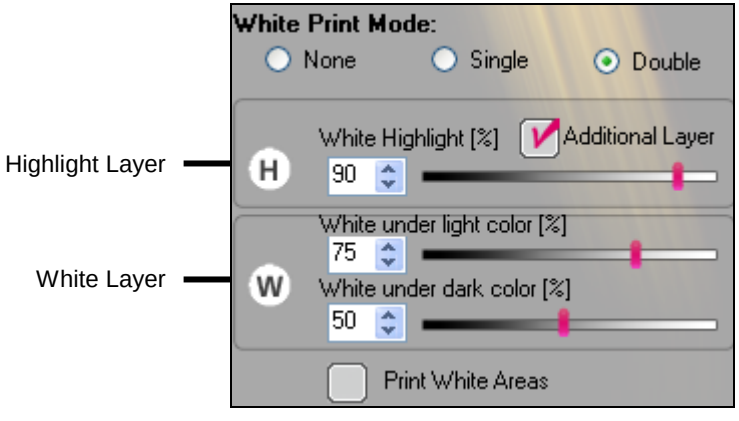
NOTE:

When you move a slider, all sliders, below the specific slider, move together.

Adjusting White Opacity – With an Additional Highlight Layer

When you select the Additional Layer option, the system distinguishes between the white highlight layer and the white under layer and prints the Highlight Layer as an additional layer together with the CMYK layer. Use the sliders to control white color opacity.

- The White Highlight (%) slider controls the opacity of the highlight white areas above CMYK colors of 0-5% opacity. The White Highlight is printed as an additional layer.
- The White Under Light Colors (%) slider controls opacity of the white layer that is printed underneath light colors.
  - The White Under Light Colors slider position determines the maximum amount of white that can appear under a light CMYK color that has 5-100% opacity.
- The White Under Dark Colors (%) slider controls opacity of the white layer that is printed underneath dark colors.
  - The White Under Light Colors slider position determines the minimum amount of white that can appear under a dark CMYK color that has 5-100% opacity.



NOTE:

The 'White Highlight' slider moves independently of the other sliders. When you move the 'White under light color' slider, the 'White under dark color' slider moves together with it.

5.3.4 Color Setting

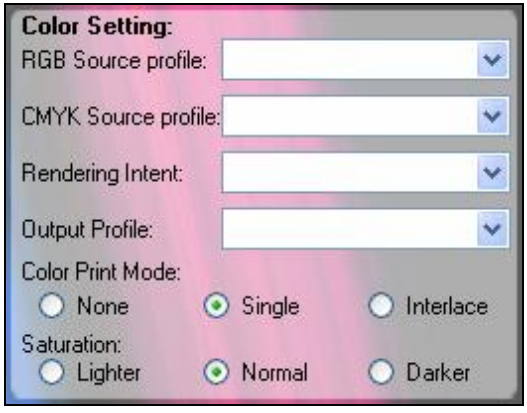


Figure 20: Color Setting

Use Color Setting, in place of Photoshop actions, to convert RGB and CMYK colors to Kornit CMYK colors, to define color saturation, and to define the Color Print mode.

Color Setting comprises the following industry-standard elements:

- RGB Source profile:
  - Adobe RGB 1998.icc (default)
  - sRGB Color Space Profile.icm
- CMYK Source profile:
  - EuroscaleCoated.icc
  - Photoshop5DefaultCMYK.icc
  - UncoatedFOGRA29.icc
  - USWebCoatedSWOP.icc (default)
  - USWebUncoated.icc
- Rendering Intent (Standard rendering types):
  - Perceptual (default) – Preserves some relationship between out-of-gamut colors, even if this results in inaccuracies for in-gamut colors.
  - RelativeColorimetric – Maintains a near exact relationship between in-gamut colors, even if this clips out of gamut colors.
  - Saturation – Preserves saturated colors and is most useful when for retaining color purity in graphics when converting into a larger color space.

- AbsoluteColorimetric – Similar to Relative Colorimetric (in that it preserves in-gamut colors and clips those out of gamut) but preserves the white point, the location of the purest and lightest white in a color space.

- Output Profile:
  - Kornit_Black_Darker.icm
  - Kornit_Black_Darker2.icm
  - Kornit_Black_Lighter.icm
  - Kornit_Black_Lighter2.icm
  - Kornit_Black_Normal.icm
  - Kornit_Black_Normal2.icm
  - Kornit_White_Darker.icm
  - Kornit_White_Darker2.icm
  - Kornit_White_Lighter.icm
  - Kornit_White_Lighter2.icm
  - Kornit_White_Normal.icm (default)
  - Kornit_White_Normal2.icm
- Color Print Mode enables selecting the following color print options:
  - None – CMYK colors are not printed; only the selected white layer is printed.
  - Single – One layer of CMYK color is printed.
  - Interlace – Two layers of CMYK color are printed in two passes, enabling perfect ink coverage.
- Saturation:
  - Lighter – A lighter than normal color saturation level.
  - Normal – The normal color saturation level.
  - Darker – A darker than normal color saturation level.

5.3.5 Remove Black Ink

Figure 21: Remove Black Ink Panel

Remove Black Ink enables progressively removing black or dark RGB colors from the image.

5.3.6 Image Sharpener

Figure 22: Image Sharpener Panel

Image Sharpener enables progressively improving image detail.

5.3.7 Time Control and Print Direction

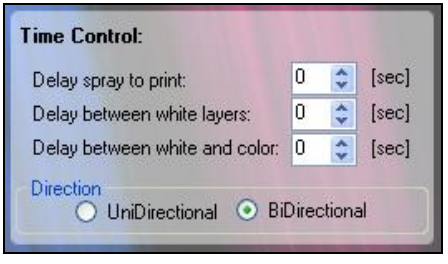


Figure 23: Time Control and Print Direction Panel

Time Control enables controlling the time lapse between print processes and comprises the following elements:

- Delay spray to print – The time delay, in seconds, between the end of the spray procedure and the start of the print procedure.
- Delay between white layers – The time delay, in seconds, between printing the first and second layers of white color.
- Delay between white and color –The time delay, in seconds, between printing the white color layer and printing the CMYK color layer.

Direction enables controlling the direction of the print and comprises the following elements:

- UniDirectional – Print in one direction only.
- BiDirectional –Print in both directions (front-to-back and back-to-front). Suitable option for printing an image:
  - On a garment that has a consistent thickness.
  - On the thinnest part of a garment (where the garment has a thicker area due to pockets, buttons, etc.).
  - On the thickest part of the garment (e.g. on a pocket).

5.3.8 Setup Control Buttons

The Setup Editor provides the following controls:

- Save – Enables creating and saving new setup files to the Setup database and enables modifying setup files stored in the Setup database. See Creating New Setup Files on page 80 and Modifying Existing Setup Files on page 82.
- Delete – Enables deleting setup files from the Setup database. See Deleting Existing Setup Files on page 84.
- Import – Enables importing setup files to the Setup database. See Importing Setup Files on page 85.
- Export – Enables exporting setup files from the Setup database. See Exporting Setup Files on page 87.

5.4 Operator Window

From the Operator window, you can perform maintenance activities to the ink, spray, and motion system. See Maintaining the Printer from the Operator Window on page 176.

➢ **To open the Operator window:**

From the Main Window, click **Maintenance** > **Operator**; the Operator window appears.

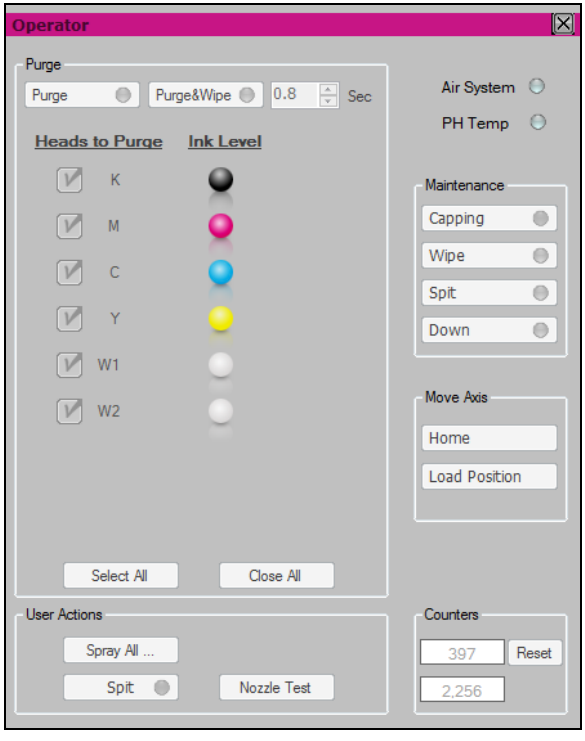


Figure 24: Operator Window

The Operator window includes:

- Operation Indicators on page 41.
- Manual Activity Buttons on page 42.
- Maintenance Tray and Axis Movement Controls on page 43.
- Heads to Purge Controls on page 43.

5.4.1 Operation Indicators

The Operation Indicators provide you with a continuous status overview of the following:

- Secondary Ink Tank Ink levels – When a Secondary Ink Tank has an insufficient amount of ink for printing, the ink level indicator is displayed with an exclamation mark.

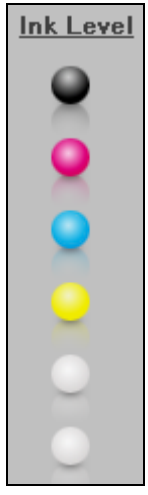


Figure 25: Secondary Ink Tanks (Sufficient ink levels)

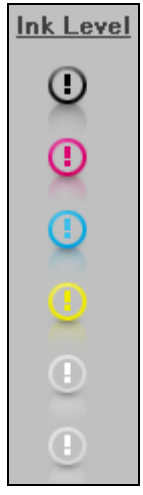


Figure 26: Secondary Ink Tanks (Insufficient ink levels)

- Air System – A red indicator light indicates that the vacuum is out of defined range.
- Print Head temperatures – A red indicator light, adjacent to PH Temp, indicates that the print head work temperature is out of the defined range. See Head Properties on page 44.
- Counters – The upper figure indicates the number of prints since Reset button was last clicked. The lower figure indicates the total number of prints produced by the printer.

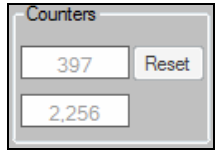


Figure 27: Counters Pane

5.4.2 Manual Activity Buttons

The Manual Activity buttons enable you to perform:

- Purge – Release ink, under pressure, to open a clogged nozzle. Ink is released only through print heads that have been selected in the Heads to Purge panel. See Heads to Purge Controls on page 43.
- Purge & Wipe – Release ink, under pressure, to open clogged nozzles, clean the print heads, and/or prepare the print heads for printing. See Performing Print Head Purge on page 205 and Manually Performing Purge and Wipe on page 206.
- Spray All – Spray the garment before printing. When you click the Spray All button, the Spray All window appears:

From the Spray All window, you can redefine:

  - Spray amount (in a percentage).
  - Wiping – Select the checkbox to enable wiping.
  - The spray area:
    - Select the Current Job Area checkbox to spray the job area only.
    - Clear the Current Job Area checkbox to spray the entire printing pallet area.
- Spit – Perform the Spit process to keep the print heads moist and unclogged.
- Nozzle Test – Perform either a color (default) or white nozzle test. See Performing a Nozzle Test on page 68.

WARNING!

When you perform a Nozzle Test, the printing pallet immediately moves without pressing the **Start** button.

5.4.3 Maintenance Tray and Axis Movement Controls

Maintenance Tray and Axis Movement controls enable you to perform the following activities:

Maintenance Tray

- Capping – Move the maintenance tray upwards until the tray is sealed under the print heads. Capping protects the print heads from lint and other foreign material and keeps the print heads moist during long pauses in the printing process.
- Wipe – Move the maintenance tray until the tray wipers are at the same level as the print heads. This position is used automatically to wipe the print heads and clean off excess ink.
- Spit – Move the maintenance tray to a height position where the maintenance tray does not interfere with printing pallet movement but is still high enough to catch ink fired from the print heads during the Spit procedure.
- Down – Move the maintenance tray downwards to the lowest position possible.

Move Axes

- Home – Move the printing pallet and the print head carriage along their respective axes to their Zero positions (note that the Scan Zero position is at the back of the printer, furthest away from the operator).
- Load Position – Move the printing pallet to the Cross Scan Axis position closest to you.

5.4.4 Heads to Purge Controls

Use the Heads to Purge checkboxes to select specific print head air valves to be purged or use Select All or Close All buttons to select all the air valves at the same time.

5.5 Technician Windows

Technicians and operators with special Kornit permission (see Activating the Technicians Mode on page 112) can use the Technician windows to configure, repair, and test the system.

5.5.1 Head Properties

From the Technician/Head Properties window, you can monitor the ink levels and print head temperatures and configure the print head temperatures, pulse width, and bias.

➢ **To open the Technician/Head Properties window:**

1. From the Main Window, click **Maintenance** > **Technician**; the Technician window appears.
2. Select the **Head Properties** tab; the Head Properties view appears.

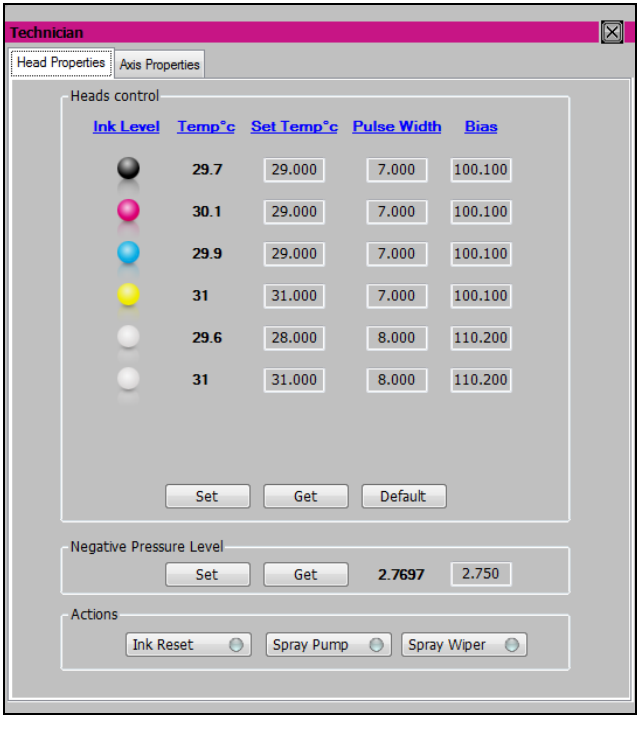


Figure 28: Technician/Head Properties Window

From the Technician/Head Properties window you can also perform:

- Ink Reset – Reset the ink level indicator and activate the pump when the ink level is low.
- Spray Pump – Manually activate the fixation spray pump for testing purposes.
- Spray Wiper – Manually activate the spray wiper for testing purposes.

5.5.2 Axis Properties

From the Technician window/Axis Properties view, you can manually move the printing pallet, print heads, and maintenance tray along their respective axes. This enables you to align these parts in order to calibrate the most suitable distances between the printing pallet and the print heads, and between the maintenance tray and the print heads.

➢ **To open the Axis Properties view:**

1. From the Main Window, click **Maintenance** > **Technician**; the Technician window appears.
2. Click **Axis Properties**; the Axis Properties view appears.

Figure 29: Technician Window/Axis Properties

From the Axis Properties view, you can:

- Move the Cross Scan axis to:
  - Home position.
  - Load position.
  - A new position, relative or absolute, to the present Cross Scan position.
- Move the Scan axis to:
  - Home position.
  - Capping position.
  - A new position, relative or absolute, to the present Scan position.
- Move the Z axis to the following positions:
  - Capping.
  - Wipe.
  - Spit.
  - Down.
- View the current position of each axis. These fields automatically update as the axes are moved.

NOTE:

The current position of each axis (the Encoder parameter):

- Is registered by the system while the machine is operating.
- Cannot be changed.

➢ **To move the printing pallet along the Cross Scan axis to a predefined position:**

From the Technician/Axis Properties window, in the Scan Axis pane, click one of the following position buttons:

- Home – The print head carriage (scan axis) and the printing pallet (cross scan axis) move to their zero positions (i.e. Cross Scan Zero position is at the back of the machine while the Scan Zero position is at the right side of the machine).
- Load Position – The printing pallet moves to the position closest to you, from where you load the garment.

➢ **To move the printing pallet, along the Cross Scan axis, to a selected position:**

From the Technician/Axis Properties window, in the Cross Scan Axis pane, click one of the following optional tabs:

- Relative:
  - Enter the positive number of microns that you want to move the printing pallet; click the **Up** or **Down** arrow buttons to initiate movement. The printing pallet moves according to the number of microns that you entered into the field. Click the **Stop** button  to end printing pallet movement.
- Absolute:
  - Enter the position (as a positive value) to where you want to move the printing pallet. Click the **Start** button; the printing pallet moves to the position that you specified. Click the Stop button  to end printing pallet movement.

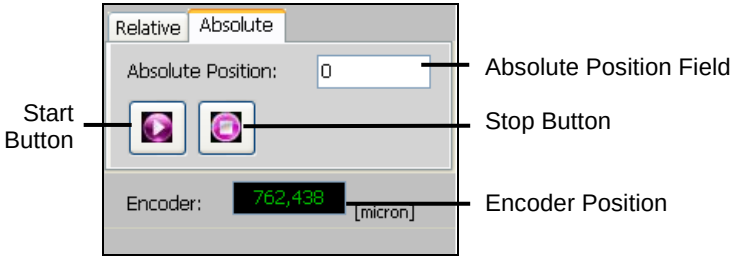


Figure 30: Technician Window/Axis Properties/Absolute Position

NOTE:

The Absolute position of the Cross Scan axis appears in the Encoder Position field and is automatically updated as the axis moves.

➢ **To move the print head carriage, along the Scan axis, to a predefined position:**

From the Technician/Axis Properties window, in the Scan Axis pane, click one of the following position buttons:

- Home – The print head carriage moves to the zero position, located on the right side of the axis.
- Capping Position – The print head carriage moves across the Scan Axis to the Capping position.

➢ **To move the print head carriage, along the Scan axis, to a selected position:**

From the Technician/Axis Properties window, in the Scan axis pane, click one of the following optional tabs:

- Relative:
  - Enter a positive number of microns that you want to move the printing pallet; click the **Left** or **Right** arrow buttons to initiate movement. The printing pallet moves according to the number of microns that you entered into the field. Click the **Stop** button  to end printing pallet movement.
- Absolute:
  - Enter the position (as a positive value) to where you want to move the printing pallet. Click the **Start** button; the printing pallet moves to the position that you specified. Click the **Stop** button  to end printing pallet movement.

➢ **To move the maintenance tray to various up and down positions:**

From the Technician/Axis Properties window, in the Scan Axis pane, click one of the following position buttons:

- Capping – Move the maintenance tray upwards until the tray is sealed under the print heads. Capping protects the print heads from lint and other foreign material and keeps the print heads moist during long pauses in the printing process.
- Wipe – Move the maintenance tray until the tray wipers are at the same level as the print heads. This position is used automatically to wipe the print heads and clean off excess ink.
- Spit – Move the maintenance tray to a height position where the maintenance tray does not interfere with printing pallet movement but is still high enough to catch ink fired from the print heads during the Spit procedure.
- Down – Move the maintenance tray downwards to the lowest position possible.

5.6 Menu Bar Navigation Chart

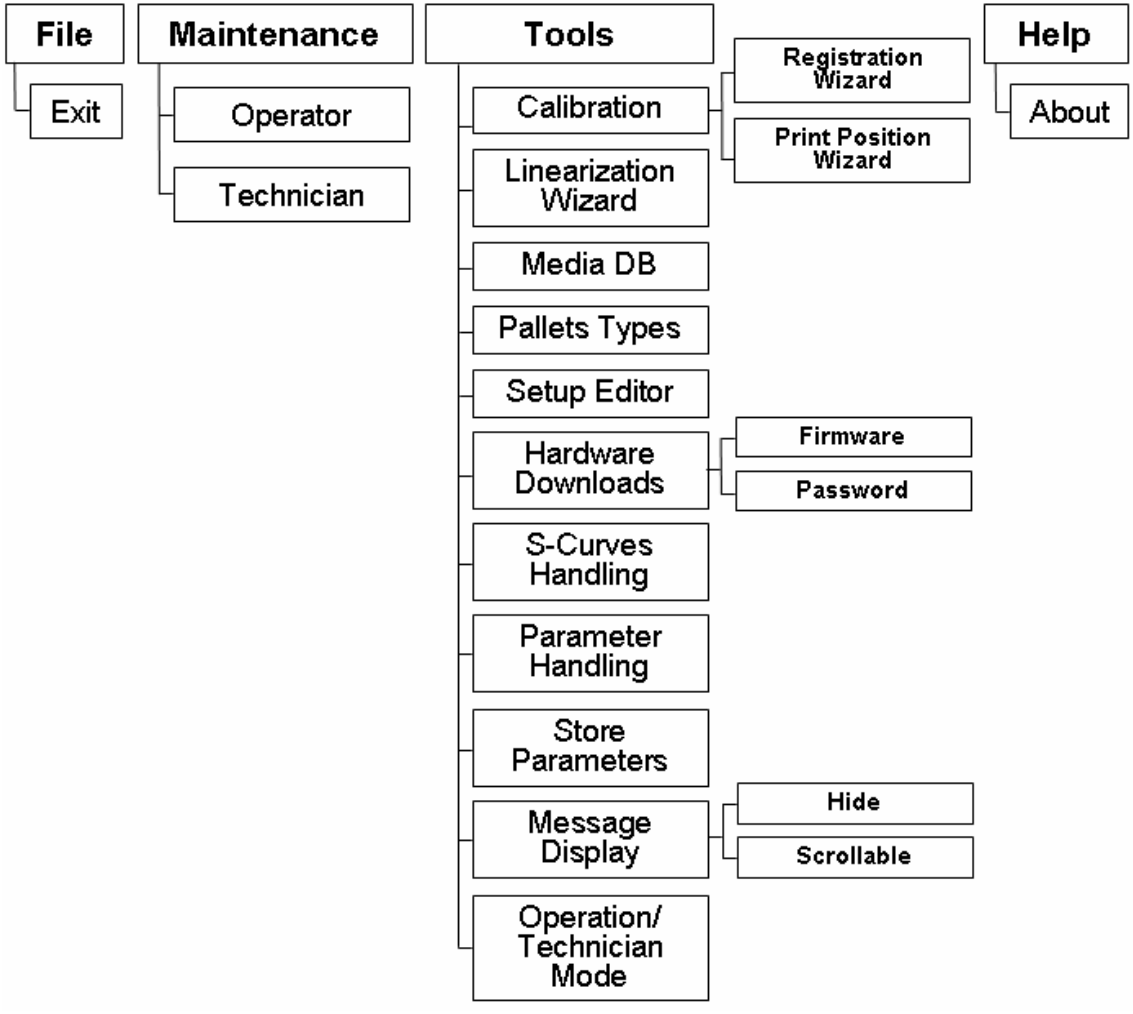
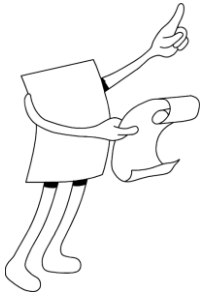


Figure 31: Menu Bar Navigation Chart

Chapter 2

Operating the Printer

kornit DIGITAL
Following the Drop of Success



Chapter 2: Operating the Printer

Operating the Printer describes all of the pre and post operation procedures that you should perform each working day:

The Operating the Printer chapter describes the procedures for:

- Preparing the System for a New Work Day on page 54.
- Closing the Printer after a Workday on page 68.

The Operating the Printer chapter also includes the:

- Breeze Daily Workflow Map on page 72.

NOTE:

Pre and post operation procedures are also known as Daily Maintenance Procedures:

- We recommend that you keep a running record of these procedures. See the Daily Maintenance Checklist (for Work Day) on page 218 and the Daily Maintenance Checklist (for Work Shift) on page 219.
- We also recommend that you perform additional maintenance procedures each week. See Weekly Maintenance Procedures on page 220.

1 Preparing the System for a New Work Day

We recommend that you perform the following procedures before beginning to print your first jobs of the day or at the start of your shift.

1.1 Renewing the Ink Supply

Visually examine the level of ink in the ink bottles before beginning to print. Make sure that there is enough ink to print at least the first several jobs of the day.

To renew the ink supply, perform the following two procedures:

- Replacing an Ink Bottle on page 55.
- Verifying that Secondary Ink Tanks are Full on page 60.

1.1.1 Replacing an Ink Bottle

When an ink bottle is less than 10% full, we recommend that you replace the bottle.

➢ **To replace an ink bottle:**

1. Open the service door on the printer's right side.
   a. Press the door latch button; the door latch handle pops out.
   b. Pull on the handle to open the service door.

Figure 32: Replacing the Ink Bottle

2. On the (ink bottle) quick connector, pull down on the quick release ring; the female quick connector separates from the male quick connector.

Figure 33: Ink Bottle

3. Unscrew the cap from the used ink bottle and then discard the bottle.
4. Remove the plastic cover cap from the new ink bottle.
5. Screw the cap onto the new (full) ink bottle.

NOTE:

We recommend that you shake up the white ink bottles in storage, once a week but not less than 24 hours before their use.

Do not shake the ink bottles immediately before replacement.

---

6. Push the female connector up into the male connector until it snaps into place.
7. Close the service door and depress the door latch button to lock the door.

1.2 Activating the Printer

NOTE:

If the printer is already active (e.g. the beginning of a new shift), continue with Verifying that Secondary Ink Tanks are Full on page 60 .

Activate the printer in the same manner, both when the printer has been briefly inactive and when it has been unused for a prolonged period.

➢ **To activate the printer:**

1. Turn on the computer and turn on the power to the printer. See Switching on the Main Power on page 58; the Scan and Cross Scan axes are initialized.

WARNING!

The activation process takes several moments to complete. Keep your hands clear of moving parts.

NOTE:

After initialization, the printer automatically performs Spit.

2. View the LCD Maintenance panel. When activation is complete, "Ready" appears in the status field.

3. On the computer desktop, click the Breeze application icon; the Main Window appears.

Figure 34: Main Window

NOTE:

The printer can be activated and maintained from the LCD screen without the use of QuickP software.

1.2.1 Switching on the Main Power

The main power switch is located at the back left-side of the printer. Turn this power switch on to operate the system.

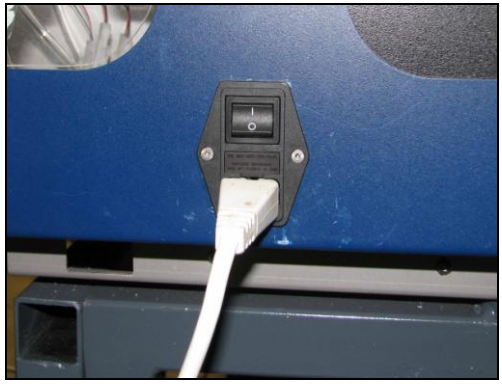


Figure 35: Main Power Switch

➢ To switch on the main power:

1. Verify that the power cable is connected to the main power source.
2. Close the hood, doors, side guards, and panels.
3. Make sure that the emergency stop switch is released.
4. Press the main power-switch so that the "I" symbol is in the depressed position.

NOTE:

To switch off the main power, press the power switch so that the "O" symbol is in the depressed position.

1.2.2 Verifying that Secondary Ink Tanks are Full

After initialization, the printer fills the Secondary Ink Tanks.

➢ **To verify that the secondary ink tanks are full:**

View the Secondary Ink Tank icons either in the LCD Maintenance Panel window or in the Main Window.

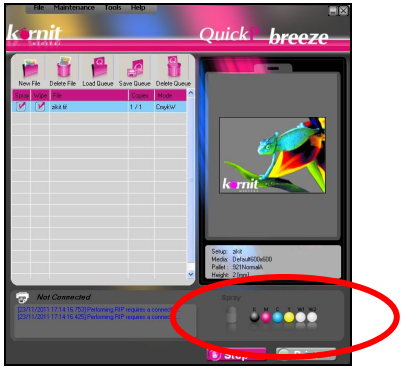


Figure 36: Main Window

Figure 37: LCD Maintenance Panel

- When the Secondary Ink Tanks are full:
  - In the LCD Maintenance Panel, the icons appear as full inkpots.
  - In the Main Window, the icons appear as colored spheres.
- When the Secondary Ink Tanks are not full:
  - In the LCD Maintenance Panel, the icons appear as empty inkpots.
  - In the Main Window, the icons contain Exclamation marks. See Figure 25 on page 41.

