Oct 2013

Installing DTG RIP Pro C6

DTG RIP Pro C6 is provided with a USB security dongle to prevent unauthorized use or pirating of the software. This device plugs into a standard USB port of the computer, and it is transparent to other applications. Only DTG RIP Pro C6 is aware of the device.

Connect your orange dongle **BEFORE** installing your DTG RIP Pro C6 software!

Policy On Lost Or Stolen Dongles

☐ The USB dongle provided with DTG RIP Pro C6 is your proof of purchase. If the dongle is lost or stolen, then that is equivalent to losing the entire software package, and a new package of DTG RIP Pro C6 must be purchased.

☐ In the event of a damaged dongle that must be replaced, there is a nominal fee for EXCHANGING a new dongle for the older dongle, where the older dongle must be reclaimed by CADlink.

This fee is waived where product is still under warranty.

☐ Regardless, it is recommended that you ensure that your dongle is covered under your business insurance policy.

Temporary License Files

☐ License files are included with your USB dongle, which are used to confirm the features within your CADlink products.

☐ If a replacement dongle is being shipped to you, then you will typically be issued "temporary" license files that will enable you to continue using your CADlink products.

☐ Temporary license files will cease working after a set criteria, though the expectation is that your replacement dongle will arrive prior to expiry.

☐ Please note that the replacement dongle will be provided with new "permanent" license files that will replace the temporary license files.

Storing Your License Files

☐ In the event of lost license files, there is a nominal administrative fee for issuing replacement license files.

The fee is waived if the Free Support period is still active. Otherwise, replacement license file issues are treated like Tech Support requests.

☐ When CADlink sends you new license files, it is important that you create backups of the license files, so they can be easily located when re-installing your CADlink products on new equipment.

☐ In the case of the orange USB flash drive dongle, your license files can be stored on the dongle itself. When re-installing your CADlink products, license files upon the dongle will be automatically used.

Step 1 - Program Installation

The following steps are an overview of installing DTG RIP Pro C6 and further information is provided within each stage of the install wizard.

1. For an orange-type dongle (i.e., a USB flash drive), connect the dongle NOW.

2. Insert the **DTG RIP Pro C6 - Epson Edition** CD into your CD-ROM drive. The install wizard should "auto start".

   If the install wizard fails to auto start, then start the installation process manually:

   ☐ From the **Start** menu, choose **Run** to open the **Run** dialog.

   ☐ Click **Browse** and locate the setup.exe file that is on the CD in the CD-ROM drive.

   ☐ Click **Open** to choose the setup.exe file, and click **OK** to close the **Run** dialog.

3. Proceed with each stage of the install wizard. Instructions are provided at each stage.

4. Proceed to

Step 2 - Printer Installation

Now that DTG RIP Pro C6 has been installed, you are ready to install the printer support files.

1. If your DTG RIP Pro C6 package includes a **Printers** DVD, then insert the DVD into your DVD-ROM drive.

> If a Printers DVD was not included, then make certain that your Internet connection is active, such that printer support files can be downloaded from CADlink.

2. From the Windows **Start** menu, choose **All Programs** >> DTG RIP Pro C6

3. The **First Time Setup** dialog will prompt for your default layout settings.

4. The **Create Queue Wizard** will launch (**Introduction** page), which will be used to install support files for your printer.

> At this time, it is recommended that you install the support files for your primary production equipment. Later, it will be possible to install support files for additional machines.

5. From the **Introduction** page, click **Next**.

6. From the **Printer Defaults** page, click the **Install Printer** button, and follow the steps for choosing the printer model and installing its printer support files.

> To obtain the latest updates for the printer driver, choose to obtain the printer package from the online server.
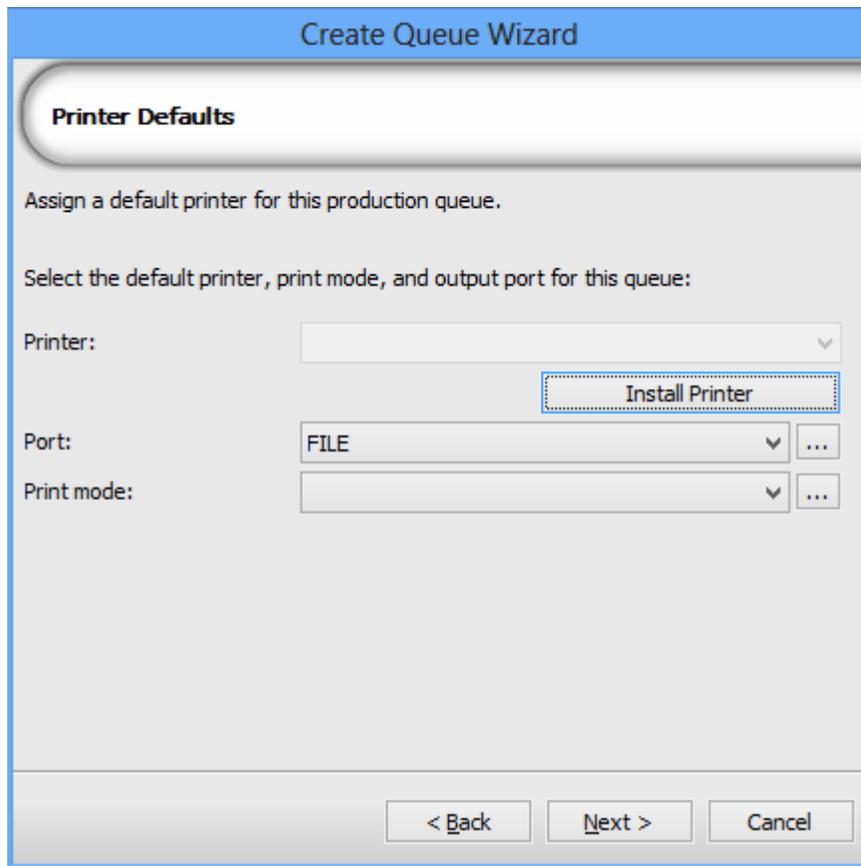
7. After the printer support files have been installed, the wizard will close.

8. DTG RIP Pro C6 is now ready for processing your designs.

9. Go **Queue** menu >> **Manage Queues**.

10. Confirm that the **Port** setting is correct for your printer. If you change the port and are prompted to change the ports for all your queues, then it is acceptable to click **Yes**.

11. Click **Close** to finish editing the **Queue Manager** dialog.

12. When performing initial tests to confirm output quality, it is recommended that a white T-shirt queue be chosen.

> **Note:** The Black T-shirt queues have been configured to apply the KnockMeBlackOut feature automatically. As such, there is no need to manually remove black from an image before printing to black garment material.
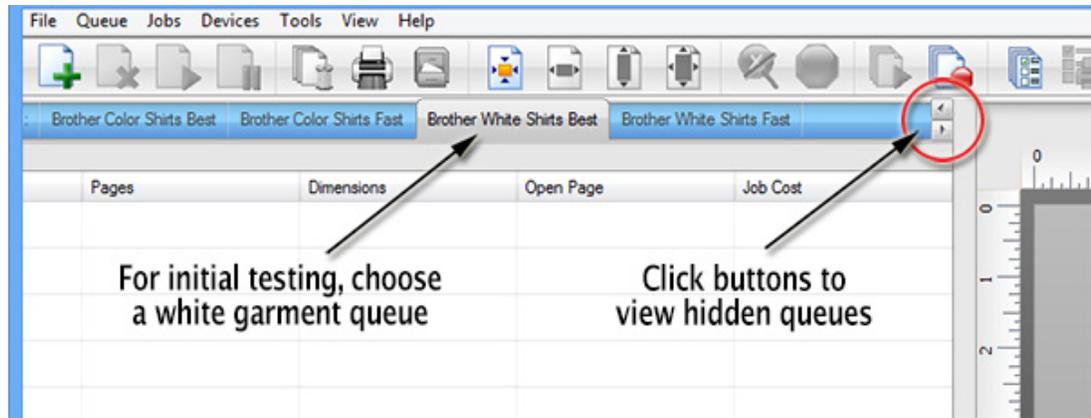
13. Proceed to the next section, Sending Jobs to DTG RIP Pro C6

Sending Jobs to DTG RIP Pro C6

Once you have installed DTG RIP Pro C6 each of the following workflows is designed to help you confirm that print and/or cut jobs are being received and processed by DTG RIP Pro C6 correctly. Choose the workflow that best represents the method by which you will use DTG RIP Pro C6.

Sending Jobs on Same Computer

For these workflows, your design application and DTG RIP Pro C6 have been installed to the same computer.

- ☐ Sending Jobs from SignLab
- ☐ Sending Jobs from PhotoShop
- ☐ Sending Jobs from Illustrator
- ☐ Sending Jobs from CorelDraw
- ☐ Sending Jobs from Other Design Applications

Sending Jobs from Separate Computers

For these workflows, your design application and DTG RIP Pro C6 have been installed on separate computers.

- ☐ Importing Designs Directly into DTG RIP Pro C6
- ☐ Sending Jobs Using a Hot Folder

Sending Jobs from SignLab®

For the latest versions of SignLab, there is support for printing directly to DTG RIP Pro

C6:

- ☐ **File** menu >> **Print and Cut** - Print to DTG RIP Pro C6 without generating an underbase. This is suitable for printing to white garment material.
- ☐ **File** menu >> **Print with Underbase** - Automatically generate underbase information for printing to either black or color garment material.

For older SignLab versions, use the following procedure to add the queue as a print destination within the Windows Control Panel. Printing from SignLab will use the common Windows **File** menu >> **Print** command.

> **Note:** Using the Windows Control Panel does not permit alpha (transparency) channel data, which prevents you from defining a white underbase for printing to black or color garment material. As such, the **File** >> **Print** command should only be used when printing to white garment material (which does not require a white underbase).

In DTG RIP Pro C6

1. From the toolbar, click the **Stop Queue** button.

2. Choose **Queue** menu >> **Manage Queues**.

3. In the **Control Panel** column, click the **Install** button, such that the queue is available as a print destination for other Windows applications.

4. Click the **Close** button.

In SignLab

5. Prepare the print design on the SignLab workspace.

6. Save the design file, such that the design is not "untitled."

7. Choose **File** menu >> **Print** to open the **Print** dialog.

8. From the **Printer** tab, choose the queue that had been designated in step (3).

9. Click **OK** to accept the **Print** dialog settings, and the job will be received in Digital Factory Apparel.

In DTG RIP Pro C6

10. If your queue is set to hold received jobs, then select the job and choose to print from the **Jobs** menu.

Sending Jobs from PhotoShop®

When DTG RIP Pro C6 was installed, additional **Send to DTG RIP Pro C6** plug-ins were installed for your PhotoShop. These plug-ins provide a quick means of transferring your PhotoShop design to DTG RIP Pro C6 in a manner that prepares the design for garment printing.

- ☐ **File** menu >> **Automate** >> **Send to DTG RIP Pro C6** - Print to DTG RIP Pro C6 without generating an underbase. This is suitable for printing to white garment material.
- ☐ **File** menu >> **Automate** >> **Send to DTG RIP Pro C6 with Underbase** - Automatically generate underbase information for printing to either black or color garment material.

In DTG RIP Pro C6

1. From the toolbar, click the **Stop Queue** button.

In PhotoShop

2. Prepare the print design in PhotoShop.

3. Save the PSD file, such that the design is not "untitled."

4. Choose **File** menu >> **Automate** >> **Send to DTG RIP Pro C6**.

   Alternatively, choose **Send to DTG RIP Pro C6 with Underbase** when printing to black or color garment material.

5. In the **Send to DTG RIP Pro C6** dialog, choose the queue name and click **OK**.

   To send jobs to DTG RIP Pro C6 that is installed on a remote computer, click **Browse** and choose the network location.

6. The job will be received in DTG RIP Pro C6.

In DTG RIP Pro C6

7. If your queue is set to hold received jobs, then select the job and choose to print from the **Jobs** menu.

See also <u>Printing from PhotoShop</u>

Sending Jobs from Illustrator®

When DTG RIP Pro C6 was installed, additional **Send to DTG RIP Pro C6** plug-ins were installed for your Illustrator. These plug-ins provide a quick means of transferring your Illustrator design to DTG RIP Pro C6 in a manner that prepares the design for garment printing.

- ☐ **File** menu >> **DTG RIP Pro C6** >> **Send to...** - Print to DTG RIP Pro C6 without generating an underbase. This is suitable for printing to white garment material.
- ☐ **File** menu >> **DTG RIP Pro C6** >> **Send with Underbase...** - Automatically generate underbase information for printing to either black or color garment material.
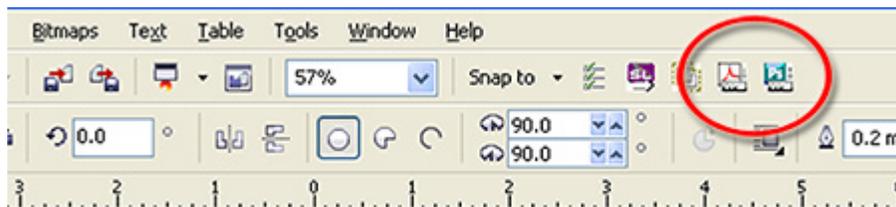
In DTG RIP Pro C6

1. From the toolbar, click the **Stop Queue** button.

In Illustrator

2. Prepare the print design in Illustrator.

3. Save the design file, such that the design is not "untitled."

4. Choose **File** menu >> **Send to DTG RIP Pro C6**.

   If the design is being prepared for printing to a black or color garment material, then click **Send to DTG RIP Pro C6 with Underbase**.

5. In the **Send to DTG RIP Pro C6** dialog, choose the queue name and click **OK**.

   To send jobs to DTG RIP Pro C6 that is installed on a remote computer, click **Browse** and choose the network location.

6. The job will be received in DTG RIP Pro C6.

In DTG RIP Pro C6

7. If your queue is set to hold received jobs, then select the job and choose to print from the **Jobs** menu.

See also <u>Printing from Illustrator</u>

Sending Jobs from CorelDraw®

When DTG RIP Pro C6 was installed, additional **Send to DTG RIP Pro C6** plug-ins were installed for your CorelDraw. These plug-ins provide a quick means of transferring your CorelDraw design to DTG RIP Pro C6 in a manner that prepares the design for garment printing.

- ☐ **Standard** toolbar >> **Send to DTG RIP Pro C6** - Print to DTG RIP Pro C6 without generating an underbase. This is suitable for printing to white garment material.
- ☐ **Standard** toolbar >> **Send to DTG RIP Pro C6 with Underbase** - Automatically generate underbase information for printing to either black or color garment material.

In DTG RIP Pro C6

1. From the toolbar, click the **Stop Queue** button.

In CorelDraw

2. Prepare the print design in CorelDraw.

3. Save the design file, such that the design is not "untitled."

4. From the **Standard** toolbar, click the **Send to DTG RIP Pro C6** button.

    If the design is being prepared for printing to a black or color garment material, then click **Send to DTG RIP Pro C6 with Underbase**.

5. In the **Send to DTG RIP Pro C6** dialog, choose the queue name and click **OK**.

    To send jobs to DTG RIP Pro C6 that is installed on a remote computer, click **Browse** and choose the network location.

6. The job will be received in DTG RIP Pro C6.

In DTG RIP Pro C6

7.   If your queue is set to hold received jobs, then select the job and choose to print from the **Jobs** menu.

See also Printing from CorelDraw

Sending Jobs from Other Design Applications

For other design applications that were not covered in the previous sections, export your design file using a file format that can be imported into DTG RIP Pro C6.

If the design contains an alpha (transparency) channel, then the file format must support alpha channels. Alpha channels are supported in PSD, PNG and TIFF file formats.

See also [Importing Designs Directly into DTG RIP Pro C6](#) See

also [Sending Jobs Using a Hot Folder](#)

Importing Designs Directly into DTG RIP Pro C6

Design files can be imported directly into DTG RIP Pro C6, without the need to open the files in their original design applications. Use this workflow where you have a design file that must be printed without having access to the original design application. For example, the customer has sent you a design file, and you need to print the file "as is" without importing it into a design application.

> **Note:** The supported image formats are subject to change, though common image formats are supported (e.g., EPS, AI, PDF, BMP, JPEG, TIFF, etc.). For designs that contain an alpha (transparency) channel, the image format should be either PSD, PNG or TIFF.

In DTG RIP Pro C6

1. From the toolbar, click the **Stop Queue** button.

In the Design Application

2. Prepare the print design.
3. Save the design file.

In DTG RIP Pro C6

4. Load the design file using one of the following methods:

   a) Choose **File** menu >> **Import File**.

   b) From the toolbar, click the **Open** button.

   c) Drag-and-drop the file into the DTG RIP Pro C6 window.

   d) Choose **File** menu >> **Get from gmail** to configure DTG RIP Pro C6 to receive designs via a Google e-mail account.

5. If your queue is set to hold received jobs, then select the job and choose to print from the **Jobs** menu.

Sending Jobs Using a Hot Folder

This workflow uses a specially designated **Hot Folder** (i.e., a directory on the hard drive). When design files are copied into the Hot Folder, they will be automatically detected by DTG RIP Pro C6 and processed. Note that the copied file will be subsequently deleted by DTG RIP Pro C6.

Create an Empty Hot Folder

1. Create an empty directory on your DTG RIP Pro C6 computer, or elsewhere on your network. This will be your Hot Folder, which must satisfy the following two conditions:

    a) The DTG RIP Pro C6 computer must have login permission to read and write to the Hot Folder.

    b) Your graphic designers must have file access permissions to write/copy files into the Hot Folder.

In DTG RIP Pro C6

2. From the toolbar, click the **Stop Queue** button.

3. Choose **Queue** menu >> **Properties**.

4. Click the **Hot Folders** tab.

5. Tick the **Enable Queue Hot Folder** checkbox, which opens a browse dialog.

6. Browse to the **Hot Folder** that had been designated in step (1). Please note that the **Hot Folder** must be empty when it is initially chosen.

7. Click **OK** to accept the **Hot Folder** path.

8. Click **OK** to close the **Queue Properties** dialog.

In the Design Application

9. In the design application, prepare the print design.

10. Save the design file in a commonly accepted format (e.g., EPS, AI, PDF, BMP, JPEG, TIFF, etc.), and copy the design file into the Hot Folder.

    For designs that contain an alpha (transparency) channel, the image format should be either PSD, PNG or TIFF.

In DTG RIP Pro C6

11. If your queue is set to hold received jobs, then select the job and choose to print from the **Jobs** menu.

Basic Configuration Topics

The following sections provide short setup procedures for configuring DTG RIP Pro

C6.

[?]Creating a New Queue

[?]Viewing Hidden Queues

[?]Rearrange Queue Tabs

Choosing the Port Settings

[?]Adjusting the Queue Properties

[?]Inspecting Job Properties

[?]Installing a New Printer

[?]Updating Machine Drivers

[?]Assigning a Different Printer

Creating a New Queue

Queue menu >> **Manage Queues**

When creating queues, name each queue according to the type of jobs that will be collected within that queue. For example, name the queue according to the printer, and indicate the media/material that will be used. If queues have been assigned meaningful names, then designers will have greater ease when choosing which queue to send jobs to.

The procedure for creating a queue is as follows:

1. Choose **Queue** menu >> **Manage Queues**.
2. The **Queue Manager** will open.
3. Click the **Add Queue** button.
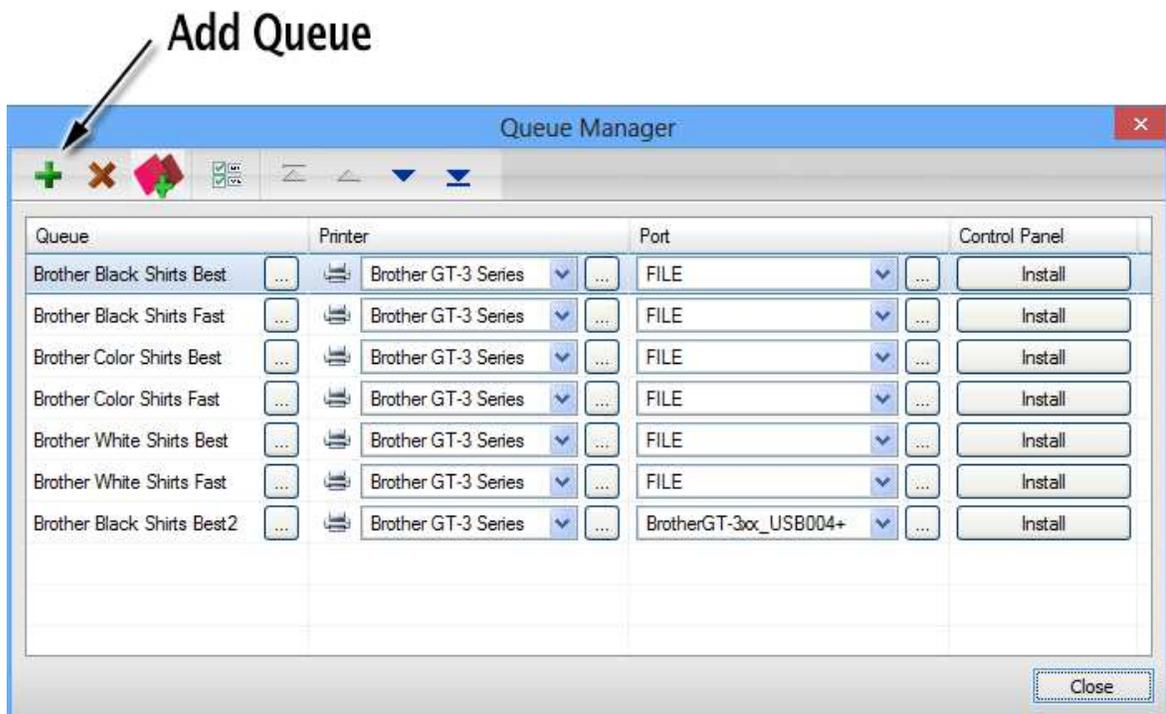
4. The **Create Queue Wizard** will launch.
5. Proceed through the wizard steps to choose the queue settings (i.e., choose the printer, port settings, print mode, page size, etc.).
6. When the wizard is finished, the new queue will be listed in the **Queue Manager** dialog.
7. Click **Close** to close the **Queue Manager** dialog.
8. Below the menu and toolbar, the tab for the new queue will be available.
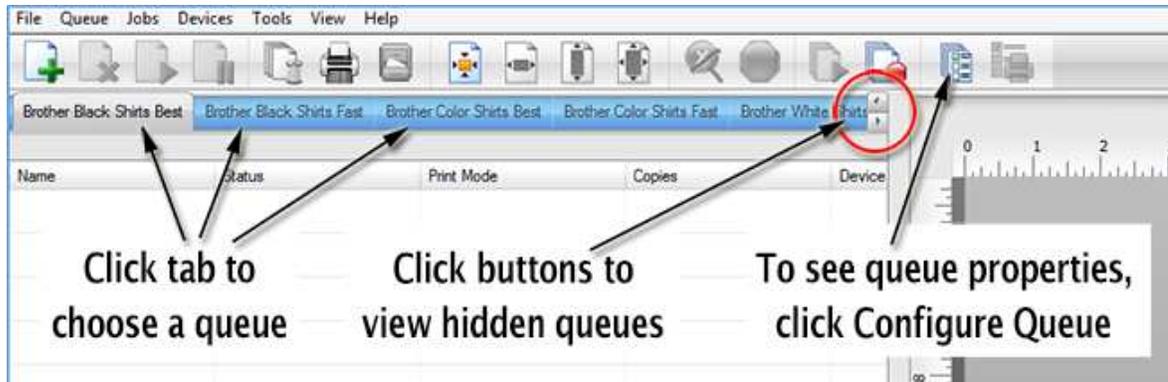
Viewing Hidden Queues

Queue tabs are arranged left-to-right. When there are more queue tabs that can fit within the display, two scroll buttons (on the right) can be used to browse hidden tabs.
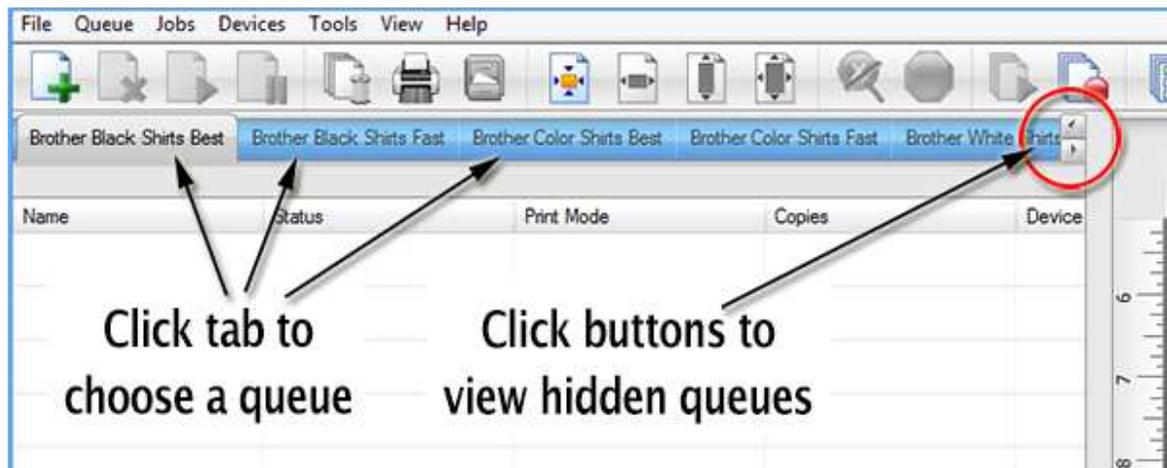

See also Rearrange Queue Tabs

Rearrange Queue Tabs

Queue tabs are arranged left-to-right in the order that each queue was created. To rearrange the tabs, use the **Queue Manager** dialog.