NOTE:

When the Secondary Ink Tanks are not full, see Manually Filling the Secondary Ink Tanks on page 213.

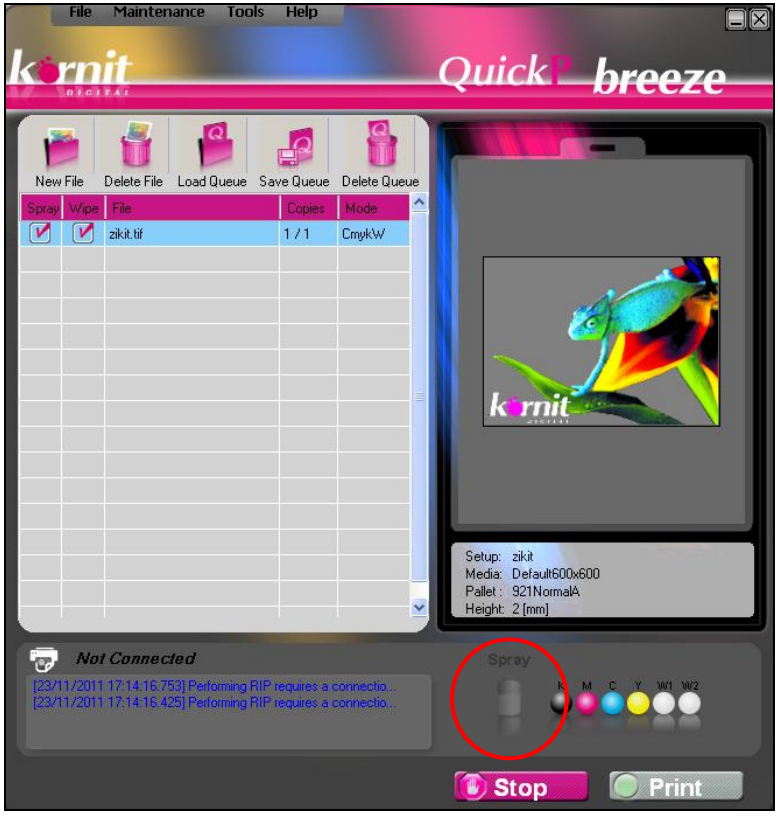
1.3 Refilling the Fixation Spray

The Fixation Spray tank is located behind the left service door. Visually examine the level of fixation liquid in the tank.

Make sure that there is sufficient fixation liquid for at least the first several jobs of the day. If the fixation liquid level drops below the minimum level, air can enter the system and cause problems with the fixation spray system.

Figure 38: Fixation Spray Tank

NOTE:



The Main Window displays the Spray icon, which indicates the following conditions.


There is sufficient spray in the Fixation Spray tank to perform several more prints.


There is insufficient spray in Fixation Spray tank to perform several more prints.

➢ To prepare the fixation liquid:

NOTE:

The fixation liquid is a mixture of tap water and the Kornit fixing agent. Prepare the mixture at a distance from the printer.

Figure 39: Fixation Agent – 1 Gallon

Figure 40: Fixation Agent – 5 Liters

1. Verify that the Fixation Spray tank and the mixing container are clean and without any residue.
2. Pour the entire contents of the Kornit Fixing Agent bottle into the mixing container.

Figure 41: Mixing Container

3. Add tap water at a ratio of 1 part Kornit Fixing Agent to 3 parts tap water.
4. Shake the mixture well.

➢ To refill the Fixation Spray tank:

1. Verify that the printer is not in the print process.
2. Shake the mixture before filling the Fixation Spray tank.
3. Open the left service door to access the Fixation Spray tank.

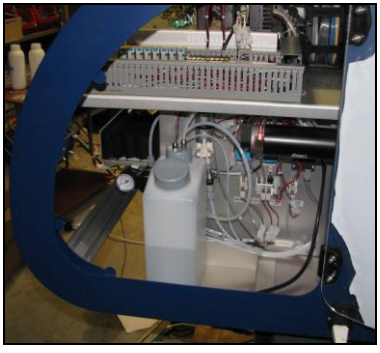


Figure 42: Left Service Door Open

4. Open the Fixation Spray tank cap and carefully fill the tank; make sure that you do not overfill, causing fixation liquid to spill out.
5. Close the Fixation Spray tank cap and then close and lock the left service door.

1.4 Emptying the Waste Ink Tank

The waste ink outlet is located at the back-right corner of the maintenance tray. The waste ink tube connects to the waste outlet and runs into the waste ink tank, located at place of your choosing below the level of the maintenance tray.

Visually examine the level of waste ink in the tank before beginning the initial printing procedure.

Figure 43: Waste Ink Tank

When the waste ink tank is more than 3/4 full, empty it so that it does not overflow during the course of your day's work.

NOTE:

- We recommend a maximum waste ink tank capacity of five liters.
- Do not empty the waste ink tank while printing as this can result in waste ink spilling outside of the tank.

1.5 Cleaning the Printing Pallet, Maintenance Tray, and Orifice Plate

We recommend that you clean the printer before beginning the first print job of the day.

➢ **To clean the printing pallet, maintenance tray, and orifice plate:**

1. From the Main Window, click **Maintenance** > **Operator**; the Operator window appears.

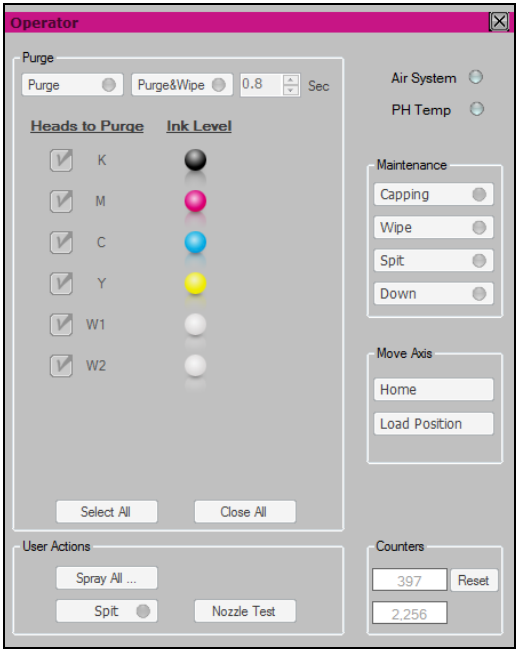


Figure 44: Operator Window

2. Click **Capping**; the maintenance tray rises up to the Capping position.
3. Clean the printing pallet, magnetic frame, and the bellows protecting the printing pallet axis, using paper towels and alcohol.
4. Clean lint and fibers from around the printing pallets and bellows, using towels and alcohol.

5. Click **Down**; the maintenance tray lowers to the Down position.

Figure 45: Print Heads

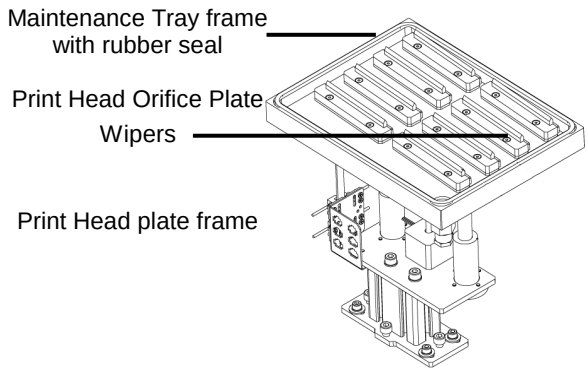


Figure 46: Maintenance Tray

6. Clean the maintenance tray frame (housing the rubber capping seal) and the wipers, using lint-free towels and wiping fluid.
7. Clean the print head plate frames, using lint-free wipes and wiping fluid.
8. Clean the print head orifice plates, only using new lint-free wipes and wiping fluid.

IMPORTANT NOTE:

Do not clean with cleaning agents, other than those described above.

1.6 Performing Print Head Purge

For instructions on performing Print Head Purge, see Performing Print Head Purge on page 205.

1.7 Performing Print Head Purge and Wipe

For instructions on performing Print Head Purge and Wipe, see Manually Performing Purge and Wipe on page 206.

1.8 Performing a Nozzle Test

We recommend that you perform a Nozzle Test before beginning the first print job of the day or between shifts.

When you perform a Nozzle Test, you produce a printout that enables you to see if there any problems with the nozzles. If there is a problem, you can perform activities to solve them.

➢ **To perform a Nozzle Test:**

1. Place a piece of printing paper for CMYK (transparency for white color) onto the printing pallet, aligned to the bottom-right corner of the printing pallet.

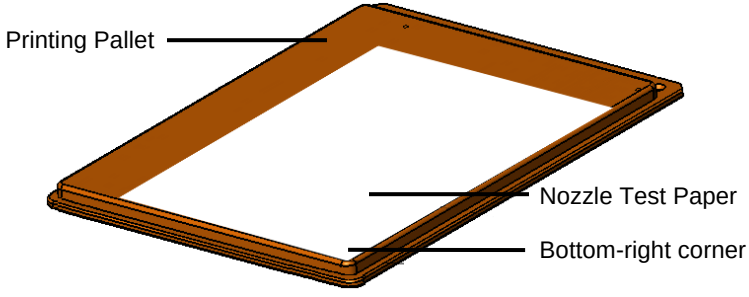


Figure 47: Aligning Printing Paper/Transparency

2. From the Main Window, click **Maintenance** > **Operator**; the Operator window appears.

NOTE:
You can also initiate a Nozzle Test from the LCD Maintenance panel.

3. Click the **Nozzle Test** button; the Nozzle Test image is printed.

WARNING!
When you click the Nozzle Test button, the printing pallet immediately begins to move and the printer begins to print.

4. Record the following information on the printed image sheet and store the sheet near the printer:
   - Date – Date of Nozzle Test.
   - Time – Time of Nozzle Test.
   - Name – Name of Operator performing the test.

1.8.1 Interpreting the Nozzle Test

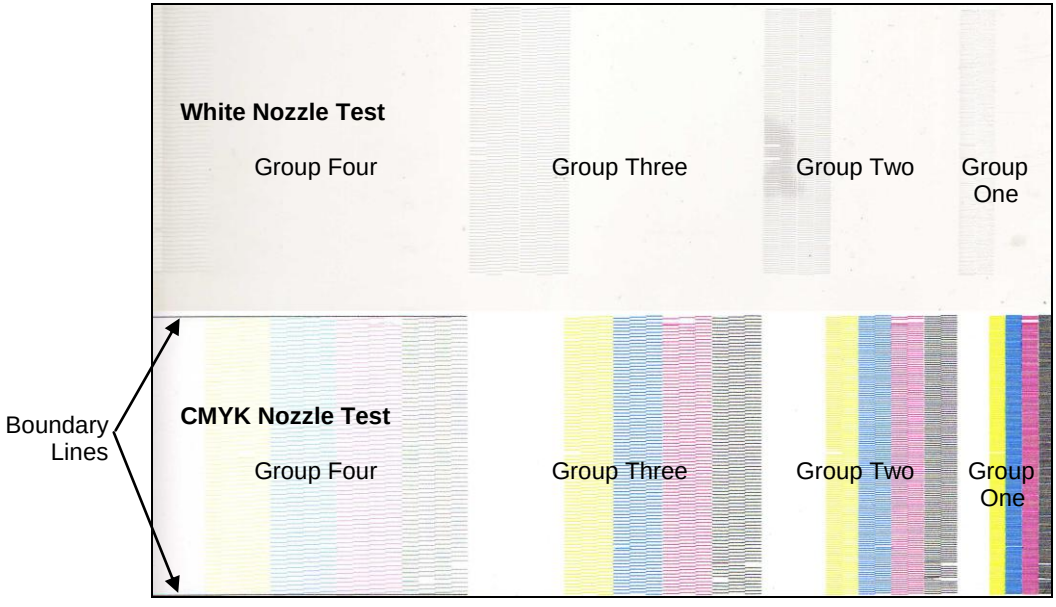


Figure 48: Nozzle Test Image

The Nozzle Test image is divided into two test groups:

- CMYK Nozzle Test
- White Nozzle Test

NOTE:

The nozzle test reflects the physical location of the print heads.

The boundary lines, in Group Four, enable viewing problematic nozzles that are located on the edges of the print heads.

The Nozzle Tests are divided into four groups:

- Group One – Displays a printed dash, in one row and for each color, from all 256 nozzles.
- Group Two – Divides the Nozzle Test into two rows where the odd numbered nozzle printed dashes appear in the right row and the even numbered nozzle printed dashes appear in the left row.
- Group Three – Divides the nozzles into three rows where the first nozzle printed dash appears in the first row, the second nozzle printed dash in the second row, the third nozzle printed dash in the third row, the fourth nozzle printed dash in the first row and so on.
- Group Four – Divides the nozzles into four rows (following the same logic).

NOTE:

In Group One, it is easy to see where there are missing nozzles but it is difficult to determine the number of missing nozzles. In the other groups, it is easier to examine the problematic areas and to determine the number of missing nozzles.

Carefully examine the printed image for the missing (possibly clogged) nozzles as signified by missing printed dashes.

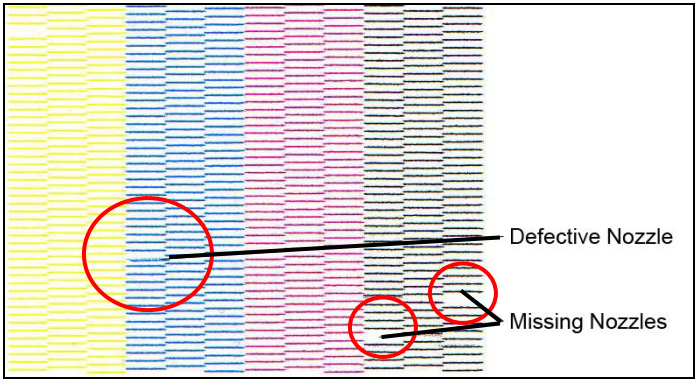


Figure 49: Missing and/or Defective Nozzles

If a printed dash is not sharply defined or is crooked, perform several purges and clean the orifice plates with wiping fluid and lint-free wipes, until the nozzle test improves to a satisfactory status.

2 Closing the Printer after a Workday

Before closing the printer, we recommend that you perform the following procedures, in the order that they appear:

WARNING!

Do not stand close to the printer during this process as the printing pallet and print head carriage move automatically.

1. Clean the maintenance tray and orifice plate. See Cleaning the Printing Pallet, Maintenance Tray, and Orifice Plate on page 66.
2. Clean the print heads and the print head orifice plate.
3. Clean the printing pallets and bellows.
4. From the LCD Maintenance panel, shut down the printer:
   a. Press **F1**; the following message appears in the LCD screen:
      "Do you really want to turn off the printer?"
   b. Using the **Move Left** button  , select **Yes**.
   c. Press the **Enter** button  to confirm; the system automatically performs cleaning procedures, and then displays the following message on the LCD screen:
      "Safely turn off the printer."
5. Turn off the power to the printer using the Main Power Switch located on the left side of the printer.
6. Examine and, if necessary, renew the ink supply. See Renewing the Ink Supply on page 55.

NOTE:

- When the printer shuts off, the application is completely disabled. To reactivate the application, switch on the power to the printer.
- For more on using the LCD Maintenance Panel, see Maintaining the Printer from the LCD Maintenance Panel on page 170.

3 Breeze Daily Workflow Map

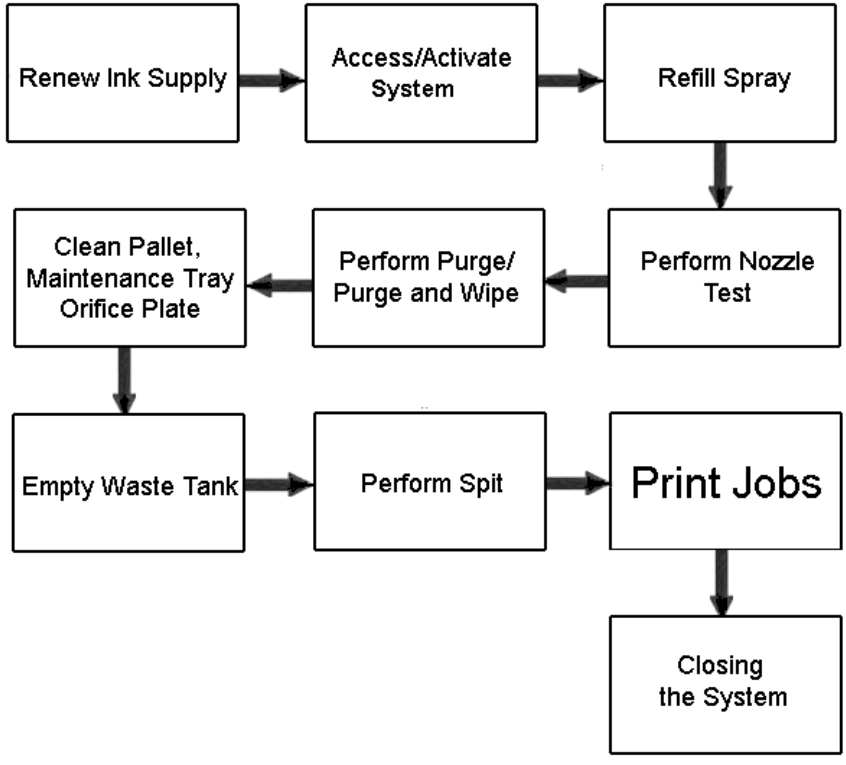


Figure 50: Daily Workflow Map

Chapter 3

Performing Printing Procedures

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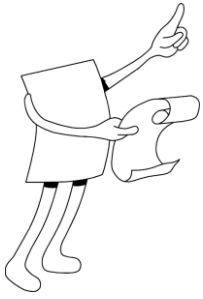

Chapter 3: Performing Printing Procedures

Performing Printing Procedures explains all the procedures involved in the actual printing process.

Performing Printing Procedures includes:

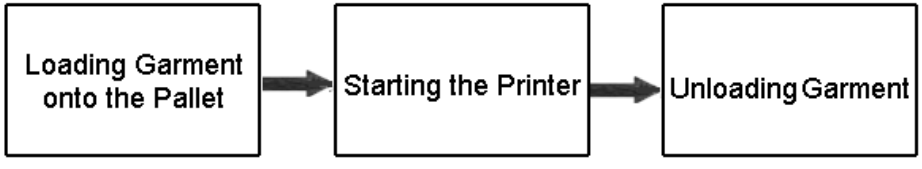

Figure 51: Printing Workflow

1 Placing a Garment onto a Printing Pallet

After each spraying or printing process, or at the start of the work day, the system automatically moves the printing pallets towards you, to the loading position. In the loading position, you can place the garment onto the printing pallet.

➢ **To place a garment onto the printing pallet:**

1. Slide the garment onto the printing pallet and position as follows:
   - Print side facing upwards.
   - The top of the garment (e.g. the t-shirt neck opening) towards you.

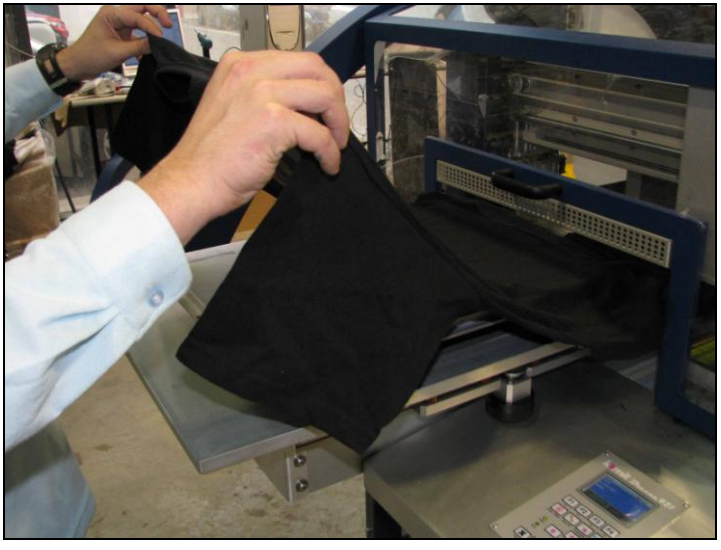

Figure 52: Placing the Garment

NOTE:
The printing will appear upside down to you.

2. Fold any excess garment material underneath the printing pallet.

Figure 53: Folding Under Excess Garment

3. On the printing pallet, gently smooth out any visible garment wrinkles. Do not stretch the material.

Figure 54: Smoothing Wrinkles

4. Carefully set the magnetic pallet frame onto the printing pallet.

CAUTION!

Verify that the frame is securely in place before continuing.

2 Starting the Printer

To start printing, choose from the following options:

- Click the Print button in the Main Window.
- Press the (green) printer Start button.

2.1 Start Printing by Clicking the Software Interface Print Button

1. In the Main Window, click the **Print** button; the printer begins to print the first job appearing in the job queue and runs until the printed image is completed.

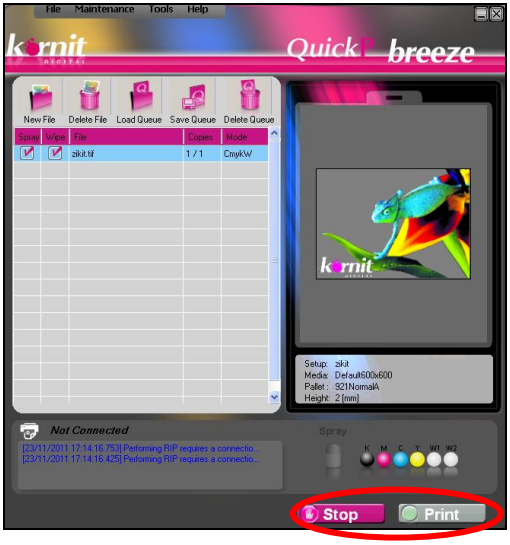

Figure 55: Main Window

2. For each subsequent copy of the print job, unload the printed garment, load the new garment, and then press the interface **Print** button or the printer **Start** button.

NOTE:

When the last copy of the print job has been printed, the job is removed from the queue and the next job moves to the top of the printing queue.

2.2 Start Printing by Pressing the Printer Start Button

1. On the printer front panel, press the green **Start** button (located to the right of the printing pallet); the printer begins to print the first job appearing in the job queue and runs until the printed image is completed.

Figure 56: Start Button

2. For each subsequent print job copy, unload the printed garment, load the new garment, and then press the application **Print** button or the printer **Start** button.

NOTE:

When the last copy of the print job has been printed, the job is removed from the queue and the next job moves to the top of the printing queue.

3 Unloading a Garment from the Printing Pallet

After each spraying or printing process, the system automatically brings the printing pallet forward to the loading position. From this position, you can remove the current garment and load the next one.

➢ **To unload a garment from the printing pallet:**

1. Lift off the magnetic pallet frame.
2. Hold the garment at the top of each side and gently lift it off the printing pallet, taking care not to wrinkle it.
3. Letting it hang down straight, take the garment to the dryer.
4. Gently lay the garment on the dryer, making sure not to wrinkle it. See Dryer on page 199.

Chapter 4

Managing Job Setups

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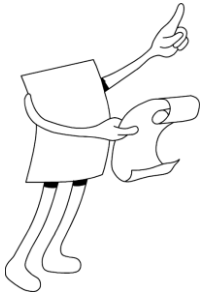

Chapter 4: Managing Job Setups

From the Setup Editor, you can perform the following:

NOTE:

When creating and modifying setups files, we recommend that the setup name provide an indication of the specific parameters that make up the setup file.

For example:

- The brand of the garment.
- Specific elements in the setup (e.g. white percentage, spray amount, resolution, full frame, stroke etc.)

1 Creating New Setup Files

Use the Setup Editor to create and save new Setup files.

➢ **To create a new Setup file:**

1. From the Main Window, click **Tools** > **Setup Editor**; the Setup Editor appears.

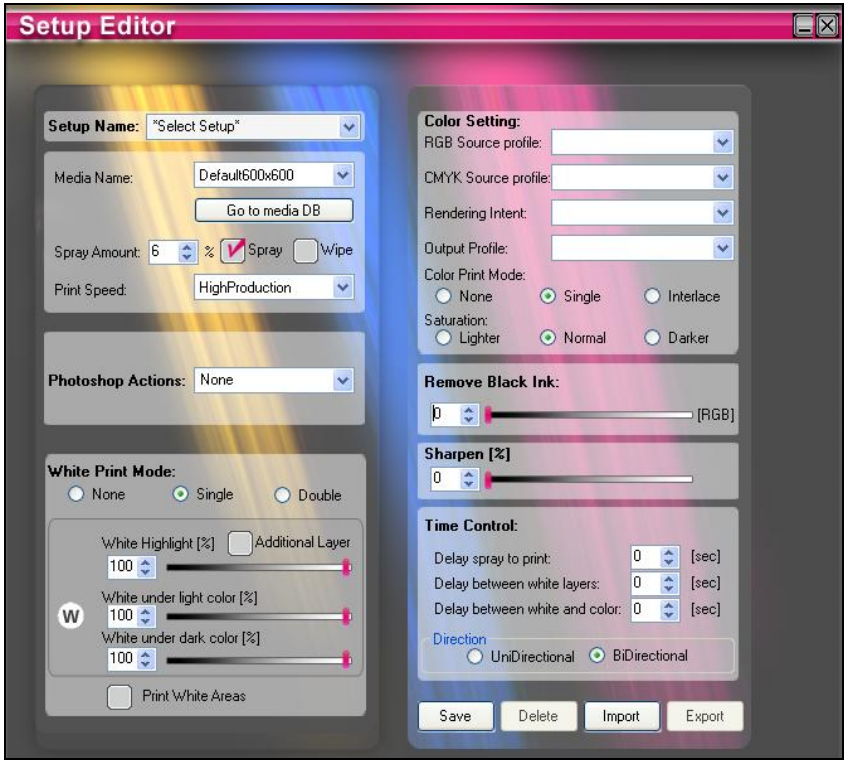

Figure 57: Setup Editor

2. From the Setup Name dropdown box, select a setup that is similar to the setup that you want to create; the selected setup's parameters appear in the various parameter fields.
3. Enter new parameters, where required.

4. Click **Save**; the Save Setup window appears.

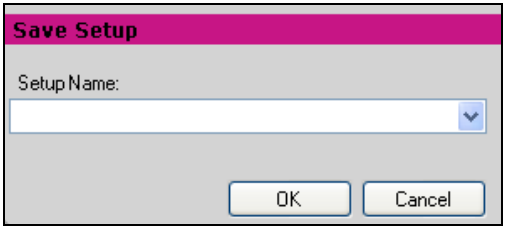

Figure 58: Save Setup Window

5. Enter an appropriate and unique name into the Setup Name field and click **OK**; an Information window informs that the setup was saved successfully.

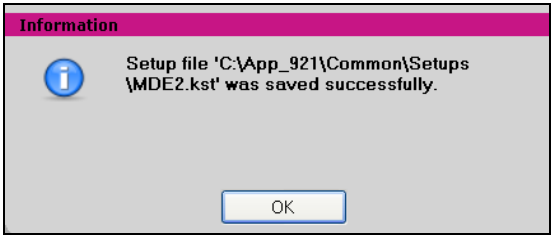

Figure 59: Setup Information Window

2 Modifying Existing Setup Files

Access the Setup files that are stored in your Setup database and then redefine the setup parameters according to your business needs.