1. Choose **Queue** menu >> **Manage Queues**.

2. The **Queue Manager** will list the queues tab names.

3. Click the queue that you want to rearrange.

4. Along the dialog toolbar, there are four buttons for moving the selected queue up/down in the list.
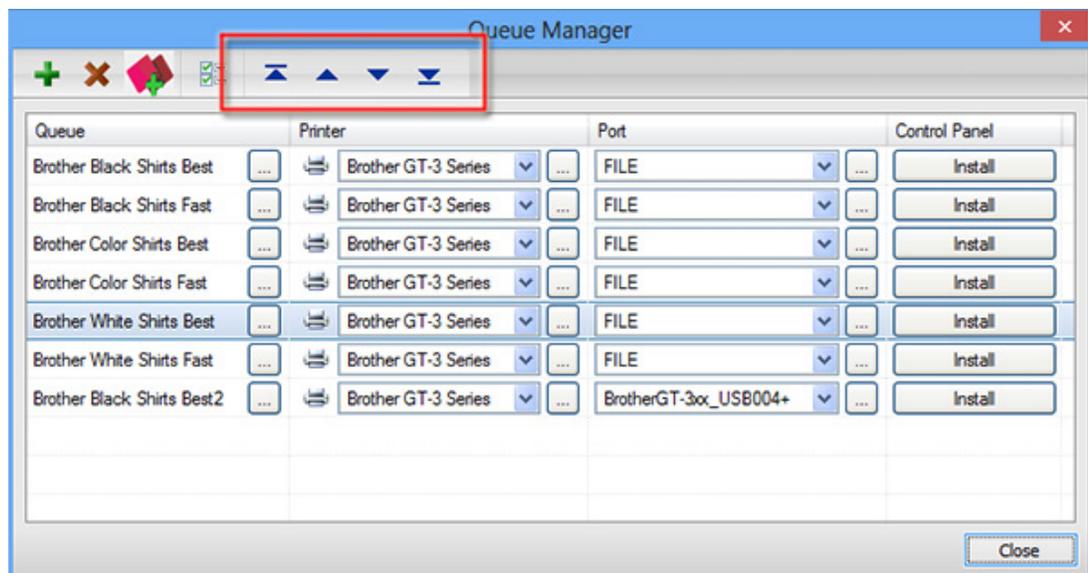
Choosing the Port Settings

1. From the **Queue** menu, choose **Manage Queues**.
2. The **Queue Manager** dialog will open.
3. For the given device, the **Port** column indicates the output port.
4. Choose a port from the drop-list.
5. Once a port has been selected, its properties can be adjusted by clicking [...].

The various port settings are described in the following sections:

[?]USB Port

[?]LPT Port

[?]TCP/IP Port

[?]FireWire Port

[?]File Port

[?]COM Port

[?]Null Port

USB Port

A Universal Serial Bus (USB) port has the benefit of allowing new hardware to be added without configuration concerns or hardware conflicts. In addition, a USB device may be added without requiring the workstation to be restarted.

1. When a printer is connected to the computer via its USB port, Windows will automatically detect the USB printer.

2. In DTG RIP Pro C6, the USB port name for the printer should now be available.

3. From the **Queue** menu, choose **Manage Queues**.

4. The **Queue Manager** dialog will open.

5. From the **Port** column drop-list, choose the USB port that is named specifically for your printer model.

> **Example:** For our Acme Printer, the USB port will be listed as "**Acme Printer Pro_USB00X+port name**."
>
> **Note:** Depending upon advanced settings within DTG RIP Pro C6, it is possible that there is a secondary "USB00X" port (or "LPTUSB1" in the case of Belkin Adapters) that is available. Do not choose either of these secondary ports, unless requested to do so by Tech Support.
>
> **Note:** Though USB is considered to be quite fast, consider that USB is a bus-based system that can be slowed significantly by other USB devices that are connected to the same bus (i.e., same workstation). For example, if an external USB hard drive or flash drive is connected to the workstation, then this can incur performance and time out issues.
>
> **Note:** Most computers that have numerous USB ports, in actuality there are (perhaps) only one or two USB buses internally. Check the workstation specifications (i.e., motherboard) to determine how data is managed by the workstation.

LPT Port

- The **LPT Port** is also known as a parallel port.
- The **LPT Mode** (i.e., printer port mode) determines the transmission rate when sending data to the printer. Though fast rates of transmission are preferable, the printer must be capable of sustaining the selected mode.

  Note: Faster data rates increase the chance of transmission errors, so using a good quality IEEE 1284 cable is important.
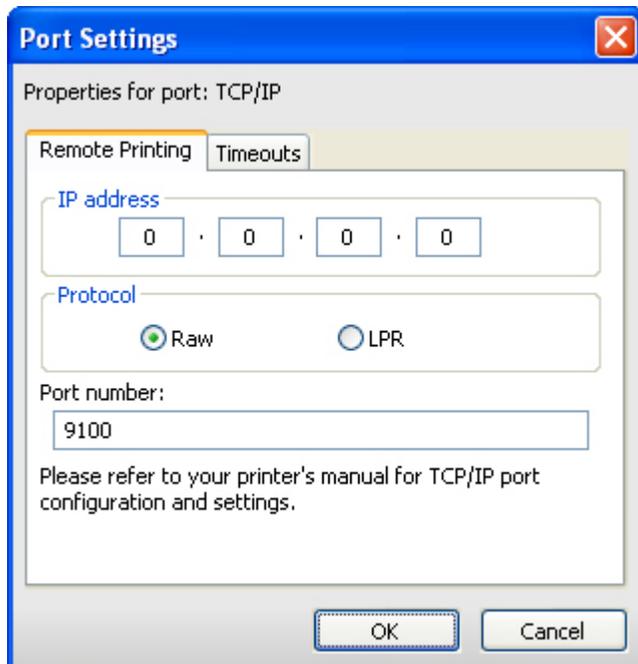
TCP/IP Port

The TCP/IP port is used with printers that are accessed across a TCP/IP network. In order to use a TCP/IP network printer, your network system administrator should be consulted to determine the **IP Address**, **Protocol**, and **Port number** of the printer.

Note: To install TCP/IP protocol under Windows, please refer to Windows Help.

The **Protocol** is determined by consulting the Operator Manual for the given printer or network adapter. Often, **Raw** is used to indicate that no additional redirection of the data stream is required (i.e. there is a single printer).

The **Timeouts** settings are usually left at their defaults.

FireWire Port

FireWire is the term used by Apple Computers for their implementation of the IEEE 1394 standard, which calls for a high performance serial bus that connects peripherals to your workstation. This standard has been implemented under other commercial names, such as i.Link from Sony Corporation. It is also sometimes referred to generically as IEEE 1394.

Implementations of the IEEE 1394 standard are becoming increasingly more common for the following reasons:

- The connection is a simple plug-in serial connector from the back of your workstation to the given peripheral
- Like USB, the connection is hot-pluggable, such that the workstation does not require rebooting when the peripheral is attached
- The standard supports a high rate of data transmission (such as that required by intensive multimedia applications)

To send FireWire output, the FireWire drivers must be installed. Please refer to the documentation provided with the given printer.

File Port

Printing to a **File** port will spool the print job and then store the spool file in the indicated directory. The spool file can then be transferred to another workstation for printing.

COM Port

The **COM port**, also known as a **serial port**, is commonly used to send data to a cutter or plotter.

Null Port

Selecting **NULL** is equivalent to "there is no printer, but please process the job anyway." The print data will be processed as if there were a printer, and the print data will be discarded upon completion. The NULL port is used for troubleshooting to confirm that print data is being calculated correctly.

Adjusting the Queue Properties

DTG RIP Pro C6 - Epson Edition provides several predefined queues with suggested settings for each type of garment material.
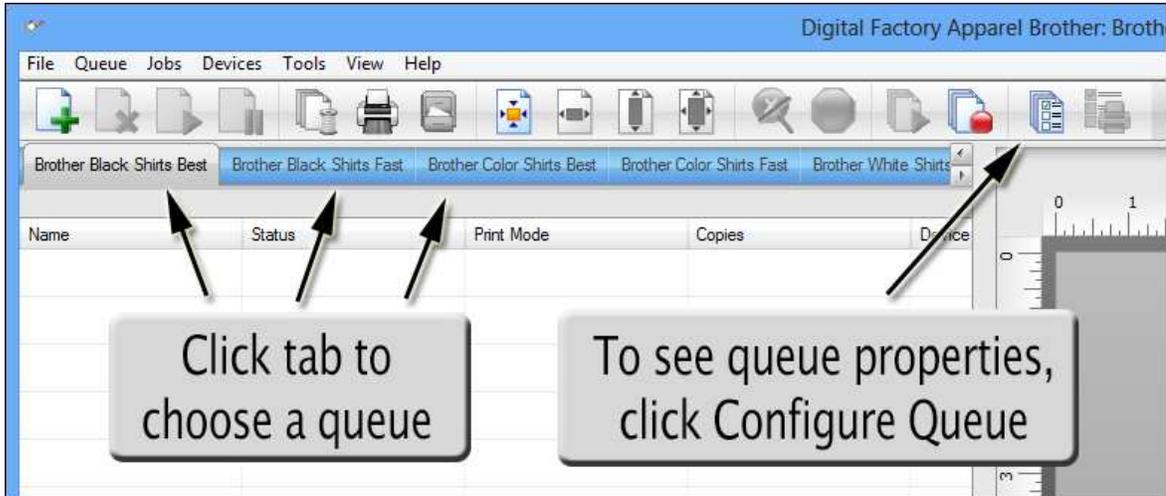
1. Select the queue by clicking its tab.
2. To edit the queue properties, click the **Configure Queue** button.
   - Alternatively, choose **Queue** menu >> **Properties**.
   - Alternatively, double-click the queue tab.

3. The **Queue Properties** dialog will open.
4. Along the left-hand side of the **Queue Properties** dialog, click the category of settings that need to be adjusted.
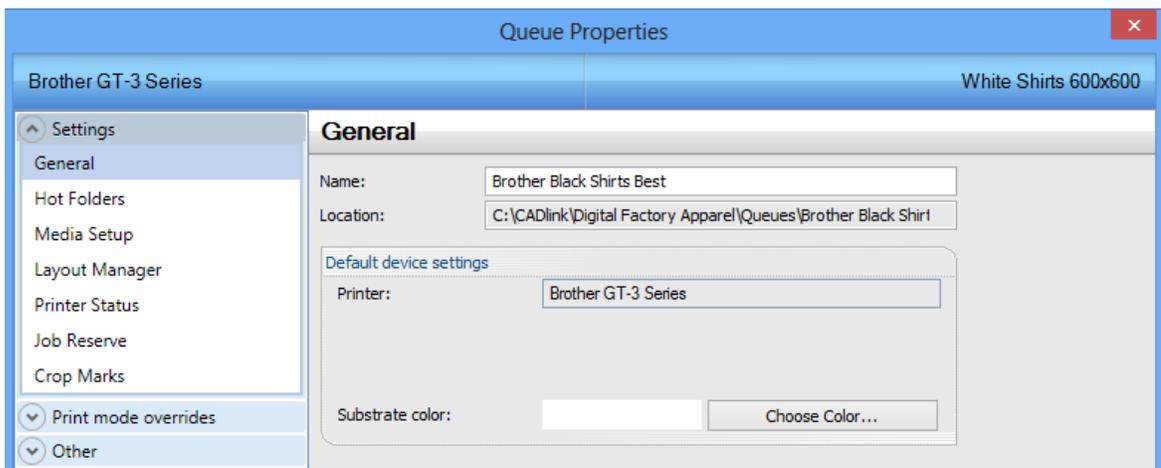
Inspecting Job Properties

When a job is received in a given queue, the properties of that job are "inherited" from the queue properties. For example, a received print job will use the print mode that had been previously set for that queue.

In most cases, there is neither a need to inspect nor modify the job properties. However, in the event of an unexpected device error, then the error log can be inspected within the job properties.

1. Suppose that a job error has occurred, and the job is being held in the active list.

    Alternatively, clicking the **Stop Queue** button will cause new jobs to be held pending.

2. Right-click the job and choose **Properties**.
3. In the **Job Ticket Properties** dialog, choose **Other** >> **Log** tab.

Installing a New Printer

When creating a new queue, you will be provided with the opportunity to install a given printer or cutter. However, to install a printer without creating a queue, use the following procedure. This procedure is typically for modifying an existing queue to use a new device.

1. Choose **Devices** menu >> **Manage Devices**.

2. The **Manage Devices** dialog will list the currently installed printers.

3. In the **Manage Printers** dialog, choose the button to either install a new printer.
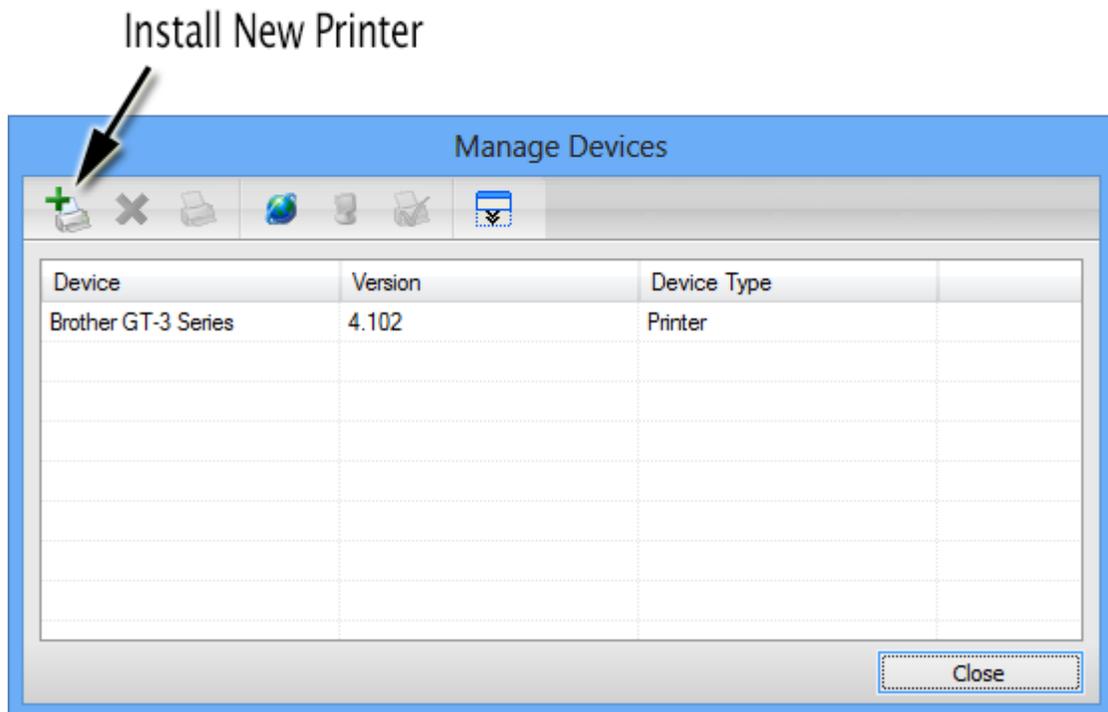
4. Choose from the list of available printers, and then click **OK** to proceed.

5. The **Device Package Search** page will query for the location from which support files will be installed.

6. Click the option "Search for new device package versions from a CD and/or the Internet"

7. Clear the "Search CD-ROM or floppy drive" checkbox.

8. Tick the "Search dedicated Online server for updated device packages" checkbox.

9. Click **Next** to proceed with the installation.

10. The new printer/cutter will now be listed within the **Manage Devices** dialog.

11. Click **Close**.

Once a printer has been installed, it can be assigned to an existing queue, or a new queue can be created.

Updating Drivers and Support Files

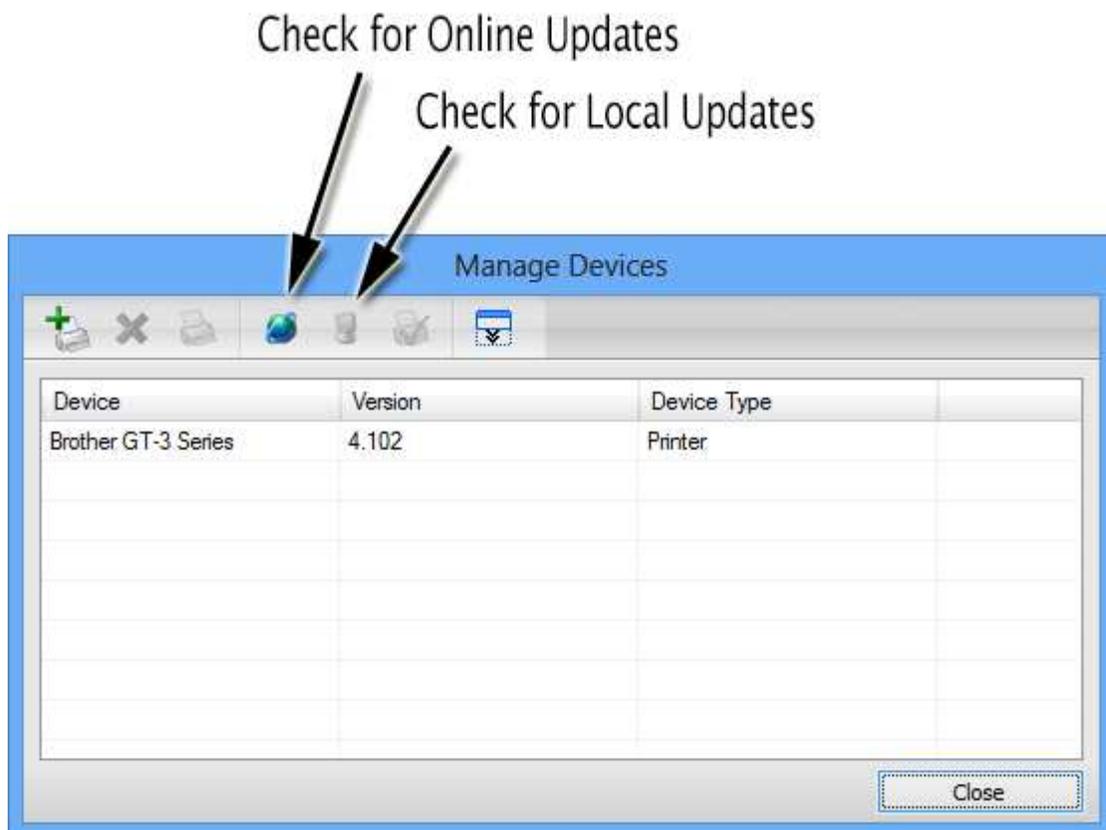**Devices** menu >> **Manage Devices**

Note: For computers that are not connected to the Internet, it is assumed that you have manually obtained the desired drivers and support files, and have placed them in a directory that the computer can access.

Use the following procedure to update machine drivers and support files that will be used by DTG RIP Pro C6.

1. Choose **Devices** menu >> **Manage Devices**.

2. The **Manage Devices** dialog will list the currently installed printers and/or cutters.

3. Click the **Check for Online Updates** button, and available files will be sought from the CADlink web site.

    Alternatively, if you have placed the drivers and support files locally (e.g., on the hard drive or CD-ROM), then click the **Check for Local Updates** button. In this case, you will be prompted for the location of the files.

4. When file updates are located, click the **Update Devices** button to proceed.

5. When the updates are complete, click **Close**.

Assigning a Different Printer

Devices menu >> **Manage Devices**

Queue menu >> **Manage Queues**

After you have been using DTG RIP Pro C6 for a while, there will come a time when the printer needs to be replaced. Instead of creating a new queue, the following procedure can be used to assign a new printer to the queue:

1. Choose **Devices** menu >> **Manage Devices** to install a new printer.

2. Choose **Queue** menu >> **Manage Queues**.

3. The **Queue Manager** dialog will list the existing queues.

4. For the desired queue, set the printer.

5. Optionally in the **Control Panel** column, click **Install** to add the printer to the Windows Control Panel.

   This allows other Windows applications to **File** menu >> **Print** to that printer, and those print jobs will be received by DTG RIP Pro C6.

Image Manipulation Topics

For a job that is being held in a queue, the Jobs menu provides an assortment of image manipulation tools.

Image Manipulation Using GIMP

Fluid Mask - Easy Image Clipping

Super Size Image

CADlink Flyout

KnockMeBlackOut

KnockMeColorOut

Transparency Opacity

Easy Color Adjustments Dialog

CADlink Easy Adjustments

Cleanup Black

Cleanup White

Contrast

Increase Saturation

Make Darker

Make Lighter

Noise Shampoo

Image Manipulation Using GIMP

GIMP is a third-party image manipulation tool that is suitable for a variety of image manipulation tasks, including photo retouching, image composition, and image construction. The following sections contain procedures for performing basic operations using GIMP, which you should complete in order to gain a sufficient understanding of these tools. Once you have developed a familiarity with the GIMP tools, you will be ready to consult the exhaustive help resources that are available through the GIMP web site.

Due to the collaborative nature of the GIMP project, CADlink neither maintains nor provides support for technical issues related to GIMP. Instead, the answers to technical questions should sought through the GIMP web site, where concise answers for your design needs can be addressed.

> **Note:** Help files for GIMP are available from the http://docs.gimp.org site. Both tutorials and forum support are available from the www.gimp.org site.

[?] Launching GIMP

[?] Opening Dialog Controls

[?] Adding Tab Controls

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GIMP Tutorial - Simple Floating Logo

Launching GIMP

1. In DTG RIP Pro C6, select a job and choose **Jobs** menu >> **Edit with GIMP**.

2. The **GIMP** application will launch, and the GIMP windows will appear.

3. The top-half of the **Main Toolbox** provides a toolbox palette for graphics editing (e.g., with tools for marquee, move, eyedropper, text entry, etc.).

4. The bottom-half of the **Main Toolbox** is a docked tab that displays the **Tool Options** dialog controls. These controls are context sensitive, per the selected tool.

5. The image will be opened in its own Image Window, which has a **Dialog** menu for opening additional sets of GIMP controls.

6. If additional image files are opened, then each image will be opened in its own **Image Window**.
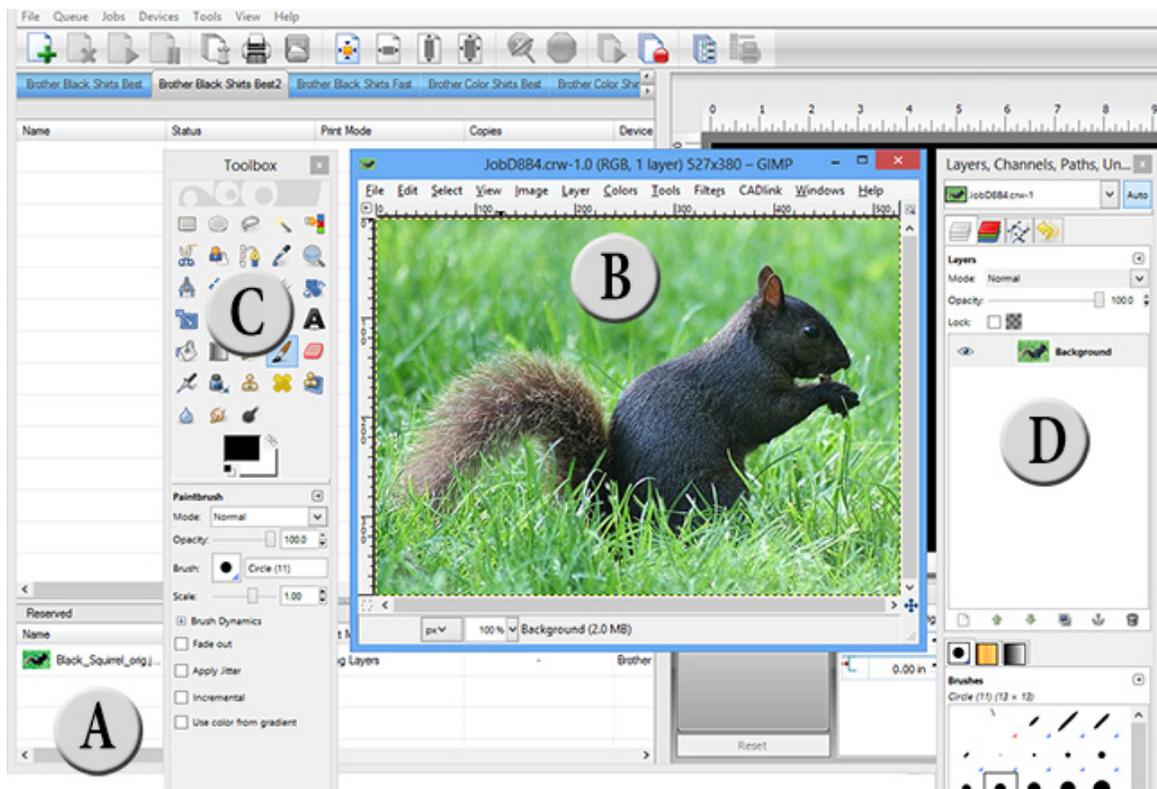
A - The original job in DTG RIP Pro C6, which has been automatically moved to the **Reserved** list.

B - The job as it initially appears in GIMP.

C - The GIMP Toolbox, which provides an assortment of editing tools.

D - Dockable toolbars that are accessible via **Windows** menu >> **Dockable Dialogs**.

Opening Dialog Controls

GIMP controls are arranged in dialogs that can be opened as separate "floating" dialogs, each being independent of the **Main Toolbox** and **Image Window**.

In the **Image Window**, choose the desired dialog via **Windows >> Dockable Dialogs**.
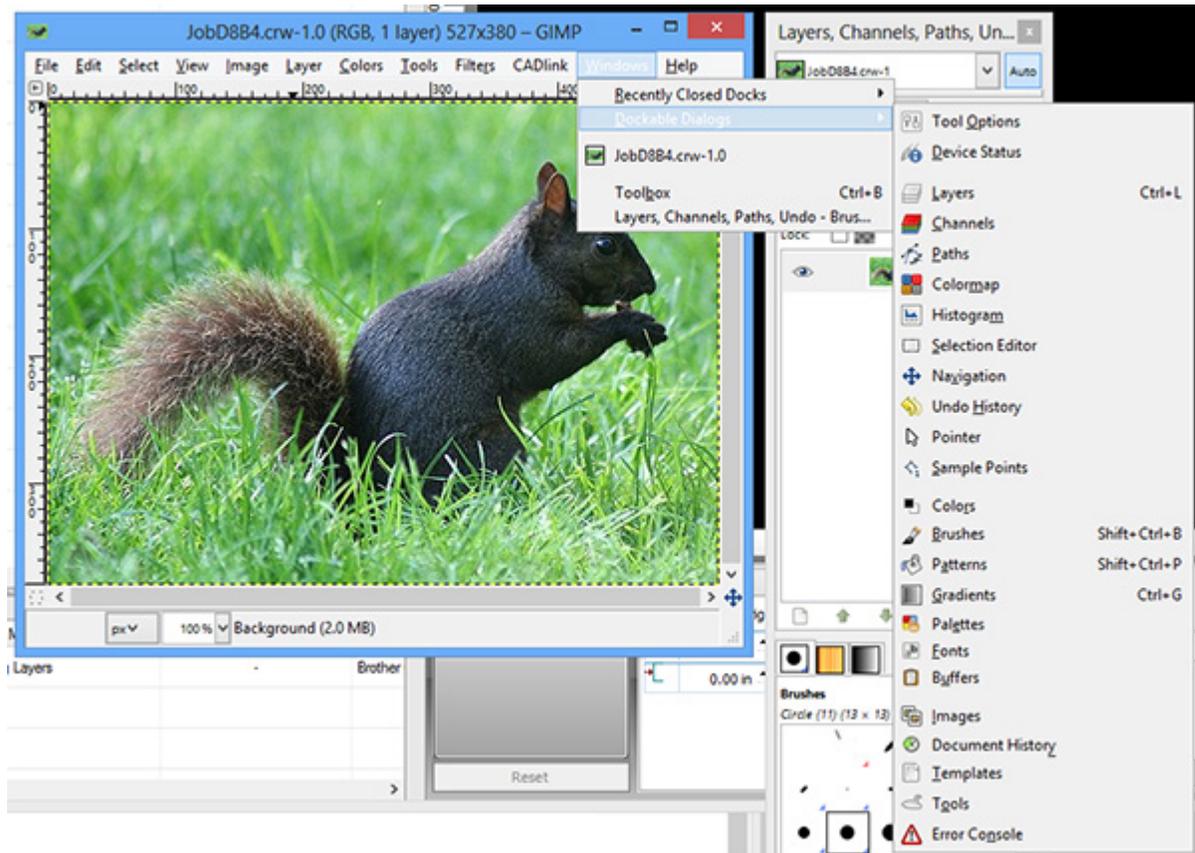
Adding Tab Controls

As an alternative to separate dialogs for each set of controls, tabs of controls can be added to an existing dialog.

1. For example, after the **Dialog** menu has been used to open a set of controls, click the **Tab** menu button (see below).

2. The **Add Tab** flyout will provide the same selection that is available from the **Windows menu**.

3. The dialog will now have tabs for switching between each set of controls.
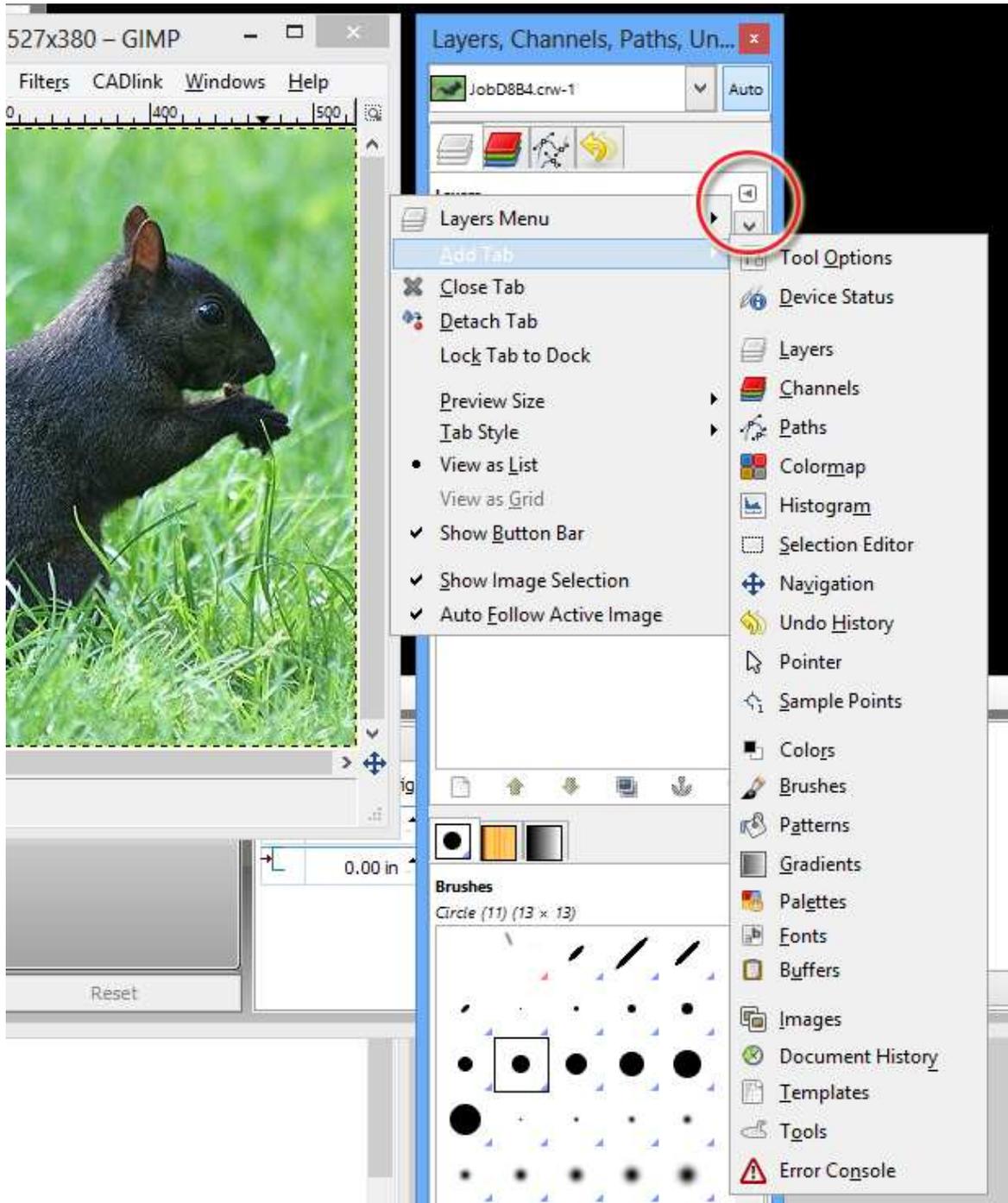
Dragging Tabs

When a dialog has two-or-more tabs, a given tab can be dragged away from its containing dialog. The tab will become a floating dialog.

Likewise for a floating dialog, click just below its title bar area and drag the dialog. The dragged selection will become a tab that can be docked into other GIMP dialogs.

Saving an Image Back to the Queue

After you have finished editing in GIMP, the image can be sent back to the queue as follows:

- From the **Image Window**, choose **CADlink** menu >> **Send to DTG RIP Pro C6**.

Comments about saving files in GIMP

- Whilst editing in GIMP, the GIMP design can be saved via **Image Window** >> **Save As**.
- The **XCF** format is the native file format for GIMP, which will retain layer information within the design.
- Alternatively, saving as **PSD** format will likewise retain layer information.

Moving a Selection

When moving a selection, be aware that the selection will only apply to the layer that is selected in the **Layers** dialog. The following procedure shows you how move pixels using both the **Float** command, as well as the traditional **Copy/Paste** commands..

1. From the **Image Window**, choose **Windows** menu >> **Dockable Dialogs** >> **Layers**.
2. The **Layers** dialog will open.
3. In the **Main Toolbox**, click the **Rectangle Select Tool**.
4. In the **Image Window**, click and drag a rectangular selection.
5. After the selection has been drawn, note that the corners of the selection can be dragged.
6. Likewise, the edges of the selection (between the corners) can be dragged.

   If necessary, use the following modifier keys to adjust the selection:

   - **[Shift + drag]** – Add to the current selection
   - **[Ctrl + drag]** – Subtract from the current selection
   - **[ALT + drag]** – Reposition the selection

   When adjusting a selection, note that the corners of the adjustment selection can be dragged.

7. In the **Image Window**, go **Select** menu >> **Float**. This will move the selected pixels onto their own layer.

   As an alternative to using the **Float** command, use the **Edit** menu >> **Copy** command, followed by **Edit** menu >> **Paste**. This will create a duplicate of the selected pixels.

8. In the **Layers** dialog, the selection will now be on a "Floating Selection" layer.
9. In the **Image Window**, click and drag to move the selection.
10. When you are finished moving the selection, do either of the following:

    - In the **Layers** dialog, right-click the "Floating Layer" and choose **Anchor Layer**. This will merge the selection with the layer that is underneath.
    - In the **Layers** dialog, click the **Create New Layer** button. This will make the "Floating Layer" into a fixed layer that is independent of the underlying layer.

    When creating new layers, it is considered good form to provide meaningful names for the layers to avoid ambiguity.

Apply Effects to Portions of an Image

When applying special effects (i.e., plug-ins) to an image, be aware that the effect will only apply to the currently selected layer in the **Layers** dialog. Likewise, if a selection has been made, then the effect will be constrained by the selection.

1. From the **Image Window**, choose **Winodws** menu >> **Dockable Dialogs** >> **Layers**.

2. The **Layers** dialog will open.

3. In the **Main Toolbox**, click the **Rectangle Select Tool**.

4. In the **Image Window**, click and drag a rectangular selection.

5. From the **Image Window**, choose **Edit** menu >> **Copy**.

6. From the **Image Window**, choose **Edit** menu >> **Paste**.

7. In the **Layers** dialog, a copy of the pasted pixels will now be on their own "Floating Selection" layer.

8. From the **Image Window**, choose **Filters** >> **Artistic** >> **Cartoon**.

9. The **Cartoon** dialog will open.

10. Adjust the **Cartoon** dialog settings for a desirable effect, and then click **OK**.

11. The cartoon effect will be applied to the selection.

12. From the **Layers** dialog, click the **Create New Layer** button. This will make the "Floating Layer" into a fixed "Pasted Layer" that is independent of the underlying layer.

13. In the **Layers** dialog, note that the visibility of the "Pasted Layer" can be toggled by clicking the "eye" button.

Draw a Straight Line

There is no "line tool" in GIMP. Instead, the **[Shift]** key is used to draw contiguous line segments.

1. In the **Layers** dialog, create a new layer.

2. From the **Main Toolbox,** click the **Pencil Tool**.

   Alternatively, this straight line technique can be applied using the following tools: Paintbrush, Eraser, Airbrush, Clone, Blur / Sharpen, Smudge, and Dodge / Burn.

3. In the **Image Window,** click ONCE to indicate the starting point.

4. A dot will appear on the image.

5. Press the **[Shift]** key. A hairline will preview a line between the dot and the cursor position.

6. Click to place the ending point of the line.

7. If contiguous line segments are required, then use **[Shift]** to place each additional line segment.

Apply Stroke to a Selection

An alternative method of drawing lines is to create a selection, and then apply a stroke to the selection.

1. From the **Image Window**, choose **Windows** menu >> **Dockable Dialogs** >> **Layers**.

2. The **Layers** dialog will open.

3. From the **Main Toolbox**, use the **Rectangle Select Tool** to create a selection.

   Alternatively, use either of the Ellipse Select, Free Select, Fuzzy Select, Select By Color, or Scissors Select tools.

4. From the **Image Window**, choose **Windows** menu >> **Dockable Dialogs** >> **Brushes**.

5. The **Brushes** dialog will open.

6. Click to choose the brush that will be used for applying the stroke.

7. From the **Image Window**, choose **Edit** menu >> **Stroke Selection**.

8. The **Stroke Selection** dialog will open.

9. Click the **Stroke line** option, and set the line parameters accordingly.

   Alternatively, click the "Stroke with a paint tool" option, and then choose from the Paint tool drop-list. The parameters for any of these tools can be adjusted by choosing the corresponding tool within the Main Toolbox.

10. In the **Stroke Selection** dialog, click the **Stroke** button to apply the stroke.

Create a Complex Selection Using Quick Mask

This procedure is based upon the following online tutorial www.gimp.org/tutorials/Quickmask

The **Quick Mask** tool can be used to create complex selections, as shown in the following steps that create a vignette for an image.

1. From the **Main Toolbox**, click the **Rectangle Select Tool**.

2. In the **Image Window**, create a rectangular selection that is slightly smaller than the bounds of the image.

3. In the bottom-left of the **Image Window**, click the **Quick Mask** button.

   Alternatively, use the **[Shift + q]** shortcut to activate Quick Mask.
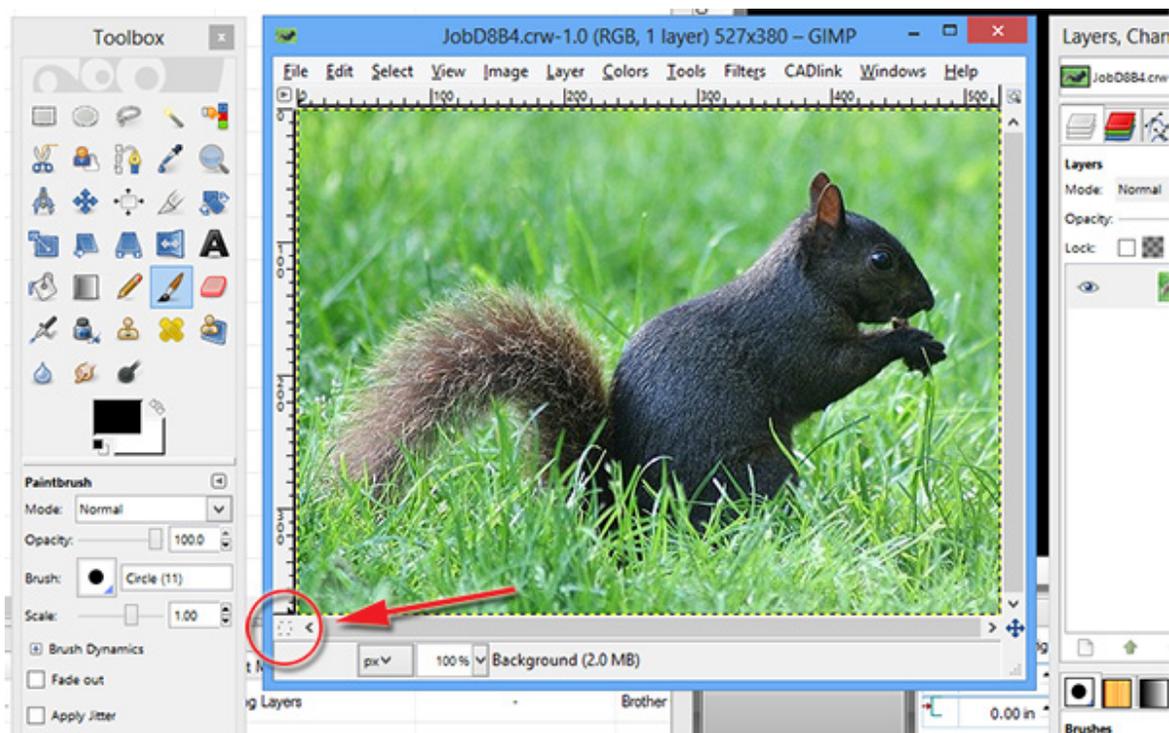

4. The **Quick Mask** button will appear like a red square, and the **Image Window** will appear to have a red translucent border.

5. The red translucent portion represents the outside of your selection.

6. The clear portion of the mask represents your current selection.

7. From the **Image Window**, go **Filters** menu >> **Distorts** >> **Waves**.

8. The **Waves** dialog will open.

9. Use the **Amplitude** and **Wavelength** sliders to create a distinctive wave effect

10. Click **OK** to apply the wave filter. As in the following screenshot, the rectangular mask has been distorted to appear like a wave pattern (stroke added for visibility).
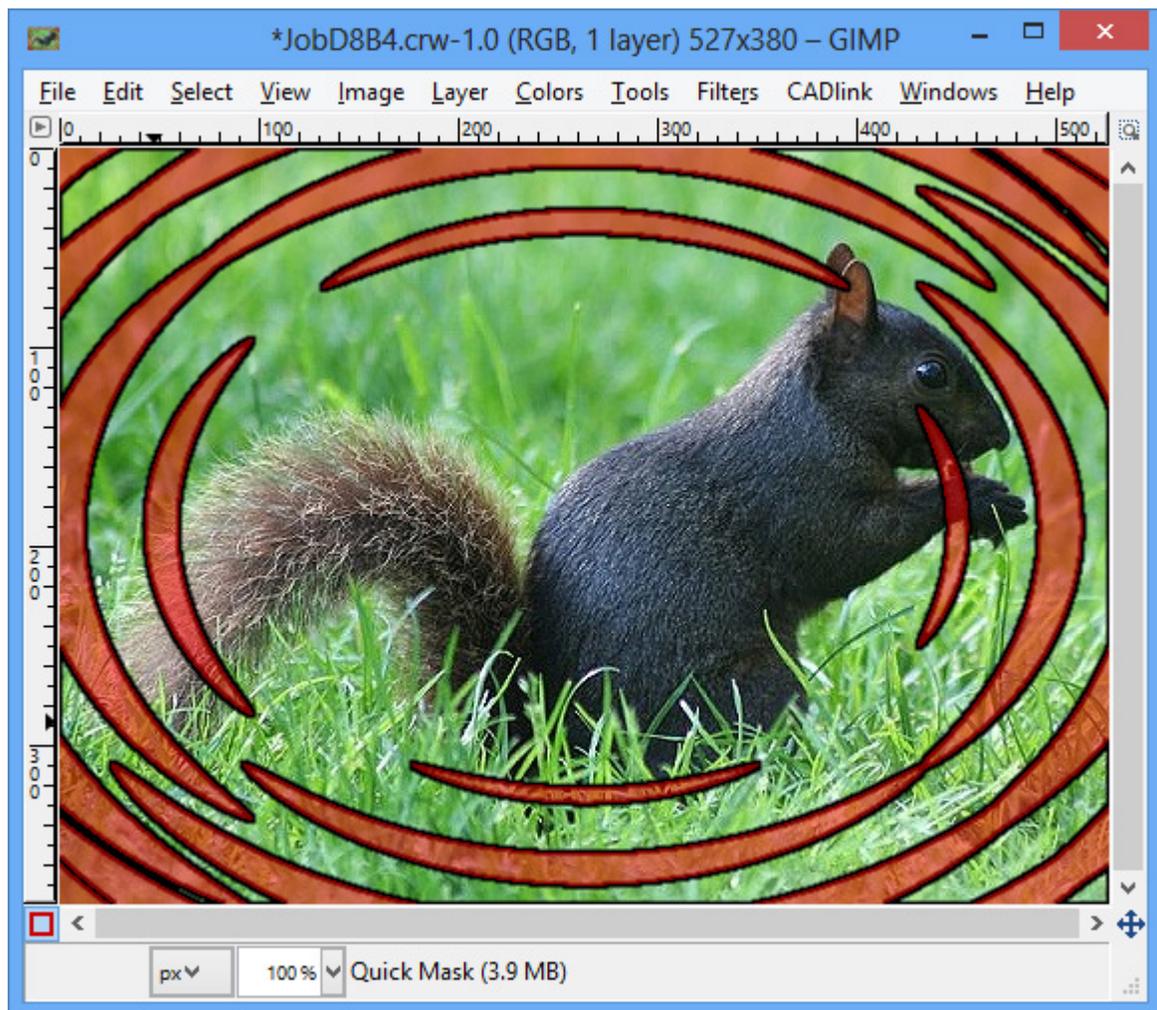
11. From the **Image Window**, go **Filters** menu >> **Blur** >> **Gaussian Blur**.

12. The **Gaussian Blur** dialog will open.

13. Click **OK** to apply the blur effect.

14. In the bottom-left corner of the **Image Window**, click the **Quick Mask** button.

15. The previously red translucent mask will now be a selection.

16. From the **Image Window**, go **Select** menu >> **Invert**.

17. In the **Main Toolbox**, set the **Background Color** = WHITE.

18. From the **Image Window**, go **Edit** menu >> **Fill with BG Color** (see result in the following screenshot).
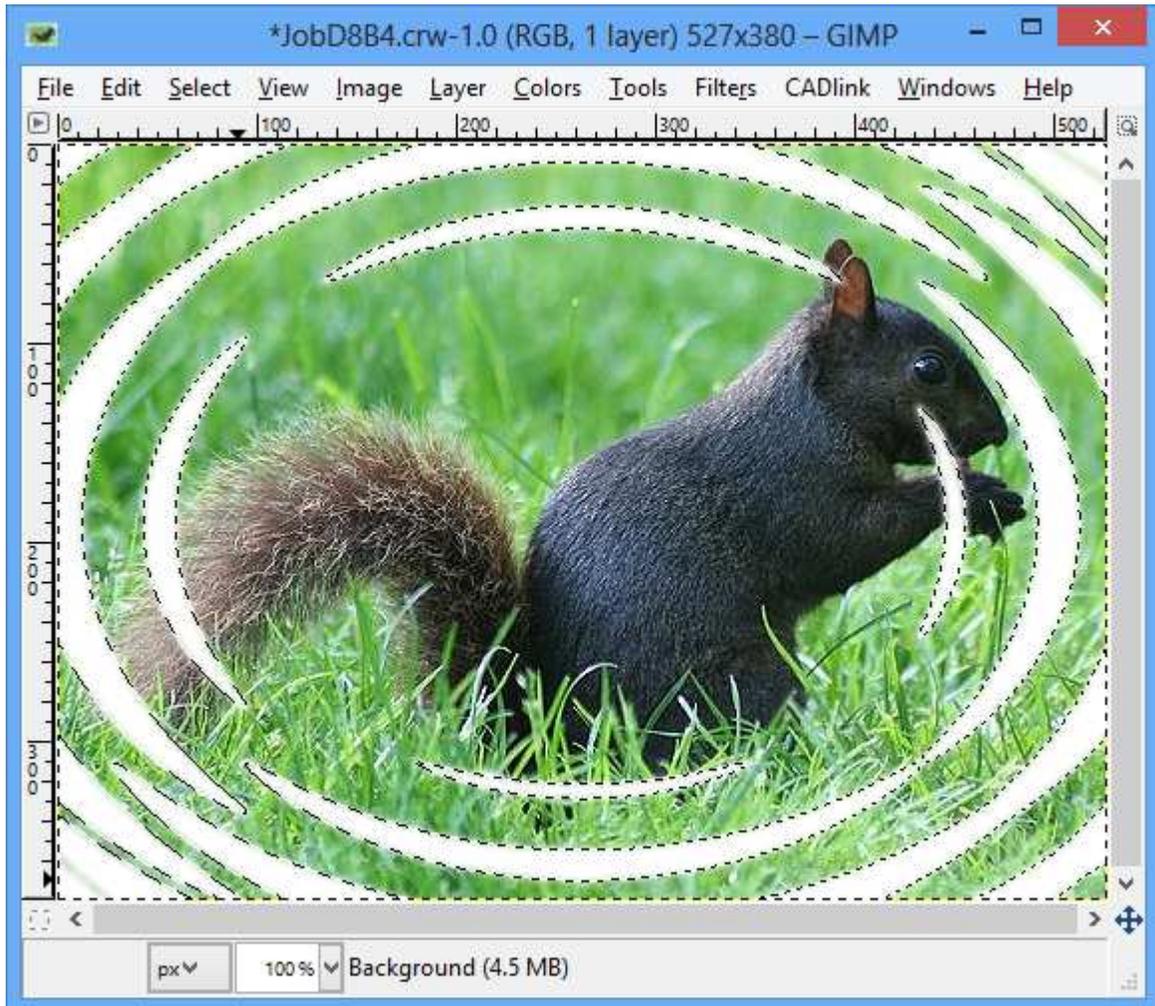
19. From the **Image Window**, go **Select** menu, choose **None**.