➢ **To modify existing Setup files:**

1. From the Main Window, click **Tools** > **Setup Editor**; the Setup Editor appears.

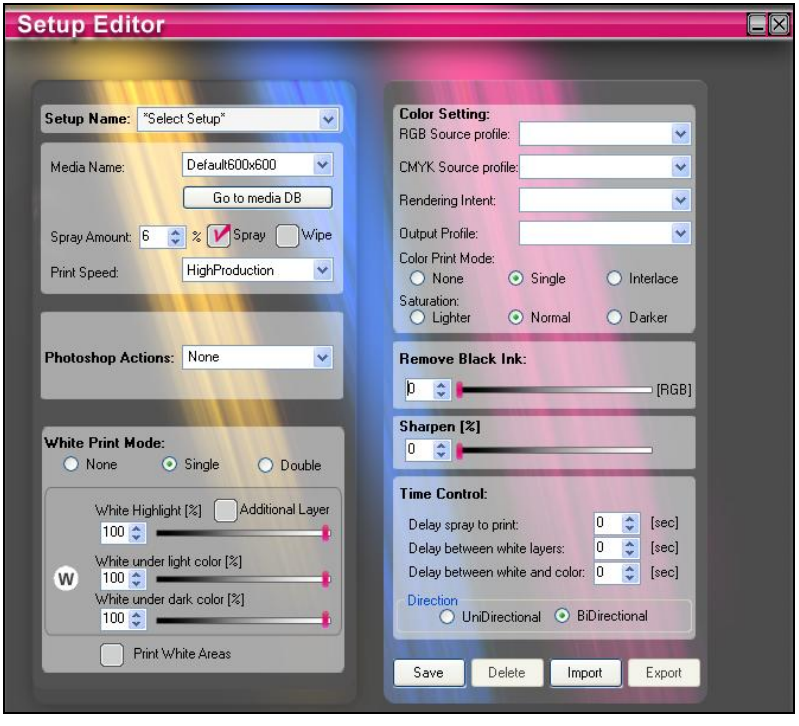

Figure 60: Setup Editor

2. From the Setup Name dropdown box, select the setup that you want to modify.
3. Modify the necessary parameters.

4. Click **Save**; the Save Setup window appears.

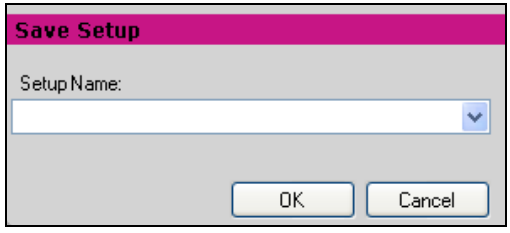

Figure 61: Save Setup Window

5. From the Setup Name dropdown box, select the name of the setup that you are modifying and click **OK**; the Save Setup warning that the Setup already exists (in the Setup database)..

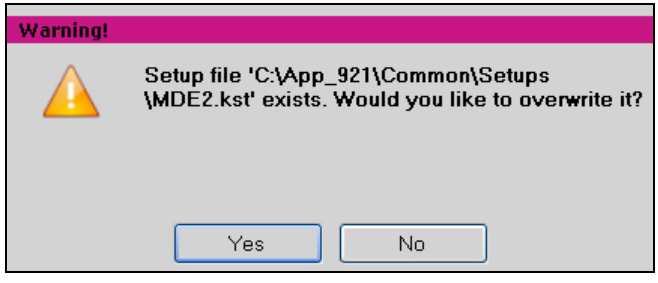

Figure 62: Save Setup Warning

6. Click **Yes** to save the modified parameters; an Information window informs that the setup was saved successfully.

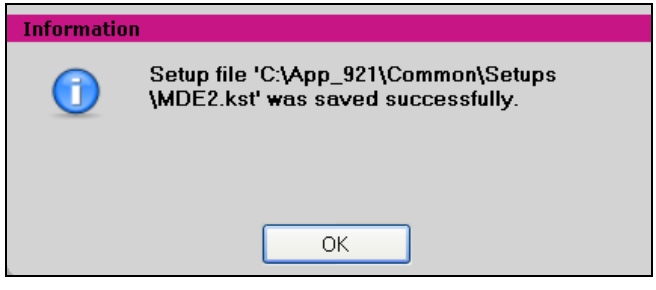

Figure 63: Setup Information Window

3 Deleting Existing Setup Files

Use the Setup Editor to delete setup files from your Setup database.

➢ **To delete setup files:**

1. From the Main Window, click **Tools** > **Setup Editor**; the Setup Editor appears.

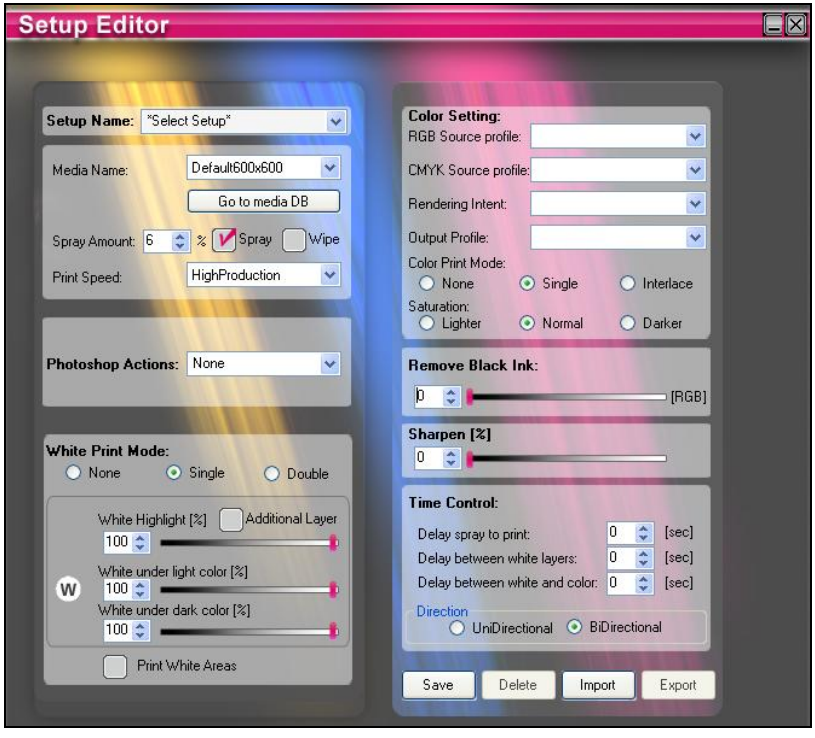

Figure 64: Setup Editor

2. From the **Setup Name** dropdown box, select the name of the setup file to delete.
3. Click the **Delete** control button; the setup file is deleted from the Setup database.

4 Importing Setup Files

You can import setup files, from an external source, to your Setup database.

➢ **To import a setup file to your Setup database:**

1. From the Main Window, click **Tools** > **Setup Editor**; the Setup Editor appears.

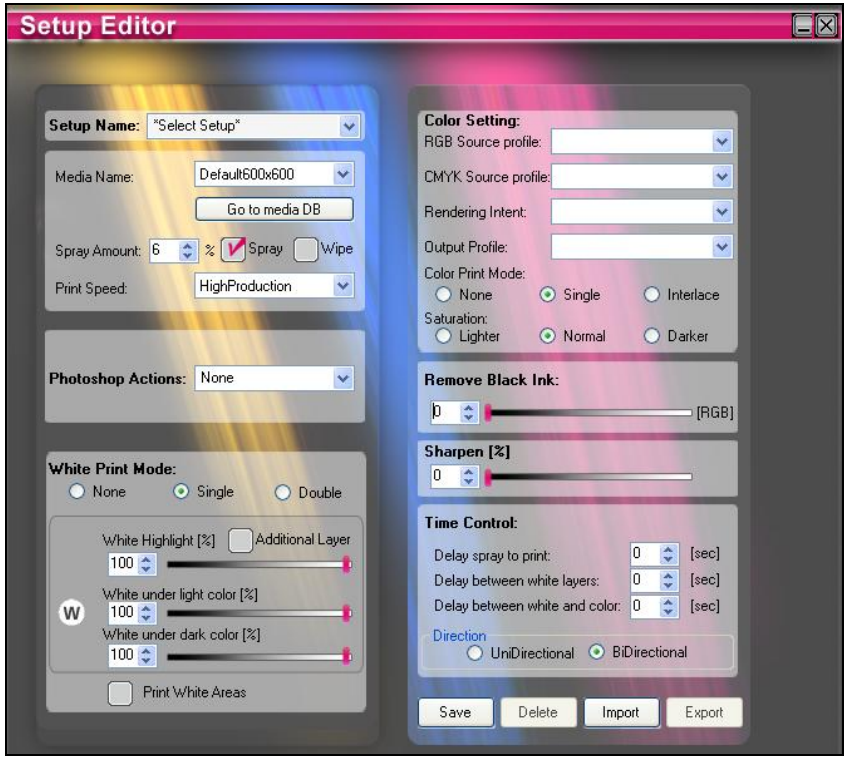

Figure 65: Setup Editor

2. Click the **Import** control button; the Open window appears.

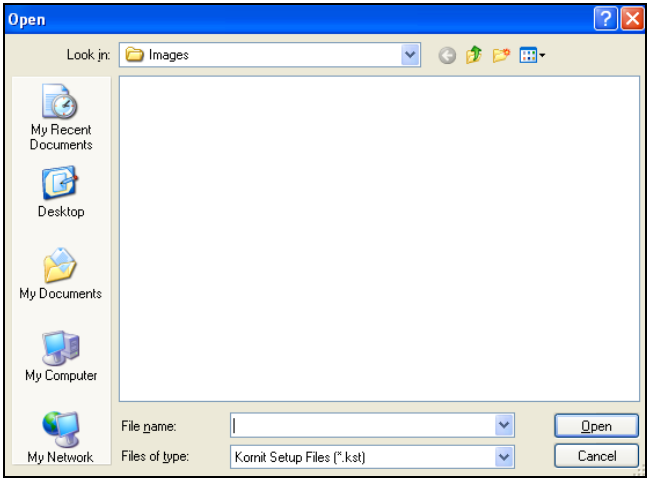

Figure 66: Setup Editor

3. Browse to the folder containing the setup file to be imported.
4. Enter an appropriate file name and click **Open**:
   - If the file already exists in the Setup database, a warning appears:
     - Click **Yes** to overwrite.
     - Click **No** to end the Import procedure.
   - If the file does not already exist, the file is saved in the Setup Database folder.

5 Exporting Setup Files

You can export setup files, to an external folder, from your Setup database.

➢ **To export a setup file from your Setup database:**

1. From the Main Window, click **Tools** > **Setup Editor**; the Setup Editor appears.

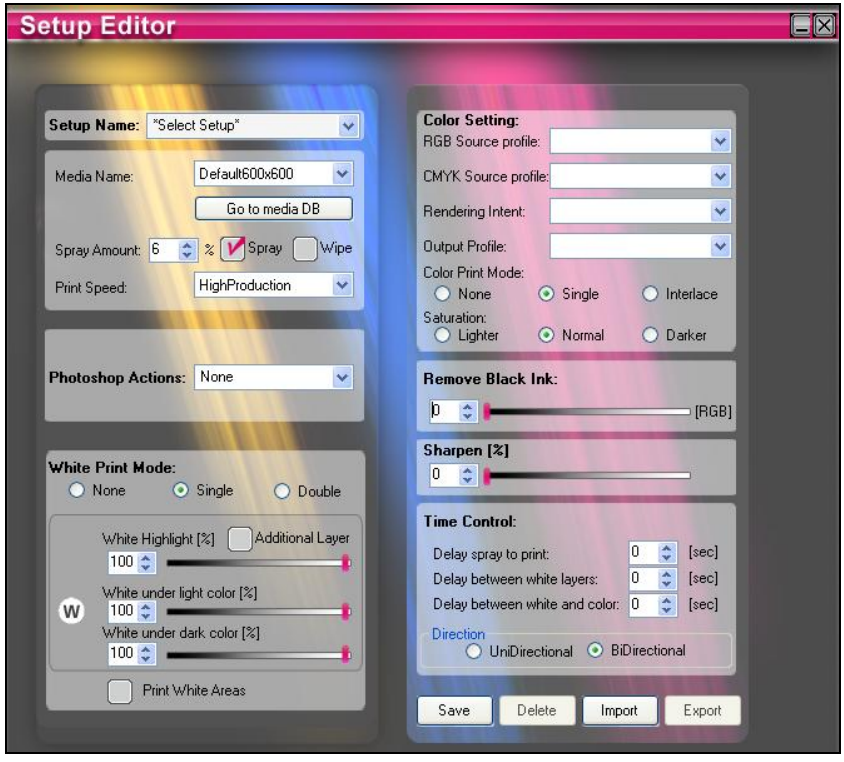

Figure 67: Setup Editor

2. From the Setup Name dropdown box, select a setup name file.

3. Click **Export**; the Save As window appears.

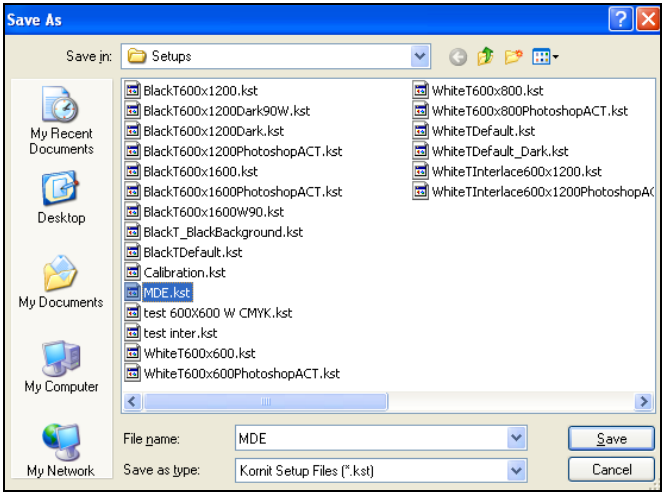

Figure 68: Save Setups Window

4. From the **Save In** dropdown box, browse to a suitable folder location.
5. Enter an appropriate Setup file name.
6. Click **Save**.

Chapter 5

Managing the Job Queue

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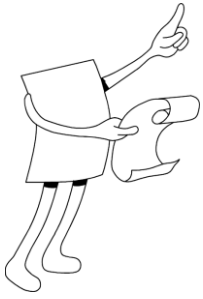


Chapter 5
Managing the Job Queue

The job queue lists all of the job files that have been uploaded to the system and displays the processing status and details of each job.

NOTE:

The system processes the first job in the queue.

Managing the Job Queue includes:

1 Verifying and Preparing Your Graphic Image Files

Before beginning the printing process, verify that your graphic image files are suitable for printing, according to:

- Resolution.
- Garment Color.

1.1 Verifying Graphic Image File Resolution

Graphic file resolution requirements are as follows:

- Input graphic files – When the image size is the same as the required print size, the minimum resolution should be 150dpi.
- Small files – The minimum resolution should be 150dpi.
- Large files – The optimum resolution is 150dpi.

1.2 Preparing your Graphic Image Files according to Garment Color

Before loading an image, determine whether you are printing on a dark or light garment:

- When printing on a light garment, begin with step 6.
- When printing on a dark garment, you must first verify that you are printing a transparent image file. If you are not printing a transparent image file, you can convert your image file to a transparent image file as described in "To convert a regular image file to a transparent image file using Photoshop" on page 91.

NOTE:

The following procedure can be performed using any graphic application program that supports creating transparent layers and saving the image in PNG, PSD, and TIFF formats.

Refer to the specific graphic application help service for correct instruction in creating transparent images.

➢ To convert a regular image file to a transparent image file using Photoshop:

1. From the Photoshop menu, click **File** > **Open** and browse to your image file; the file image appears in the Photoshop work area.

Figure 69: File Image

2. In the Photoshop toolbar (on the left), click the **Magic Eraser** icon; the Tolerance field and Contiguous check box appears in the Magic Eraser toolbar.

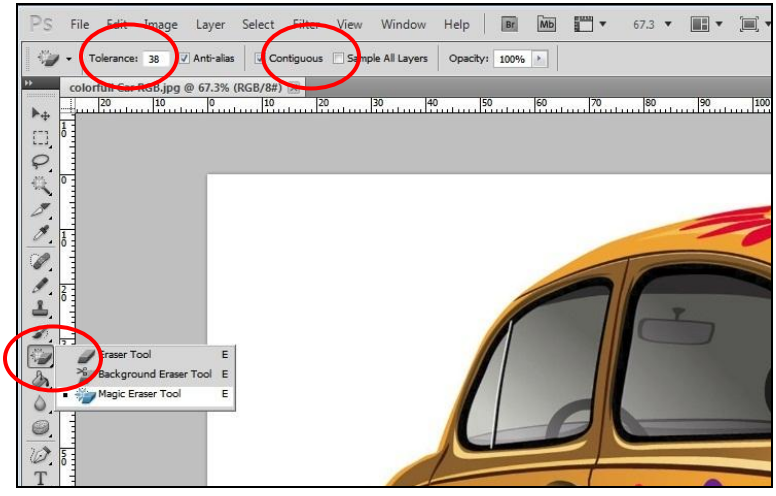


Figure 70: Selecting Magic Eraser

3. Select the **Contiguous** checkbox and enter an appropriate **Tolerance** level.

4. Click the mouse anywhere in the area that should be transparent (to select several areas, hold down the Shift key while clicking the additional areas); the selected areas become transparent.

Figure 71: Selecting Transparent Layer

5. Save the file, under a new name, with one of the formats that can support transparent layers:
   - PNG
   - PSD
   - TIFF (when selecting TIFF, you must select the **Save Transparency** option in the TIFF Options window.

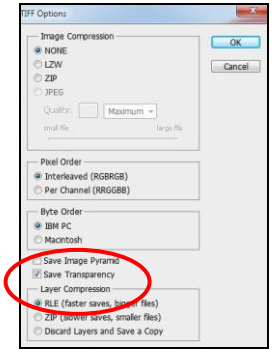


Figure 72: Selecting Save Transparent Option

6. Check for layers:
   - If the file is comprised of multiple transparent layers, from the Photoshop menu, select **Layer** > **Merge Visible**.
   - If visible layers still exist, delete them from the Layers window.

2 Uploading, Creating, Defining, and Deleting Jobs

Figure 73: Main Window

To create a new job, perform the following activities:

- Uploading a Job File to the Job Queue on page 95.
- Setting Up the Job File for Printing on page 103.
- Deleting Job Files from the Job Queue page 107

2.1 Uploading a Job File to the Job Queue

The job file must first be uploaded to the job queue.

There are four methods for uploading a job file to the job queue:

- To upload a job file to the job queue (drag and drop), see page 96.
- To upload a job file to the job queue (standard upload), see page 97.
- To crop and upload an image (crop from the Open window), see page 99.
- To upload and crop an image (crop from the File Details window) on page 100.

NOTE:

When the uploaded image is larger than the printing pallet, the printer issues a warning to that effect.

➢ To upload a job file to the job queue (drag and drop):

1. Select an appropriate job file and drag/drop the file onto the Preview pane; the image appears in the Preview pane.

Figure 74: File Details Window

2. Modify the job file parameters and click **OK**; the image appears in the Preview pane and the job file name appears in the job queue.

Figure 75: Main Window

➢ To upload a job file to the job queue (standard upload):

1. From the Main Window, click **New File**; the Open window appears.

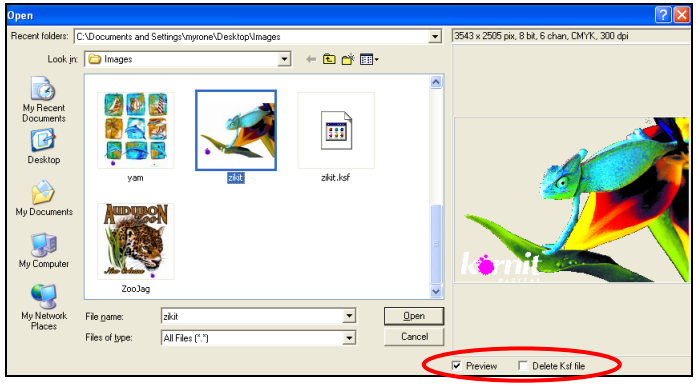


Figure 76: Open Image File Window

2. Select an image file; when the Preview checkbox has been selected, the image appears in the Preview pane on the right side of the window.

NOTES:

- We recommend using the following image formats: Tiff, PNG, JPG, and PSD.
- When an image file is uploaded to the system, a .KSF file is automatically generated adjacent to the uploaded image file; the .KSF file is not an image file and only contains job ticket and job format information. Therefore, do not upload a .KSF file.
- To delete the automatically generated .KSF file, select the Delete .Ksf file checkbox.
- If a .KSF file has been generated for an image file (i.e. the image file has previously been uploaded to the system), when uploading the image file again, the file enters directly into the job queue.
- To upload an image file that has previously been uploaded to the system but with new setup parameters, first delete the .KSF file.

---

3. Click **Open**; the image file appears in the File Details window and the image appears centered in the Preview pane.

NOTE:

The position of the image in the Preview pane reflects the position of the printed image on the printing pallet.

Figure 77: File Details Window: Job Ticket Parameters Panel

4. Modify the job file parameters and click **OK**; the image appears in the Preview pane and the job file name appears in the job queue.

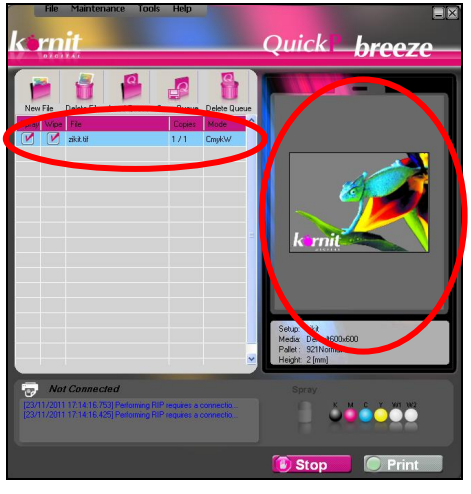


Figure 78: Main Window

➢ To crop and upload an image (crop from the Open window):

1. From the Main Window, click **New File**; the Open window appears.
2. Select a job file; when the Preview checkbox has been selected, the image appears in the Preview pane.
3. Place the cursor into the Preview pane; the cursor changes to a pointer.
4. Holding down the left mouse button, mark out the section of the image for cropping.

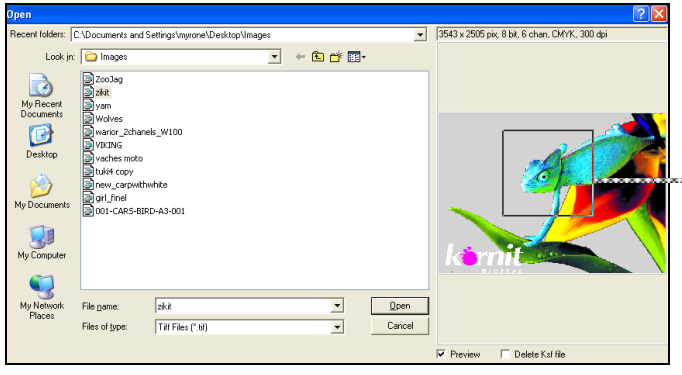


Figure 79: Open Image File Window

5. Click the **Open** button; the cropped image appears in the File Details window.

Figure 80: Main Window

6. Click **OK** to accept the cropped image; the image appears in the Preview pane and the image name appears in the job queue.
7. Where necessary, adjust the size of the image.

➢ **To upload and crop an image (crop from the File Details window):**

1. From the Main Window, click **New File**; the Open window appears.
2. Select a job file; when the Preview checkbox has been selected, the image appears in the Preview pane.
3. Click **Open**; the image appears in the Preview pane.
4. Right-click the image; the Crop context menu appears.

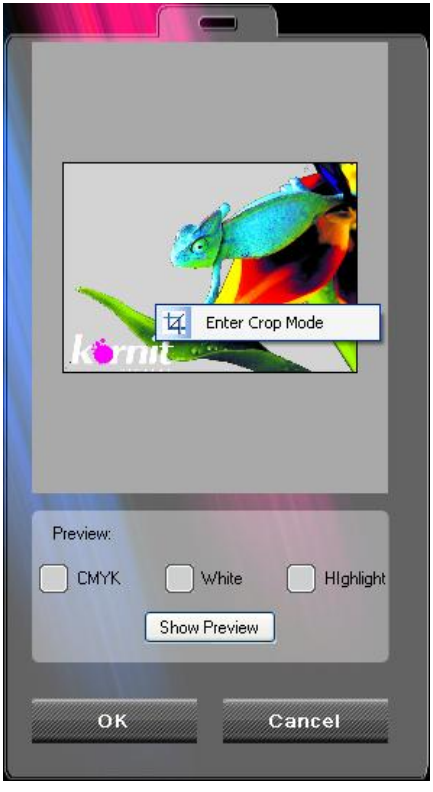


Figure 81: Job Set Preview Pane

5. Click **Enter Crop Mode**; the cursor changes to an + crop tool.
6. Using the crop tool, mark out the section of the image for cropping.

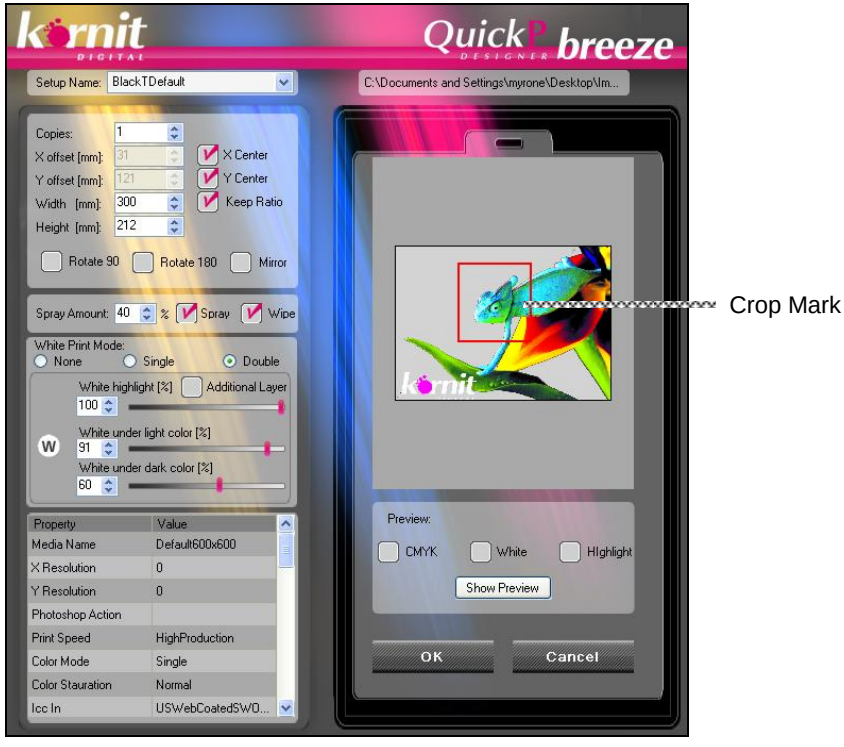


Figure 82: Open Image File Window

7. Right-click the image again; the Crop context window appears.

8. Click **Set Crop** to perform the crop.

NOTE:
To cancel the crop procedure, click **Exit Crop Mode**.

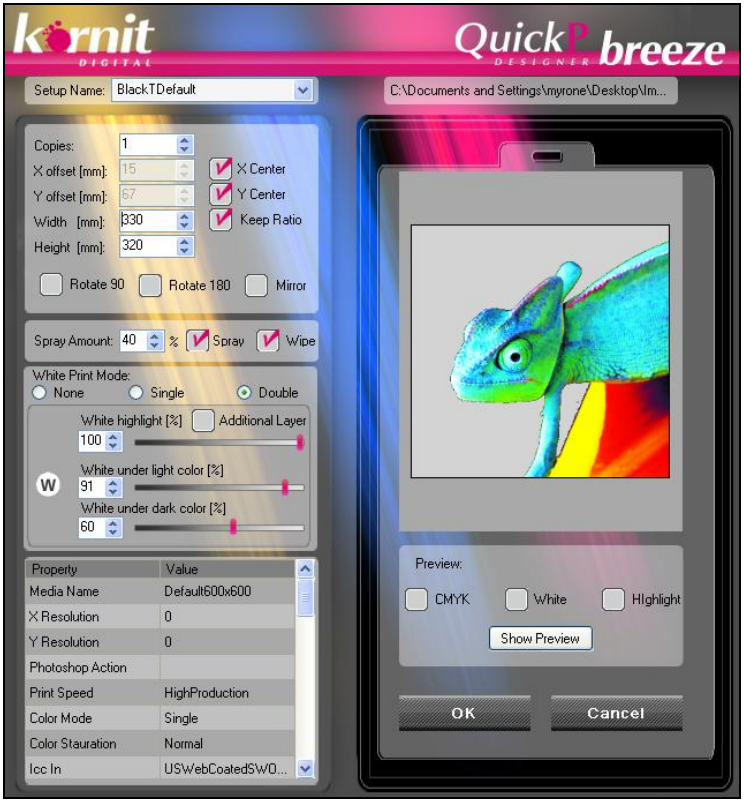


Figure 83: File Details Window

9. Define the file details and then click **OK**; the cropped image appears in the Preview pane and the image name appears in the job queue.

10. Where necessary, adjust the size of the image.

2.2 Setting Up the Job File for Printing

After uploading the job file, select an appropriate job setup and define the number of copies to be printed.

Perform the following procedures:

- To select an appropriate job setup on page 104.
- To set up the job file for printing on page 105.
- To modify job file parameters and then set up the job file for printing on page 105.

➢ To select an appropriate job setup:

Use the chart below to select a job setup (provided by Kornit) according to the input file type.