Saving Images with Transparency

GIMP can be used to create images that contain transparency layer information (a.k.a., an Alpha channel). Use the following steps to confirm whether an image already has a transparency layer. If a transparency layer is not present, then use the subsequent steps to add a transparency layer.

?Check for an Existing Transparency Layer

?Construct an Image with Transparency Layer

?Load a File onto a Transparent Layer

Check for an Existing Transparency Layer

For an image file that supports transparency information (e.g., a GIF or PNG file), it is possible that the file already contains a transparency layer (i.e., Alpha channel). The Channels dialog can be used to confirm whether an Alpha already exists, as follows:

1. From the **Main Toolbox**, choose **File** menu >> **Open** to load the given file.

    Alternately from SignLab, choose **Image** menu >> **Edit with GIMP**.

2. The image will be shown in the **Image Window**.
3. From the **Image Window**, choose **Windows** menu >> **Dockable Dialogs** >> **Layers**.
4. The **Layers** dialog will open.
5. From the **Image Window**, choose **Windows** menu >> **Dockable Dialogs** >> **Channels**.
6. The **Channels** dialog will open.
    - In the **Channels** dialog, if there is a an **Alpha** channel, then this indicates that the image already has a transparency layer.
    - If the **Channels** dialog does **NOT** have an **Alpha** channel, then use the following section to construct an image that has a transparency layer.

[?]Construct an Image with Transparency Layer

Construct an Image with Transparency Layer

In the previous section, we found that the image did not have an Alpha channel for storing transparency data. Use the following procedure

1. From the **Image Window**, choose **Select** menu >> **All**.

2. From the **Edit** menu, choose **Copy**.

3. From the **File** menu >> **New**.

4. The **Create a New Image** dialog will open.

5. Click to expand the **Advanced Options**.

6. From the **Fill With** drop-list, choose **Transparency**.

7. Click **OK** to create the image.

8. A new **Image Window** will open.

9. In the **Channels** dialog, there will be an **Alpha** channel. This indicates that a transparency layer has been created for the image.

10. In the new **Image Window**, choose **Edit** menu >> **Paste**.

11. In the **Layers** dialog, note that the pasted image is on a "Floating Selection" layer.

12. In the **Layers** dialog, click the **Create New Layer** button.

13. The previously "Floating Selection" will now be its own "Pasted Layer."

At this point, you can delete background elements from the "Pasted Layer" to reveal the transparent layer.

[?]Load a File onto a Transparent Layer

Load a File onto a Transparent Layer

The following procedure is an alternative method that shows how to create an image with a transparent layer, such that an image file can then be loaded as a new layer. For the file that will be loaded, you need to know width, height, and resolution of the image.

1. From the **Main Toolbox**, choose **File** menu >> **New**.

2. The **Create a New Image** dialog will open.

3. Click to expand the **Advanced Options**.

4. From the **Fill With** drop-list, choose **Transparency**.

5. Set the **Width** and **Height** of the canvas that will be created for the image.

6. Set the **Resolution** of the image.

7. Click **OK** to create the image.

8. A new **Image Window** will open.

   The Channels dialog can be used to confirm the existence of an (Alpha) transparency layer.

9. From the **Image Window**, choose **File** menu >> **Open as Layers**.

10. The **Open Image as Layers** dialog will open.

11. Choose the image file and click the **Open** button.

12. In the **Layers** dialog, note that the loaded image is on a separate layer above the "transparent" background.

At this point, you can delete background elements from the loaded file to reveal the transparent layer.

Making a Selection Partially Opaque

Once an image has been set up with an (Alpha) transparency layer, there are various means of making the image partially opaque.

[?] Adjust Opacity Using the Eraser Tool

[?] Adjust Opacity Using a Floating Selection

[?] Adjust Opacity Using a Layer Mask

Adjust Opacity Using the Eraser Tool

1. From the **Main Toolbox**, click the **Eraser Tool**.

2. The lower-half of the toolbox will display the **Eraser** commands.

3. Set the **Opacity** to a low value, perhaps 50% or 20%.

4. Adjust the **Scale** for the desired brush size.

5. In the **Image Window**, click and drag to apply a partially transparent effect (i.e., paint the image using the eraser tool).

Adjust Opacity Using a Floating Selection

Adjust Opacity Using a Floating Selection

1. From the **Main Toolbox**, use the selection tools to make a selection (e.g., Rectangle Select, Ellipse Select, Select by Color, etc.).

2. From the **Image Window**, choose **Select** menu >> **Float**.

3. In the **Layers** dialog, the selection will now be on a "Floating Selection" layer.

4. In the **Layers** dialog, adjust the **Opacity** slider to achieve the desired level of transparency effect.

Adjust Opacity Using a Layer Mask

Adjust Opacity Using a Layer Mask

1. In the **Image Window**, create a selection.

2. From the **Image Window**, choose **Layer** menu >> **Mask** >> **Add Layer Mask**.

3. The **Add Layer Mask** dialog will open.

4. Set the **Initialize Layer Mask** to = Selection.

5. From the **Main Toolbox**, click the **Paintbrush Tool**.

6. The lower-half of the toolbox will display the Paintbrush parameters.

7. Set the **Opacity** to a low value, perhaps 50% or 20%.

8. Adjust the **Scale** for the desired brush size.

9. In the **Image Window**, click and drag to apply a partially transparent effect (i.e., paint the image using the paintbrush tool).

10. From the **Image Window**, choose **Layer** menu >> **Mask** >> **Apply Layer Mask**.

GIMP Tutorial - Simple Floating Logo

This procedure, updated for GIMP 2.4, is based upon the following online tutorial
http://www.gimp.org/tutorials/The_Basics

Now that you have developed some familiarity with the GIMP tools, try the following tutorial as an intermediate working example.

Suppose that an image requires some three-dimensional floating text that can be repositioned as a separate layer. In this procedure, we will demonstrate how to work in GIMP with toolbox tools, layers, layer masks, filter effects, drop shadows and levels tool.

> **Note:** Completing this tutorial should provide you with a good overview of GIMP functionality, and the individual tutorial sections are useful as examples. For further documentation and tutorials, consult the materials available at www.gimp.org

Step 1 - Launching GIMP

Step 2 - Adding a Text Layer

Step 3 - Creating a Text Object

Step 4 - Moving the Text

Step 5 - Invert the Text

Step 6 - Blur the Text Edges

Step 7 - Adding a Color Layer

Step 8 - Bump Map the Text

Step 9 - Using the Text as a Layer Mask

Step 10 - Cyan Layer

Step 11 - Sharpening the Mask Using Levels

Step 12 - Applying the Mask to a Duplicate

Step 13 - Creating the Drop Shadow

Step 14 - Moving the Drop Shadow

Step 15 - Saving the Image Back to SignLab

Step 1 - Launching GIMP

1. From DTG RIP Pro C6, select the job and then choose **Jobs** menu >> **Edit with GIMP**.

2. The **Main Toolbox** for GIMP will launch. If GIMP had not been previously launched, then several seconds may be required to configure the application.

3. The **Image Window** will display the image, and the **Main Toolbox** will provide editing controls.

Step 2 - Adding a Text Layer

1. If the **Layers** dialog is not present, then from the **Image Window** choose **Windows >> Dockable Dialogs >> Layers**.

2. In the **Layers** dialog, the image will be on the "Background" layer.

3. In the **Layers** dialog, click the **Create New Layer** button.

4. The **New Layer** dialog will open.

5. Set the **Layer** name to "Text Layer."

6. Set the **Layer Fill Type** to White, and then click **OK**.

Step 3 - Creating a Text Object

1. In the **Main Toolbox**, click the **Text Tool**.
2. Click within the **Image Window** to place the text entry point.
3. The **GIMP Text Editor** will open.
4. Type some sample uppercase text, such as "SQUIRREL"
5. Click **Close** to finish text entry.
6. In the **Layers** dialog, the text will appear as a new "SQUIRREL" layer.
7. In the lower portion of the **Main Toolbox**, the text parameters will be available.
8. Adjust the font and font size as appropriate for the image.

Step 4 - Moving the Text

1. In the **Main Toolbox**, click the **Move Tool**.

2. The **Move** parameters will appear in the lower-half of the toolbox.

3. In the **Move** parameters, set **Move** = Layer (button), and click the **"Move the active layer"** option.

4. Click and drag the text object to position it, or use the cursor keys.

Step 5 - Invert the Text

1. In the **Layers** dialog, right-click the "SQUIRREL" layer and choose **Merge Down**.
2. The "SQUIRREL" layer is now merged with the "Text layer" that was previously created.
3. From the **Image Window**, choose **Colors** menu >> **Invert**.
4. The text will now appear as white text on a black background.

Step 6 - Blur the Text Edges

1. In the **Main Toolbox**, click the **Blur / Sharpen** tool.

2. The **Blur / Sharpen** parameters will appear in the lower-half of the toolbox.

3. For a larger brush size, increase the **Scale** slider.

4. For the **Rate** slider, adjust the intensity of the blur effect, such that a slight blurring occurs along the text edges. Perhaps a low initial value of 5 would be appropriate. When developing this procedure, a value of 50 produced good results.

5. Apply the blur effect by clicking and dragging in little swirls along the text edges.

6. A slight blurring should be apparent.

Step 7 - Adding a Color Layer

1. In the **Layers** dialog, click the **Create New Layer** button.
2. The **New Layer** dialog will open.
3. Set the **Layer name** to "Color Storm."
4. Set the **Layer Fill Type** to White, and then click **OK**.
5. From the **Image Window**, choose **Filters** menu >> **Render** >> **Clouds** >> **Plasma**.
6. The **Plasma** dialog will preview how the white background of the "Color Storm" layer will appear.
7. Adjust the **Turbulence** slider to enhance the effect, and then click **OK** to apply.
8. The plasma effect will now be applied to the "Color Storm" layer.

Step 8 - Bump Map the Text

Milestone: Three Layers

At this point, the **Layers** dialog should have three layers in the following order:

- A "Color Storm" layer that has a colorful plasma effect.

- A "Text Layer" that has blurred, inverted text (white on black).

- A "Background" layer that has our original image.

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1. In the **Layers** dialog, select the "Color Storm" layer.

2. From the **Image Window**, choose **Filters** menu >> **Map** >> **Bump Map**.

3. The **Bump Map** dialog will preview the "Color Storm" layer.

4. From the **Bump Map** drop-list, choose the "Text Layer."

   This drop-list is used to choose the "surface" that serves as the basis for the bump map effect. Note that this drop-list will list ALL available GIMP layers.

5. Adjust the preview sliders, such that you can see the impression created by the text.

6. Adjust the **Bump Map** dialog parameters, such that the plasma colors appear to be wrapped over the text, and the shading on the text appears distinctive.

   When developing this procedure, we found that good results were obtained by: Azimuth = 135, Elevation = 15, and Depth = 1.

7. Click **OK** to apply the **Bump Map** dialog settings.

8. The "Color Storm" layer will now be modified according to the bump map effect.

Step 9 - Using the Text as a Layer Mask

1. In the **Layers** dialog, select the "Color Storm" layer.
2. Right-click the "Color Storm" layer and choose **Add Layer Mask**.
3. The **Add Layer Mask** dialog will open.
4. Set the mask properties to **White (full opacity)**, and the click **Add** button.
5. In the **Layers** dialog, the "Color Storm" layer will have a mask that appears as a "blank" rectangle to the right of its thumbnail preview.
6. In the **Layers** dialog, click the "Text Layer."
7. From the **Image Window**, choose **Edit** menu >> **Copy**.
8. In the **Layers** dialog, click the "Color Storm" layer.
9. From the **Image Window**, choose **Edit** menu >> **Paste**.
10. The pasted text layer will now appear in the **Layers** dialog as a "Floating Selection" layer.
11. Right-click the "Floating Selection" layer and choose **Anchor Layer**.

This will anchor the floating selection into the previously active layer, which in our case was the mask of the "Color Storm" layer.

Step 10 - Cyan Layer

1. In the **Main Toolbox**, click the **Foreground** color.
2. The **Change Foreground Color** dialog will open.
3. Set a cyan hue and then click **OK** to accept.
4. In the **Layers** dialog, select the "Text Layer."
5. Click the **Create New Layer** button.
6. The **New Layer** dialog will open.
7. For the new layer, set the **Layer** name to "Cyan Layer."
8. Set the **Layer Fill Type** to **Foreground color**, and then click **OK**.

Step 11 - Sharpening the Mask Using Levels

Milestone: Four Layers

At this point, the **Layers** dialog should have four layers in the following order:

- A "Color Storm" layer that has a colorful plasma effect that is clipped to a mask.

- A "Cyan Layer" that has a cyan foreground.

- A "Text Layer" that has blurred, inverted text (white on black).

- A "Background" layer that has our original image.

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1. In the **Layers** dialog, select the "Color Storm" layer.
2. From the **Image Window**, choose **Colors** menu >> **Levels**.
3. The **Levels** dialog will open.

   The **Levels** dialog graphically shows the shadows, midtones, and highlights that are present in the given layer. However, in our case the layer is a mask based on inverted text, where we had previously blurred the edges of the text (i.e., the blurred text edges are various shades of gray).

4. In the **Levels** dialog, the **Input Levels** section has a slider with three handles: **Shadows** (left-most handle), **Midtones** (center handle), and **Highlights** (right-most handle).
5. Below the sliders are three edit fields, which can be used to set precise slider values.
6. Set the **Highlights** slider to 100.
7. Set the **Midtone** slider to 0.20 .
8. The edges of the text mask should appear much sharper.
9. Click **OK** to close the **Levels** dialog.

Step 12 - Applying the Mask to a Duplicate

1. In the **Layers** dialog, select the "Color Storm" layer.
2. Right-click the "Color Storm" layer and choose **Duplicate Layer**.
3. A "Color Storm copy" layer will be created.
4. Right-click the "Color Storm copy" layer and choose **Apply Layer Mask**.
5. Double-click the "Color Storm copy" layer, and change its name to "Shadow."
6. With the "Shadow" layer selected, click the **Lower This Layer** button (i.e., the "down arrow" button).

Step 13 - Creating the Drop Shadow

Milestone: Five Layers

At this point, the **Layers** dialog should have five layers in the following order:

- A "Color Storm" layer that has a colorful plasma effect that is clipped to a mask.

- A "Shadow" layer that will be used to create a drop shadow.

- A "Cyan Layer" that has a cyan foreground.

- A "Text Layer" that has blurred, inverted text (white on black).

- A "Background" layer that has our original image.

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1. In the **Main Toolbox**, click the **Foreground color**.
2. The **Change Foreground Color** dialog will open.
3. Set a black hue and then click **OK** to accept.
4. For the "Color Storm" layer, click the "eye" button to clear the layer visibility to **OFF**.
5. Select the "Shadow" layer and tick the **Lock** checkbox. This will lock the transparency within the "Shadow" layer.
6. From the **Main Toolbox**, click and drag the black Foreground color onto the **Image Window**.
7. When the black color is dropped onto the **Image Window**, the lettering of the "Shadow" layer will be filled with black.

   The **Lock** checkbox (a.k.a., **Keep Transparency**) prevents the transparent portions from being filled.

8. For the "Shadow" layer, clear the **Lock** checkbox (i.e., remove the tick).
9. For the "Color Storm" layer, click the "eye" button to clear the layer visibility to **ON**.

Step 14 - Moving the Drop Shadow

1. In the **Layers** dialog, click the "Shadow" layer.

2. In the **Main Toolbox**, click the **Move** Tool.

3. Using the cursor keys, nudge the "Shadow" layer.

4. To see the finished image, turn **OFF** the layer visibility for both the "Cyan Layer" and "Text Layer."

Step 15 - Saving the Image Back the Queue

1. From the **Image Window**, choose **CADlink** menu >> **Send to DTG RIP Pro C6**.
2. The finished image will be placed in the queue as a new job.

Fluid Mask - Easy Image Clipping

Note: Fluid Mask also has its own help documentation, and tutorial videos are available from the Fluid Mask web site (www.vertustech.com).

Fluid Mask is an intuitive tool for knocking out the background of an image, such as a photo of a person standing before scenery. The process is very much like a paint-by-numbers coloring book, where you paint with a green brush (the **Keep** brush) to indicate the foreground, and paint with a red brush (the **Delete** brush) to indicate background.

Suppose that you have a customer photo, such as a JPEG image of their child that was taken using a digital camera. However, the background of the image is cluttered and needs to be clipped using Fluid Mask.

1. In DTG RIP Pro C6, select the job and then choose **Jobs** menu >> **Edit with Fluid Mask**.

2. The Fluid Mask editing mode will launch, and the image will be analyzed in order to automatically identify similar regions of color and texture.

   - Several seconds may be required, and the resulting regions will appear much like a paint-by-numbers coloring book.

3. Along the top of the Fluid Mask window are three tabs: **Source**, **Workspace**, and **Cut-out**. The **Workspace** tab should be active.

4. On the left-hand side is the **Tools** toolbar.
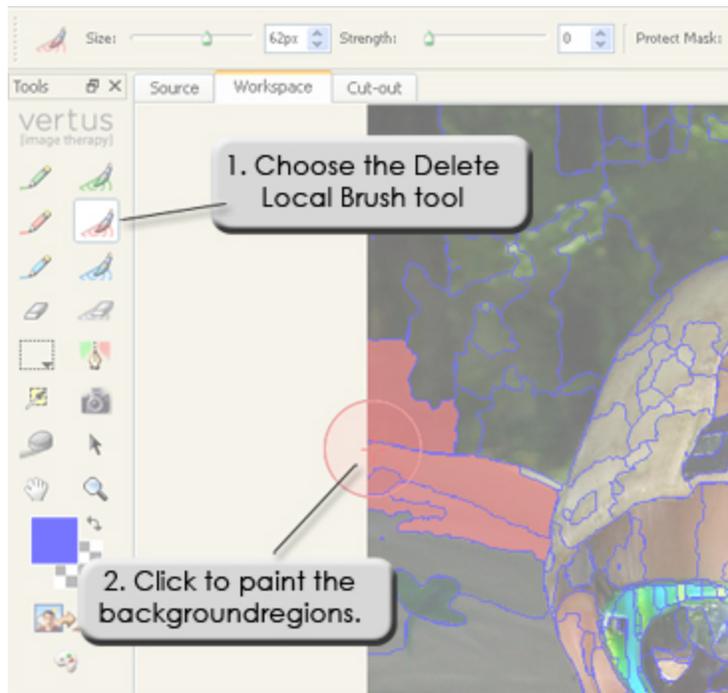
5. From the **Tools** toolbar, choose the **Delete Local Brush** tool.

6. With this brush, move the cursor over part of the background image and then left-click.

   - Notice that regions that were overlapped by the brush have now been filled with a red mask.

7. Continue to click other portions of the background, such that you are filling in the background with a red mask (i.e., this portion is being marked for deletion).

   - In addition to clicking, you can also click-and-drag to paint over an area.

8. If necessary, remove the tick from the **Show Object Edges** checkbox. This will hide the regions, such that you can distinguish any portions of the background that were missed.

9. When you have finished painting the background red, choose **Image** menu >> **Auto-Fill Image**.

   - The foreground of the image will be automatically painted green (i.e., the foreground will be kept).

   - Also, a blue blending line will automatically indicate the transition region between red background and green foreground.

10. From the **Tools** toolbar, click the **Create Cut-Out** button.

11. From the **File** menu, choose **Save And Apply**.

See also Fluid Mask Comments

Fluid Mask Comments

Green for foreground, Red for background

- In our example, we used a red brush to paint the background mask, and then we used **Image** menu >> **Auto-Fill Image** to automatically complete the foreground mask.

- Depending on the image, we may have found it easier to use a green brush to paint the foreground mask, and then use **Auto-Fill Image** to complete the background mask.

Blue for busy edges (e.g., hair, fur and feathers)

- For images that have busy edges, the easiest procedure is to first use the **Blend Exact Brush** (blue) with a thick brush to paint those edges, and then use a thin brush to trace the remainder of the principle image.

- Once the image has been traced with blue, use the **Keep Exact Brush** (green) to paint within the traced image.

- Optionally, use **Image** menu >> **Clean All Blend** and **Clean All Keep** to catch any stray pixels that you may have missed.

- Then use **Image** menu >> **Auto-Fill with Delete** to complete the background.

Local Brush and Exact Brush

- For both green and red, there is a **Local Brush** and an **Exact Brush**.
- Use the **Local Brush** to paint regions.
- Use the **Exact Brush** to paint only pixels (i.e., this is a fine editing tool).

Increase the brush size

- Use the square bracket keys ' [' and '] ' to change the brush size.

Increase the brush strength

- A brush with strength zero will affect only the regions that you touch with the brush.
- A strength greater than zero will cause adjacent regions to be painted (e.g., like a damp brush).

Use the Clean Tool

- After most of a background or foreground mask has been filled, choose the **Tools** toolbar >> **Clean Tool**, and then click the given mask. Any speckles within the mask will be automatically painted.

Hide the Region Edges

- Along the bottom of the **Fluid Mask** window is the **Show Object Edges** checkbox. Remove the tick to reveal missed areas.

Undo the Paint Steps

- If you have painted the wrong portion of the image, then use the **Edit** menu >> **Undo** command. The shortcut for Undo is **[Ctrl + z]**.

- Alternatively, from the **Tools** toolbar, use the **Erase Brush** (there are both **Local** and **Exact** versions).

Zoom

- Press the ' z ' key to activate the zoom magnifying glass, then marquee-select the zoom region.

- To see the full size image, use the **[Ctrl + 0]** shortcut (control + zero).

- Use the ' + ' and ' - ' keys to zoom in and out.

Example - Hair and Feathers

Ever since FluidMask was introduced, it has been quite useful for knocking out the background of images using a "paint by numbers" style of interface. Now with transparency support in SignLab, busy edges can likewise be knocked out, such as for hair, fur or feathers. The resulting edges will be partially transparent, such that objects behind the image will show through.
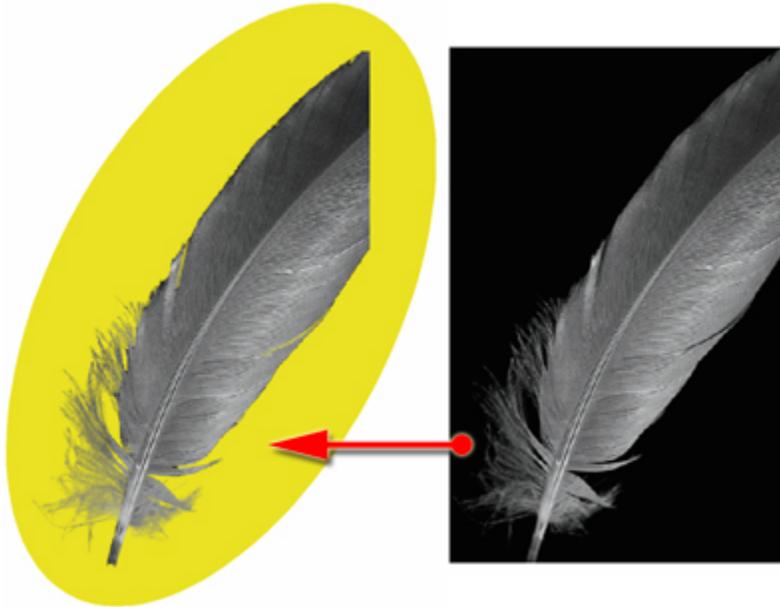
On the right, the original image is of a white feather on a black background. Using FluidMask, the feathery areas incorporate transparency that cause the image to blend naturally with backgrounds.

The following steps illustrate how FluidMask is used to prepare transparent transitional edges:

1. Choose **Image** menu >> **FluidMask** to begin, and FluidMask will automatically identify common regions within the image.