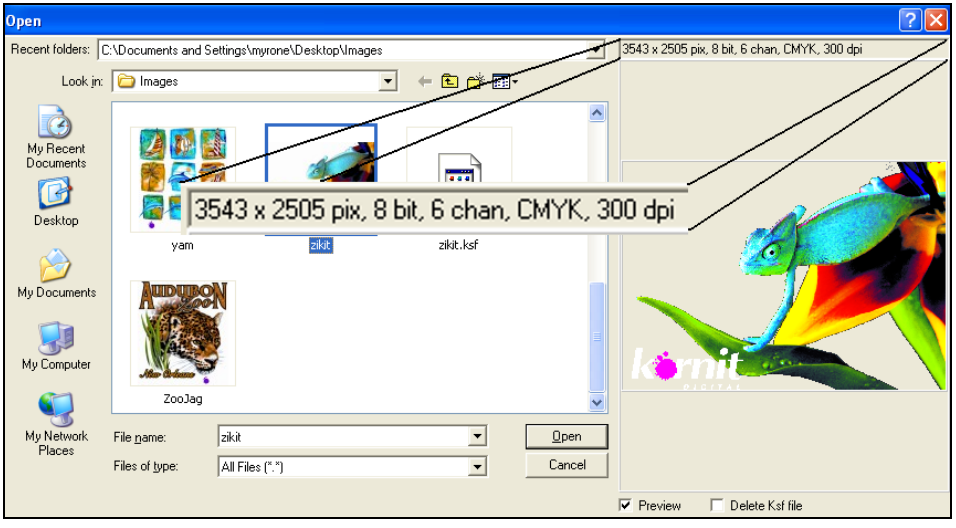


Figure 84: Input File Type Window

Input File Type	File Information	Recommended Job Setup
• 6 chan, CMYK • TIFF or PSD	CMYK, White, and Highlight channels for printing on black/dark garments	BlackT Manual
• 5 chan, CMYK • TIFF, PSD, or PNG	CMYK channel with transparent layer, mainly for printing on black or dark garments.	BlackT Default
• 4 chan, CMYK • JPG, TIFF, PSD, or PNG	CMYK channel, mainly for printing on white or light-colored garments.	WhiteT Manual
• 4 chan, RGB • TIFF, PSD, or PNG	RGB channel with transparent layer, mainly for printing on black or dark garments.	BlackT Default
• 3 chan, RGB • JPG, TIFF, PSD, or PNG	RGB channel, mainly for printing on white/light-colored garments.	White Default

➢ **To set up the job file for printing:**

1. From the Setup Name dropdown box, select an appropriate job setup; all of the file detail properties appear.
2. In the Copies box, enter the number of copies to be printed.
3. Click **OK**; the job files enters the job queue.

➢ **To modify job file parameters and then set up the job file for printing:**

1. Select a setup name from the Setup Name dropdown box. The job setup will serve as the basis of the modified setup.
2. Enter the number of copies of this file to be printed.
3. If required:
   a. Reposition the image along the Scan axis, using one of the following options:
      - Select the **X Center** checkbox to center the image on the Scan axis.
      - Clear the **X Center** checkbox:
        - Enter an appropriate value; the image moves along the Scan axis according to the entered value.
        - Drag and drop the image to an appropriate location on the Scan axis.

   b. Reposition the image along the Cross Scan axis, using one of the following options:
      - Select the **Y Center** checkbox to center the image on the Cross Scan axis.
      - Clear the **Y Center** checkbox:
        - Enter an appropriate value; the image moves along the Cross Scan axis according to the entered value.
        - Drag and drop the image to an appropriate location on the Cross Scan axis.

c. Adjust the width and height of the image:
   - Select **Keep Ratio** to maintain the width/height ratio when either the width or height parameter is changed.

d. Select the **Rotate 90** checkbox to rotate the image 90 degrees.

e. Select the **Rotate 180** checkbox to rotate the image 180 degrees.

f. Select the **Mirror** checkbox to create a mirror image of the original image.

g. Reset the Spray Amount. For setting the Spray Amount, see Managing the Media Database on page 120.
   - Select the **Spray** and/or **Wipe** checkboxes to spray and/or wipe the media. Wipe flattens the shirt fibers, after applying the fixation spray, to provide a higher quality print result.

h. Select a new White Print Mode and readjust the white color. See Defining White and Highlight Layers on page 33.

4. To preview the changes to the image made by the modified file detail parameters, click **Show Preview**.

5. To individually preview the color layers, select the following check boxes:
   - CMYK – Only the CMYK layer appears in the Preview.
   - White – Only the white layer appears in the Preview.
   - Highlight – Only the white highlight appears in the Preview.

6. Click **OK** to save the modified setup parameters and upload the file to the job queue.

NOTE:

Parameters modified in the File Details window will be applied only to the specific job. Use the Setup Editor to create new job setup files. See Setup Editor on page 26 .

2.3 Deleting Job Files from the Job Queue

You can delete any job file or queue from the job queue (even after pressing the Emergency Stop button during the printing procedure).

➢ **To delete a single job file from the job queue:**

1. Select the target job file in the queue.
2. Click **Delete File**; the job file is removed.

➢ **To delete all of the files from the job queue:**

Click **Delete Queue**; all of the files in the job queue are deleted.

3 Managing File Lists

You can save a list of jobs that you want to print, according to a specific order. This list of jobs can be saved as a .qu file and later loaded for printing.

NOTE:

The jobs in the list will include their job parameter settings, as well as their setups (advanced parameter settings).

➢ To save a file list:

In the job queue, click the **Save Queue** button; all of job files in the queue, together with their parameters, are saved in a QU file in a folder of your choice.

➢ To load a file list to the job queue:

1. Click **Load Queue** and browse to the folder containing the queue file.
2. Select the .qu file and click **Open**; the file appears in the job queue.

NOTE:

This file list remains in the job queue until you delete it or load a different job list.

The file list only saves each file's path. To reload the list, you must store all of the lists in the same location.

When working on a network, make sure that your network is connected.

4 Organizing the Job Queue

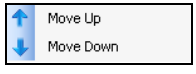
The system prints the jobs according to the order, from top to bottom, that the job files appear in the job queue. You can define the position of each job within the job queue:

➢ **To move a job up or down in the job queue:**

1. When there are at least two job files in the job queue, select the appropriate file.
2. Drag and drop the file into the appropriate row.

➢ **To move a job file one row up or down in the job queue:**

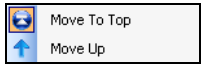
1. When there are at least two job files in the job queue, right-click the job file that you want to move one row in the queue; the Move context window opens.



2. Click **Move Up** to move the job file up one row in the job queue.
3. Click **Move Down** to move the job file down one row in the job queue.

➢ **To move a job file to the top of the job queue:**

1. When there are at least three job files in the job queue, right-click the job file that you want to move to the top of the job queue; the Move context window opens.



2. Click **Move to Top**; the job file moves to the top of the job queue.

➢ **To move a job file to the bottom of the job queue:**

1. When there are at least three job files in the job queue, right-click the job file that you want to move to the bottom of the job queue; the Move context window opens.

2. Click **Move to Bottom**; the job file moves to the bottom of the job queue.

Chapter 6

Configuring Advanced System Parameters

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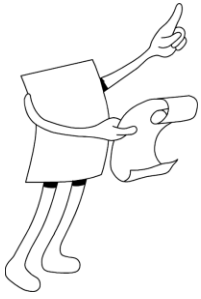
Following the Drop of Success



Chapter 6: Configuring Advanced System Parameters

Configuring the System describes how you can change the system parameters according to your requirements.

Configuring the System includes the following sections:

1 Activating the Technicians Mode

To test and configure some system elements, you must first change the system mode from Operator to Technician.

NOTE:

- System elements that require Technician privileges (Technician Mode) appear as "disabled" in the Operator mode.
- The Technician mode is intended for qualified Kornit engineers.

➢ **To activate the Technician mode:**

1. From the Main Window, click **Tools** > **Technician**; the Password Update window appears.

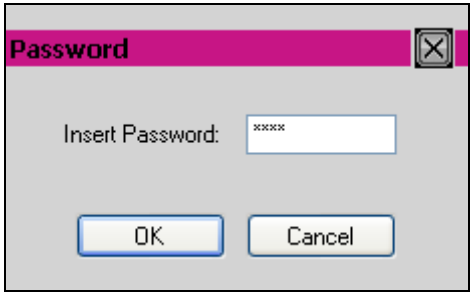


Figure 85: Password Update Window

2. Enter your password and click **OK**.
3. From the Main Window, click **Maintenance** > **Technician**; the system changes to the Technician mode.

➢ **To reactivate the Operator Mode**:

From the Main Window, click **Tools** > **Operator**; the system returns to the Operator Mode.

2 Manually Setting the Printing Pallet Height

Set the distance between the print heads and the media so as to prevent contact, thereby preventing damage to the garment and the print heads during the printing procedure.

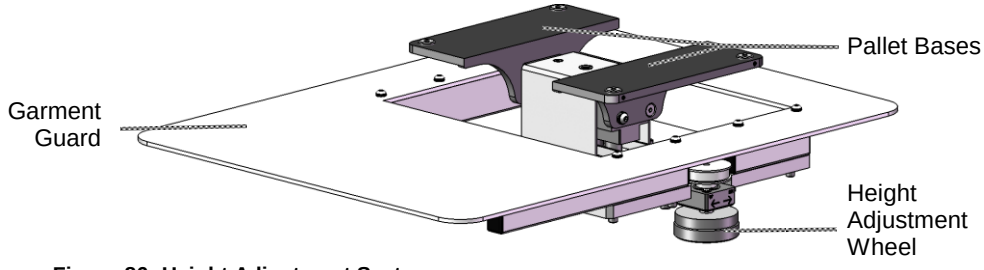


Figure 86: Height Adjustment System

NOTE:

- To manually set the printing pallet height before performing a wizard, the media refers to a transparency. See Registering the Print Heads: Print Registration Wizard on page 140 and Calibrating the Print Head Position: Print Position Wizard on page 151.
- To manually set the print height for a new media, the media refers to a test garment.

➢ To manually set the printing pallet height:

1. Place the media onto the printing pallet.
2. Using the LCD Maintenance Panel direction arrows, move the print head carriage to a position above the printing pallet travel path. See Maintaining the Printer from the LCD Maintenance Panel on page 170.
3. Using the LCD Maintenance Panel direction arrows, slowly move the printing pallet to a position beneath the print head carriage.

NOTE:

Watch the space between the print heads and the garment. If you see that the garment and the print heads might come into contact, turn the Pallet Height adjustment wheel to lower the printing pallet.

4. Using the Pallet Height adjustment wheel, raise or lower the printing pallet height so that the gap between the garment and the print heads is 2 mm.
5. Click the **Home** and **Load Position** buttons to manually move the printing pallet backwards and forwards.

3 Configuring Print Head Functionality

From the Technician/Head Properties window, you can configure print head functionality, adjust the negative pressure level, and perform specific system actions.

NOTE:

To access the Technician window, you must be in the Technician mode. See Activating the Technicians Mode on page 112.

➢ To access the Technician/Head Properties window:

1. From the Main Window, click **Maintenance** > **Technician**; the Technician window appears.
2. Click **Head Properties**; the Technician/Head Properties window appears.

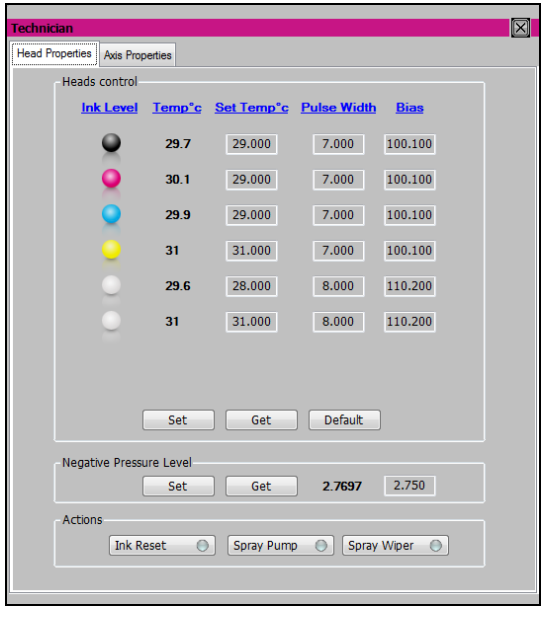
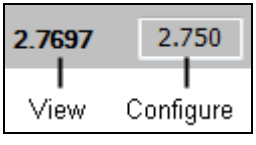


Figure 87: Technician/Heads Properties Window

From the Technician/Head Properties window, you can:

- View:
  - The ink level of each ink tank (in the Ink Level column).
  - The actual temperature of each print head (in the Temp°C column).
  - The actual Negative Pressure Level (displayed to the left of the Negative Pressure Level field).
- Perform:
  - Ink Reset – Reset the ink level indicator and activate the pump when the ink level is low. In case of low ink levels in the secondary ink tanks, see Manually Filling the Secondary Ink Tanks on page 213.
  - Spray Pump – Manually activate the spray pump for testing purposes.
  - Spray Wiper – Manually activate the spray wiper for testing purposes (without moving the printing pallet).
- Configure:
  - Set Temp (ºC) – The temperature of each individual print head.
  - Pulse Width (µS) – The pulse width of each individual print head.
  - Bias (V) – The pulse amplitude of each individual print head.
  - The Negative Pressure Level (vacuum)



➢ To configure Bias, Pulse Width, and Set Temp:

In the Technician/Head Properties window, click the Bias, Pulse Width, and Set Temp fields and perform the necessary changes.

- Click **Set** to apply all changes made to the print head parameters. These changes are immediately applied but not saved in a permanent memory file; when the printer is powered off without saving the changes, the changes are lost.
- Click **Get** to load the parameters from the temporary memory file (i.e. loads files saved when clicking Set).
- Click **Default** to reload factory default settings.

➢ To configure the Negative Pressure level:

In the Technician/Head Properties window, click the Negative Pressure Level field and perform the necessary changes.

- Click **Set** to apply the changes that you made. These changes are immediately applied but not saved in a permanent memory file; when the printer is powered off without saving the changes, the changes are lost.
- Click **Get** to reload Negative Pressure Level parameters from the system's memory (i.e. after making value changes, but not clicking Set, you can return to the original set value).

4 Configuring Media Database Operation Parameters

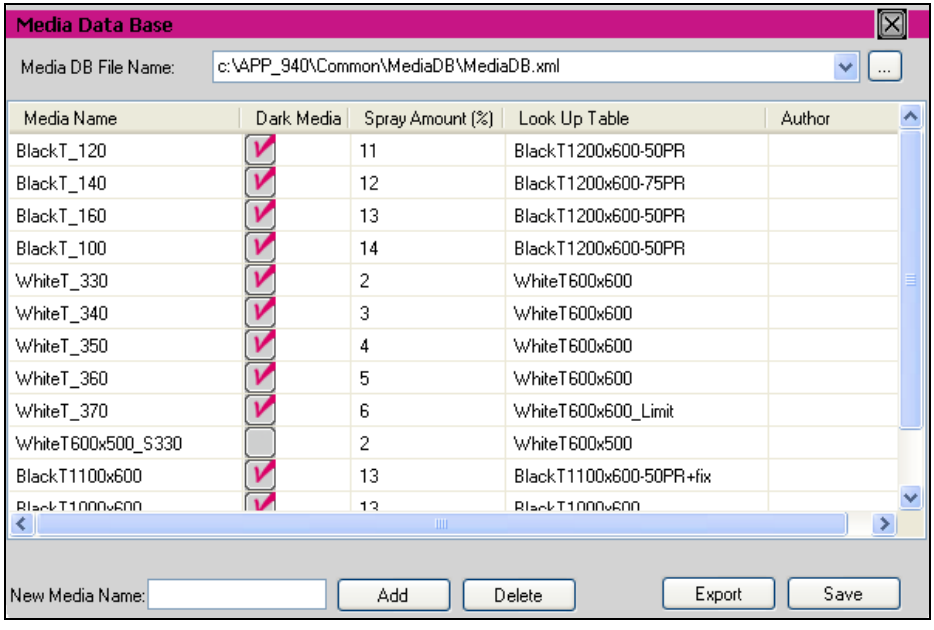


Figure 88: Media Data Base

Jobs can be printed on a wide range of media types, which can be stored in the Media database. Your system has been installed with a number of pre-defined media definitions, which you can use, or you can create new definitions, as required.

Media database settings include the following parameters:

- Media Name – The name of the media type.
- Dark Media – Indicates whether the media is a dark color. When selecting the Dark Media option, the system enables the "White Print Mode" options in the File Detail Parameters Panel (see White Print and Highlight Mode on page 32).
- Spray Amount –The amount of fixation spray that is suited to this material. The spray amount is:
  - Entered as a percentage.
  - Chosen according to the garment type and garment color (dark/light). Generally, a more absorbent garment requires a greater amount of spray. Additionally, a dark garment that requires a white layer underneath the CMYK layer requires a greater amount of spray.
- Look Up Table – Limited number of factory-produced settings that include color calibration (color linearization tables) and print resolution. When creating a new media, select a Look Up Table setting according to:
  - Garment Color (e.g. black, dark, light).
  - Print Resolution.

NOTE:

In general, dark media requires a higher resolution than light media.

- Author – The name of the operator who defined the media type. The author of a default media, which cannot be deleted, is defined as Factory.

4.1 Managing the Media Database

From the Media Data Base window, you can perform the following tasks:

- Import medias to the Media database.
- Configure a specific media in the Media database.
- Add new medias to the Media database.
- Delete medias from the Media database.
- Export medias from the Media database to another folder.

➢ **To import a media database:**

1. From the Main Window, click **Tools** > **Media Data Base**; the Media Data Base window appears.

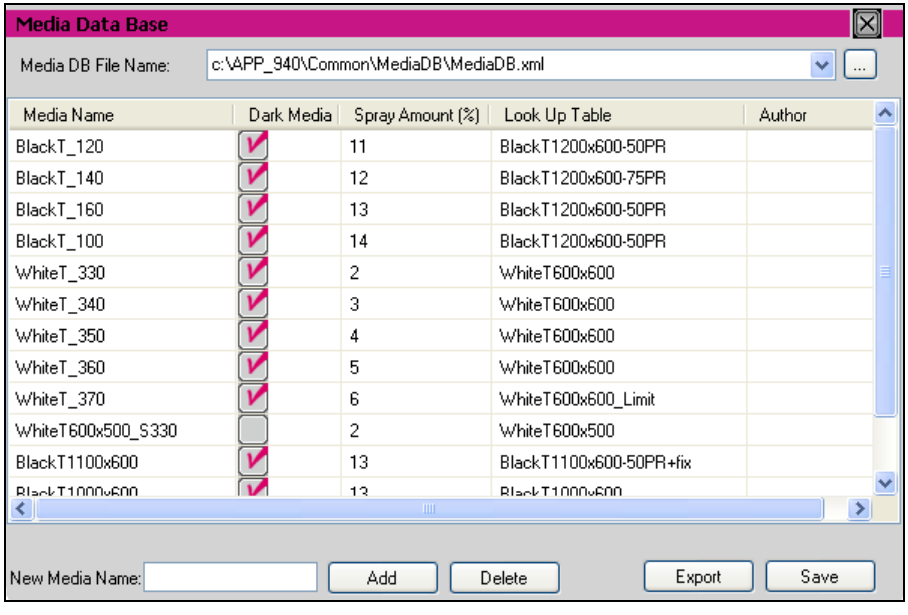


Figure 89: Media Data Base Window

2. Click the **Browse** button ... ; the Open window appears.
3. Browse to the media database file and click **Open**; the media database appears in the window.

➢ **To configure the settings of a specific media:**

- To change a media name, click the **Media Name** field and overtype with a new name.
- When using dark-colored garments, select the **Dark Media** checkbox.
- To increase or decrease the amount of fixation spray on the garment, click the **Spray Amount** field and overtype the Spray Amount percentage.
- Click the **Look Up Table** field and select a suitable setting.
- Click the **Author** name field and overtype with a new name.

NOTE:

The author name of a media created by Kornit cannot be changed.

➢ **To add a media to the database:**

1. In the New Media Name field, enter a new media name.
2. Click **Add**; the new name appears in the Media Name list.
3. Update the new Media with the new required parameters
   - Dark Media.
   - Spray Amount (%).
   - Look Up Table.
   - Author.
4. Click **Save**.

➢ **To delete a media from the Media Database:**

1. Select the target media name; the entire row is selected.
2. Click **Delete**; the Delete Confirmation dialog box appears.
3. Click **Yes**; the row is deleted.
4. Click **Save**.

➢ **To export a media to an external folder:**

1. Select the target media name; the entire row is selected.
2. Click **Export**; the Select Export Folder dialog box appears.

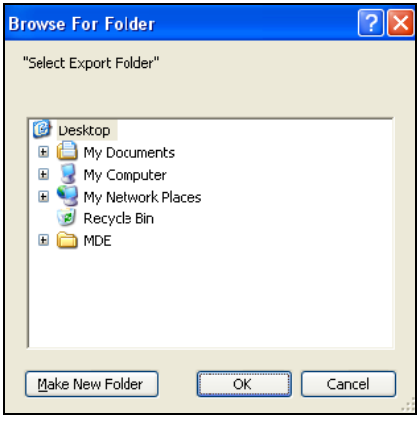


Figure 90: Browse to Export Folder Window

3. Browse to the target folder and click **OK**; the Successful Export dialog box appears.
4. Click **OK**.

5 Configuring the Pallet Type

The system supports the following pallet types:

- Normal (Standard) Pallet.
- Children's Pallet.

For more on pallet types, see Pallet Types on page 197.

➢ **To configure the pallet type:**

1. From the Main Window, click **Tools** > **Pallet Types**; the Pallet Types window appears.

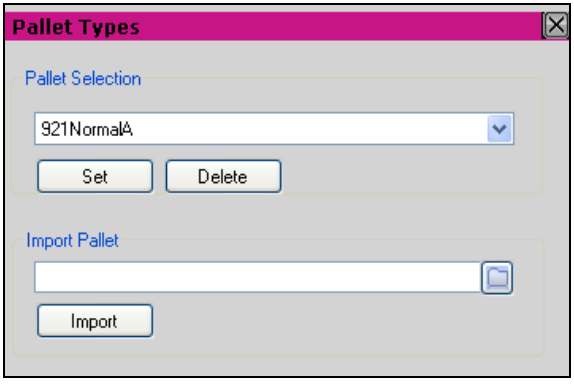


Figure 91: Pallet Types Window

2. Open the **Pallet Selection** dropdown menu and select the pallet name, from the Printing Pallet database, that reflects the actual printing pallet installed on the machine.
3. Click **Set** to save the selection.

➢ **To add a pallet type to the pallet database:**

1. Click the **Import Pallet** browse button; the Open window appears.
2. Browse to the pallet type that you want to include in the file and click **Open**; the pallet type appears in the Import Pallet field.
3. Click **Import**; the pallet type appears in the pallet database.

➢ **To remove a pallet type from the pallet database:**

1. Open the **Pallet Selection** dropdown menu and select the printing pallet that you want to remove from the database.
2. Click **Delete;** the pallet type is removed from the pallet database.

NOTE:

You cannot delete the Normal (Standard) pallet.

6 Handling Parameters

NOTE:

Only Kornit technicians are authorized to perform changes to system parameters using the Parameters Handling window.

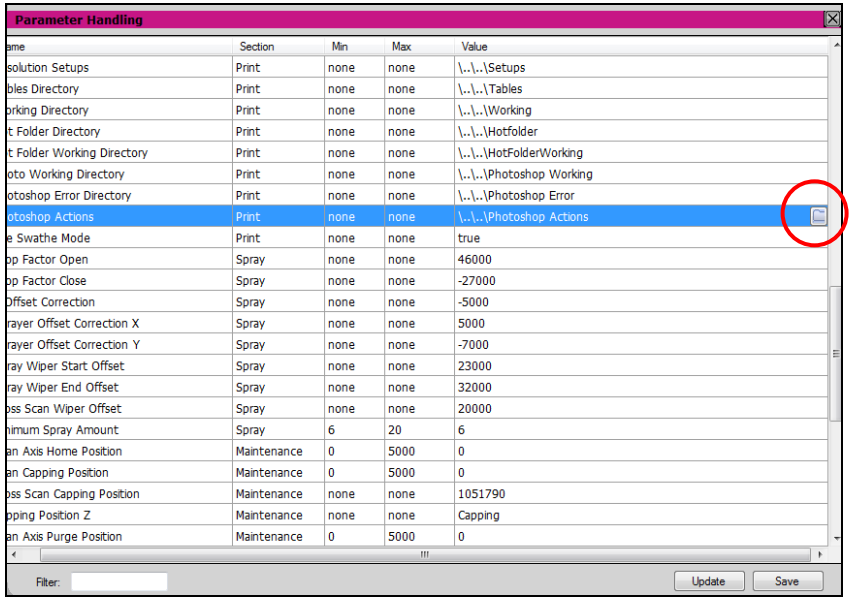


Figure 92: Parameter Handling Window

The Parameter Handling window lists all system parameters and displays all of the system parameter elements.

The Parameter Handling window includes the following controls:

- Filter – Enables focusing on specific parameters.
- Update – Temporarily saves changes to the system parameters. These changes are lost when system power is turned off.
- Save – Permanently saves changes to the system parameters.
- Browse – Appears when you click a parameter that defines a path and enables you to define the parameter path.

7 Backing Up and Restoring Parameters

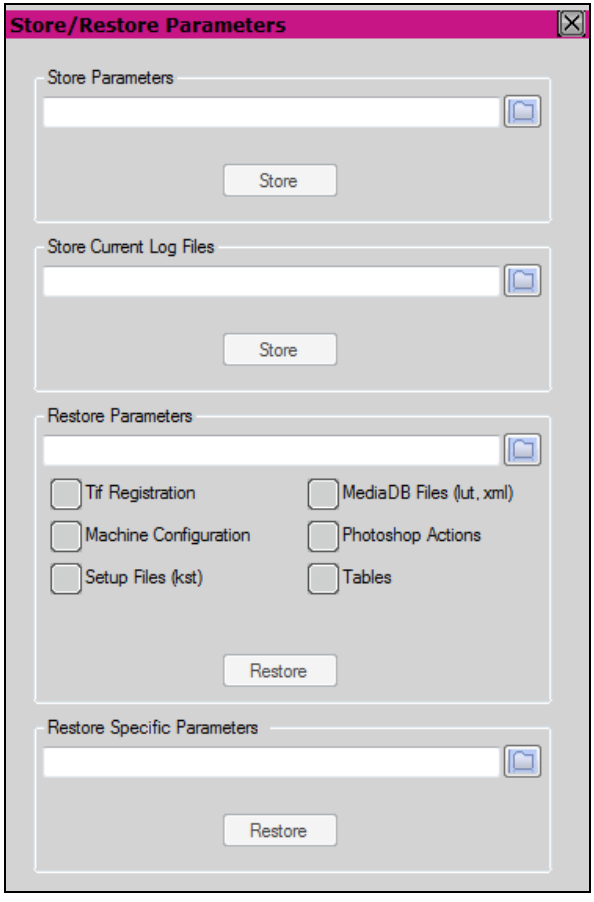


Figure 93: Store/Restore Parameters

From the Store/Restore Parameters window, you can

- Back up system parameters in a separate folder.
- Back up current log files in a separate folder.
- Retrieve all of the backed up system parameters to the system.
- Retrieve specific backed up system parameters to the system.

➢ **To back up system parameters in a separate file folder:**

1. Click the **Store Parameters Browse** button; the Save As window appears.
2. Browse to the parameters backup folder (Kornit Digital\Breeze921\Common\Working\Stored) and enter a file name; the parameters backup file path appears in the Store Parameters path field.
3. Click **Store**; the system stores all of the parameters in a zip file and places the file in the parameters backup folder.

➢ **To back up current log files in a separate folder:**

1. Click the **Store Current Log Files Browse** button; the Save As window appears.
2. Browse to the current log files backup folder (Kornit Digital\Breeze921\Common\Working\Stored) and enter a file name; the current log files backup file path appears in the Store Current Log Files path field.
3. Click **Save**; the system stores all of the parameters in a zip file and places the file in the current log files backup folder.

➢ **To retrieve and store the backed up system parameters to the system:**

1. Click the **Restore Parameters Browse** button; the Open window appears.
2. Browse to the parameters backup folder (Kornit Digital\Breeze921\Common\Working\Stored) and select the parameters zip file.
3. Click **Open**; the file path appears in the Store Parameters path field.

4. Select any or all of the storage folders:
   - Tif Registration – Stores all of the registration and step (calibration) files.
   - Machine Configuration – Stores all of the machine parameter files.
   - Setup Files (kst) – Stores all of the setup files created in the system (C:\Kornit Digital\Breeze921\Common\Setups).
   - Media DB Files (lut, xml) – Stores all of the media data and all of the Lookup Table files (C:\Kornit Digital\Breeze921\Common\MediaDB).
   - Photoshop Action – Stores all of the Photoshop Action files (C:\Kornit Digital\Breeze921\Common\Photoshop Actions).
5. Click **Restore**; the selected folder files are restored to the system.

➢ **To restore a specific parameter to the system:**

1. In the Restore Specific Parameters panel, click the browse button  ; the Open window appears.
2. Browse to the parameters backup folder (Kornit Digital\Breeze921\Common\Working\Stored) and select the specific file (.ENC or .XML) to restore; the file path appears in the Restore Specific Parameters path field.
3. Click **Restore**; the selected file is restored to the system.
4. Repeat all steps to restore additional parameters.

➢ **To retrieve a specific backed up system parameter (stored in an .xml file) to the system:**

An .xml file, containing the specific system parameter, is sent to you from Kornit. Store this file on your server.

1. Click the **Browse** button to browse to the .xml file containing the specific system parameter; the backup file path appears in the Store Parameters path field:
   Kornit Digital\Breeze921\Common\Working\Stored\XXX.
2. Click **Restore**; the parameter is restored to the system.

8 Configuring the Message Display

From the Main/Message Display, the system informs you of the following:

- The current system status.
- Procedures being performed.
- System problems.

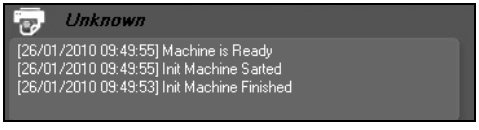


Figure 94: Configuring the Message Display

You can:

- Hide or display the messages.
- Add or remove scroll bars.
- Permanently delete the messages from the display box.

➢ **To hide or display the messages:**

From the Main Window, click **Tools** > **Message Display**; depending on the current Hide/Display message status, either Hide or Show appears.

- Click **Hide** to hide the messages.
- Click **Show** to display the message

➢ **To add or remove the ability to scroll through the display box:**

From the Main Window, click **Tools** > **Message Display**; depending on the present Scroll/No Scroll message status, either Scrollable or Disable Scroll appears.

- Click **Scrollable** to display the scrollbar, which enables you to scroll to the messages.
- Click **Disable Scroll** to remove the scrollbar.

➢ **To permanently delete the messages from the display box:**

1. From the Main Window, click **Tools** > **Message Display**.
2. Click **Clear**; the messages are permanently deleted.

9 Downloading Software

When you have Technician privileges, you can download updates for the following electronic card software:

- Main Board.
- Spectra Board.
- NP Board.
- LCD Board.
- RF Board.

With Technician privileges, you can also download the software for any of the above electronic cards, in the case of card replacement.

➢ **To download electronic card software and software updates into your system:**

1. When you receive a software or software update file, save the file to your PC.
2. From the Main Window, click **Tools** > **Hardware Downloads** > **Firmware**; the Firmware window appears.

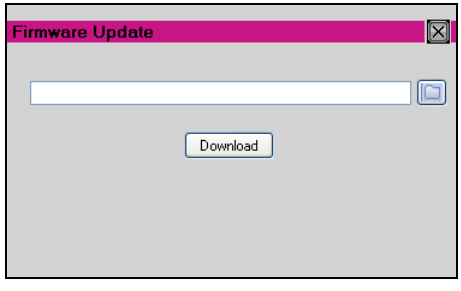


Figure 95: Firmware Window

3. Click the **Browse** button  ; the Select Firmware File window appears.
4. Browse to the software/software update file: Breeze921\Common\Bin\Firmware\Release15.5 (or higher) and select the first of the two files.
5. Click **Open**; the file path appears in the Firmware Update window.

6. Click **Download**; the file is downloaded to the system and the Firmware Update Completed Successfully window appears.
7. From the Firmware window, browse to the software or software update file: Breeze921\Common\Bin\Firmware\Release15.5 and select the second of the two files.
8. Click **Open**; the file path appears in the Firmware Update window.
9. Click **Download**; the file is downloaded to the system and the Firmware Update Completed Successfully window appears.
10. Perform Uploading and Downloading Axis Speed Configurations (S-Curve Files Handling). See page 133.
11. Turn off the printer and then turn on the printer again (to operate using the new update).

10 Uploading and Downloading Axis Speed Configurations (S-Curve Files Handling)

NOTES:

To upload and download axis speed configurations, you must first activate the Technicians Mode.

Axis speeds have been pre-determined and configured in your system by Kornit. Using the S-Curve Files Handling window, with technician privileges, you can:

- Download (import) new speed configurations (that you can receive from Kornit).
- Upload system speed configurations to a folder for export.

➢ **To open the S-Curve Files Handling window:**

From the Main Window, click **Tools** > **S-Curve Handling**; the S-Curve Files Handling window appears.

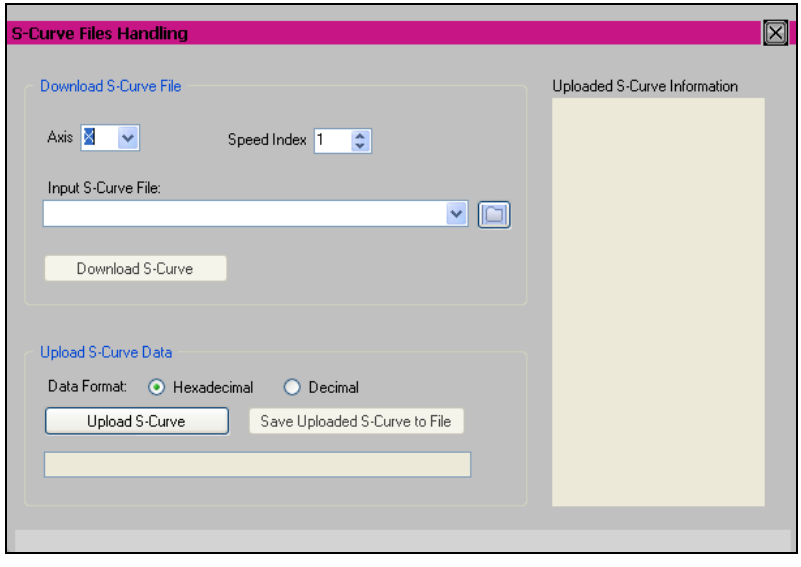


Figure 96: Configuring S-Curve Files Handling

NOTE:

1. Browse to the file folder in which the new configurations are saved: Breeze921\Common\Bin\Curves.
2. Write down the Axis Name and the Speed Index of each of the two files. For example: X_Axis_Wipe50_15

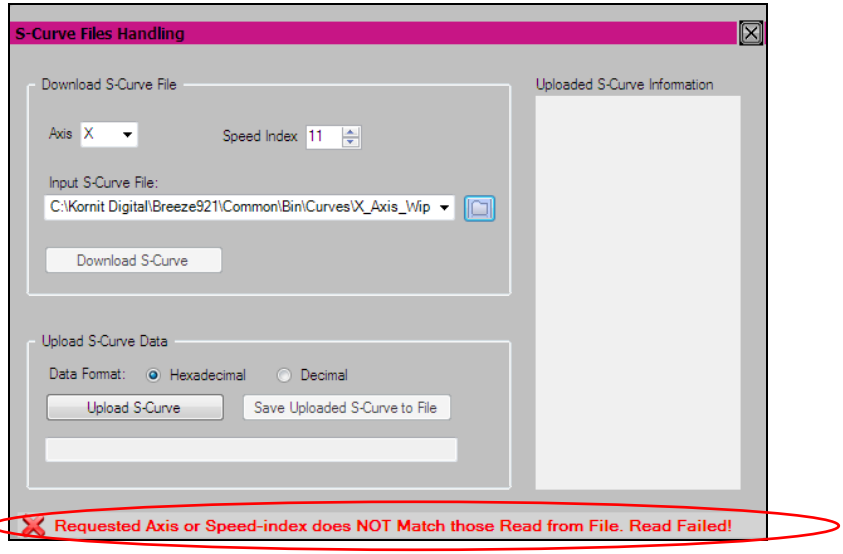
   Axis Name Speed Index

➢ **To download the speed configurations:**

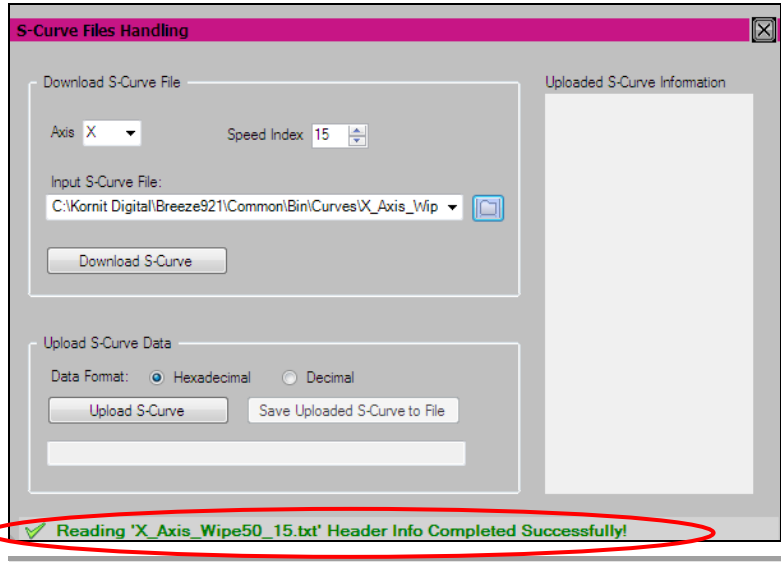
1. In the S-Curve Files Handling window, select the Axis name and Speed Index, according to information that you noted for the first of the two files.
2. Click the Input S-Curve file **Browse** button  and browse to: Breeze921\Common\Bin\Curves.
3. Select the first file (that stores the new configurations).

NOTE:

If the Axis name and/or the Speed Index are not appropriate for the downloaded file, the following warning appears (in Red print) and the Download S-Curve button is disabled.



When the Axis name and/or the Speed Index are appropriate for the downloaded file, the following message appears (in Green print) and the Download S-Curve button is disabled.



4. Click **Download S-Curve**; the first axis configuration is downloaded to the system.
5. Again, in the S-Curve Files Handling window, select the Axis name and Speed Index, according to information that you noted for the second of the two files.
6. Click the Input S-Curve file **Browse** button  and browse to: Breeze921\Common\Bin\Curves.
7. Select the second file (that is holding the new configurations).
8. Click **Download S-Curve**; the second axis configuration is downloaded to the system.

➢ **To upload the system's speed configurations to a file for exportation:**

1. Select a Data Format:
   - Hexadecimal
   - Decimal
2. Click **Upload S-Curve**; the S-Curve configurations appear in the Uploaded S-Curve Information pane.
3. Click **Save Uploaded S-Curve to File**; the Save As window appears.
4. Browse to the folder in which you want to save the new configurations.
5. Click **Save**; the file is saved as a .txt file and the file path appears in the field below the Upload S-Curve button.

11 Updating the System Password

Your system is supplied with a password that allows you to operate the printer. When your password expires or when you change the Main Board, you must update your system password (i.e. request a new password from Kornit and apply the password to your system).

NOTE:

- To update the system password, you must first activate the Technicians Mode.
- Your password is enabled for a specified number of hours of powered-on printer use. Twenty hours before reaching the time limit, the system will inform you of the number of remaining hours of usage.
- When the time limit has expired, the system is automatically locked. You will not be able to RIP files but you can still perform maintenance activities.

➢ To update your system password:

1. In the Main Window, click **Help** > **About**; the Kornit window appears.

Figure 97: About Kornit

2. Record your Board ID number and send it to your local Kornit representative with your request for a password update; Kornit will create a new password and will send it back to you through your dealer.

NOTE:

For your local Kornit representative details, see Troubleshooting on page 202.

3. When you receive the new password, open the Main Window and click **Tools** > **Hardware Downloads** > **Password**; the Password Update window appears.

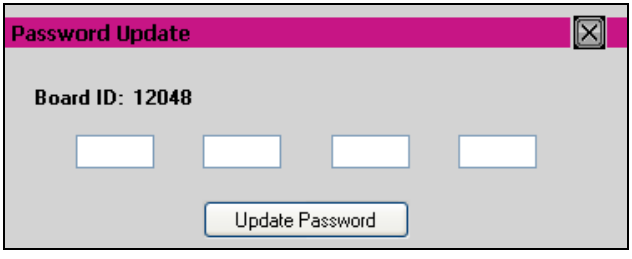


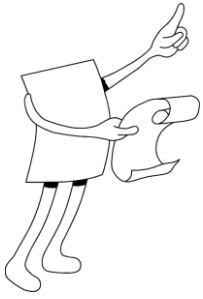
Figure 98: Update Password

4. Enter the four new groups of numbers/letters into the fields.
5. Click **Update Password**; the new password is accepted and you can resume working with the system.

Chapter 7

Working with the Wizards

kornit DIGITAL
Following the Drop of Success



Chapter 7: Working with the Wizards

The Working with the Wizards chapter focuses on the system wizards and includes:

NOTE:

Each wizard displays concise wizard steps. For complete operation details of the specific wizard, click the Wizard Information icon  .

1 Registering the Print Heads: Print Registration Wizard

Print registration has been calibrated in the factory according to the print heads provided with the printer. When you install new print heads or when print registration is inaccurate, recalibrate using the Print Registration Wizard.

1. Place an A3 or A4 transparency onto the printing pallet, aligned to the bottom-right corner of the printing pallet.

NOTE:
The Print Registration Wizard has been programmed to work with either Standard or Children's printing pallets. The number of printed tests on one transparency depends on the printing pallet size.

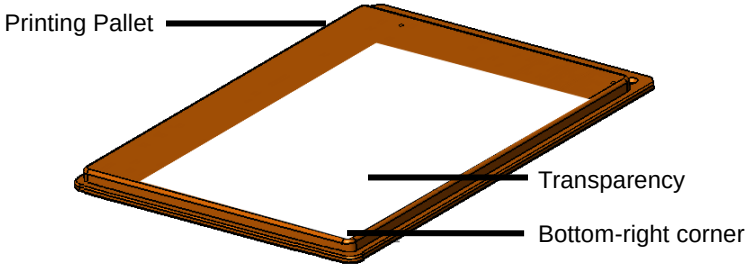


Figure 99: Aligning Transparency

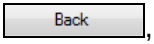
2. From the Main Window, click **Tools** > **Calibration** > **Registration Wizard**; the Print Registration wizard appears, displaying the Head Left/Right Calibration window.

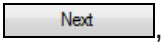
➢ **To navigate through the Registration Wizard:**

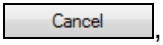
Click **Print** 

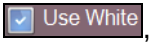
in the application or press the green printer Start button on the printer to print the specific test file.

At any stage of the Print Registration wizard:

- Click **Back** 

, to repeat the specific procedure enabled by the window.
- Click **Next** 

, to proceed to the next procedure.
- Click **Cancel** 

, to exit the wizard.
- Select the **Use White** checkbox 

, to complete the full registration procedure, including registration of the white print heads.
- Click **Reset** 

, to reset the registration numbers to zero.
- Click **P&W** 

, to purge and wipe the print heads.

Attention:

Before performing any of the wizard test prints, verify that the distance between the printing pallets and the print heads is 2 mm.

1.1 Performing Head Calibration

In Step 1, Head Left/Right Calibration, the printer prints left and right along the scan axis. This step calibrates between the left and right print directions for each print head.

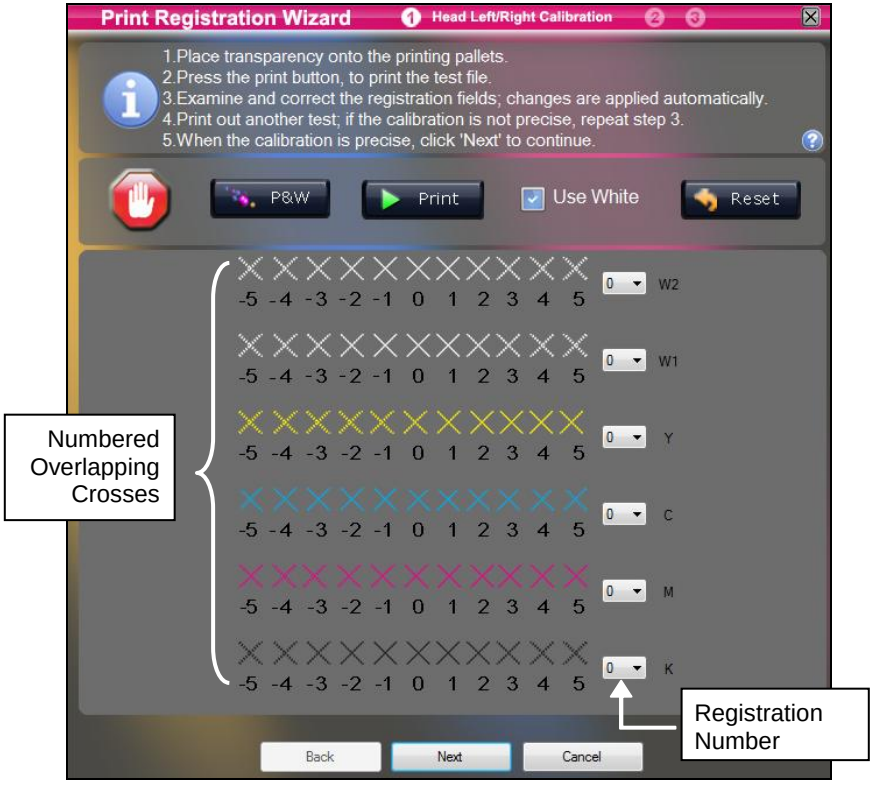


Figure 100: Step 1_Head Left/Right Calibration Window

➢ To perform Head Left/Right Calibration:

1. Click the **Print** button; the printer prints out the Head Left/Right Calibration test.

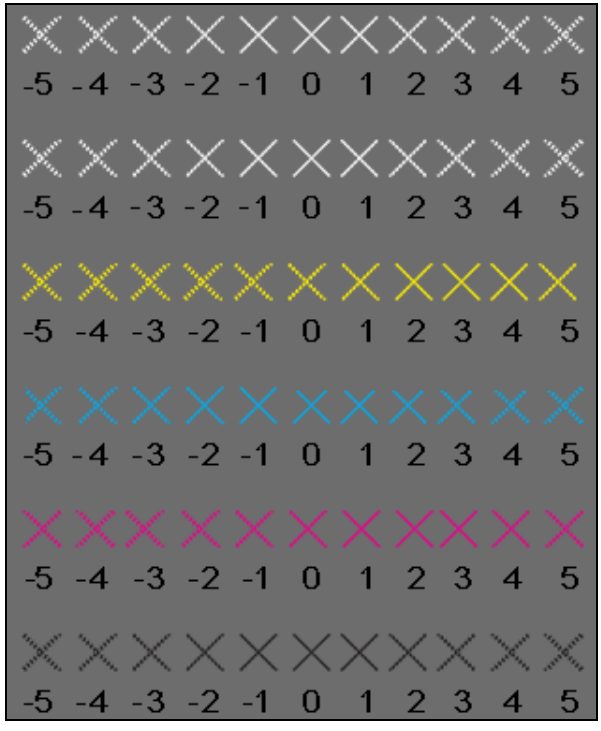


Figure 101: Step 1_ Head Left/Right Calibration Window – Close-up

2. Examine the printout; for each print head, determine which cross has the most precise color overlap.
   In the example below, cross 2 has the most precise overlap.

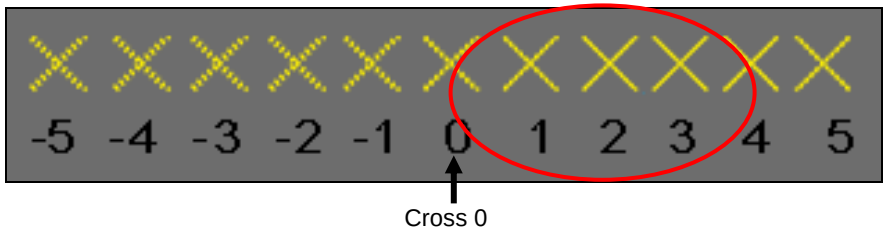


Figure 102: Head Left/Right Calibration - Magnified

a. For each print head, examine the calibration test for the three most precisely overlapping X's.

b. Enter the average Cross number into the Registration Number fields (for each print head).

3. Click the **Print** button to print out a second test print:
   - If Cross 0 does not have the most precise overlap, the calibration was not precise enough; repeat steps 2 and 3.
   - If Cross 0 has the most precise overlap, the calibration was precise; proceed to the next step.
4. Click **Next**; the Head to Head Scan Calibration window appears.

1.2 Performing Head to Head Scan Calibration

In Step 2, Head to Head Scan Calibration, the printer calibrates all of the print heads along the scan axis. In this step, the printer prints vertical black reference lines on top of CMY and white colored lines.

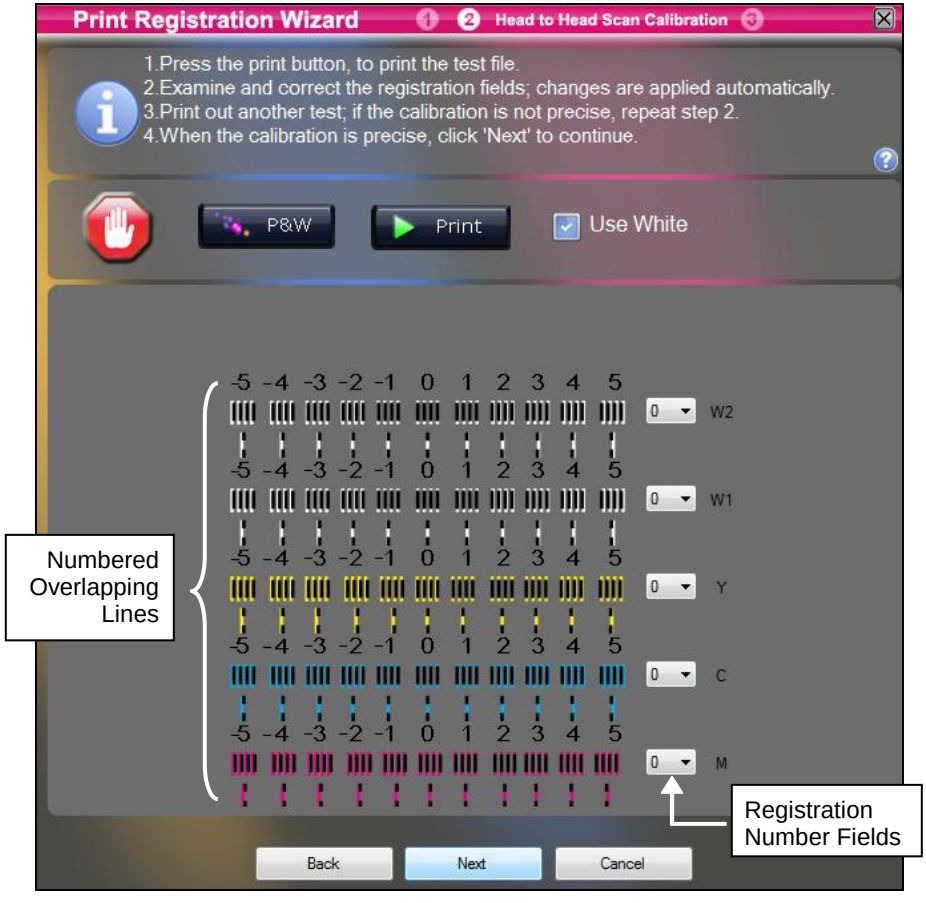


Figure 103: Step 2_Head to Head Scan Calibration Window

➢ To perform Head to Head Scan Calibration:

1. Click the **Print** button; the printer prints out the Head to Head Scan Calibration test.

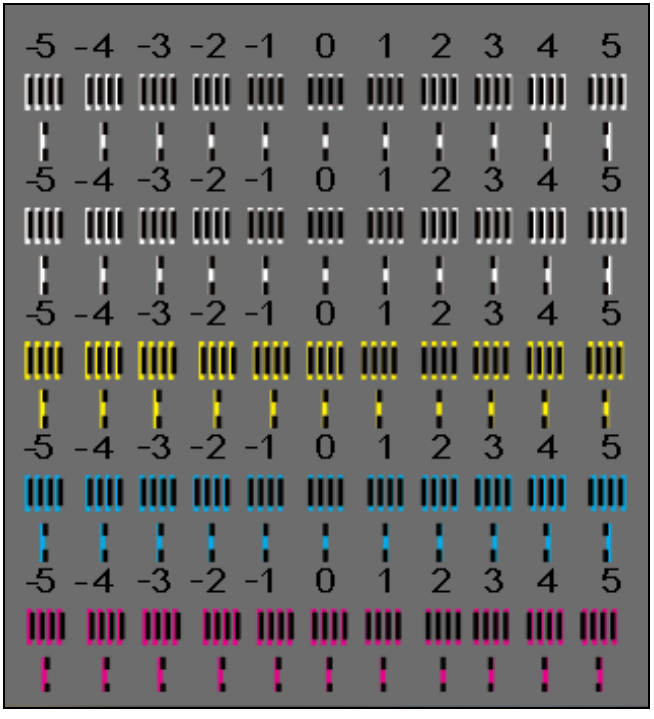


Figure 104: Head to Head Scan Calibration Test – Close-up

2. Examine the printout; determine the group of lines that has the most precise overlap.
   In the example below, group 2 has the most precise overlap.

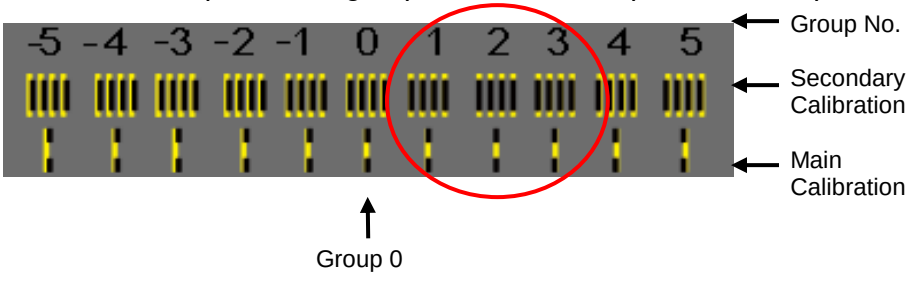


Figure 105: Head to Head Scan Calibration Test - Magnified

3. For each print head:
   a. Examine the Main Calibration test for the most precisely overlapping lines.
   b. Examine the Secondary Calibration test for the three most precisely overlapping group of lines.
   c. Enter the Group number into the Registration Number fields.
4. Click the **Print** button to print out a second test print:
   - If Group 0 does not have the most precise overlap, repeat steps 2 to 3.
   - If Group 0 does have the most precise overlap, continue with the following step.
5. Click **Next**; the Head to Head Cross Scan Calibration window appears.

1.3 Performing Head to Head Cross Scan Calibration

In Step 3, Head to Head Cross Scan Calibration, the printer calibrates all of the print heads along the cross scan axis. In this step, the printer prints horizontal black reference dashes on top of CMY and white colored dashes.