2. Using the **Blend Exact Brush** (blue), paint the transition areas between the foreground and background. In particular, paint the feathery areas where objects behind the image should be partially visible.
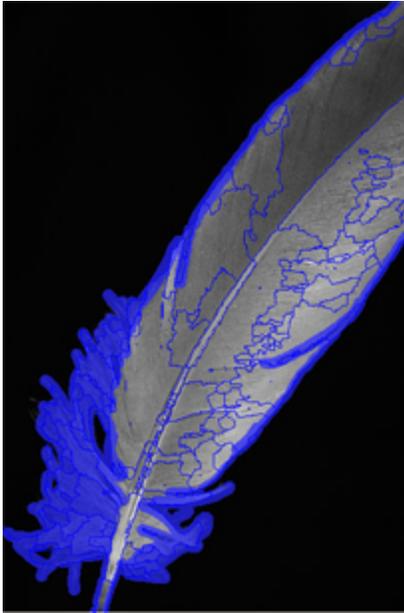
3. Using the **Keep** brushes (green), paint the remaining foreground areas of the image.

    If you inadvertently paint over a blue area, then use a **Blend** brush to restore the blue.
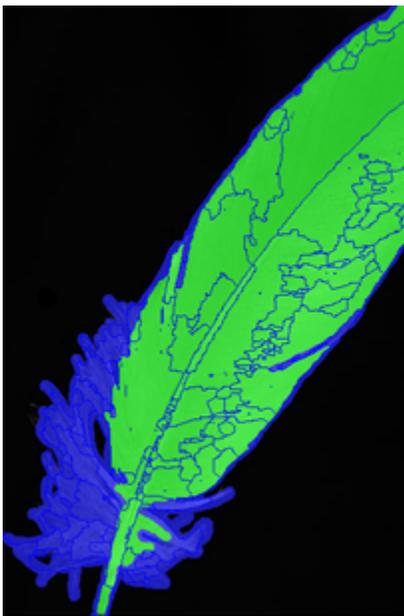
4. Finally, use the **Delete** brushes (red) to paint the background areas that should be completely removed.

    As before, if you inadvertently paint over a blue area, then use a **Blend** brush to restore the blue.
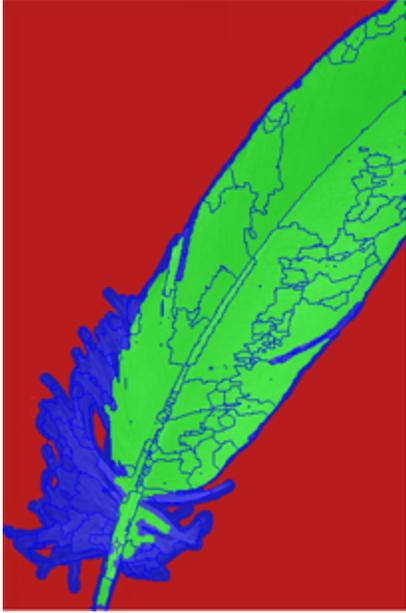
5. When all the regions have been painted, use the **Image** menu >> **Create Cut-out** command to complete the finished image that has both a knocked-out background, and a transition area along the edges that will be partially transparent.

Super Size Image

The **Super Size Image** is an image enlargement tool that increases the resolution of an image, whilst retaining the detail and qualities of the original image. Typically, it would be desirable to increase the resolution for images that are lower resolution than ideal, or after scaling the job to print at dimensions that are much greater than the image was designed for.

For example, suppose that a job image has a resolution of 150 dpi, and you have used the Visual Print Manager to scale the image print dimensions by 100%. However, scaling did not change the image resolution. As a solution, use Super Size Image to increase the image resolution.

1. Select the job and choose **Jobs** menu >> **Super Size Image**
2. The current image resolution will be displayed, and you are provided an opportunity to set a higher resolution.
3. When the **OK** button is clicked, the **Zoom Engine** dialog will preview the quality of the resized image. Adjust the **Zoom Engine** controls to retain the desired quality.
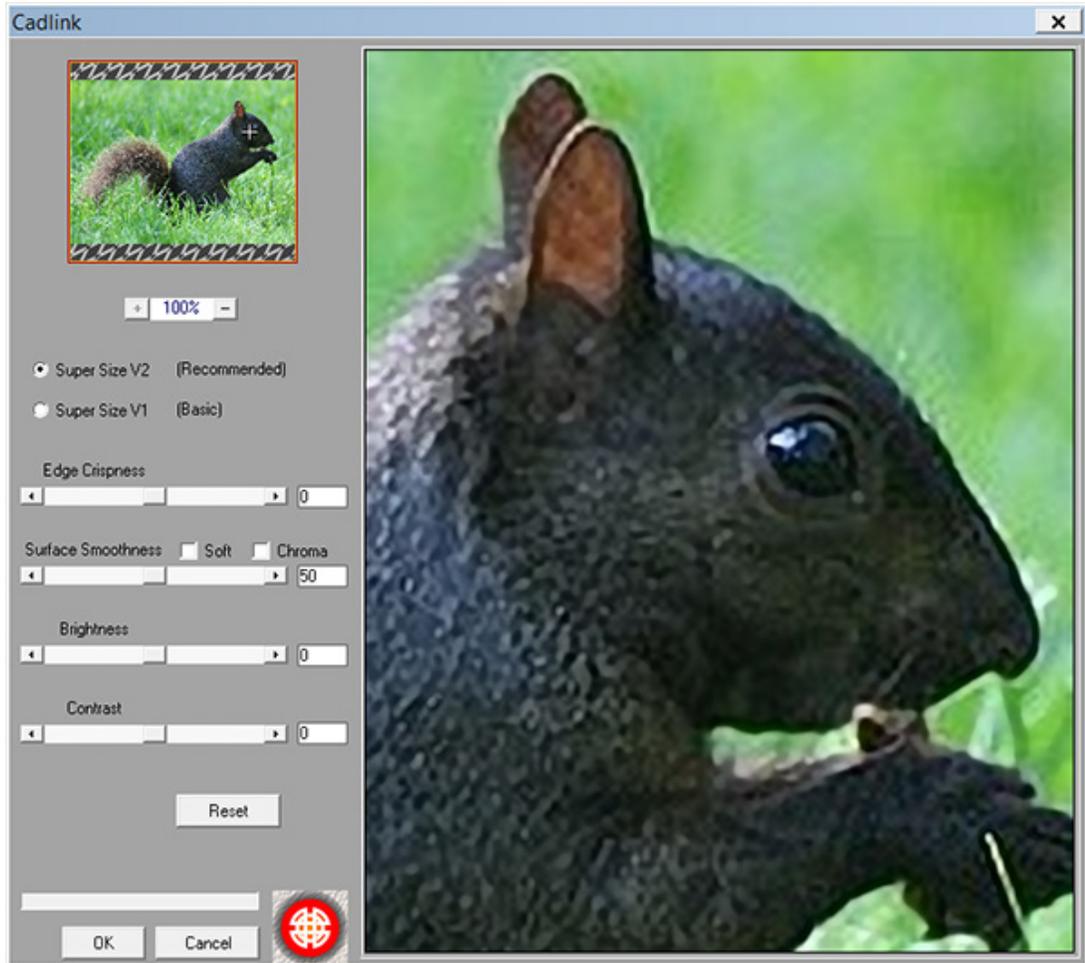
- **Preview Image** – A thumbnail of the original image is shown in the upper-left corner of the dialog, and a zoomed preview takes up about 2/3 of the right-hand side. Click the original image thumbnail to center the preview.

- **Zoom Level** –Click the (+) and (-) buttons to adjust the zoom level of the zoomed preview.

- **Super Size V1 and V2** – These are versions 1 and 2 of the Super Size algorithm that is used for enlarging images. **Super Size V2** is the improved method that retains greater image quality (e.g., less aliasing, sharper details, etc.), though the V1 method remains available as an alternative.

- **Edges Crispness** – This slider varies in the range of [-100, 100]. Positive values will sharpen the edges between color regions, whereas negative values will blur the edges.

- **Surface Smoothness** – This slider varies in the range of [0, 100]. This slider affects the perceived texture of the image. Low slider values allow the image to appear more jagged (i.e., rough), whereas high values create the impression of a continuous, smooth surface.

- **Soft and Chroma** – Note that the **Soft** and **Chroma** options are only available if **Super Size V2** is enabled. Tick the **Soft** checkbox to create a slight blur that suggests softness within the image. Tick the **Chroma** checkbox to increase the color saturation.

- **Brightness** (-100, 100) – Adjust the intensity of the finished image.

- **Contrast** (-100, 100) – Adjust the perceived difference between light and dark regions of the image.
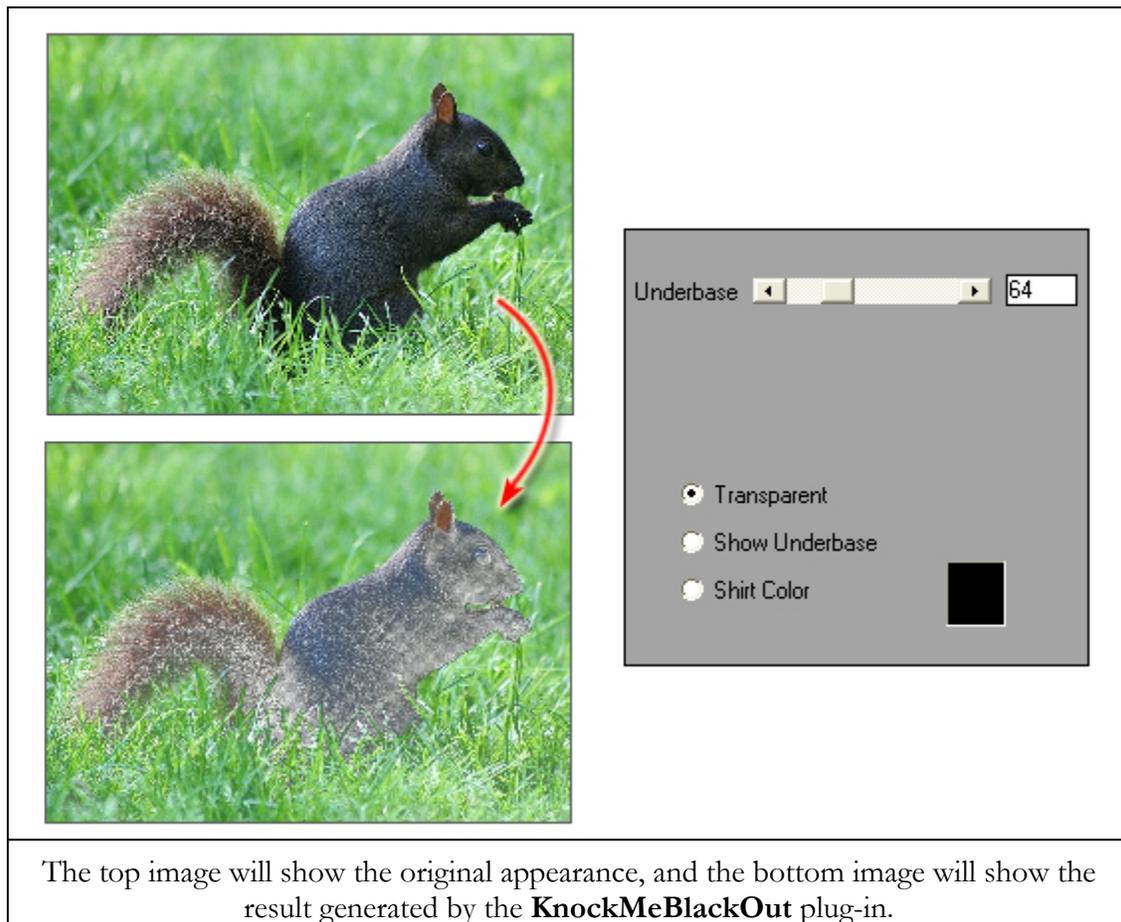
KnockMeBlackOut

Jobs menu >> **CADlink** >> **KnockMeBlackOut**

The KnockMeBlackOut command is optimized for creating an underbase for either a black or near-black garment color. If you have an image that already has a black background, and you want to print onto a black shirt, this plug-in effectively provides a one-hit sequence for preparing the image.

2. Choose the **KnockMeBlackOut** command, and the preview dialog will show two versions of the image.

The top image will show the original appearance, and the bottom image will show the result generated by the **KnockMeBlackOut** plug-in.

3. By adjusting the **Underbase** slider, this allows you to vary the shades of gray that will be "knocked out" of the image.

The KnockMeBlackOut Controls

- **Preview** - The original image is shown above the filtered image. At the bottom-right is a zoom control for inspecting the filter results. When the zoomed image does not fit within the available space, click and drag to reposition the preview.

- **Transparent** - This is a preview mode that shows how the image will appear once the plug-in is applied. This is the best view for inspecting the image colors that will be printed.

All transparent areas are denoted by a ""checkerboard" pattern where the garment color will show through. The fainter the checkerboard pattern, the more underbase that will be printed.

	Original Image
	Before using KnockMeBlackOut, we setup our original image with the following:
	1. A solid blue strip
	2. A yellow-to-black gradient fade
	3. A spot white-to-black gradient fade (i.e., a white ink is part of this gradient)
	4. The word "WHITE" (with white text color)
	5. The word "BLACK" (with black text color)
	Transparent Mode (checker pattern = garment color)
	In the KnockMeBlackOut preview, the **Transparent** option will use a checker pattern where nothing is printed. For our original image, the preview shows:
	1. The solid blue that will be printed.
	2. The yellow color that gradually blends to the garment color.
	3. The printed spot white that gradually blends to the garment color.
	4. The print spot white of the word "WHITE"
	5. For the word "BLACK," no ink is printed.

- **Show Underbase** - This preview mode shows the white underbase that will be created.

Note that the preview is inverted, such that black areas represents the white underbase, and the white areas will not be applied with underbase.

Gray areas will represent a thin underbase layer will be printed to allow some of the garment color to show through.

	Show Underbase Mode (black = applied underbase)
	The **Show Underbase** option uses black to represent the printed white underbase, and a checker pattern where nothing is printed.
	1. Solid black that represents solid white underbase. The solid blue color will be printed atop the underbase.
	2. A black strip that fades to gray. The underbase is strongest at the left, where the yellow needs dominate the garment color.
	3. A black strip that fades to gray at the far-right. Again, the The underbase needs to be strongest at the left, where the white needs to dominate the garment color.
	4. The word "WHITE" appears black, since a solid white underbase will be applied here.
	5. The word "BLACK" appears white, since zero underbase will be applied.
	Of course, printing black ink on a black garment in point (5) does not make sense, and is only used here as an example.

- **Shirt Color** - This preview mode combines the garment color, underbase and image colors to show the preview as it would appear on the finished garment. The color picker can be used to choose the specific hue that represents the garment color.

	Shirt Color Mode (show garment color mixed with image) The **Shirt Color** option shows the image colors as they will appear when printed on the garment, and a checker pattern where nothing is printed. 1. A solid blue strip. The white underbase has been applied, and only blue should be visible on top. 2. A yellow-to-black gradient fade. Inspection of the garment will show that less yellow is printed as the gradient blends into the black garment color. 3. A spot white-to-black gradient fade. Inspection of the garment will show that less white is printed as the gradient blends into the black garment color. 4. The word "WHITE" should appear as a solid white. 5. The word "BLACK" will preview as black because it matches the black garment material. Of course, printing black ink on a black garment in point (5) does not make sense, and is only used here as an example.

- **Underbase** - Use this field to adjust the underbase strength (0..255) that will be applied to the garment. The default underbase setting is 70 (about 25% of maximum).

Increasing this value will cause more underbase to be laid down, which will increase the perceived color brightness in the printed image.
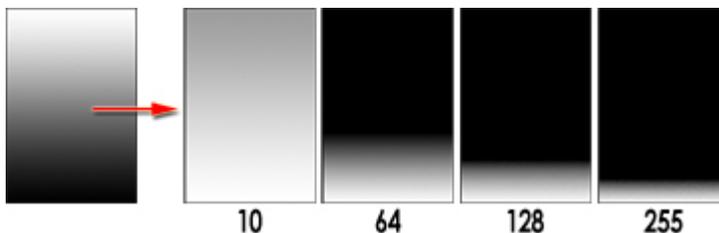
- **Reset** - Set all the dialog controls to their recommended defaults.

> **Note:** Changing the underbase setting does not change areas that will have 100% white ink in the underbase, nor areas that require no white ink in the underbase. Instead, the underbase setting will change the amount of white ink used to blend the black garment color into the image colors (i.e., in the shadow regions of the image). In effect, increasing the underbase can cause shadow regions of the original image to appear lighter and more visible.

KnockMeColorOut

Jobs menu >> **CADlink** >> **KnockMeColorOut**

This **KnockMeColorOut** command is optimized for creating an underbase for a specific garment color. However, if the garment color is either black or near-black, then please refer to the **KnockMeBlackOut** plug-in.

1. Open or create the design that will be printed.

   > **Note:** In **PhotoShop**, the **KnockMeColorOut** plug-in does not work with images on the default **Background** layer. If the image is on the default Background layer, then you must create a duplicate of the image on a new layer, and then delete the old Background layer.

2. Choose the **KnockMeColorOut** command, and the preview dialog will show two versions of the image.

The top image will show the original appearance, and the bottom image will show the result generated by the **KnockMeColorOut** plug-in.
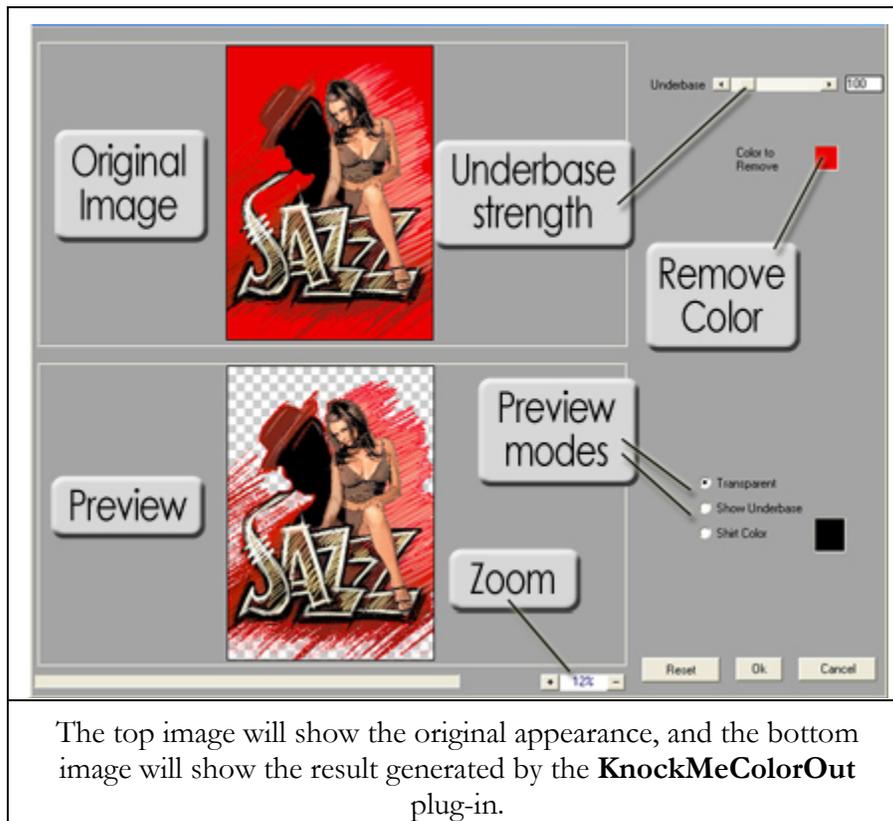
3. By adjusting the **Underbase** slider, this allows you to vary the hues of the selected color that will be "knocked out" of the image.

The KnockMeColorOut Controls

- **Preview** - The original image is shown above the filtered image. At the bottom-right is a zoom control for inspecting the filter results. When the zoomed image does not fit within the available space, click and drag to reposition the preview.

- **Transparent** - This is a preview mode that shows how the image will appear once the plug-in is applied. This is the best view for inspecting the image colors that will be printed.
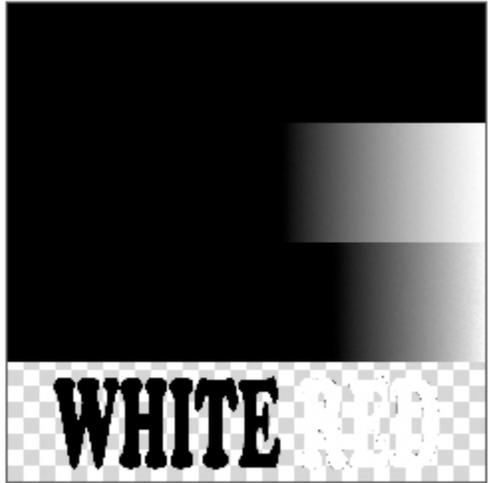
All transparent areas are denoted by a "checkerboard" pattern where the garment color will show through. The fainter the checkerboard pattern, the more underbase that will be printed.

<table>
<tr>
<td>

</td>
<td>

Original Image

Before using KnockMeColorOut, we setup our original image with the following:

1. A solid blue strip
2. A yellow-to-red gradient fade
3. A spot white-to-red gradient fade (i.e., a white ink is part of this gradient)
4. The word "WHITE" (with white text color)
5. The word "RED" (with red text color)

Transparent Mode (checker pattern = garment color)

In the KnockMeColorOut preview, the **Transparent** option will use a checker pattern to represent where the garment color will show through. For our original image, the preview shows:

1. The solid blue that will be printed.
2. The yellow color that gradually blends to the garment color.
3. The printed spot white that gradually blends to the garment color.
4. The print spot white of the word "WHITE"
5. For the word "RED," no ink is printed

</td>
</tr>
</table>

- **Show Underbase** - This preview mode shows the white underbase that will be created.

  Note that the preview is inverted, such that black areas represents the white underbase, and the white areas will not be applied with underbase.

  Gray areas will represent a thin underbase layer will be printed to allow some of the garment color to show through.

	Show Underbase Mode (black = applied underbase) The **Show Underbase** option uses black and shades of color to represent the printed white underbase, and a checker pattern where nothing is printed. 1. Solid black that represents solid white underbase. The solid blue color will be printed atop the underbase. 2. A black strip that fades to gray. The underbase is strongest at the left, where the yellow needs dominate the garment color. 3. A black strip that fades to gray at the far-right. Again, the underbase needs to be strongest at the left, where the white needs to dominate the garment color. 4. The word "WHITE" appears black, since a solid white underbase will be applied here. 5. The word "RED" appears white, since zero underbase will be applied. Of course, printing red ink on a red garment in step (5) doesn't make sense, and we use this example for the sake of comparison.

- **Shirt Color** - This preview mode combines the garment color, underbase and image colors to show the preview as it would appear on the finished garment. The color picker can be used to choose the specific hue that represents the garment color.

	Shirt Color Mode (show garment color mixed with image)
	The **Shirt Color** option shows the image colors as they will appear when printed on the garment, and a checker pattern where nothing is printed. For our example, the color picker has been set to red.
	1. A solid blue strip. The white underbase has been applied, and only blue should be visible on top.
	2. A yellow-to-red gradient fade. Inspection of the garment will show that less yellow is printed as the gradient blends into the red garment color.
	3. A spot white-to-red gradient fade. Inspection of the garment will show that less white is printed as the gradient blends into the red garment color.
	4. The word "WHITE" should appear as a solid white.
	5. The word "RED" will preview as red because it matches the red garment color.
	Of course, printing red ink on a red garment in point (5) does not make sense, and is only used here as an example.

- **Underbase** - Use this field to adjust the underbase strength (0..1000) that will be applied to the garment. The default underbase setting is 100 (about 10% of maximum).

  Increasing this value will cause more underbase to be laid down, which will increase the perceived color brightness in the printed image.

With an Underbase setting of 100, only about 10% of the selected hue is "knocked out," which provides a greater background contrast with the shirt color. This would be appropriate when printing onto a black shirt, so as to retain more of the red image.	With an Underbase setting of 650 (65%), this would be appropriate for printing to a red shirt. Less ink would be used to print the image color, thereby allowing the image to blend more naturally into the shirt color.

- **Reset** - Set all the dialog controls to their recommended defaults.

  > **Note:** Changing the underbase setting does not change areas that will have 100% white ink in the underbase, nor areas that require no white ink in the underbase. Instead, the underbase setting will change the amount of white ink used to blend the garment color into the image colors (i.e., in the shadow regions of the image). In effect, increasing the underbase can cause shadow regions of the original image to appear lighter and more visible.

Transparency Opacity

Some image file formats support the inclusion of an alpha channel, which is essentially a grayscale image that supplements the main job image. The alpha channel is often used to indicate where portions of the job should be transparent, thereby allowing the underlying garment material to show through.

In the case of printing to black (or color) garment material, the alpha channel can be used to indicate areas (and to what degree) that the garment color should show through, such that the printed colors will blend more naturally into that of the garment. Not only is less ink required to complete such jobs, but the printed colors will blend more naturally into that of the garment.