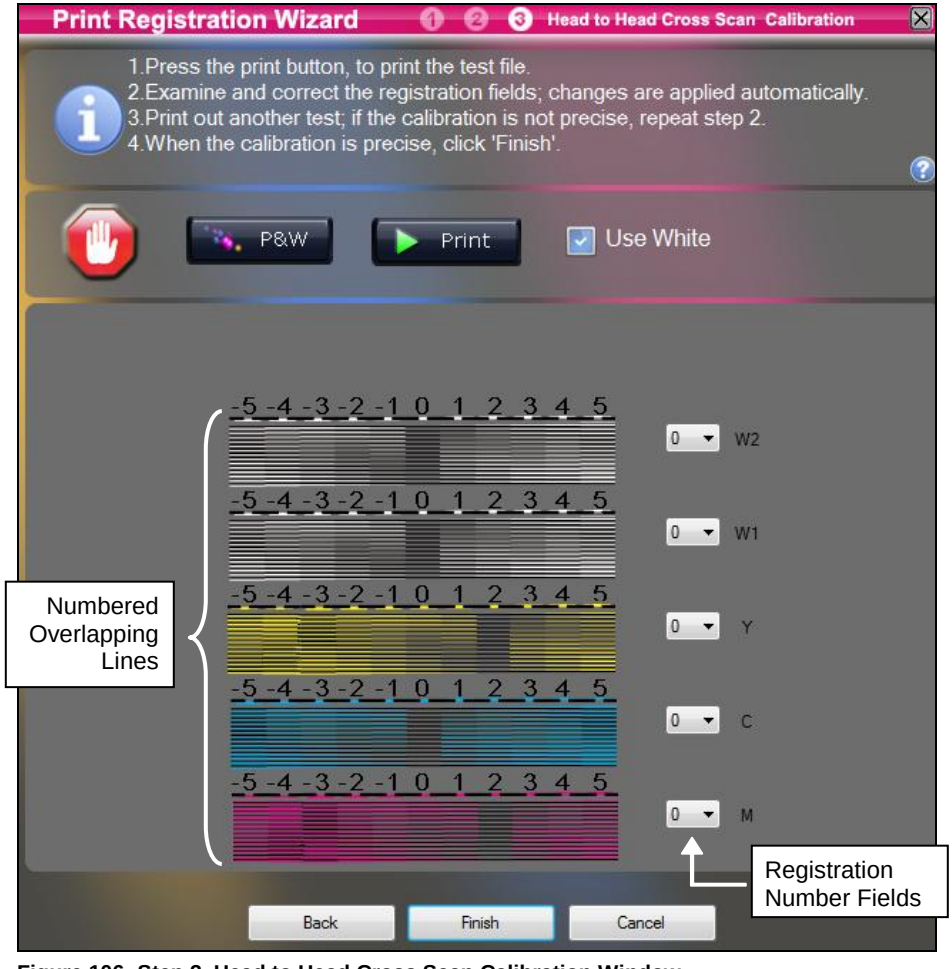


Figure 106: Step 3_Head to Head Cross Scan Calibration Window

➢ To perform Head to Head Cross Scan Calibration:

1. Click the **Print** button; the printer prints out the Head to Head Cross Scan Calibration test.

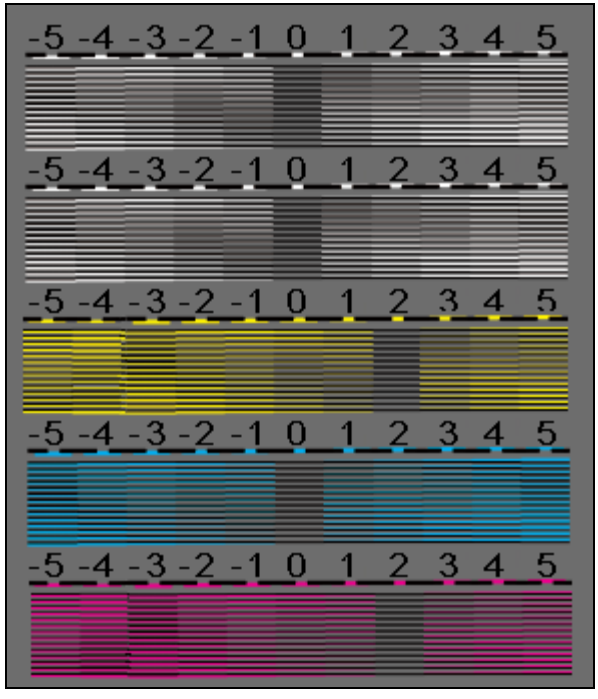


Figure 107: Head to Head Cross Scan Calibration Test – Close-up

2. Examine the printout; determine the group of dashes that have the most precise overlap.
   In the example below, group 2 has the most precise overlap.

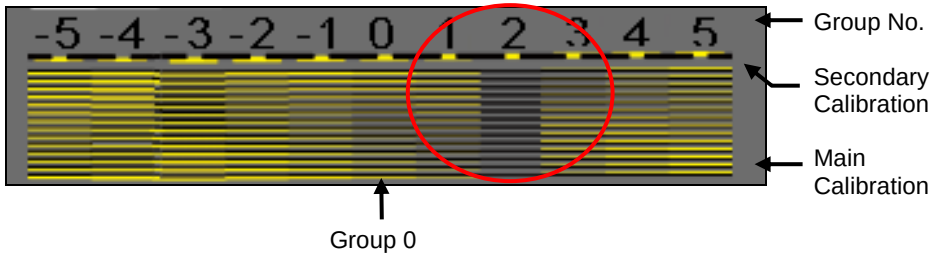


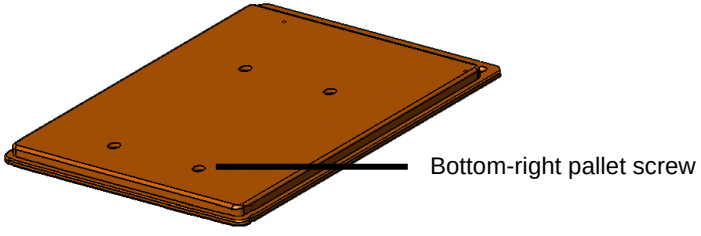
Figure 108: Head to Head Cross Scan Calibration Test – Magnified

3. For each print head:
    a. Examine the Main Calibration test for the most precisely overlapping dashes.
    b. Examine the Secondary Calibration test for the three most precisely overlapping group of dashes.
    c. Enter the Group number into the Registration Number fields (for each print head).
4. Click the **Print** button to print out a second test print;
    - If Group 0 does not have the most precise overlap, repeat steps 2 to 3.
    - If Group 0 has the most precise overlap, proceed to the next step.
5. Click **Finish**; the Print Registration wizard closes.

2 Calibrating the Print Head Position: Print Position Wizard

Use the Print Position Wizard when you recognize inaccurate print positioning.

The Print Position Wizard enables you to calibrate the correct print location, using the bottom-right pallet screw as the point of reference.



To determine the precise print location on the standard printing pallet, perform the following procedures:

- Identify the present print location on the printing pallet.
- Calibrate the correct print location on the printing pallet.

➢ **To identify the present print location on the printing pallet:**

1. Place a transparency onto the printing pallet, aligned to the bottom-right corner.

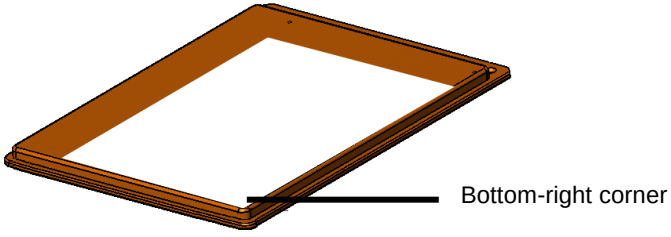


Figure 109: Aligning the Transparency

2. From the Main Window, click **Tools** >**Calibration** > **Print Position Wizard**, the Print Position Wizard appears.

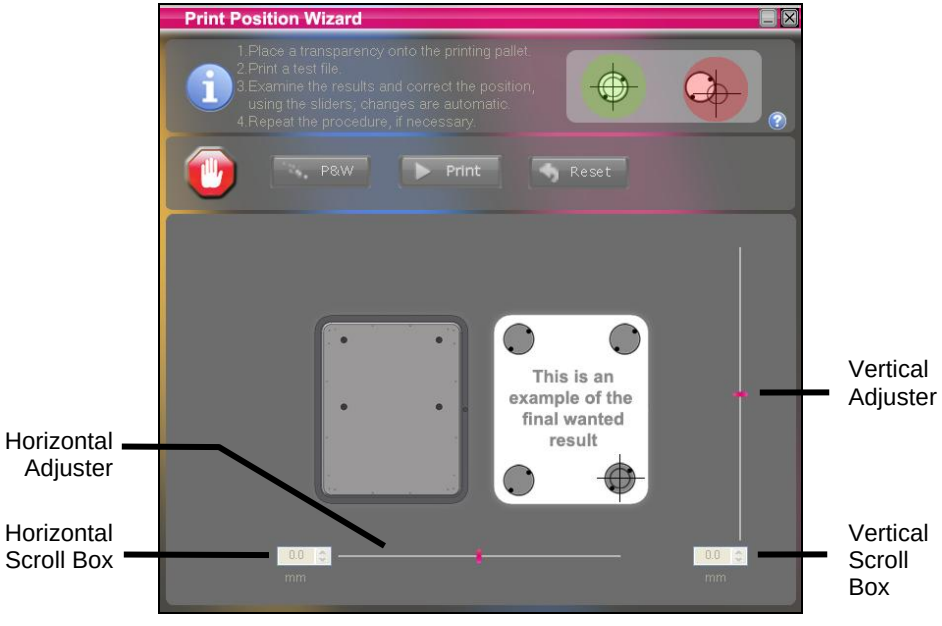


Figure 110: Print Position Wizard

3. Click **P&W** to purge and wipe the print heads.

4. Click **Print**; the printer prints out a Print Position Calibration test.
    - If the printed position appears directly over the bottom-right pallet screw; the print location on the printing pallet is correct.

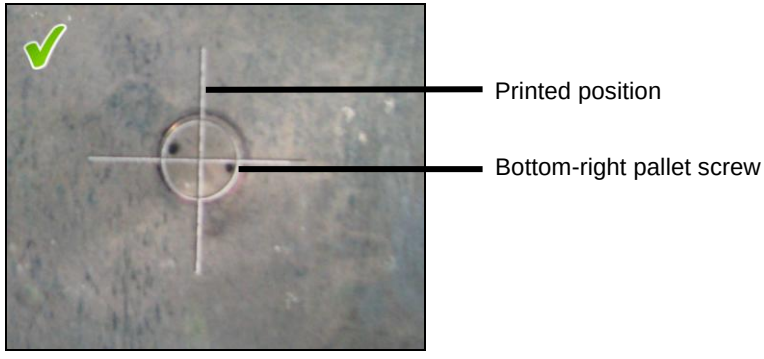


Figure 111: Correct Print Alignment

- If the printed position does not appear directly over the bottom-right pallet screw; the print location on the printing pallet is incorrect and needs to be adjusted.

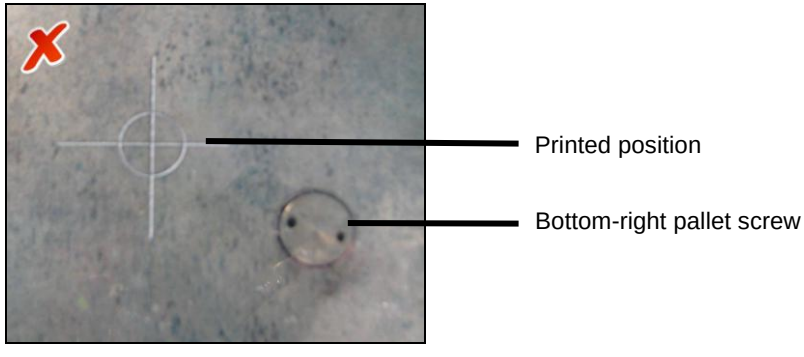


Figure 112: Incorrect Print Alignment

NOTE:

When the printed position does not appear directly over the bottom-right pallet screw, click the **Reset** button and the click the **Print** button; if the print location is still incorrect, continue with the "To calibrate the correct print location on the printing pallet" procedure on page 154.

➢ **To calibrate the correct print location on the printing pallet:**

1. Using a ruler, measure the horizontal and vertical distances from the center of print position to the center of the bottom-right pallet screw.

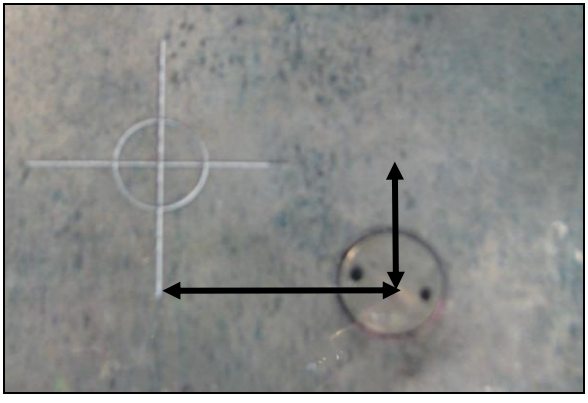


Figure 113: Measuring Horizontal and Vertical Distance

2. Move the adjusters according to the horizontal and vertical distance from the center of the cross-hairs and the center of the pallet screw.

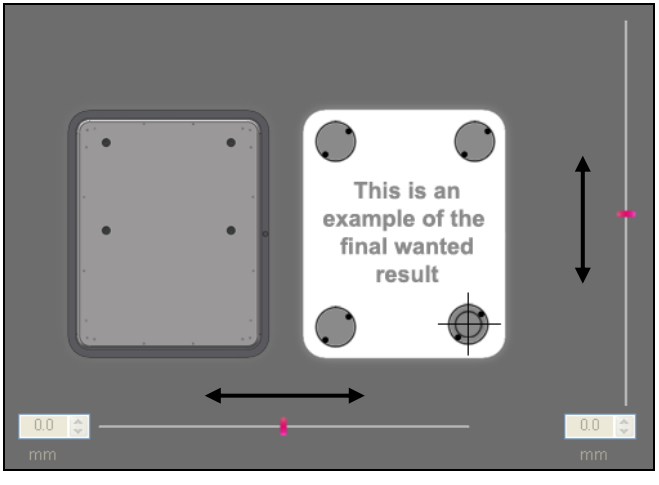


Figure 114: Moving the Adjusters

NOTES:

- The adjusters register the distance in microns. One millimeter = 1000 microns.
- To move the print position, move the sliders in the direction that you want to move the print or enter the appropriate numbers into the adjuster scroll boxes.

3. Erase the printed position from the transparency, using a paper towel.
4. Click **Print** again; the printer prints out a new Print Position test.
5. If the printed position does not appear directly above the bottom-right pallet screw; repeat steps 1 – 5, until the printed position is correct.
6. When you have completed all of the identification and calibration procedures, click the **Close** button.

3 Calibrating Media for Printing: Linearization Wizard

Using a color measurement device and the Linearization Wizard, you can calibrate various types of media for printing with preferred colors and density.

NOTE:

- Currently, Kornit only supports the X-Rite Eye-One automatic densitometer measuring device. To purchase this device, contact your local Kornit representative.
- For your local Kornit representative details, see Troubleshooting on page 202.
- A CD is included with the X-Rite eye-one measuring device. The CD data must be loaded into the printer computer before performing the Linearization wizard procedures for the first time.
- 8-bit files can be printed directly, using the calibration tables created with the Linearization wizard. In many cases, this will enable you to print quality images without the use of third-party RIP software.

➢ **To calibrate the media using an automatic densitometer:**

1. Connect the measurement device to a USB outlet.
2. Select **Use Eye-One densitometer**; the Calibrate button is activated.

Figure 115: Linearization Wizard – Step 1

3. Select a Light Colors option:
   - None (recommended)
   - CM
   - CMYK

4. Click the **Calibration** button; a message dialog box appears and instructs you to put the Eye-One on the white tile and to press the Densitometer Scan button.

NOTE:

If the Eye-One densitometer is not properly connected, the following message appears:

If this message appears, verify that the eye-one is properly connected to the Kornit printer.

5. Align the Eye-One device on the white tile (the white dot in the cradle) and press the Densitometer Scan button on the side of the Eye-One; the message on the Step 1 - Densitometer Type window changes initially to Please Wait and then to Calibration Done.

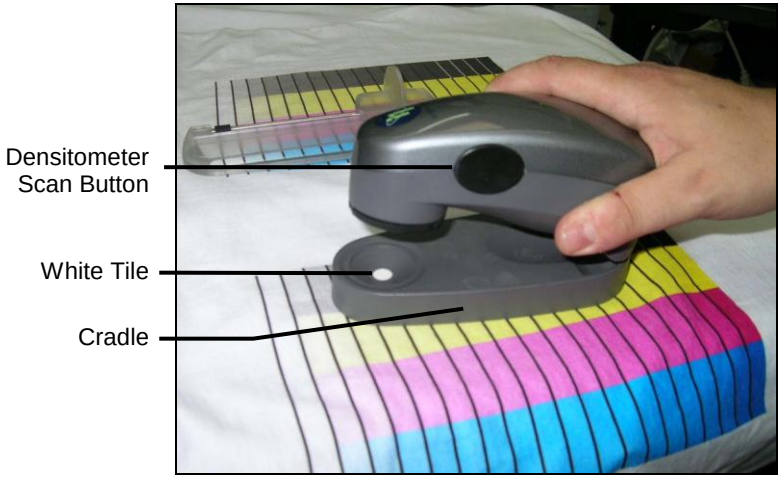


Figure 116: Align the Eye-One on the White Tile

6. Click **Next**; the Resolution and Ink Restriction window appears.

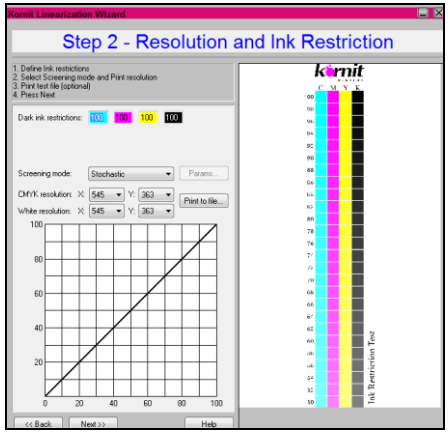


Figure 117: Linearization Wizard – Step 2

7. Define the **Dark ink restrictions**.

NOTE:

Dark ink restrictions enable you to determine at what ink concentration bleeding occurs. Therefore, begin by making a print file where "Dark ink restrictions" has been defined at approximately 85. You can make additional files where "Dark ink restrictions" has been reduced, until you produce a file that has no bleeding.

8. Select the **CMYK resolution** X and Y values from the dropdown menus (e.g. 545).
9. If printing with white ink, select the **White resolution** X and Y values from the dropdown menus.

NOTE:

Define the resolution according to the resolution that you normally use when printing.

The higher the resolution, the more color density is printed and therefore the slower the printing speed. If bleeding starts at under 70% ink coverage, reduce the Print Resolution. Bleeding under 70% means that the resolution that was used in the test was too high for the media and is wasteful (i.e. reduce the resolution from 545 to 455 or from 455 to 363).

10. Open the **Screen mode** dropdown menu and select an option:
    - Stochastic – Recommended
    - Linear
    - Diamond

11. Click **Next**; the Chart Creation window appears.

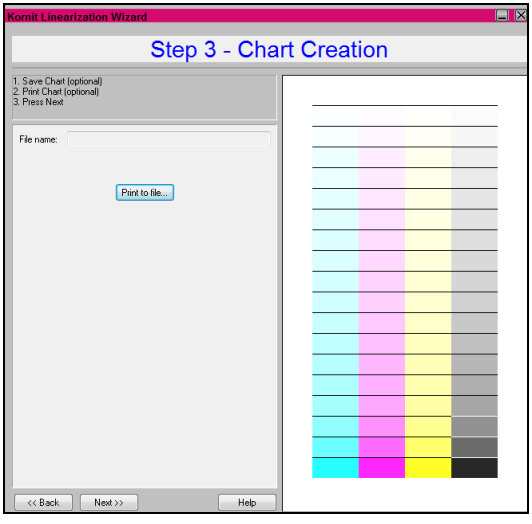


Figure 118: Linearization Wizard – Step 3

12. Click **Print to file**; the Print Parameters window appears.

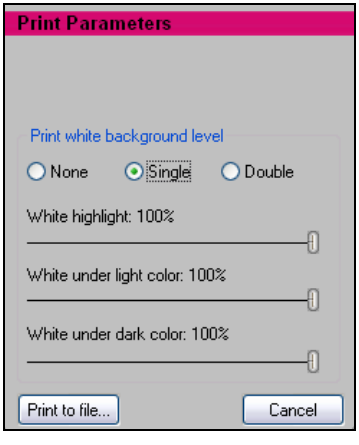


Figure 119: Print Parameters Window

13. Select a Print white background level option:
    - None – No white background will be printed. (recommended)
    - Single – One layer of white background will be printed.
    - Double – Two layers of white background will be printed.

NOTE:

When you select "None" as the White Print Mode option, the following options are disabled:

- White Highlight (%).
- White Under Light Colors (%).
- White Under Dark Colors (%).

When you select "Single" or "Double", the three sliders control the printed white layer:

- The White Highlight (%) slider controls the opacity of the white areas beneath CMYK colors of 0 – 5% opacity.
- The White Under Light Colors (%) slider controls opacity of the white layer that is printed underneath light colors.
    - The White Under Light Colors slider position determines the maximum amount of white that can appear under a CMYK color that has opacity of 5-100%.
- The White Under Dark Colors (%) slider controls opacity of the white layer that is printed underneath dark colors.
    - The White Under Dark Colors slider position determines the minimum amount of white that can appear under a CMYK color that has opacity of 5-100%.

14. If enabled, move the slide tools to specify the opacity of the white areas.

15. Click **Print to file**; the Save As window appears.

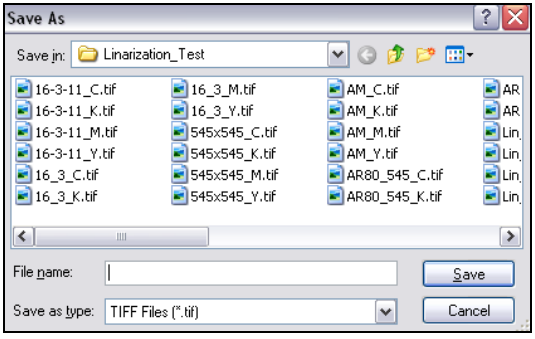


Figure 120: Save As

16. Select the folder in which to save the file, enter the file name and click **Save**; the print file is saved and the Chart Creation window reappears.

17. Minimize the Chart Creation window; the Breeze application regains focus.

18. In the job queue, click **New File** and load the print file into the job queue.

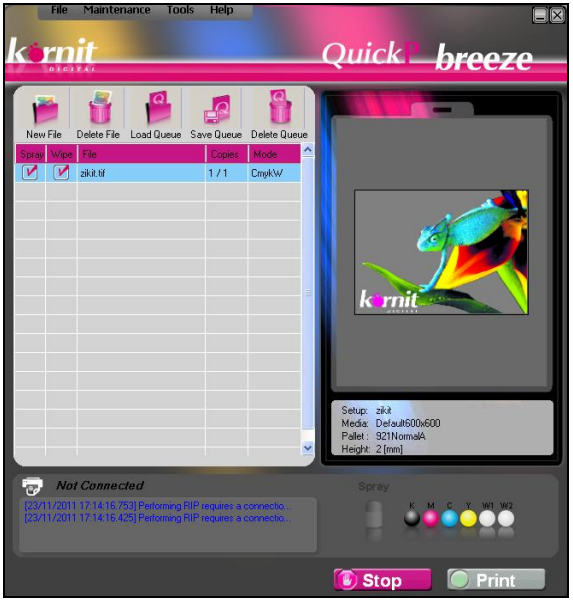


Figure 121: Main Window

19. If necessary, drag and drop the file to the top of the queue.
20. Double-click the print file in the job queue to access the File Details window to enter the following parameters (see File Details Window on page 22):
    - Spray Amount – Select the required spray amount from the dropdown list, according to the selected media type.
    - Media Name – Enter the media name.

NOTE:

- The thickness of the media is predefined for each media.
- The print file is saved as 1Bit image file; therefore, some of the setup parameters have been disabled.

21. Place a garment on the printing pallet and press the green printer Start button; the Linearization test is printed.
22. Dry the garment. See Dryers on page 199.
23. Examine the dried, printed garment to identify the highest ink coverage at which there is no bleeding.
24. If there is bleeding, repeat procedure step 7 on page 159.

NOTE:

It is essential that *all* parameters and conditions for *all* aspects of this test (i.e. file preparation parameters using the linearization wizards and file printing parameters, such as spraying amount on the Kornit) are identical to those of the target jobs for which you will use the calibration table that this test creates.

25. Maximize the Chart Creation window and click **Next**; the CMYK Linearization Density window appears.

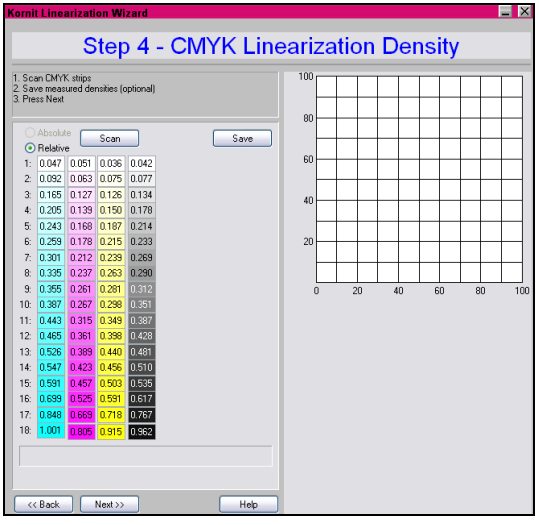


Figure 122: Linearization Wizard – Step 4

26. On a flat surface, place the special Linearization ruler on the garment and press the Densitometer Scan button.

27. In the CMYK Linearization Density window, the color (to be scanned) blinks and a message appears requesting that you scan the first row of the cyan (from light to dark).

28. Place the densitometer on the white area adjacent to the lightest color in the row, press (without releasing) the Scan button, and wait for a beep.

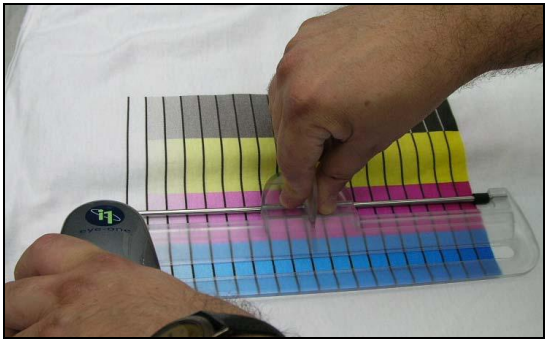


Figure 123: Pressing the Scan button

29. After the beep, slowly slide the densitometer across the colors and at an even speed, until it reaches the white area on the other side (adjacent to the darkest color in the row).

30. Release the Scan button.

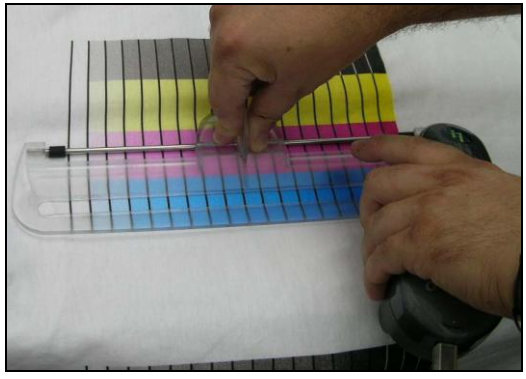


Figure 124: Sliding the densitometer to the right

NOTE:

- You do not hear a "beep" sound when you release the Scan button.
- Slide the densitometer at an even speed to prevent the densitometer from reading a patch twice.
- Each time you perform the measurement and release the densitometer's Scan button, the relevant values are entered into the table featured in the window.
- If a scan fails, the message: **"Scan failed. Please try again"** appears and the same color continues to blink. Repeat steps 29 and 30 until scanning succeeds.
- Make sure that you scan the correct color (i.e. the color that is blinking in the application window).

After you succeed in scanning the current color, the results are displayed in the graph on the right of the window. A message is displayed instructing you to scan the next color, which is now blinking in the window.

Each time you succeed in scanning a color row, move the ruler up to the next color row, according to the instructions displayed in the window.

After all the color rows have been scanned, all the color density measurements are displayed on the left and the results graph is displayed on the right. At the bottom of the left pane, the "Scan done" message appears.