In the following screenshots, the left-hand image is the original color image (a black squirrel amidst green grass), and the right-hand image is an alpha channel grayscale that has been specifically designed to indicate the blackest portions of the color image. In the grayscale, the lightest (white) portions represent areas that will show through, whereas black will be opaque. When printed, less ink will be printed according to the lightest portions, thereby allowing the garment to show through in those regions (presumably for black garment material).

The same concept can be applied with color garment material, such as "knocking out" red in a design that will be printed to red garment material.
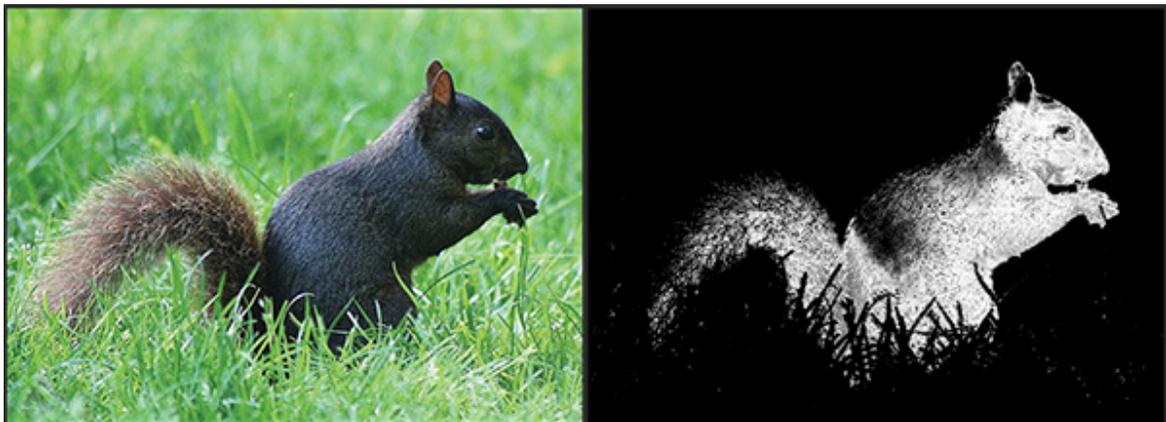
When using transparency to knock out portions of the printed image, a particular concern is the quality of gradient transitions between the image and garment colors, since it is desirable to obtain the most seamless transition. If the alpha channel is not obtaining the desired quality, then the Transparency Opacity tool in DTG RIP Pro C6 can be used to adjust the alpha channel.

For example, the following screenshot shows the **Transparency Opacity** dialog. The top image is the alpha channel, and the bottom image is a preview. Note that the color picker is black to indicate a black garment color, so the preview image shows black where the black garment will show through in the resulting print.
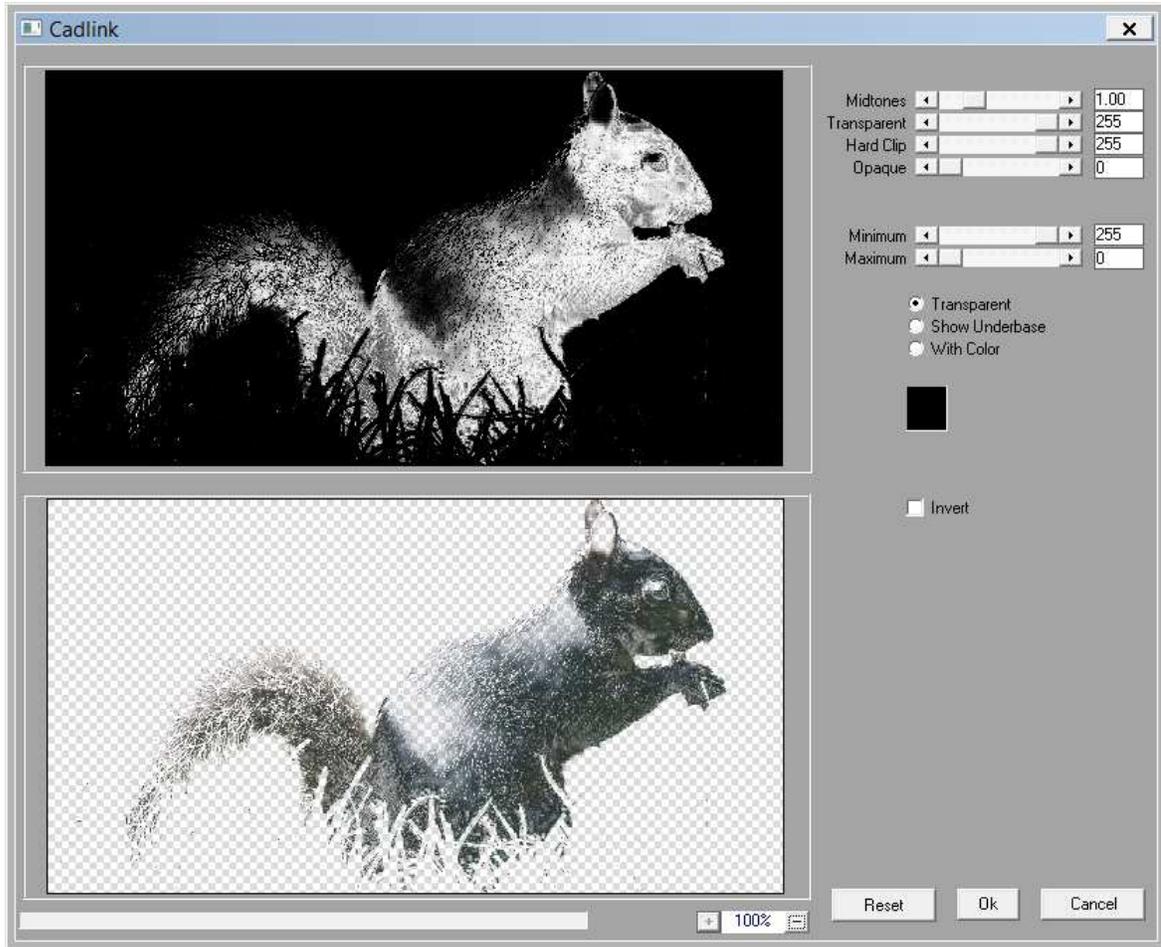
The dialog provides controls for adjusting the transition between white and black regions of the alpha channel. The alpha channel, like any image, is composed of shadow, midtone and highlight regions. In term of grayscale values that range from 0 to 255, shadows have low values approaching 0, and highlights have high values approaching 255. The midtones are the intervening shades between shadows and highlights.

Midtones - This setting represents the approximate middle ground between shadows and highlights, such that the number of grayscale values is balanced between shadow/midtones and midtones/highlights.

Transparent - The white regions of the alpha channel have a grayscale value of 255 (i.e., fully transparent). Reducing this value will reduce the white alpha regions, which allows more ink to be laid down in the transition areas (i.e., more coverage of the garment material).

Hard Clip - The transition areas between white and black represent the blending from image color to garment color, usually in the form of a gradient. Reduce the Hard Clip setting to

create a sharper gradient transition, which makes it less likely for specks of ink to occur within gradients.

Opaque - Increasing this value above zero will cause more of the image to be evaluated as black ink, thereby knocking out more of the image, and laying down less ink.

Minimum and Maximum - The alpha channel , being a grayscale, has gray values that range from 0 (black, maximum opacity) to 255 (white, completely transparent). One way of considering the gray values (0..255) is as a series of steps that allow details to be discerned within the grayscale.

By adjusting the Minimum and Maximum values to less than (0..255), the alpha channel will effectively have less of a range of detail available. However, adjusting this range can be necessary to omit the blackest and whitest portions of an "unbalanced" image that (say) has undesirable artifacts.

Preview Mode

The bottom preview image has three preview modes.

- ☐ **Transparent** - Use this option when the alpha channel is being used to knock out black (or color) from an image.

- ☐ **Show Underbase** - Use this option when the alpha layer is being used to define where a white underbase ink should be applied before printing the color image.

- ☐ **With Color** - Use the color picker to choose the approximate garment channel, so the image can be previewed as it will appear when printed.

Invert - Flip the white and black values of the alpha channel, such that the transparent areas are reversed.

# Easy Color Adjustments Dialog
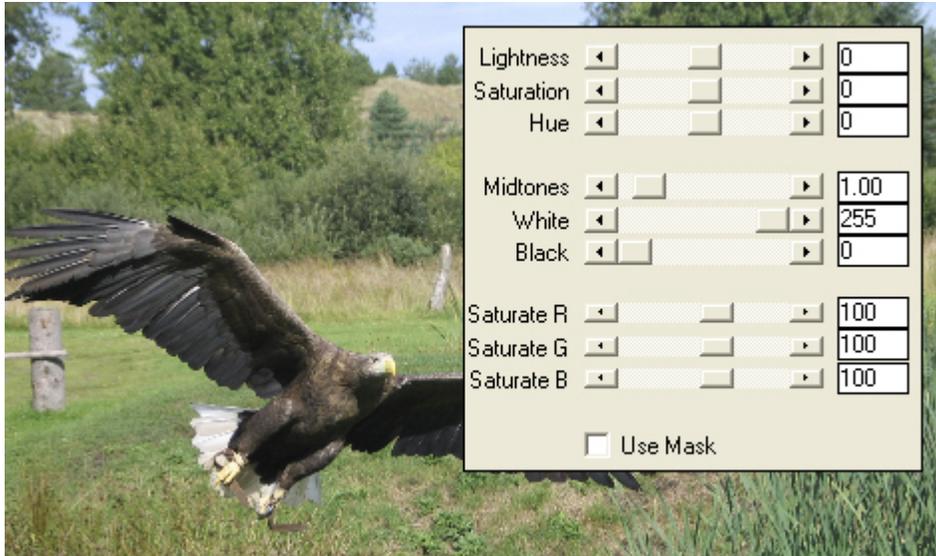
Lightness, Saturation and Hue

These controls are used to adjust the Hue, Saturation, and Lightness values of the bitmap.

- **Hue** is the visual perception of a specific color, such as red, yellow, violet, or orange-brown. The Hue setting is arranged like a color wheel (ROYGBIV), where adjusting the Hue setting will rotate the bitmap colors through the color wheel.

- **Saturation** is the colorfulness of an area in consideration of its brightness level. For example, as a color falls under increasing levels of shadow, the color appears darker, even though its saturation remains constant.

- **Lightness** is the appearance of a color in terms of how white or black it appears.

Midtones, White and Black

These controls are like a Levels control, where a Histogram is used to visualize the range of color values within the image.
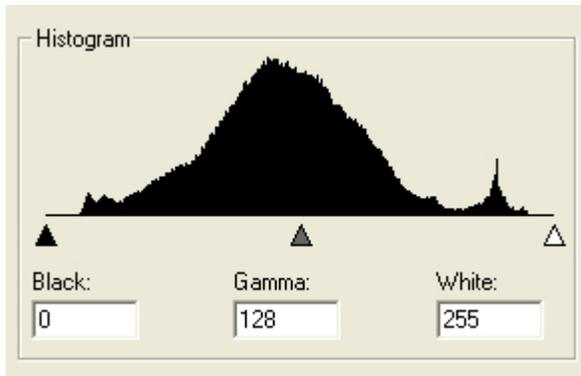
- Increasing the **Black** level will equate the darkest portions to black.
- Decreasing the **White** level will equate the lightest portions to white.
- Increasing or decreasing the **Midtones** will modify the overall intensity of the bitmap (like Gamma in the above histogram).

Saturate RGB

These controls are used to adjust the relative proportions of Red:Green:Blue within the image.

Use Mask

A vector shape can be used to constrain color adjustments within the image.

Cleanup Black

Cleaning the black within an image will adjust near-black pixels to make them black, which should cause the blacks to appear more solid. There are three degrees of Cleanup Black (x1, x2, and x3) that can applied.

Original	Cleanup Black x1	Cleanup Black x3

Cleanup White

Cleaning the white within an image will adjust near-white pixels to make them white, thereby increasing the overall brightness of the image. There are three degrees of Cleanup White (x1, x2, and x3) that can applied. Be aware that increasing the intensity of white pixels can cause details to be lost within the highlight regions of the image.

Original	Cleanup White x1	Cleanup White x3

Contrast

The Contrast command adjusts the darkest blacks to black, and the lightest whites to white, to produce a more vibrant image.

Original	With Contrast Adjustment

Increase Saturation

The **Increase Saturation** command will evaluate the job image and seek to obtain greater vibrancy from the colors.

Original	With Saturation Adjustment

Make Darker

For the darkest regions of an image, the **Make Darker** commands will cause those regions to print closer to black. When using these commands, be cautious of losing details within the shadow regions of the image.

| Original | Make Darker x1 | Make Darker x2 |

Make Lighter

The **Make Lighter** commands cause the lightness within an image to be more prominent.

Original	Make Lighter x1	Make Lighter x2

Noise Shampoo

Noise Shampoo will simplify details within the image, such that the image colors are more homogeneous to that of computer-generated artwork.

Original	Normal Default	Enhanced Default
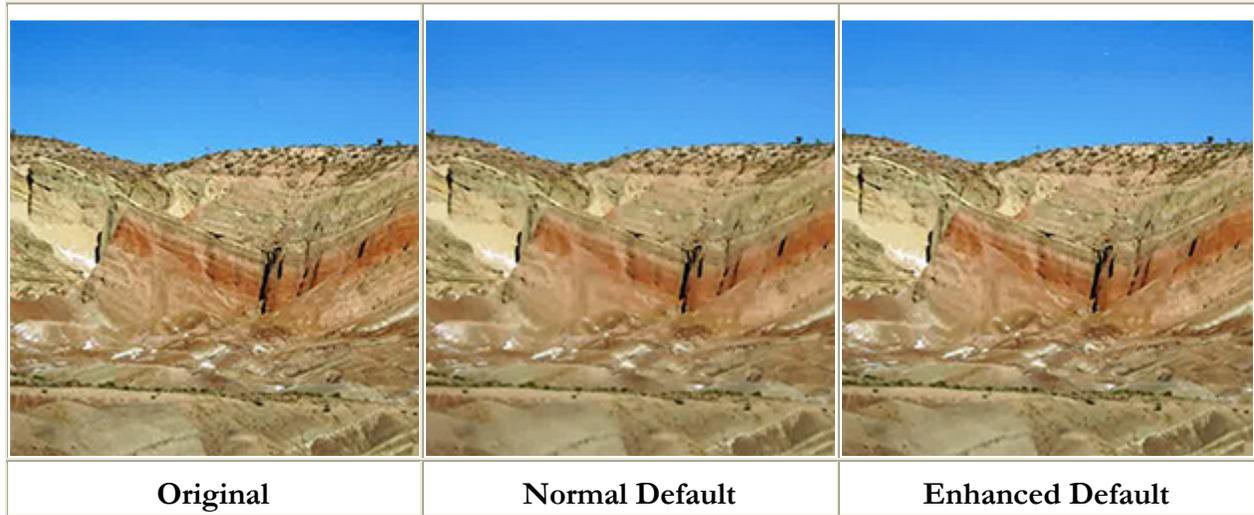
Basic Application Printing

The secret of really good garment printing is integrating the garment color into the design that is being printed onto the garment. When done properly, the image colors will blend into the garment, and the garment color will appear seamless wherever possible. DTG RIP Pro C6 provides unique tools that help you to accomplish specialized tasks for garment printing and achieving the best results with minimal work each time.

In this chapter are special workflows for garment printing from PhotoShop, Illustrator, and CorelDraw. In addition, general workflows are provided for other design applications, such as Xara, GIMP, etc.

Printing to White Garments

Printing to a white garment is straight-forward because it is like printing an image to a white sheet of paper; the colors are simply absorbed into the garment, and the image is reproduced. As such, a minimal of file preparation (if any) is required when printing to white garment material.

Printing to Black or Color Garments

In contrast to white garments, printing on either black or color garments requires a specialized workflow to create an "underbase" layer that lays down a white primer, such that the garment color does not produce a hue shift in the image printed on the garment. This is similar to (say) house painting, where a white priming coat of paint is applied, so that the final layer of paint is not "polluted" by dark surfaces that existed prior to the primer.

Simulating the Shirt Color

When editing the design in your graphic design software, it can be helpful to create a solid fill background object that simulates the garment color for you. However, take care to hide/delete the background object before printing.

For design software that allow you to organize a design onto layers (e.g., PhotoShop, CorelDraw, etc.), put the background object on its own layer, and then hide the layer before printing. In this manner, the background object can be quickly hidden as required, such as after doing subsequent edits to the design.

Underbase Shortcuts - Send to DTG RIP Pro C6

When DTG RIP Pro C6 is installed, special Send to DTG RIP Pro C6 plug-ins are created for your PhotoShop, Illustrator and CorelDraw design applications, such that your designs can sent directly to DTG RIP Pro C6. Sending designs in this fashion eliminates the extra steps required by the **File** menu >> **Print** dialog, and underbase information is automatically generated. In this manner, DTG RIP Pro C6 streamlines the garment printing workflows for your designs.

PhotoShop Topics

[?] [Printing from PhotoShop](#)

[?] [KnockMeBlackOut and KnockMeColorOut](#)

[?] [Printing to a White Garment from PhotoShop](#)

[?] [Printing to Black or Near-Black Garments from PhotoShop](#)

[?] [Applying Soft Edges Using KnockMeColorOut](#)

[?] [Other PhotoShop Background Removal Tools](#)

[?] [Quick Mask in PhotoShop](#)

[?] [Using the History Brush](#)

[?] [Anti Aliasing for a White Underbase](#)

[?] [Directly Adjusting the Underbase](#)

[?] [Color Management in PhotoShop](#)

[?] [Tips for Image File Formats](#)

Illustrator Topics

[?] [Printing from Illustrator](#)

[?] [Printing to a White Garment from Illustrator](#)

[?] [Printing to a Black or Color Garment from Illustrator](#)

[?] [Color Management in Illustrator](#)

[?] [Dealing with Working Space Mismatches](#)

CorelDraw Topics

[?] [Printing from CorelDraw](#)

[?] [Printing to a White Garment from CorelDraw](#)

[?] [Printing to a Black or Color Garment from CorelDraw](#)

Printing from

PhotoShop®

When DTG RIP Pro C6 is installed, if there is an installation of PhotoShop present on your computer, then a **File** menu >> **Automate** >> **Send to DTG RIP Pro C6** shortcut will be added to your PhotoShop. This **Send to DTG RIP Pro C6** shortcut will allow you to quickly send jobs directly to any available production queue that has been configured in DTG RIP Pro C6. Using this shortcut greatly simplifies garment printing, regardless of the garment color in question.
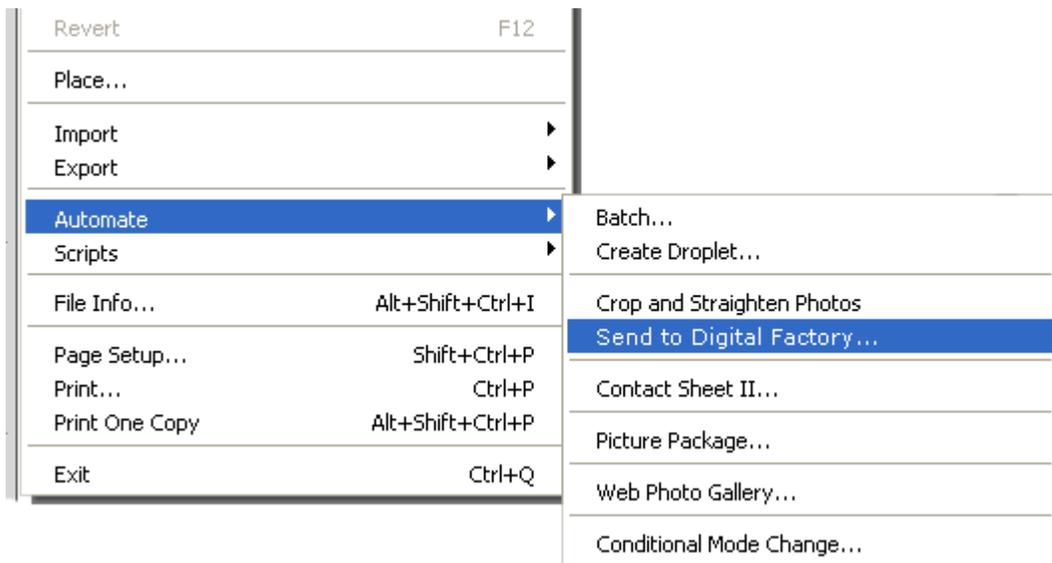
Revert	F12
Place...	
Import	▶
Export	▶
Automate	▶
Scripts	▶
File Info...	Alt+Shift+Ctrl+I
Page Setup...	Shift+Ctrl+P
Print...	Ctrl+P
Print One Copy	Alt+Shift+Ctrl+P
Exit	Ctrl+Q

Automate submenu:
- Batch...
- Create Droplet...
- Crop and Straighten Photos
- **Send to Digital Factory...**
- Contact Sheet II...
- Picture Package...
- Web Photo Gallery...
- Conditional Mode Change...

[?]KnockMeBlackOut and KnockMeColorOut

[?]Printing to a White Garment from PhotoShop

[?]Printing to Black or Near-Black Garments from PhotoShop

KnockMeBlackOut and KnockMeColorOut

Filter menu >> **CADlink** >> **KnockMeBlackOut** / **KnockMeColorOut**

Also installed with DTG RIP Pro C6 are two plug-ins that will appear under the PhotoShop Filter menu:

☐ **KnockMeBlackOut** – This plug-in is used to simplify the process of preparing an underbase for printing on either black or near-black garments.

☐ **KnockMeColorOut** – This plug-in is used to simplify the process of preparing an underbase for printing on colored garments.

Both of these plug-ins aid the designer in knocking out undesired backgrounds of simple and complex images, and integrating the garment color as part of the design. The plug-in preview provides a representation of how the image will appear when printed to the garment, including the variable intensities of underbase that can be applied.

Printing to a White Garment from PhotoShop

When printing to a white garment material, note that an underbase is not required.

1. In PhotoShop, start with the image that is ready to be printed.

2. Go **File** menu >> **Automate** >> **Send to DTG RIP Pro C6**.

3. The **Send to DTG RIP Pro C6** dialog will open, and the available queues should be listed.

>   If the queues are not listed, then click the Browse button to specify the directory to which DTG RIP Pro C6 had been installed (e.g., C:\ CADlink \ DTG RIP Pro C6 \ Queues).

4. Click the desired queue, and then click the **OK** button.

5. The print job will now be sent to DTG RIP Pro C6 and be listed under the indicated queue tab.

Printing to Black or Near-Black Garments from PhotoShop

Note: After preparing an underbase for your image, the **File** menu >> **Print** command **CANNOT** be used because the underbase information will be stripped out.

Before printing on black or near-black garments, the image must first be prepared for printing a white ink "underbase" layer as part of the print process. This preparation involves creating a transparency layer in the image that allows the background color of the garment to integrate into the design, and this background color to supply some of the color detail of the design, instead of using ink to represent all the color in those areas.

- ☐ Generally, wherever the transparency layer in the image is 100% transparent, no underbase will be printed.
- ☐ Likewise, wherever the transparency layer is less than 100% (i.e., is opaque to some degree), a white ink layer (i.e., an underbase) will print on the garment. The underbase intensity is determined by the degree of opacity of the transparent layer.
- ☐ When printing, the white underbase will be printed first, and then the color image printed atop the underbase.

As an aid for preparing images for black or near-black garments, the KnockMeBlackOut plug-in should be used. When DTG RIP Pro C6 was installed, this plug-in was automatically under PhotoShop **Filters** menu >> **CADlink** >> **KnockMeBlackOut**.

Printing to a Color Garment from PhotoShop

The workflow for printing on color garments is similar to printing on black garments, except that the KnockMeColorOut plug-in is used to prepare an underbase for the printed image. Using this plug-in, the garment color can be approximated, such that the printed image will blend into the garment color. In effect, the garment color provides a portion of the coloration used in the design.

Part 1 - Preparing the Image Using KnockMeColorOut

This plug-in is optimized for creating an underbase for a specific garment color. However, if the garment color is either black or near-black, then please refer to the KnockMeBlackOut plug-in that was discussed in the previous section.

1. In PhotoShop, start with the image that will be printed.

   The **KnockMeColorOut** plug-in does not work with images on the default Background layer. If the image is on the default Background layer, then you must create a duplicate of the image on a new layer, and then delete the old **Background** layer.

2. Choose **Filter** menu >> **CADlink** >> **KnockMeColorOut**.

3. The preview dialog will show two versions of the image. The top image will show the original appearance, and the bottom image will show the result generated by the **KnockMeColorOut** plug-in.

4. By adjusting the **Underbase** slider, this allows you to vary the shades of gray that will be "knocked out" of the image.

5. Click on the top image to choose a color that will be "knocked out" (i.e., choose a color that closely matches the garment color, such that the garment becomes a substitute for the given color).

Alternatively, use the color picker to choose the "knock out" color.

6. For the remaining dialog controls, refer to the previous descriptions "The KnockMeBlackOut Controls."

The **Underbase** setting can vary from 0 to 1000, with a default of 100 (i.e., 10%). In the following screenshots, Underbase settings of 100 and 650 have been applied. At the higher Underbase setting, less ink will be applied, allowing more of the shirt color (e.g., a red shirt) to show through and blend with the image.

With an **Underbase** setting of 100, only about 10% of the selected hue is "knocked out," which provides a greater background contrast with the shirt color. This would be appropriate when printing onto a black shirt, so as to retain more of the red image.	With an **Underbase** setting of 650 (65%), this would be appropriate for printing to a red shirt. Less ink would be used to print the image color, thereby allowing the image to blend more naturally into the shirt color.

If the shirt color were black, then the Underbase setting of 100 would be suitable because more of the red image background would be retained. However, if the shirt color were red, then an Underbase setting of 650 would allow a more natural blend between image background and the shirt color.

Part 2 - Printing to a Colored Garment from Photoshop

> **Note:** After preparing an underbase for your image, the **File** menu >> **Print** command **CANNOT** be used because the underbase information will be stripped out.

Now that the image has been prepared for printing to a color garment, it can be sent to DTG RIP Pro C6 as follows:

1. Go **File** menu >> **Automate** >> **Send to DTG RIP Pro C6**.

2. The **Send to DTG RIP Pro C6** dialog will open.

3. The available queues will be listed. Click the desired queue and then click the **OK** button.

4. The print job will now be sent to DTG RIP Pro C6 and be listed under the indicated queue tab.

Applying Soft Edges Using KnockMeColorOut

The **KnockMeColorOut** plug-in can also be used to help with blending soft edges into the shirt color. For example, the following images are of a doe that needs to be applied to a black shirt. However, if we merely perform a blanket knockout of the white background, then the result is a white halo effect that (usually) detracts from the image quality.
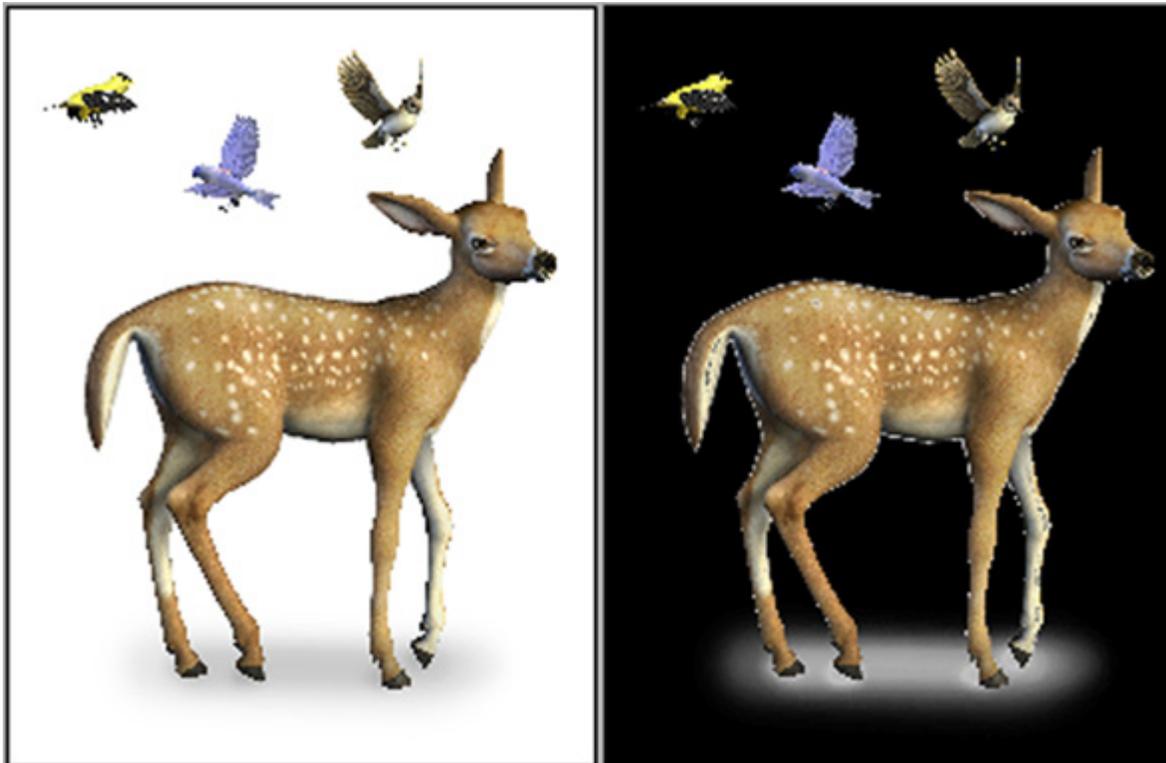
For the image on the left, we want to knock out the white background for application to a black shirt. However, the preview on the right shows that off-white pixels will create a halo effect around the doe.

If we inspect a small region of the doe's back, then we can see why this happens. The fur of the doe is difficult to select and remove correctly. Though increasing the tolerance of the Magic Wand tool can capture more of the off-white pixels, removing bits of the off-white fur will produce a hard edge that detracts from a natural image. What is really needed here is to retain the fur and blend it into the black of the shirt.

By increasing the Overprint setting, more of the white halo is removed. However, fine detail is lost (i.e., the doe hair).

The solution is to create a duplicate layer of the image, then use the **Magic Wand** tool to clean the outer contour of the underlying layer image.
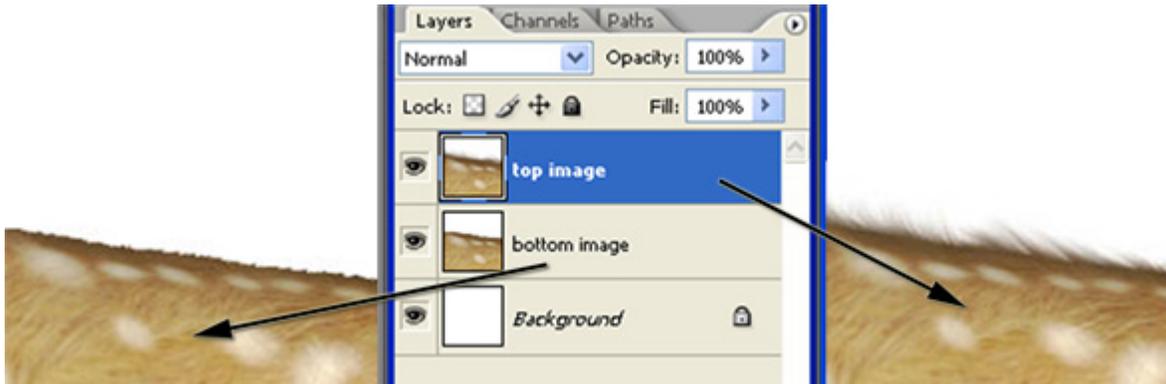
On the left, the **Magic Wand** tool was used to carefully remove the off-white portions along the fur, including the hairs of the fur. On the right, we have a second layer copy of the doe with fur intact.

The **KnockMeColorOut** tool can then be applied to the top-most image to remove white and off-white. Adjust the Underbase setting to achieve the desired blend of fur with the black shirt background. This will remove the white spots from the top-most image, but the white spots from the underlying image will now show through (thereby preserving the image quality).
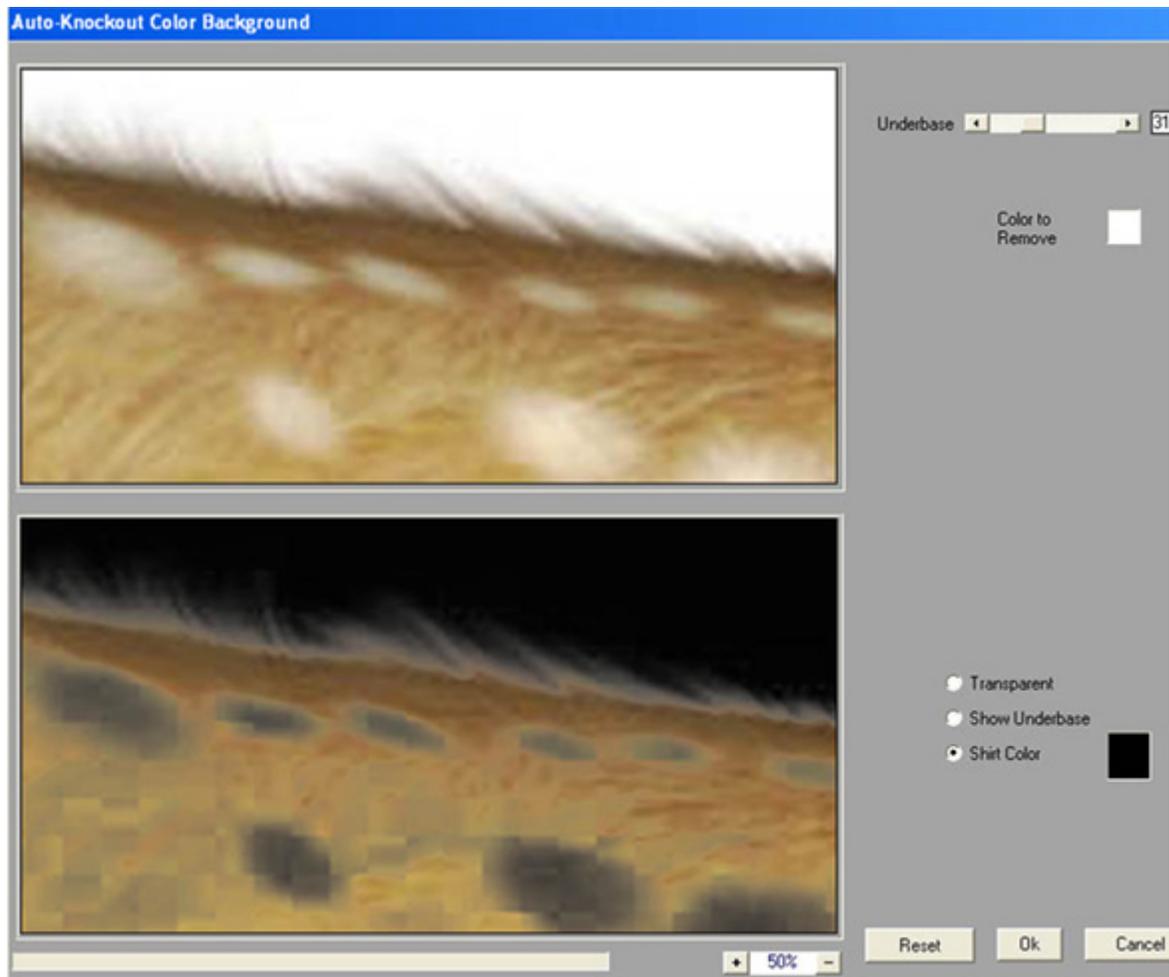
The **KnockMeColorOut** can now be applied to the top image. This removes off-white from along the hairline, though removes white from the animal pelt as well.

Once the top image is ready, use the **Layers** menu >> **Merge Layer** command to combine it with the underlying layer image. The image is now ready for application to a black shirt. Using these techniques, you can blend even complex images like fur and hair into your shirt, thereby obtaining the highest quality T-shirt printing results.
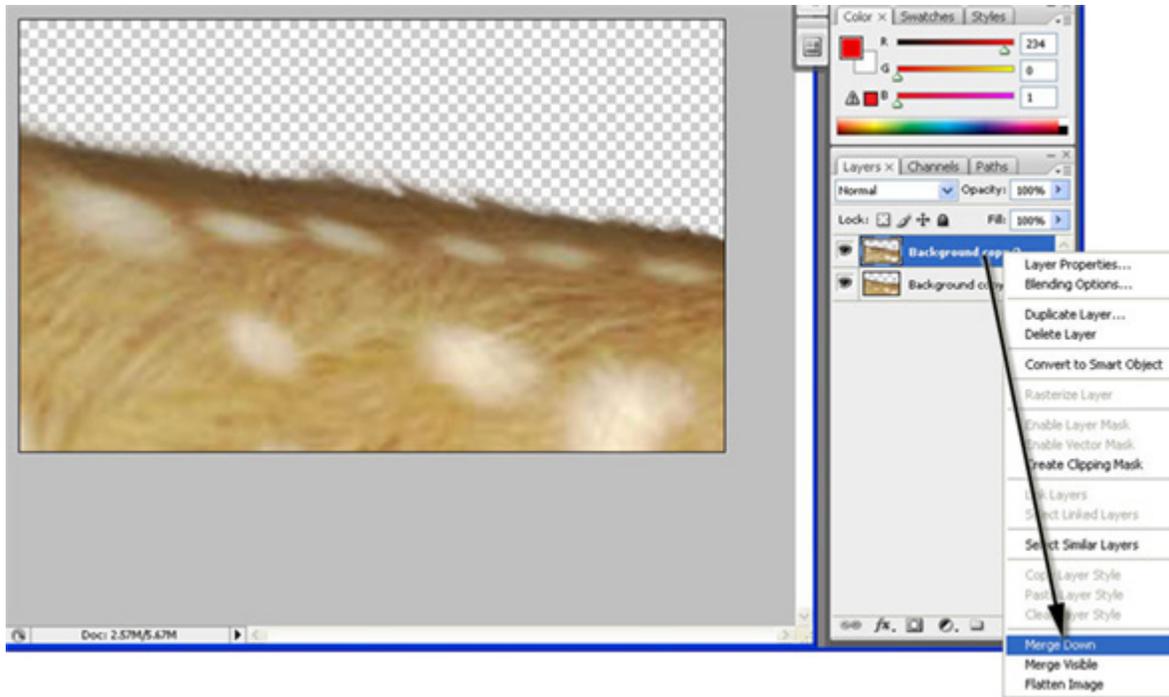
Once white has been removed from the top image, right-click the layer and choose **Merge Down**. This will combine the top image with the underlying image (which still has the white spots on its coat).

Other PhotoShop Background Removal Tools

PhotoShop provides several tools for preparing an underbase for your design. Technically, anything that gets you good results is suitable.

☐ **Color Range** - Under the PhotoShop **Select** menu, the **Color Range** tool is used to select a specific hue (or range of hues). However, for black or near-black, the **KnockMeColorOut** performs significantly better than **Color Range**.

For other hues (including white), both **Color Range** and **KnockMeColorOut** will produce comparable results. However, the advantage of **KnockMeColorOut** is its ability to show results in three preview modes (Transparent, Show Underbase, and Shirt Color).

☐ **Magic Wand** - In addition to the previous tools that we have mentioned, the **Magic Wand Tool** can often be useful for quickly selecting a specific hue or range of hues. Note that the **[Shift]** key can be used to add hues to the current selection.

☐ **Quick Selection Tool** - Newer versions of PhotoShop have this tool, which provides an easy means of painting regions to select them.

See [Removing a White Background in PhotoShop](#)

☐ **Quick Mask** - This is a classic PhotoShop tool that provides strong control over painting a selection.

See [Quick Mask in PhotoShop](#)

Quick Mask in PhotoShop

Suppose that the original image has a single layer, and the image is surrounded by an off-white that is not desirable for printing. If the Quick Selection Tool is not available in PhotoShop, then use the Quick Mask tool.

1. Activate **Quick Mask Mode** (q).

2. Use the **Brush Tool** (b) to paint black, white, or shades of gray that determine selection regions.

>   White areas will be selected, and black areas not selected. Gray selection varies according to how light/dark the shade is.

3. The **Paint Bucket Tool** (g) or **Gradient Tool** (g) can be used to fill regions.

>   Use **[Shift]** to switch between tools that use the same hotkey (i.e., **[Shift + g]**).

4. After you have finished painting black/white/gray, use ' q ' to exit **Quick Mask Mode**.

>   If necessary, the resulting selection can be inverted using **Select** menu >> **Inverse**.

Viewing the Shirt Color in PhotoShop

If you need to temporarily simulate the shirt color in PhotoShop, create a new layer that is filled with the shirt color, and then drag the layer beneath the image layer. However, note that this layer is for on-screen preview only, and it should be deleted before printing the job.

1. In the **Layers** palette, click the **Create a New Layer** button.

2. The new layer will be selected.

3. From the **Tools** palette, click the **Paint Bucket Tool**.

4. From either the **Color** or **Swatches** palettes, set the fill color equal to the shirt color (e.g., black).

5. Click on the image to perform the fill.

6. In the **Layers** palette, drag the filled layer to beneath the image layer.
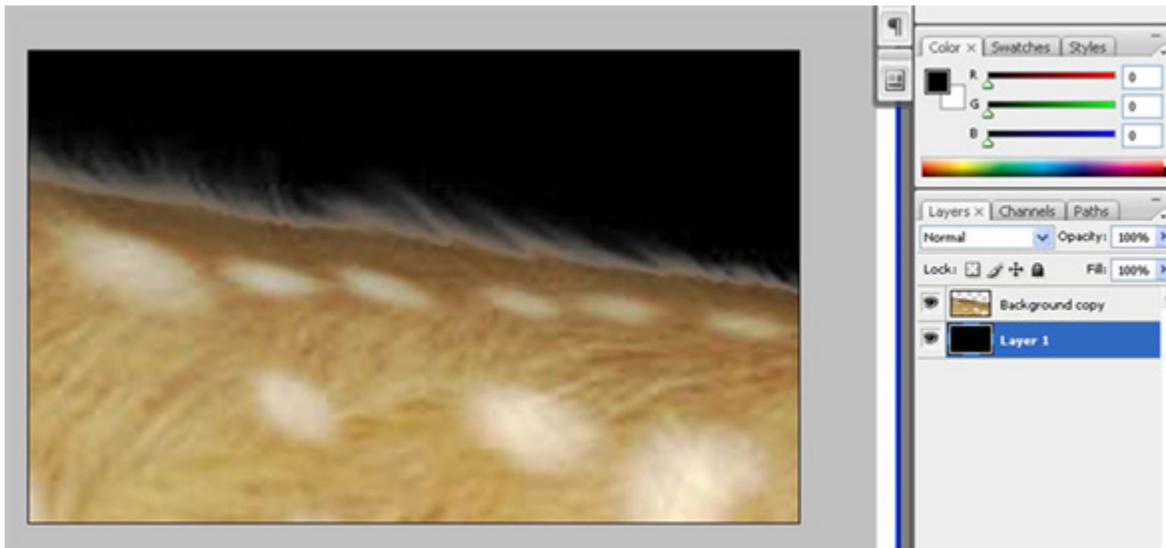
Place a black filled layer beneath the image to simulate how it will appear when printed to a color shirt (black in this example).

Using the History Brush

In our previous KnockMeColorOut example (i.e., a doe on a white background), we were required to prepare the image on two layers because the KnockMeColorOut plug-in would otherwise cause white portions within the doe fur to be lost. However, a simpler method can be to use the **History** tool to undo the portions that were knocked out of the doe fur.

1. Start with the original image that has been pasted on its own layer (e.g., the doe in our previous examples).

2. Apply the **KnockMeColorOut** plug-in to the image, and increase the **Underbase** setting to remove off-white portions as well.

3. From the **Tools** palette, click the **History** tool.

4. The **History** palette will open, and discrete steps of the editing history for this image will be listed.

5. In the **History** palette, tick the checkbox that is at the far-left of the "Pasted" layer. This indicates to the History tool that this step in the editing history will be the source.

6. At this point, the **History** "brush" is like a regular brush. Adjust the size of the brush and then click on the image where portions from step (2) need to be reversed.
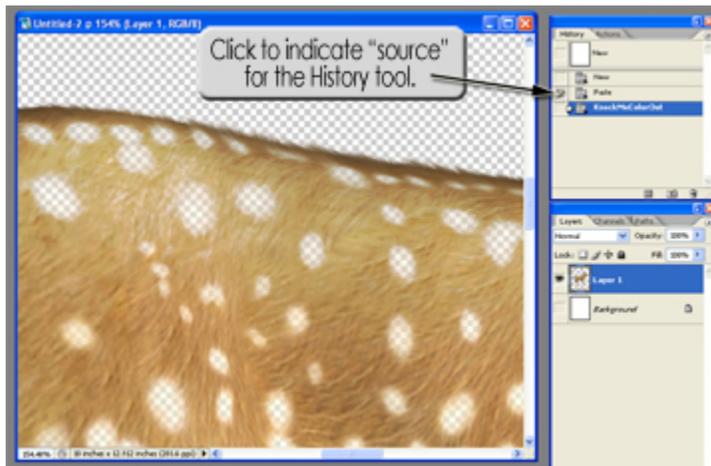
Click to indicate that the original pasted layer will be the "source" for the **History** tool.

Anti Aliasing for a White Underbase

When printing with a white underbase, take care to avoid design elements that introduce visible aliasing (i.e., staircasing). For example, adding text objects to the design in PhotoShop can create aliasing because the text needs to be rasterized when output. If at all possible, do any text work within (say) Illustrator, and then layout the text with the images from PhotoShop. For cases where you must layout your text within PhotoShop, use the advice as explained here:

- ☐ When adding text in PhotoShop, there are five anti-aliasing options (older PhotoShop versions may have a checkbox for toggling the anti-aliasing ON/OFF).
- ☐ When enabled, anti-aliasing will blur the edges of the text into the background. By default, anti-aliasing in ON.
- ☐ However, with anti-aliasing enabled, this introduces the same white halo issue that occurred when removing the white background from the doe image.
- ☐ Instead of attempting to blend the text into the background, it is easier to simply turn anti-aliasing = **None** or **OFF**.
- ☐ Though turning off anti-aliasing will cause noticeable staircasing, there won't be a white halo.
- ☐ If the text requires higher quality, then use **Image** menu >> **Image Size** to increase the resolution.

Note 1: Aliasing is only an issue when printing with an underbase because it will produce a halo effect on black or near-black garment material. If printing to a white shirt, then there will not be an issue.

Note 2: Avoid saving the finished file in JPEG format, as the compression method used for JPEG can introduce aliasing issues.

Note 3: When copy and pasting objects from (say) Illustrator or CorelDraw into PhotoShop, these objects will be anti-aliased by default.

Directly Adjusting the Underbase

After having applied either the **KnockMeColorOut** or **KnockMeBlackOut** plug-ins, it may be desirable to selectively edit the underbase. This can be done using the Transparency Opacity tool, which provides Levels-like controls for adjusting the underbase.

For an example of using Transparency Opacity, see Removing a White Background in PhotoShop

Color Management in PhotoShop

> **Note:** For the Adobe Creative Suite products, Adobe Bridge can be used to enforce consistent color management across the entire suite via **Edit** menu >> **Creative Suite Color Settings**.

To configure the color management settings specifically for PhotoShop, use **Edit** menu >> **Color Settings**. Since PhotoShop is a general purpose graphics design application that can be applied to a number of uses, use the default color management settings as a guideline, and adjust these settings when you have specific output requirements.
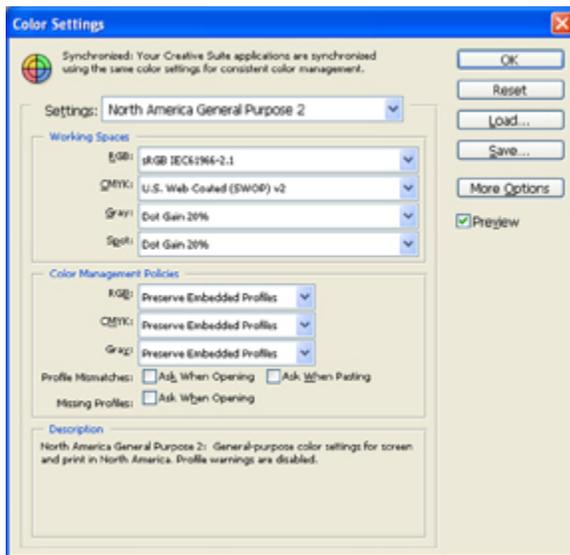
The **Color Settings** dialog is used to set the color management settings in PhotoShop. In the Adobe Creative Suite products, note that Adobe Bridge is used to set the color management that is used across the suite.

When you use several design applications for creating, modifying and outputting your jobs, it is important that you have consistent RGB color management settings. Otherwise, differences in these settings can cause dramatic color shifts that interfere with your output quality. For RGB working space settings, the most common working spaces are: 1) sRGB, 2) Adobe RGB, and 3) Apple RGB.

- ☐ Adobe RGB tends to be the most popular with photographers.
- ☐ sRGB is somewhat of a web standard.
- ☐ Apple RGB is often used for pre-press purposes.

For T-shirt printing, any of these three working spaces should be fine. The working gamut of a T-shirt printer is relatively small, so none of these working spaces will have a particular advantage over the others. In SignLab, the default working space is equivalent to Adobe RGB.

> **Note:** If your design applications are already set for Adobe RGB, then no further changes are required because this is the same default that SignLab will use.

For whatever working space settings that you decide upon, make certain that they are consistent across the applications that you are using. By having consistent working spaces, this means that importing new elements into your design will be automatically provided with correct color management.