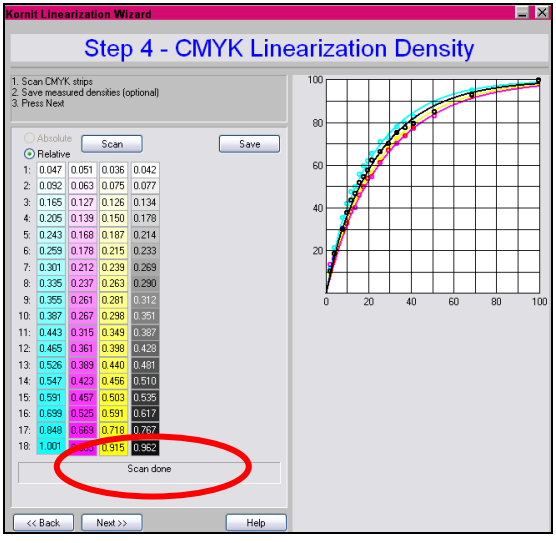


Figure 125: Scan Done Message

31. Click **Next**; the Save Linearization Table window appears.

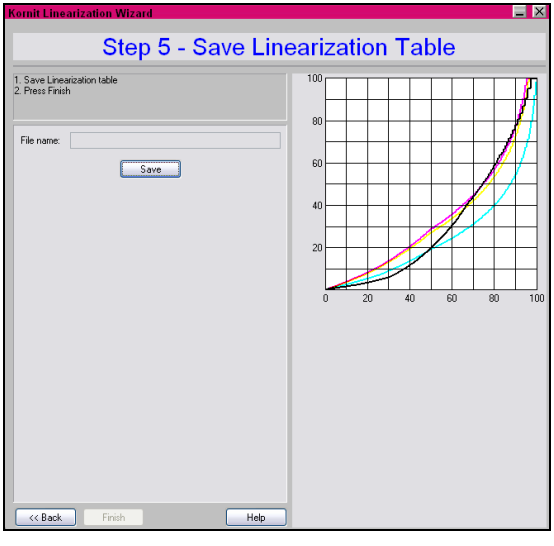


Figure 126: Save Linearization Table

32. Click **Save**; the Save As window appears.

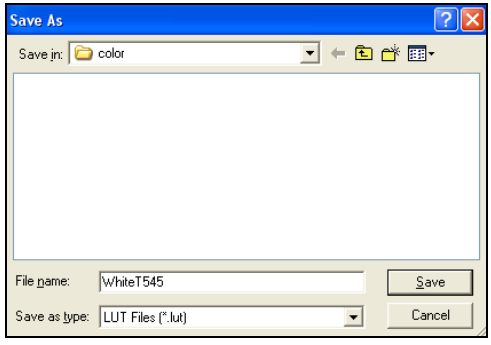


Figure 127: Save As Window

33. In **Save in**, enter the media database folder path (Common/MediaDB).
34. Enter the file name and click **Save**; the file is saved as a .lut (Look Up Table) file type and the window closes.
35. In the Save Linearization Table, click **Finish**; the saved file can now be used when loading job files. For more information on loading job files, see Verifying and Preparing Your Graphic Image Files on page 90.
36. Repeat the Linearization Wizard from the beginning and, for all resolutions in use in your business, redefine the Dark Ink Restrictions. See procedure step 7 on page 159.

➢ Creating a new media using the new LUT definitions:

1. From the Main Window, click **Tools** > **Media Data Base**; the Media Database window appears.
2. Select a (factory) media that reflects the same resolution as that used in the wizard print.
3. Change the media name and from the LUT dropdown menu, select the LUT file saved in procedure step 33 on page 167.
4. Click **Save**; the new media appears in the Setup Details Media database list.

Chapter 8

Maintaining the System

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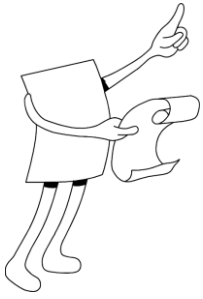
Following the Drop of Success



Chapter 8: Maintaining the System

The Maintaining the System chapter deals with the activities that you can manually perform, in order to test and/or correct system functionality.

Maintaining the System includes:

1 Maintaining the Printer from the LCD Maintenance Panel

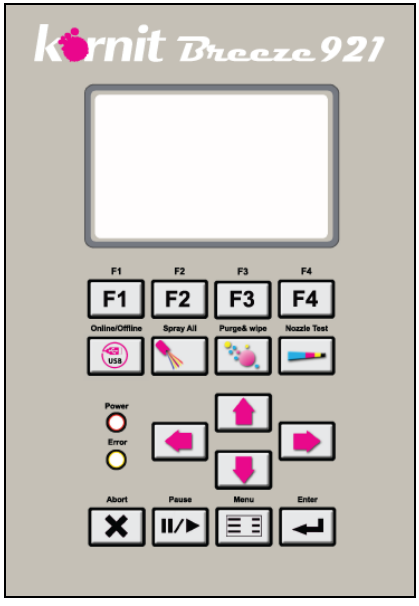


Figure 128: LCD Maintenance Panel

The LCD Maintenance Panel provides you with an ongoing visual report of the printer and enables you to perform various maintenance activities.

The LCD Maintenance Panel is composed of:

- An LCD Report Screen
- Operation Status Indicators
- Command Buttons

1.1 LCD Report Screen

Figure 129: LCD Report Screen

In the LCD Report Screen, you can view:

- System status (i.e. initializing, ready, cleaning).
- Ink system vacuum (NP refers to Negative Pressure).
- Ink system status.

1.1.1 System Status

System Status can be one of the following:

- Initializing – The system is in the "starting up" process.
- Cleaning – The system is performing automatic cleaning procedures before beginning the printing procedures.
- Ready – The system is ready to perform printing procedures.

1.1.2 Ink Subsystem Vacuum Status

When the system is operating, a vacuum (negative air pressure) is applied to the ink subsystem to prevent ink from dripping from the print heads.

The Vacuum status changes color as follows:

- Green color – The vacuum is in range.
- Red color – The vacuum is out of range.

NOTE:

Kp represents kilopascal.

1.1.3 Ink Subsystem Status

The ink subsystem status icons are located on the top-right of the panel. There are three ink subsystem icons types:

-  Full Inkpot – There is sufficient ink to print the next job.
-  Empty Inkpot – There is insufficient ink to print the next job.
- Inkpot Fills and Empties – The ink subsystem is presently being filled with ink.

1.2 Operation Status Indicators

The console panel features the following two indicators:

- Power Indicator – Green light indicates that the system power is on.
- Hardware System Error Indicator – Red light indicates that there is an error in the hardware system.

1.3 Command Buttons

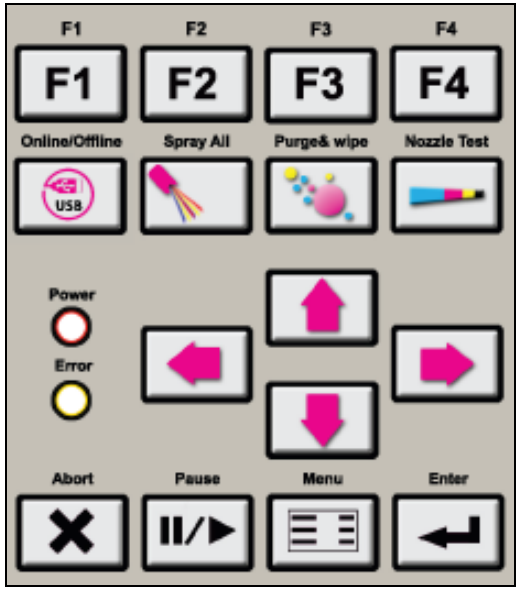


Figure 130: LCD Maintenance Panel Close-up

The console panel features the following command buttons:

- F1 – Activates the Turn Off procedure.
- F2, F3, F4 – Presently not in use.
-  Online/Offline – Disconnects and connects the communication between the printer and the computer.
-  Spray All – Activates the fixation spray system to spray the entire printing pallet surface.
  - When there is a job in the queue, the spray amount is defined in the job.
  - When there is no job in the queue, the spray amount is defined by the default in the Operator window/Spray All window.
-  Purge and Wipe – Activates the Purge and Wipe procedure. See Purging and Wiping the Print Head Nozzles on page 179.
-  Nozzle Test – Initiates a Nozzle Test. See Performing a Nozzle Test on page 68.

NOTE:

The Online/Offline, Spray All, and Nozzle Test command buttons are enabled only when the printer is connected to the computer that is running the Kornit application.

The Purge & Wipe command button is always enabled.

-  Abort – Stops the printing process. You cannot restart from where you left off.
-  Pause – Stops the printing process. You can restart from where you left off.
-  Menu – Click to replace the LCD Report Screen with the LCD Maintenance Panel menu. See LCD Maintenance Panel Menu Map on page 175. Click a second time on the Menu button to regain the LCD Report Screen.
- Menu Direction Buttons – Enable you to navigate in the LCD Maintenance Panel menu.
  - → – Displays further menu options.
  - ← – Returns you to the master option.
  - ↑ – Enables moving up in the menu.
  - ↓ – Enables moving down in the menu.
  - Enter – Accepts the LCD Maintenance Panel menu selection.
- Printing Pallet and Print Head Assembly Direction Buttons:
  - → – Enables moving the print head assembly to the right.
  - ← – Enables moving the print head assembly to the left.
  - ↑ – Enables moving the printing pallet away from you.
  - ↓ – Enables moving the printing pallet towards you.

NOTE:

When moving the printing pallet from the Capping or Spit position, the maintenance tray is first automatically lowers to the Down position.

1.3.1 LCD Maintenance Panel Menu Map

The diagram below represents the LCD menu structure.

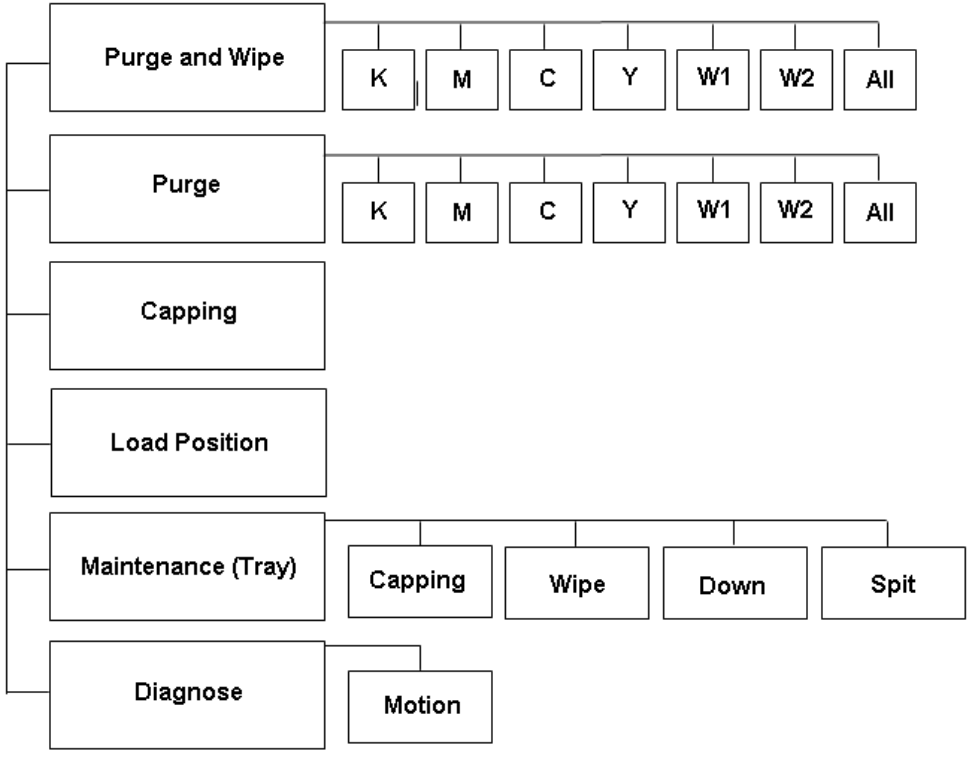


Figure 131: LCD Maintenance Panel Menu Map

2 Maintaining the Printer from the Operator Window

From the Operator window, you can perform:

- Maintaining the Ink System on page 177.
- Maintaining the Spray System on page 181.
- Maintaining the Axes System on page 183.

➢ **To access the Operator window:**

1. From the Main Window, click **Maintenance** > **Operator**; the Operator window appears.

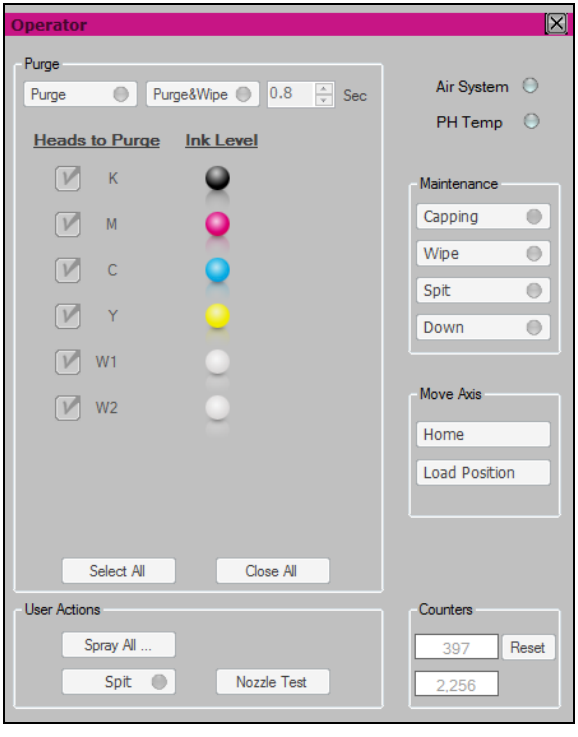


Figure 132: Operator Window

2.1 Maintaining the Ink System

The ink pumps draw the ink from the ink bottles, along the ink paths, and into the secondary ink tanks where floater sensors monitor the level of ink in each tank. From the secondary tanks, the ink flows to the print heads.

During the printing process, the system automatically and constantly fills the secondary ink tanks, enabling a smooth and steady flow of ink to the print heads.

NOTE:

To reset the automatic refill system, see Ink Reset in Head Properties on page 44.

However, certain procedures, such as Purge, use large amounts of ink and can cause the ink levels to rapidly drop.

From the Operator window, you can monitor the levels of the Secondary Ink Tanks at all times and perform the following manual ink procedures.

- Purging the Print Head Nozzles on page 178.
- Purging and Wiping the Print Head Nozzles on page 179.
- Spitting Ink through the Print Head Nozzles on page 180.
- Nozzle Test. See Performing a Nozzle Test on page 180.

2.1.1 Purging the Print Head Nozzles

Force small amounts of ink out through the nozzles to clear the print heads.

➢ **To purge the print head nozzles:**

1. In the Operator window, click the checkboxes to select the print heads that you want to purge or click **Select All**, to select all of the print heads.

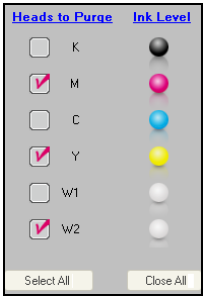


Figure 133: Ink Valve Controls

2. In the Sec box 

, set the purge time to 0.8 seconds.

IMPORTANT NOTE:

Do not enter a purge time greater than 2.5 seconds.

NOTE:

If you have Operator privileges, the Sec box appears inactive. To make purge time changes, you must have Technician privileges. See Activating the Technicians Mode on page 112.

3. Click **Purge**; the green button indicator light appears and the following occurs:
   a. The print heads move along the Scan axis to a position above the maintenance tray.
   b. The maintenance tray moves up to the print heads, leaving a 2mm gap.
   c. Pressure is applied to the ink tanks, pushing the ink from the tanks to the print heads for the allotted time.

2.1.2 Purging and Wiping the Print Head Nozzles

Force small amounts of ink out through the nozzles to clear the print heads. Following a purge, move the print heads across the wipers to remove excess ink and prepare the print heads for printing.

➢ **To purge and wipe the print head nozzles:**

1. In the Operator window, click the checkboxes to select which print heads to purge or click **Select All**, to select all of the print heads.
2. In the Sec box 

, set the purge time to 0.8 seconds.

IMPORTANT NOTES:

- Do not enter a purge time greater than 2.5 seconds
- If you have Operator privileges, the Sec box appears inactive. To make Purge time changes, you must have Technician privileges. See Activating the Technicians Mode on page 112.

3. Click **Purge** & **Wipe**; the green button indicator light appears and the following occurs:
   a. The print heads move along the Scan axis to a position above the maintenance tray.
   b. The maintenance tray moves up to the print heads, leaving a 2mm gap.
   c. Pressure is applied to the ink tanks, pushing the ink from the tanks to the print heads for the allotted time.
   d. The maintenance tray moves to the wiping position (the wipers are level with the print heads).
   e. The print heads move across the wipers to clean the excess ink.

2.1.3 Spitting Ink through the Print Head Nozzles

The Spit procedure keeps the print heads unclogged and moist for printing. During the procedure, the print heads move to the service area and the maintenance tray moves to the spit position under the print heads, to collect the ink that is fired.

NOTE:

The printer automatically performs the spit procedure after a predetermined time elapses between printing procedures.

➢ **To spit ink through the nozzles:**

In the Operator window, click **Spit**; the following occurs:

1. The print heads move along the Scan axis to a position above the maintenance tray.
2. The maintenance tray moves to the Spit position.
3. The print heads periodically release (spit) ink.

2.1.4 Performing a Nozzle Test

When you suspect that some nozzles are clogged or not working properly, you can perform a Nozzle Test. See Performing a Nozzle Test on page 68.

2.2 Maintaining the Spray System

From the Operator window, you can manually perform the following spray activities:

- Spray All – Spray the entire printing pallet area with the printing spray.
- Spray Current Job Area – Spray only the printing area defined by the first job in the job queue.

➢ **To spray the entire printing pallet area:**

1. Click **Spray All**…; the Spray All window appears displaying spray amount, wipe, and spray area settings as defined in the Job Setup.

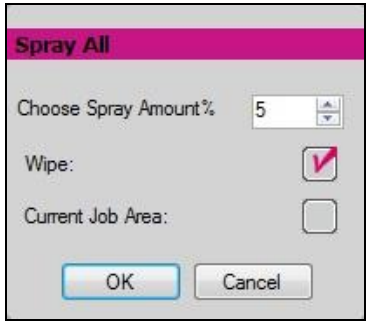


Figure 134: Spray All Window

2. If required, change the Choose Spray Amount % and Wipe settings.
3. Clear the **Current Job Area** checkbox.
4. Click **OK** to spray the entire printing pallet area; the printing pallet moves into the spray position and the system sprays the printing pallet area according to the Spray All settings.

➢ **To spray the current job area only:**

1. Click **Spray All**…; the Spray All window appears displaying spray amount, wipe, and spray area settings as defined in the Job Setup.

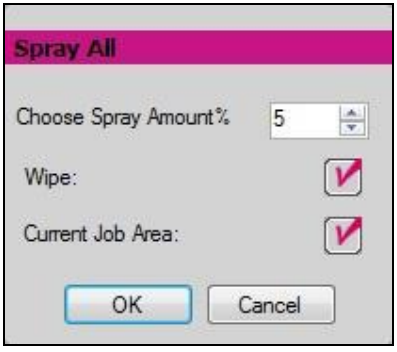


Figure 135: Spray All Window

2. If required, change the Choose Spray Amount % and Wipe settings.
3. Select the Current Job Area checkbox.
4. Click **OK** to spray the current job area; the printing pallet moves into the spray position and the system sprays the job area according to the Spray All settings.

2.3 Maintaining the Axes System

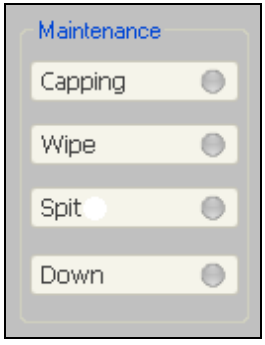


Figure 136: Maintenance Panel

Figure 137: Move Axis Panel

From the Operator window, you can activate the various axes and manually:

- Move the printing pallet to the following positions:
  - Home
  - Load
- Move the print heads to the following positions:
  - Capping
  - Spit
- Move the maintenance tray to the following positions:
  - Capping
  - Wiping
  - Spit
  - Printing

2.3.1 Moving the Axes to the Home Position

You can move the printing pallet and the print head carriage to their respective Home positions.

➢ **To move the printing pallet and the print head carriage to the Home position:**

In the Operator window, click **Home**; the printing pallet moves to the backside of the printer and the print head carriage moves to the extreme right of the printer.

2.3.2 Moving the Printing Pallet to the Load Position

The load position is the printing pallet position closest to you. This is the printing pallet position for loading the garment.

➢ **To move the printing pallet to the load position:**

In the Operator window, click **Load Position**.

2.3.3 Moving the Print Head Carriage to the Capping Position

You can move the print head carriage across the Scan axis to the Capping position.

➢ **To move the print head carriage to the capping position:**

In the Operator window, click **Capping Position**.

2.3.4 Moving the Print Head Carriage to the Spit Position

You can move the print head carriage across the Scan axis to the Spit position.

➢ **To move the print heads to the Spit position:**

In the Operator window, click **Spit Position**.

2.3.5 Moving the Maintenance Tray to the Capping Position

In the Capping Position, the printing pallet moves to the load position, the print head carriage moves to a position above the maintenance tray and the maintenance tray rises up until it closes on the print heads.

➢ **To raise the maintenance tray to the capping position:**

In the Operator window, click **Capping**.

2.3.6 Moving the Maintenance Tray to the Wipe Position

In the Wipe position, the printing pallet moves to the load position, the print head carriage moves to a position above the maintenance tray, and the maintenance tray moves either up or down until the wipers are level with the print heads.

➢ **To raise the maintenance tray to the wipe position:**

In the Operator window, click **Wipe**.

2.3.7 Moving the Maintenance Tray to the Spit Position

In the Spit position, the printing pallet moves to the load position, the print head carriage moves to a position above the maintenance tray, and the maintenance tray moves either up or down to a level below the Wipe position.

2.3.8 Moving the Maintenance Trays to the Down Position

In the Down position, the printing pallet moves to the load position, the print head carriage moves to a position above the maintenance tray, and the maintenance tray lower down to the lowest position on the Z axis.

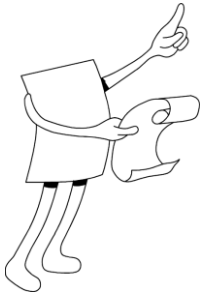
➢ **To lower the maintenance trays to the down position:**

In the Operator window, click **Down**.

Chapter 9

Appendix

kornit DIGITAL
Following the Drop of Success



Chapter 9: Appendix

The appendix provides you with information on the following subjects:

In addition, the appendix provides you with the following information and tools for maintaining your system:

1 Hot Folder

The Kornit Breeze supports automatic file loading from a predefined Hot Folder.

Towards this end, by default, the following four Hot Folders are located inside the Common folder.

- Hot Folder – Triggers the software to "pull" the file. The file is erased from the hot folder and loaded to the printer job queue.
- Hot Folder Working – The loaded file is saved in the hot folder until the printing process is completed or until the file is erased from job queue.
- Photoshop Working – The file is automatically saved in this folder when Photoshop is working on the file. The file is deleted from the folder after it is printed or deleted from queue.
- Hot Folder Error – Files that cannot be loaded to the job queue are sent to this folder.

NOTE:
You can reset the hot folder path from the Parameters Handling window. See Handling Parameters on page 125.

Files that have been sent to the input hot folder are loaded automatically and will be ripped according to the parameters in the file name.

Kornit Breeze samples the folder every few seconds. Upon identification of a new file, the file is automatically loaded, providing that the file name matches the defined pattern.

The files are loaded in FIFO order (First In First Out). If Kornit Breeze fails to load a specific file due to a problem with the file name, for example if the setup name is not correct, the file is moved to an error folder (C:\Program Files\Kornit Digital\QuickP\Error).

1.1 Naming the Image File

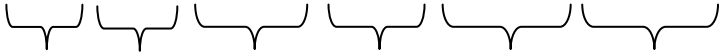
According to whether or not the file was prepared in Kornit's QuickP Designer software, Breeze provides you with two naming options:

- The file not prepared in the QuickP Designer.
- The file prepared with the QuickP Designer.

1.1.1 File Not Prepared in QuickP Designer

File names must match the following structure:

setup_table_filename_copies_xshftmm_yshiftmm.tif



	Parameter	Refers to:
1	Setup	A setup file that was defined in Kornit Breeze for a specific type of media (white/dark garment etc).
2	Table	A printing pallet that is available to your Kornit printer and which has been defined in your Kornit Breeze software.
3	Filename	The name of the image file.
4	Copies	The number of copies to be printed.
5	Xshiftmm	The distance in millimeters from the left side of the table's printable area to the left edge of the image to be printed.
6	Yshiftmm	The distance in millimeters from the top side of the table's printable area to the top edge of the image to be printed.

Each of the parameters is described in further detail in the subsequent sections.

Files are saved in the .png format which is a compressed file that supports transparent files – an essential property for printing on dark textiles. When a file is saved, the size of the image and its resolution are automatically saved with it. This information is used by the Kornit printer when the file is loaded for printing.

Example File Name:
LightTNormal545_Normal_Horseimage_5_10_40.png

Indicates a transparent PNG file name (Horseimage) using a predefined setup called LightTNormal545. It will print 5 copies on a Normal sized printing pallet with the image location being shifted right 10 mm and down 40 mm from the table top left corner.

1.1.2 Files Prepared in QuickP Designer

When preparing files using QuickP Designer, you have two options for processing:

- 8-bit
- 1-bit

Processing 8-bit Files

When you process the file as an 8-bit file, the following two files (with identical names) are created:

- File_name.tif – The image file.
- File_name.ksf – The Job Ticket.

Both files should be copied to the hot folder.

Processing 1-bit Files

When you process the file as a 1-bit file, the following six files (with identical names) are created:

- File_name_C.tif, File_name_M.tif, File_name_Y.tif, File_name_K.tif, File_name_W.tif – Separation files.
- File_name.ksf – The Job Ticket.

All files should be copied to the hot folder.

NOTE:

The files are loaded in FIFO order (First In First Out). If the application fails to load a specific file due to a problem with the file name or the .ksf file, the file is moved to an error folder.

1.1.3 Setup

Breeze setup files define the media. According to the setup file selected for a specific image file, the printer prepares/processes the file after it has been uploaded to the hot folder.

The program must know to select the correct setup file according to the selected garment.

The Factory Setup Options include:

- LightTNormal545
- LightTMidContrast545
- LightTHighContrast545
- LightTManual545
- LightTSkinTone545
- BlackManual545x454
- BlackTHigh545x454
- BlackTHighInterlace545x454
- BlackTHighStroke545x454
- BlackTMid545x454
- BlackTMidFullFrame545x454
- BlackTMidFullFrameInterlace545x454
- DarkT545x454
- DarkTInterlace545x454

1.1.4 Printing Pallet

The selected printing pallet determines the maximum printable area.

The printing pallet parameter should contain the name of the printing pallet on which the selected garment should be printed and should match one of the printing pallets defined in your Breeze system.

The program needs to automatically relate each garment size that can be selected to one of the available printing pallets.

The position of the image on the garment is calculated according to the distance of the top-left corner of the image from the top-left corner of the table printable area. For more details on calculating the position, see Xshiftmm and Yshiftmm on page 194.

The pallet type should match the Kornit printing pallet names.

Available printing pallet types:

- Normal (Standard) pallet.
- Children's pallet.

NOTE:

Before sending a processed file to the machine, make sure that the same pallet type is currently defined in the system.

1.1.5 Filename

The filename parameter should be the order number and should include an indication of the exact garment type required (i.e. color, size, style of the garment, etc).

The order details should also be sent to the warehouse. Receipt of the order number enables the warehouse manager to select the correct garment (color/size/style) to be loaded on the machine.

Kornit recommends that you work with barcode producing software and a barcode reader. The barcode should be generated together with the order and should also include the garment details (size, color, style, etc) and the barcode reader should be connected to the Kornit printing station computer. This ensures that the correct image file will be loaded and printed on the correct garment.

1.1.6 Copies

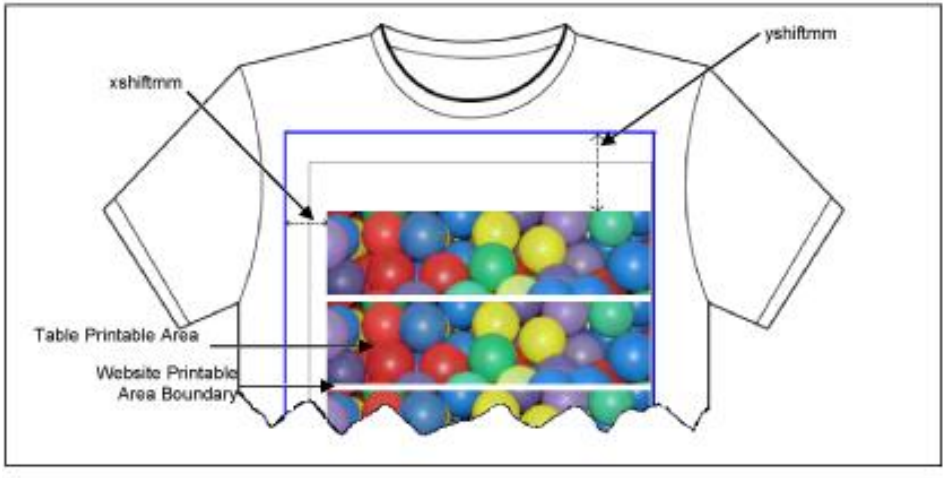
The copies parameter indicates the number of copies of the selected image to be printed.

1.1.7 Xshiftmm and Yshiftmm

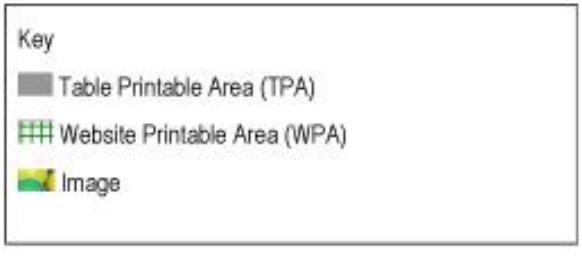
Xshiftmm – The distance in millimeters from the left side of the printing pallet printable area to the left edge of the image to be printed.

yshiftmm – The distance in millimeters from the top side of the printing pallet printable area to the top edge of the image to be printed.

Xshiftmm = 0 and yshiftmm = 0 Indicates that the image starts printing in the top left corner of the table printing area, not necessarily the space allocated in the website.



Examples for Calculating the xshiftmm and yshiftmm Values



2 Printing Pallets

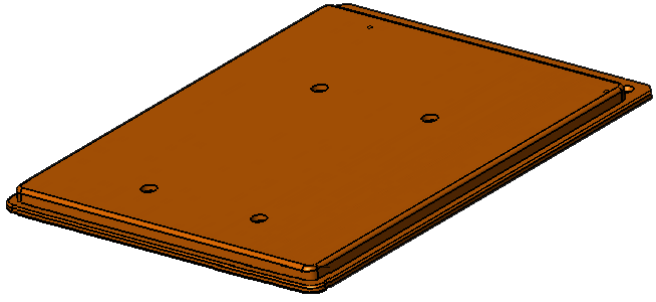


Figure 138: Standard Printing Pallet

The Printing Pallets section provides you with the following information:

2.1 Printing Pallet System Description

You install the printing pallet on the pallet base.

Figure 139: Pallet Base

Figure 140: Installed Pallet

The printing pallet system is comprised of the following components:

- Pallet Base – Fixed, flat surface onto which the printing pallet is installed. The pallet base has four gold-colored, threaded, screw holes that align with the screw holes on each printing pallet. These screw holes enable you to firmly fix the printing pallet to the pallet base.
- Pallet Screws – Fasten the printing pallet to the pallet base by four special screws. Loosen or tighten these screws with a 4 mm Allen Key.
- Magnetic Pallet Frame – Device for holding the garment in place during spraying and printing.

CAUTION!

Do not use force when tightening the printing pallet as over-tightening can cause the printing pallet to become unleveled.

2.2 Pallet Types

The Breeze can print with the following printing pallets:

- (Normal) Standard Pallet
- Children's Pallet

2.2.1 Normal (Standard) Pallet

The Normal (Standard) Pallet (P/N 33-TABL-0002) is for printing on t-shirts and garments that fit the printing pallet size.

Maximum Printing Area:

- Width: 365mm (14.37″)
- Length: 460mm (18.11″)

NOTE:

Printing pallet size is about 18 mm longer (in width and in height) than the maximum allowed printing area.

2.2.2 Children's Pallet

The Children's Pallet (PN: 33-TABL-0006) is used for printing on children-sized T-shirts and garments.

Maximum Printing Area:

- Width: 272mm (10.8")
- Length: 270mm (10.6")

2.3 Replacing the Printing Pallet

You can replace the printing pallet with a new printing pallet or you can exchange the Standard and the Children's pallets.

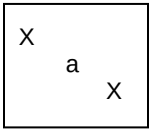
NOTE:

Replacing a printing pallet is an uncomplicated procedure but we recommend that you work carefully and that you do not use force.

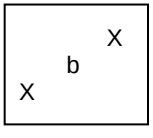
➢ **To replace a printing pallet:**

1. Remove the magnetic pallet frame.
2. Remove all of the pallet screws using a 4mm Allen Key (there is no ordered sequence).
3. Lift the printing pallet off the pallet base and store in a protected location.
4. Place the required printing pallet onto the pallet base.
5. Look though the pallet screw holes to verify that the gold-colored screw holes of the base are visible and aligned.
6. Insert all four screws, without tightening them.
7. Gently, but firmly tighten:

   a. The left-rear screw (furthest from you on the left) and then the right-front screw (closest you and on right).



   b. The right-rear screw (furthest from you on the right) and then the left-front screw (the closest to you and on the left).



NOTE:

The gold-colored screw holes on the pallet base are precisely leveled and aligned when the system is assembled. Precise positioning is very important for maintaining high printing standards. Therefore, do not use force when tightening the pallet screws.

3 Dryers

After printing, immediately remove the garment from the printing pallet and place it on the dryer. See Unloading a Garment from the Printing Pallet on page 78.

NOTE:

- The average drying time suitable for most types of garments is 4 minutes, at 160°C (350°F).
- Certain garment types and colors can require changing the drying system and parameters (e.g. images printed with white ink require more drying time).

The Dryer section includes:

3.1 Adjusting the Drying System and Parameters

You can adjust the drying system and parameters for garment types and colors that require special drying times.

For instruction on adjusting your specific drying system, consult your dryer supplier.

3.2 Dryer Specifications

We recommend that you use dryers that meet the following specifications:

- Gas oven (recommended) or electric oven without IR (with hot air).
- Minimum chamber length of 3m (10 feet). A chamber length of 4m is recommended.
- Chamber temperature of 160°C (350°F) is required on belt.
- Belt speed control.

3.3 Recommended Dryers

Model	Company	Web site
Md8	Interchangecorp - USA	www.interchangecorp.com
Jetstream	Adelco UK	www.adelco.co.uk
Triple e oven	Calmat	www.calmatflash.com

3.4 Testing Dryer Suitability

Before using the dryer for the first time, or before mass-printing, you should test the performance of the dryer.

➢ **To test dryer suitability:**

Print a garment using all the standard procedures and parameters that you will be using on an ongoing basis and then:

- Smell the image – If you can smell the fixation spray, the image has not dried.
- Chafe the image with a piece of material – If ink rubs off on the material, the image is not dry.
- Wash the garment to make sure that the image does not fade.
- Examine for burning. See Burning on page 201.

3.4.1 Burning

A burnt image will have a yellowish color or can be cracked.

➢ **To correct burning:**

1. Adjust the temperature to 160°C (350°F).
2. Dry a second garment; if the image is still burnt, or if the image cracks when stretching the garment, reduce the drying temperature for this type of garment.

4 Troubleshooting

Troubleshooting provides you with solutions to problems that can arise while performing the printing procedure.

Troubleshooting includes:

If problems continue, contact your local Kornit representative:

Kornit Digital Ltd **(Head Office)** 12 Ha`Amal St., Afek Park, Rosh-Ha`Ayin 48092, Israel	**Tel:** +972.3.908.5800 **Fax:** +972.3.908.0280 **Email:** support@kornitics.com
Kornit Digital **North America Inc** 9077 North Deerbrook Trail, Brown Deer, WI 53223, USA	**Toll Free:** 888.456.7648 **Tel:** +1.414.354.0905 **Fax:** +1.414.354.0906 **Email:** supportkna@kornitics.com
Kornit Digital **Asia Pacific Ltd** Unit 31, 12/F., HITEC 1 Trademart Drive, Kowloon Bay, Hong Kong	**Tel:** +852.2.174.4100 **Fax:** +852.2.174.4400 **Email:** supportap@kornitics.com
Kornit Digital **Europe GmbH** Halskestrasse 29, Ratingen, D–40880, Germany	**Tel:** +49.2102.579.4075 **Fax:** +49.2102.166.3538 **Email:** supporteu@kornitics.com

4.1 Opening Clogged Nozzles

Perform the following activities, in the order that they are listed, until the nozzles are unclogged:

1. Performing the Spit Procedure on page 204.
2. Performing Print Head Purge on page 205.
3. Manually Performing Purge and Wipe on page 206.
4. Repeating the Nozzle Test on page 208.
5. Performing a Long Purge - Technician on page 209.

NOTE:

- If you have completed all procedures and the nozzles are still clogged, contact your local Kornit support representative.
- For local Kornit support representative details, see Troubleshooting on page 202.

4.1.1 Performing the Spit Procedure

Spit is a procedure that ejects ink through the print heads to keep them unclogged and moist. The system automatically initiates Spit after a predetermined time elapses between printing jobs but you can also manually initiate the procedure to unclog nozzles.

➢ **To initiate the Spit Procedure:**

1. From the Main Window, click **Maintenance** > **Operator**; the Operator window appears.
2. Click the **Spit** button; the Spit procedure is initiated.

4.1.2 Performing a Nozzle Test

To perform a nozzle test, see Performing a Nozzle Test on page 68.

4.1.3 Performing Print Head Purge

After you have determined which print heads are clogged, repeatedly purge the clogged print heads until you see that ink is dripping freely from the print heads and into the maintenance tray.

➢ **To purge a print head with clogged nozzles:**

1. From the Main Window, click **Maintenance** > **Operator**; the Operator window appears.

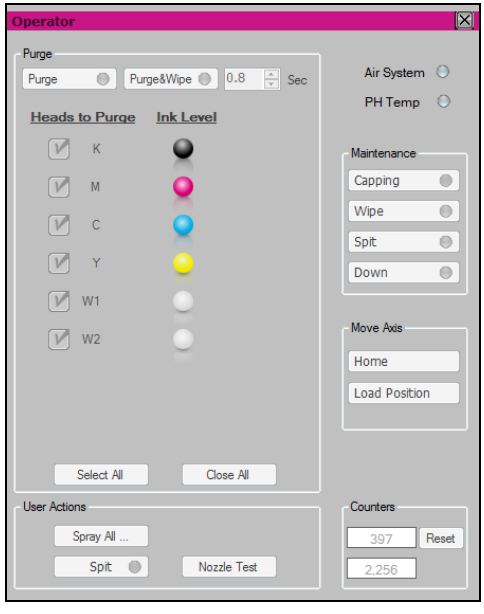


Figure 141: Operator Window

2. Select the **Heads to Purge** checkboxes of the print heads that you want to purge.
3. Click the **Purge** button; the green indicator light appears during the purging process (you can simultaneously purge all the print heads or you can purge each print head separately).

NOTE:

You can repeat the Purge procedure several times.

4.1.4 Manually Performing Purge and Wipe

The Purge and Wipe procedure is used for cleaning the print heads (e.g. to open a clogged nozzle) and/or to prepare the print heads for printing.

➢ **To manually perform purge and wipe:**

1. Select the **Heads to Purge** checkboxes of the print heads that you want to purge.

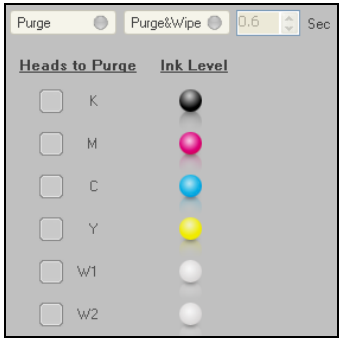


Figure 142: Purge and Wipe Controls

2. In the Sec (time) field, set the amount of time (in seconds) for the purging procedure.
3. Click **Purge and Wipe**:
   - The maintenance tray moves up until the wipers are level with the print heads.
   - Ink is forced through the print heads.
   - The print heads move across the wipers and are wiped clean of excess ink.

NOTE:

- The green indicator light appears during purging and wiping.
- We recommend purging and wiping after all maintenance procedures.
- When you perform Purge, you can select a long time-period (in the Sec field). In contrast, do not perform Purge and Wipe for long periods.

4.1.5 Verifying Unclogged Print Head Nozzles

Each print head contains a row of printing nozzles. After purging the Pint Head nozzles, verify that the nozzles are unplugged.

➢ **To verify that the print head nozzles are unplugged:**

1. Visually examine the print heads; when you successfully purge a print head, you can see a stripe of ink of that color appearing along the length of the print head.

Figure 143: Stripe of Ink on Print Heads

2. Wipe the nozzles with a lint-free wipe.
3. Repeat the Nozzle Test to verify that the problem is resolved. See Repeating the Nozzle Test on page 208.

NOTE:

If the stripe of ink does not appear, there may be a more serious problem than a clogged nozzle, or there may be air in the system. The following section describes how to determine the cause of the problem.

4.1.6 Repeating the Nozzle Test

Perform the Nozzle Test. See Performing a Nozzle Test on page 204:

- If the Nozzle Test no longer shows missing printed dashes, you have resolved the problem.
- If the Nozzle Test still shows missing printed dashes, determine if the:
  - Missing nozzles are in a different place.
  - Missing nozzles are in the same place.

Missing Nozzles in a Different Place

A Nozzle Test that shows the missing nozzles, in a different place than the initial Nozzle Test, indicates that there is air in the system.

Missing Nozzles in the Same Place

A Nozzle Test that shows the missing nozzles in the same place as the previous Nozzle Test indicates a problem specific to the nozzle area that does not show ink.

Perform another purge of the print head with the problematic nozzles and then wipe the nozzles with a lint-free wipes.

4.1.7 Performing a Long Purge - Technician

When you (the technician) determine that there is air in the system and you have not yet cleared the air from the system, perform a long purge to expel air through the manual purge valve.

NOTE:

The timing of various actions during the long purge procedure is essential. Therefore, we advise that you first read through this entire procedure, and only then perform the procedure.

➢ To perform a long purge:

1. Remove the print head cover.
2. From the Main Window, click **Maintenance** > **Operator**; the Operator window appears.
3. In the Purge pane:
   - Clear all of the Heads to Purge checkboxes of the print heads that you do not want to purge.
   - Select all of the Heads to Purge checkboxes of the print heads that you want to purge.

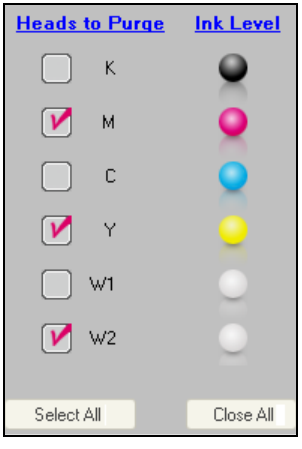


Figure 144: Purge Pane

4. In the Sec field, set the time to 2 (seconds).

5. Manually open the Manual Purge Valve of one of the print heads that you want to purge.

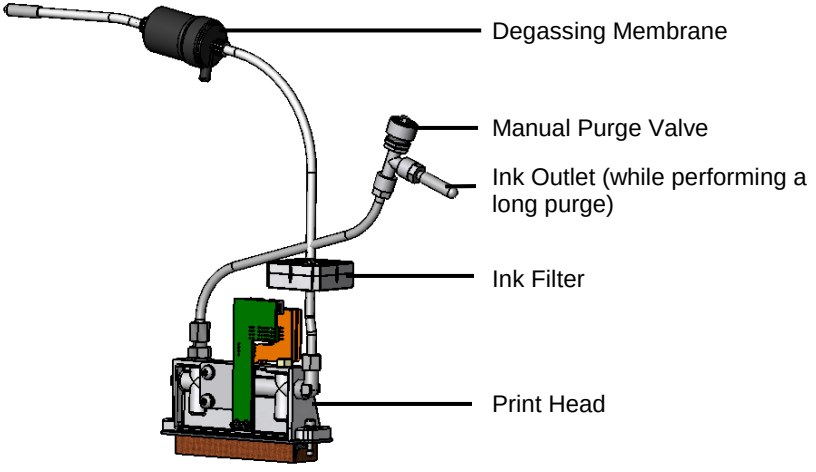


Figure 145: Image of Purge Valves

NOTE:
Keep your hand on the Manual Purge Valve, ready to close it off.

6. Click the **Purge** button; the green indicator light appears during purging.
7. After 1.5 seconds, close the Manual Purge Valve; you should see ink coming out of the print head.

NOTE:
Do not leave the Manual Purge Valve open for longer than 2 seconds, and most important, not more than the 2 seconds of the purge duration. Otherwise, air can get into the system again and you will have to repeat this process.

8. Repeat steps 5 - 7 for each selected print head.
9. Reset the purge duration time back to the original setting.
10. Perform a Nozzle Test. See Performing a Nozzle Test on page 68.

4.2 Fixing Bleeding Images

Bleeding has occurred when:

- There is a lack of sharpness in the edges of the printed white layer.
- One color runs into another color.
- Ink pulls are created.
- There is fogginess around the image.
- More registration
- The image is pale.
- There is a hard feel on the final size.
- Smell.
- The image cracks when the garment is stretched.
- There is yellow on white shirts.

When bleeding has occurred with an image, first determine whether this is happening to all images or only to specific images.

When a specific image is bleeding, perform each of the following solutions until the problem is solved:

1. Increase the Fixation Spray Amount – The fixation spray increases the adhesiveness of the image to the garment and prevents it from being absorbed, thus producing a smooth and vivid image.
2. Decrease the Ink Percentage – Examine the ink percentage that was used to prepare the image file to determine if it was too high. How do you know??
3. Verify that 100% Black is used – Make sure that the black separation that was used to prepare the file is 100% black and not a composite of CMYK. How do you do this??

NOTE:

A composite of 100% black, 35% cyan and 35% magenta can also be used.

➢ **To increase the fixation spray amount:**

1. From the job queue, double-click the target job; the File Details window appears.

Figure 146: File Details Window

2. Increase the number in the **Spray Amount** box.
3. Click **OK** to save the new setting.

NOTE:

This change in spray amount will only be applied on this image. For Setup spray changes, use the Media Database window.

4.3 Manually Filling the Secondary Ink Tanks

After manually performing a purge or when there is a malfunction in the system, the system can indicate low ink levels. In such cases, press the Ink Reset button in the Technician/Head Properties window.

If the ink levels are not full and you have Technician privileges, you can manually fill the Secondary Ink Tanks from the Technician window.

➢ **To manually fill the Secondary Ink Tanks:**

1. Verify that the ink bottles are full.
2. From the Main Window, click **Maintenance** > **Technician**; the Technician window appears.

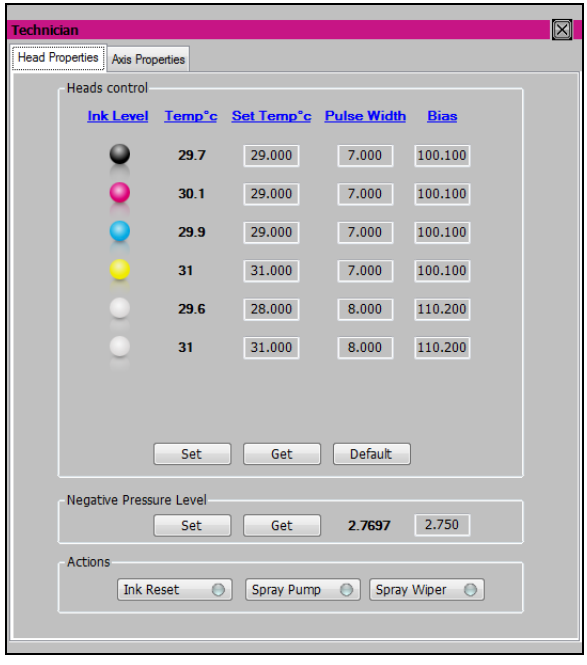


Figure 147: Technician Window

3. Click the **Ink Reset** button; the ink pumps pump ink to the empty Secondary Ink Tank(s) and shut off after ten seconds, even if the tank(s) are not yet full.

4. View the Ink Level icons in the Technician window.
    a. If the icons indicate that the Secondary Ink Tank(s) are not full, click the **Ink Reset** button again.
    b. If the icons still indicate, repeat step a until the system no longer pumps ink, indicating that the Secondary Ink Tanks are full.

NOTE:

After resetting the ink 2-3 times, the Secondary Ink Tank should be full (if working properly). If the Secondary Ink Tank is not yet full, contact your local distributor.

4.4 Correcting a Malfunctioning Vacuum System

Negative Air (vacuum) is applied to the ink system to prevent unwanted ink from dripping out of the print heads.

You can view the Negative Air status at the bottom of the LCD Maintenance Monitor window. The status is presented as a negative number and in the following colors:

- Green – There is sufficient vacuum pressure in the system.
- Red – There is insufficient vacuum pressure in the system.

When the Negative Air status number color appears as red for an extended period of time, we suggest that you perform the corrective procedure.

➢ **To correct a malfunctioning vacuum system:**

1. Turn off the power to the system. See Activating the Printer on page 57.
2. Turn back on the power to the system.
3. Examine the Negative Air status number in the LCD Maintenance Panel window:
   - If the number color is green, resume printing.
   - If the number color is red, contact you local Kornit agent.

4.5 Cleaning the Encoder – Technician

The Encoder should be cleaned by the technician only, when the axes do not function according to expectation.

➢ **To clean the Encoder:**

1. From the Operator window or the LCD Maintenance Panel, lower the maintenance tray to the **Down** position.
2. Lift up the Front Hood (automatically shutting down the system).
3. Using lint-free wipes, gently wipe the encoder strip along its entire exposed length, both on the top side and on the bottom side.

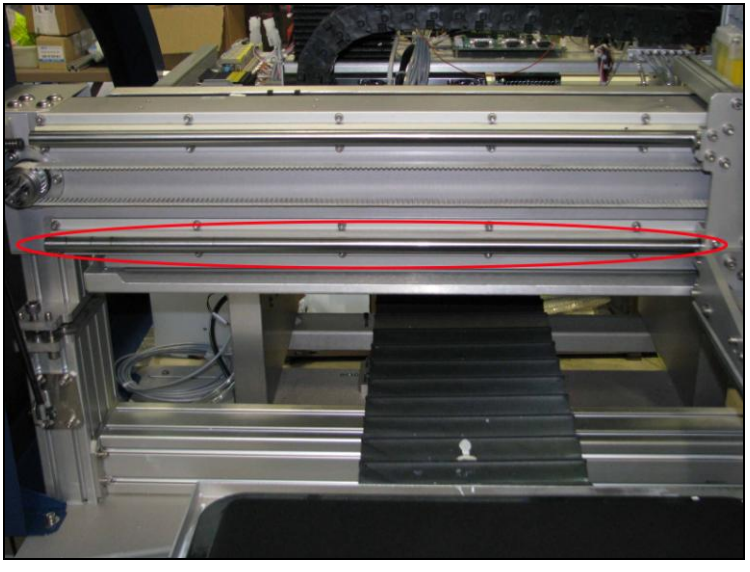


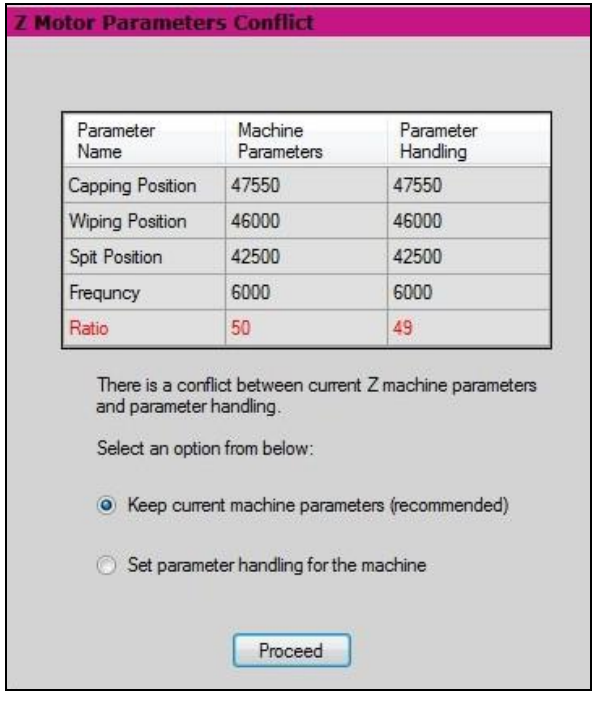
Figure 148: Encoder Strip

4. Manually move the print head assembly to the left side of the Scan axis and gently wipe the remainder of the encoder strip.
5. Lower down the Front Hood; the system restarts and automatically performs initialization.

4.6 Defining Conflicting Z Motor Parameters

The system automatically compares the parameters that were burnt into the Main Board with the parameters defined in the Parameters file (MachineConfig.enc).

When any of the parameters of Main Board and the Parameters file are not in agreement, the Z Motor Parameters Conflict window appears and the conflicting parameters appear in red.



➢ **To define conflicting Z Motor parameters:**

1. Select one of the following options:
   - Keep current machine parameters (recommended)
   - Set parameter handling for the machine.
2. Select **Proceed**.

5 Daily Maintenance Checklist (for Work Day)

Daily Maintenance Checklist (for Work Day) summarizes the actions that you should perform when starting and completing a work day.

For a more complete description of daily maintenance activities, see the following document:
62-PMNT-0003-Breeze Preventative Maintenance Guide.

Copy and complete this checklist for your daily records.

	Date:	
Step	**Start of Day Description**	**Completed**
1	Verify that the ink bottles are not empty.	
2	Verify that the spray tank is full.	
3	Verify that the waste ink tank is not almost full.	
4	Clean printing pallet, bellows, pallet frame, sleeve-protector panel, and surfaces around the printing pallet.	
5	Clean the ink wipers.	
6	Clean the print head orifice plates.	
7	Power On the printer and turn on the computer.	
8	Access the interface.	
9	Perform print head purge/purge and wipe	
10	Print nozzle tests (write and store test date and time).	
	End of Day Description	
1	Clean maintenance tray and wipers.	
2	Clean the bottom frame of the print head carriage.	
3	Clean the print head orifice plates.	
4	Clean the ink wipers	
5	Print nozzle tests (write and store test date and time).	
6	Close the application.	
7	Power Off the printer and turn off the computer	

Table 1: Daily Maintenance Checklist (for work day)

6 Daily Maintenance Checklist (for Work Shift)

Daily Maintenance Checklist (for Work Shift) summarizes the actions that you should perform when starting and completing a work day.

For a more complete description of daily maintenance activities, see the following document:
62-PMNT-0003-Breeze Preventative Maintenance Guide.

Copy and complete this checklist for your daily records.

	Date:	
Step	**Start of Shift Description**	**Completed**
1	Verify that the ink bottles are not empty.	
2	Verify that the spray tank is full.	
3	Verify that the waste ink tank is not almost full.	
4	Clean printing pallet, bellows, pallet frame, sleeve-protector panel, and surfaces around the printing pallet.	
5	Clean the ink wipers.	
6	Clean the print head orifice plates.	
7	Power On the printer and turn on the computer.	
8	Access the interface.	
9	Perform print head purge/purge and wipe	
10	Print nozzle tests (write and store test date and time).	
	End of Shift Description	
1	Clean maintenance tray and wipers.	
2	Clean the bottom frame of the print head carriage.	
3	Clean the print head orifice plates.	
4	Clean the ink wipers	
5	Print nozzle tests (write and store test date and time).	
6	Close the application.	
7	Power Off the printer and turn off the computer	

Table 2: Daily Maintenance Checklist (for work shift)

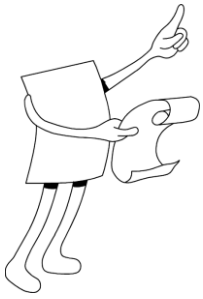
7 Weekly Maintenance Procedures

The following procedures must be performed once a week.

For a more complete description of weekly maintenance activities, see the following document:
62-PMNT-0003-Breeze Preventative Maintenance Guide.

➢ **To perform weekly maintenance:**

1. Clean the maintenance tray, the pipe running from the tray to the waste container, and the wipers.
    a. From the Operator window, click **Down** to lower the maintenance tray.
    b. Open the Front Hood; the interlock shuts down the printer.
    c. Move the print head carriage to the left side of the printer.
    d. Pour warm water onto the maintenance tray and use lint-free wipes to wipe away all ink particles from the tray and the wipers.
    e. Ensure that the waste ink tube is unblocked. If blocked, use a rigid wire to push through the blockage, allowing the ink to drain freely.
    f. Clean the ink wipers with hot water.
    g. Close the Front Hood; the printer automatically begins initialization.
    h. Wait for completion and perform Purge and Wipe.
2. Clean the scan-axis encoder scale.
3. Perform a general cleanup:
    a. Clean all machine covers and bellows, ensuring that all color drops, spray drops, dust and lint are removed.
    b. Clean the area around the machine to remove all lint.



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Kornit Digital: 12 Ha'Amal St., Afek Park, Rosh-Ha'Ayin 48092, Israel
Tel: +972.3.908.5800, Fax: +972.3.908.0280, Email:kornit@kornit.co.il, www.kornit-digital.com