Tips for Image File Formats

The **File** menu >> **Print** command will discard the alpha layer (i.e., transparency) information that was prepared for the image, which prevents DTG RIP Pro C6 from using the alpha layer to generate an underbase layer. As such, it is necessary to save your image in either PSD, TIFF or PNG format, which can then be imported into DTG RIP Pro C6.

Likewise, the following are common situations where it is necessary to save your image file and bring it into the DTG RIP Pro C6 window:

- ☐ The customer is providing the artwork, and you wish to avoid further editing of the artwork.
- ☐ The design computer is separate from the computer on which DTG RIP Pro C6 is installed.
- ☐ The design computer is a Mac OSX system.

If you need more of an automated system of printing between networked computers, then it is possible to configure a **Hot Folder** in DTG RIP Pro C6, such that copying the image file into the hot folder is automatically detected and printed.

Saving a PSD File Out of PhotoShop

- ☐ Saving in PSD format is encouraged because it provides the greatest compatibility when making further edits in PhotoShop.
- ☐ Before saving the image, make certain that there will be maximum compatibility between PSD and PSB files. This can be set via **Edit** menu >> **Preferences** >> **File Handling** >> **Maximize PSD and PSB File Compatibility** = Always.

    Alternatively, this can be set to **Ask**, which will prompt you each time that a PSD file is saved.

- ☐ With maximum compatibility with PSB, most PSD files should work without issue. However, if your image is composed of multiple layers, particularly with text and objects each with their own underbase, then it may be necessary to save the image as a single layer job. Use the **Layers** menu >> **Merge Layers** command to collapse such layers before saving.
- ☐ When saving, always tick the **ICC Profile** checkbox, such that an embedded profile is saved with the image.
- ☐ In most cases, you will want to clear the **Layers** checkbox = OFF. This will cause the design to be flattened to a single layer, which prevents stray (unnoticed) transparency within the design from interfering with the underbase or spot channel information that you have prepared.

Exporting a PSD File from Illustrator

Use the following steps when creating a PSD file from Illustrator:

    1) Choose **File** menu >> **Export**

    2) Choose a location and filename for saving.

    3) The **PhotoShop Export Options** dialog will open.

    4) Set **Resolution** = 300 ppi

    5) Click the **Flat Image** option.

    6) Clear the **Anti-alias** checkbox.

    7) Tick the **Embed ICC Profile** option.

    8) Click **OK** to continue.

TIFF Format

☐ When saving in TIFF format, tick the **Layers** checkbox.

☐ When saving, always tick the **ICC profile** checkbox, such that an embedded profile is saved with the image.

☐ If available, then tick the **Save Transparency** checkbox.

PNG Format

☐ The PNG format does not support the embedding of color profiles. As such, more care might be required to ensure that the correct profiles are used with the PNG file, especially if you are reusing a PNG file from a previous job.

JPEG Format (special mention)

☐ Saving as JPEG is not workable. Though the specification for JPEG files does allow for storing underbase information, PhotoShop does not currently support storing of underbase information in JPEG format.

Printing from Illustrator®

The Send to DTG RIP Pro C6 Shortcuts

File menu >> **Send to DTG RIP Pro C6**

File menu >> **Send to DTG RIP Pro C6 with**

Underbase

When DTG RIP Pro C6 is installed, if there is an installation of Illustrator present on your computer, then a **File** menu >> **Send to DTG RIP Pro C6** shortcut will be added to your Illustrator. This shortcut sends jobs directly to the selected production queue.

Likewise, the **Send to DTG RIP Pro C6 with Underbase** shortcut will also send jobs. In addition, the alpha (i.e., transparency) layer within the design will be used to create an underbase layer.
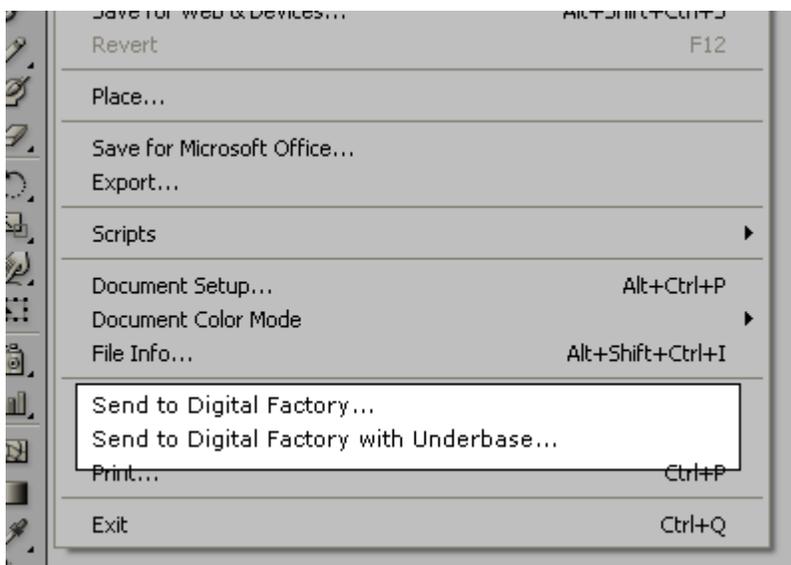
By using **Send to DTG RIP Pro C6**, several image preparation steps are automatically performed for you with respect to page size, and color settings.

If the deisgn uses an alpha layer to define where underbase information should be applied, then the **Send to DTG RIP Pro C6 with Underbase** command will automatically use the alpha layer to create an underbase layer.

[?]Printing to a White Garment from Illustrator

[?]Printing to a Black or Color Garment from Illustrator

[?]Color Management in Illustrator

[?]Dealing with Working Space Mismatches

Printing to a White Garment from Illustrator

When printing to a white garment material, note that an underbase is not required.

1. In Illustrator, start with the image that is ready to be printed.

2. Go **File** menu >> **Send to DTG RIP Pro C6**.

3. The **Send to DTG RIP Pro C6** dialog will list the available queues.

> If necessary, click the **Browse** button to specify the location of a given queue
> (e.g., C:\ CADlink \ DTG RIP Pro C6 \ Queues).

4. In the **Send to DTG RIP Pro C6** dialog, the available queues will be listed.

5. Choose the desired queue and then click the **OK** button.

6. The print job will now be sent to DTG RIP Pro C6 and be listed under the indicated queue tab.

Printing to a Black or Color Garment from Illustrator

Note: For black or color garments, the **File** menu >> **Print** command **CANNOT** be used because no underbase information will be generated.

Now that the image has been prepared for printing to a black or near-black garment, it can be sent to DTG RIP Pro C6 as follows:

1. Go **File** menu >> **Send to DTG RIP Pro C6 with Underbase**.

2. The **Send to DTG RIP Pro C6** dialog will open.

3. The available queues will be listed. Choose the desired queue and then click the **OK** button.

4. The print job will now be sent to DTG RIP Pro C6 and be listed under the indicated queue tab.

Color Management in Illustrator

Note: For the Adobe Creative Suite products, Adobe Bridge can be used to enforce consistent color management across the entire suite via **Edit** menu >> **Creative Suite Color Settings**.

To configure the color management settings specifically for Illustrator, use **Edit** menu >> **Color Settings**.

When you use several design applications for creating, modifying and outputting your jobs, it is important that you have consistent RGB color management settings. Otherwise, differences in these settings can cause dramatic color shifts that interfere with your output quality. For RGB working space settings, the most common working spaces are: 1) sRGB, 2) Adobe RGB, and 3) Apple RGB.

- Adobe RGB tends to be the most popular with photographers.
- sRGB is somewhat of a web standard.
- Apple RGB is often used for pre-press purposes.

For T-shirt printing, any of these three working spaces should be fine. The working gamut of a T-shirt printer is relatively small, so none of these working spaces will have a particular advantage over the others.

Dealing with Working Space Mismatches

Once you have decided on all your working space settings, consider how you will resolve possible conflicts. For example, the **Color Settings** dialog has **Profile Mismatches** and **Missing Profiles** options for prompting when the working space of imported files are in conflict with your established workspace.

If your working space is Adobe RGB, then decide in advance about how to resolve an imported image that is tagged as either sRGB, Apple RGB, or some other working space. Usually, it is a good idea to convert import images to use your current working space, as this ensures you are consistently using the same working space.
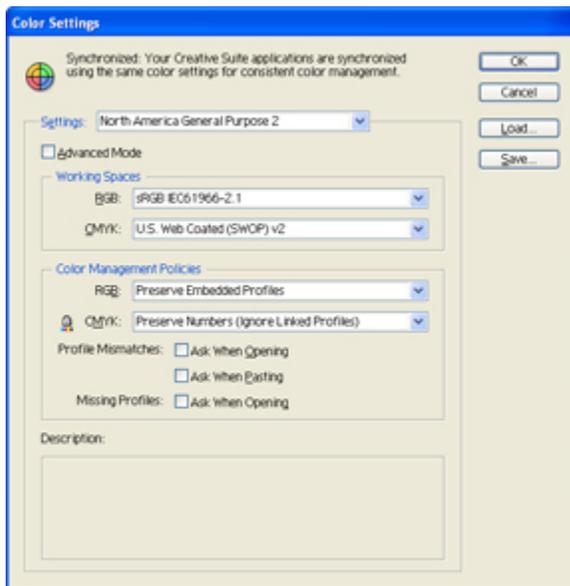
The **Color Settings** dialog is used to set the color management settings in Illustrator.

Printing from CorelDraw®

The Send to DTG RIP Pro C6 Shortcuts

Standard toolbar >> **Send to DTG RIP Pro C6**

Standard toolbar >> **Send to DTG RIP Pro C6 with**

Underbase
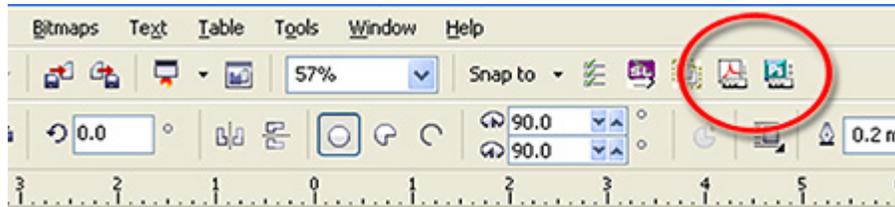
When DTG RIP Pro C6 is installed, if there is an installation of CorelDraw present on your computer, then a **Send to DTG RIP Pro C6** shortcut will be added to the **Standard** toolbar. This shortcut sends jobs directly to the indicated queue in DTG RIP Pro C6.

Likewise, the **Send to DTG RIP Pro C6 with Underbase** shortcut will also send jobs, though in this case the alpha (i.e., transparency) layer within the design will be used to create an underbase layer.

[?] Printing to a White Garment from CorelDraw

[?] Printing to a Black or Color Garment from CorelDraw

Printing to a White Garment from CorelDraw

When printing to a white garment, note that an underbase is not required.

1. In CorelDraw, start with the image that is ready to be printed.
2. From the **Standard** toolbar, click **Send to DTG RIP Pro C6**.
3. The **Publish to DTG RIP Pro C6** dialog will list the available queues.

    If the queues aren't listed, then click the **Browse** button, and select the directory to which DTG RIP Pro C6 had been installed (e.g., C:\ CADlink \ DTG RIP Pro C6 \ Queues).

4. Click the appropriate queue and then click the **OK** button.
5. The print job will now be sent to DTG RIP Pro C6 and listed under the indicated queue tab.

Printing to a Black or Color Garment from CorelDraw

For black or color garments, printing a white underbase will prevent hue shifts in the printed image. Generally, Photo-Paint can be used to create a mask, which will be interpreted as a transparency layer by DTG RIP Pro C6.

Mask Preparation in Corel Photo-Paint

Note: If you already have an image file that has a transparency layer (i.e., alpha channel), then skip ahead to Linking the Image File into CorelDraw.

1. In Corel Photo-Paint, start with the image that is ready to be printed.

2. Choose **Window** menu >> **Dockers** >> **Channels** to display the individual channels within the image.

3. Enable **Mask** menu >> **Mask overlay**.

4. Enable **Mask** menu >> **Marquee visible**.

5. Choose the **Magic Wand Mask** Tool.

6. Set the Magic Wand for **Additive** mode.

7. Set a small **Tolerance**, such that similar hues will be included in your selections.

8. Click within a background region of the image. The foreground should appear as if covered by a red transparent mask.

9. In the **Channels** docker, the **Current Mask** alpha channel will be created to store your mask.
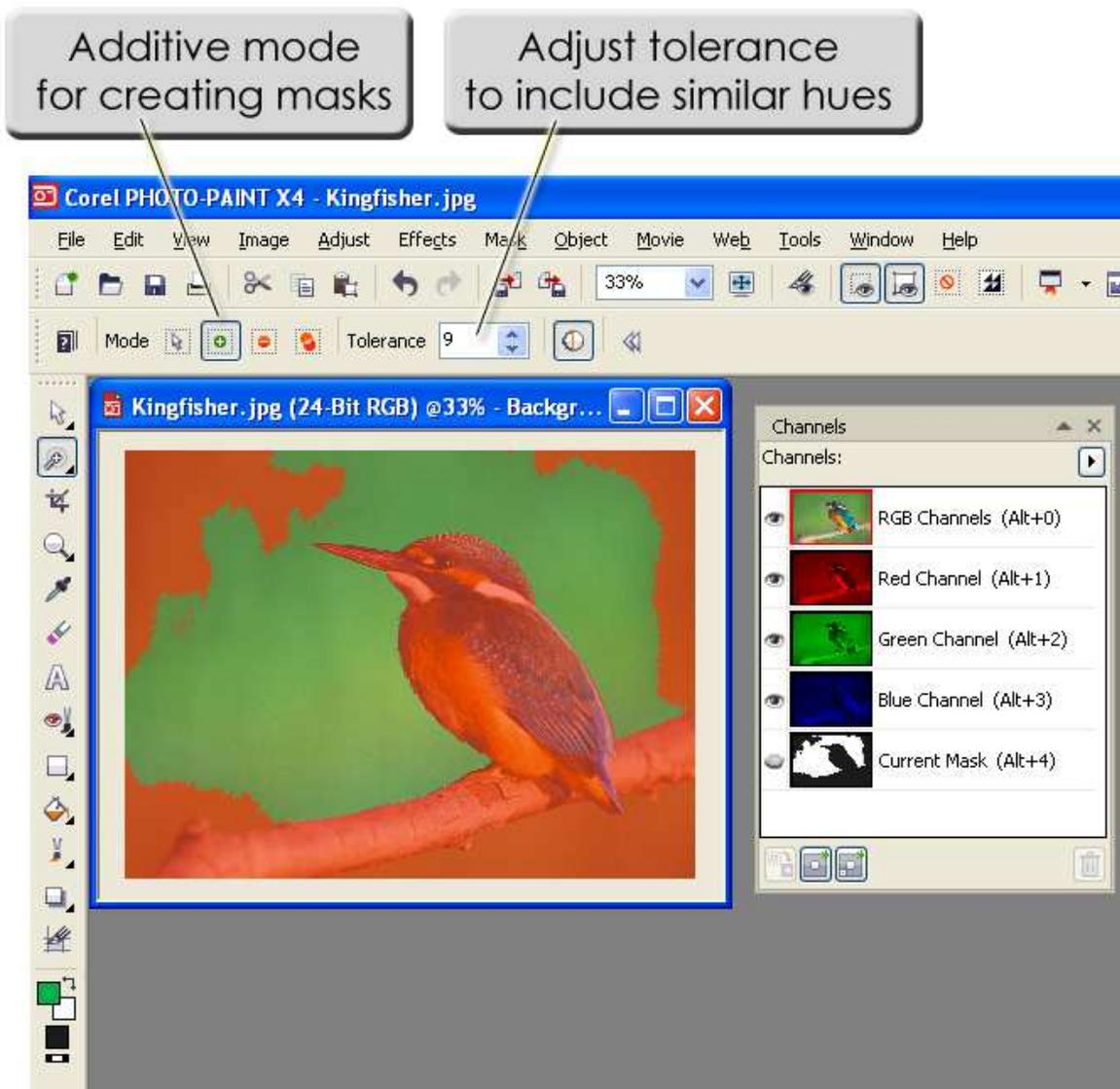
Photo-Paint has several tools for creating masks. We used the **Magic Wand Mask Tool** (W) in **Additive** mode to select portions of the background. The **Channels** docker will create a **Current Mask** alpha channel to store your mask.

10. Continue clicking background regions of the image, until only the foreground is covered by a red transparent mask.

11. Choose **Mask** menu >> **Invert Mask**

12. Save the file in **CPT** format.

Linking the Image File into CorelDraw

13. In CorelDraw, choose **File** menu >> **Import**.

14. In the **Import** dialog, tick the **Link bitmap externally** checkbox.

15. Choose the image file and click **Import**.

16. For the imported file, arrange it with any further supporting artwork as required.

17. From the Standard toolbar, click **Send to DTG RIP Pro C6 with Underbase**.

18. The **Publish to DTG RIP Pro C6** dialog will list the available queues.

    If the queues aren't listed, then click the **Browse** button, and select the directory to which DTG RIP Pro C6 had been installed (e.g., C:\ CADlink \ DTG RIP Pro C6 \ Queues).

19. Click the desired queue and then click the **OK** button.

20. The print job will now be sent to DTG RIP Pro C6 and listed under the indicated queue tab.

Advanced Application Printing

The following sections provide examples of how your designs can be prepared in your preferred graphic design application, such as Adobe PhotoShop, Illustrator, or CorelDraw. In order to simplify he workflow for printing onto black or color garment material, CADlink has provided plug-ins for these applications, such that a design can sent to DTG RIP Pro C6 without having to manually create a white ink underbase. It will be generated automatically for you.

For other applications that do not have the convenience of these plug-ins, export the design in a file format that supports the sort of transparency or alpha channel preparation that you need, and then import that file into DTG RIP Pro C6.

[?]Job Preparation in PhotoShop

[?]Send To, and Send With Underbase

[?]Removing a Black Background in PhotoShop

[?]Removing a White Background in PhotoShop

Job Preparation in PhotoShop

When preparing artwork, a designer will be familiar with the basic tools of their graphic design application. However, artwork for garment printing often involves a few additional concepts regarding transparency, alpha channels, and spot colors. The following sections discuss these concepts with respect to PhotoShop, though they can just as easily apply to other graphic design applications, such as GIMP.

Transparency

A typical PhotoShop design is arranged on one-or-more layers in the Layers palette. Each layer is like a sheet of paper resting upon the layer below it, and any unfilled pixels on that layer will allow the underlying layer to show through. For any unfilled pixels that have nothing below them, such a checker pattern is used as a visual indicator.

When printing the design, the checker pattern indicates where the underlying garment color will show through. This is similar to printing with CMYK inks, where CMYK "white" is the absence of printed ink. In contrast, spot white is an actual white ink that is printed to the garment, usually as an underbase or highlight.

Behind the scenes in PhotoShop, layer transparency is a grayscale image that is used to indicate where the transparent pixels are. Of course, PhotoShop does not present you with a grayscale, but instead (by the action of deleting pixels) you "edit" the transparency. Similarly, were you to use a mask to delete a gradient pattern of pixels, the transparency would have a gradient fade-in effect. Of course, behind the scenes the grayscale would now have a gradient pattern (shades of gray) to indicate the fade-in transparency effect.

Alpha Channels

Alpha channels are similar in concept to the grayscale that is used by transparency effects, and PhotoShop arranges such channels in the **Channels** palette. For our purposes, the grayscale pixels of an alpha channel are used to represent regions of the printed image that should be "filled in" with a special color, such as spot white or spot color ink.

Though transparency and alpha channels are similar in nature, note that they are treated as distinct within the design. A transparency is treated somewhat like a characteristic of the design (showing where the design shows through), whereas an alpha channel is an extra grayscale in the design (showing where a spot white or spot or color should be printed).

Creating a White Underbase or Highlight

Depending upon how you want to print your design, DTG RIP Pro C6 can be configured to interpret either the transparency or alpha channel as a white underbase (or highlight).

Creating a Spot Color

Alternatively, an alpha channel can be used to create either a white underbase, or a spot color.

However, note that DTG RIP Pro C6 (currently) supports only one alpha channel within a design, and such a design is not permitted to contain transparency (i.e., the transparency must be removed by flattening the design to its Background layer). Otherwise, the transparency channel will be used instead of the alpha channel.

Send To, and Send With Underbase

For applications such as PhotoShop, Illustrator and CorelDraw, when DTG RIP Pro C6 is installed, additional "Send to..." and "Send with Underbase..." shortcuts are installed, which add extra commands within those applications for sending jobs to DTG RIP Pro C6. The equivalent commands in SignLab are **File** menu >> **Print and Cut**, and **Print with Underbase**.

Regardless of which application is sending the job, the "Send with Underbase" command will automatically create a transparency that defines where white ink should be printed as an underbase for the main CMYK image.

Though the **Send with Underbase** command will be quite suitable, you can manually create your own transparency or alpha channel, and then export that design using an appropriate file format. For example, one could create an alpha channel in PhotoShop and then use the **Quick Mask Tool** to paint the alpha channel.

Ultimately, the manner in which you configure your designs will depend upon the tools that you are familiar with in your graphic design application. The following sections provide suggestions with regards to preparing designs.

Removing a Black Background in PhotoShop

Note: For jobs printed to black garment material, the Black T-shirt queues will automatically apply the KnockMeBlackOut filter.

Suppose that we have brought the following artwork into PhotoShop. The artwork has a black background, with some good details in the midtones, and we want to prepare this artwork for printing to black garment material.

Comparing the Black Values

Before we create a design using this artwork, let us inspect the color values within the black background.

1. Choose **Window** menu >> **Info** to open the Info palette.

2. Activate the **Eye Dropper** tool (i).

3. By moving the cursor over the black areas of the image, we are able to observe the color values displayed within the **Info** palette.

4. Whereas one would expect pure black values of RGB (0, 0, 0), what we find are undesirable shades of gray in the range of (4, 4, 4) to (47, 47, 47).

5. This problem can be further illustrated by choosing **Image** menu >> **Adjustments** >> **Invert**. Inverting the image causes light areas to become dark, and vice-versa. However, notice that not all of the formerly dark areas have become light.

Presumably, these details were overlooked when the artwork was being prepared, though they can be fixed as follows.

Fixing the Black Regions

To remove these near-black regions, use the Levels tool.

6. Undo the **Invert** command that was just used, and choose **Image** menu >> **Adjustments** >> **Levels**.

7. The **Levels** tool provides a histogram that summarizes the luminance values within the image, which ranges from left-to-right, black >> midtones >> highlights.
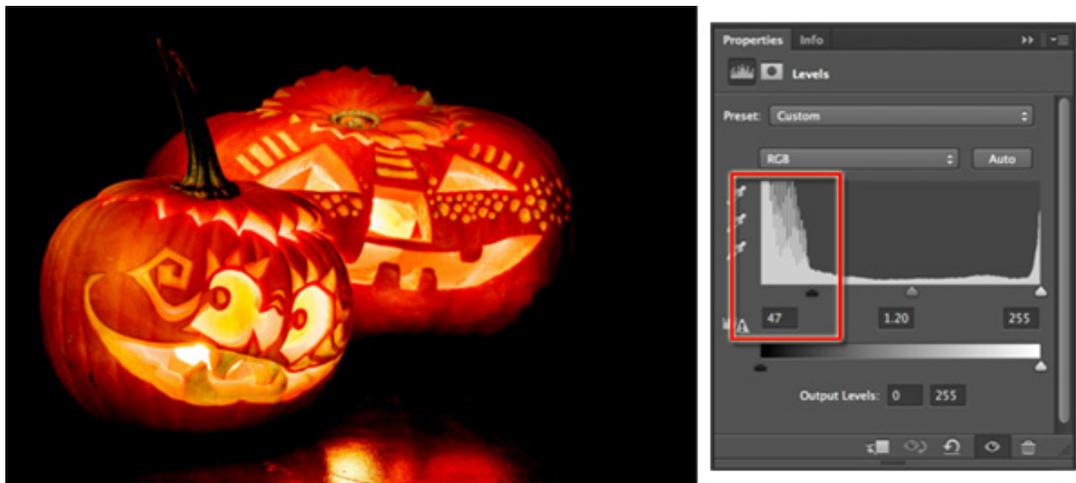
8. For this particular image, note the unusual luminance values that are near-black (at the far left). These are the off-black values that concern us, and they can be removed by dragging the

left-hand (shadows) slider from 0 to 32. This will ensure that the unwanted gray pixels are cleared back to black (0).

9. Having adjusted the shadows slider from 0 to 22, this affects the distribution of luminance values in the midtones and highlights. To compensate, we adjusted the middle (midtones) slider from 1.00 to 1.20.

10. If we want to check that our adjustments are correct, we can temporarily apply the Invert command to confirm that the near-black pixels are indeed gone.

Removing the Black Background

11. From the **Filter** menu, choose **CADlink >> KnockMeBlackOut**.

12. A filter preview dialog will open, which previews how the image will appear with black pixels removed. Note the checker pattern that indicates where black has been removed.
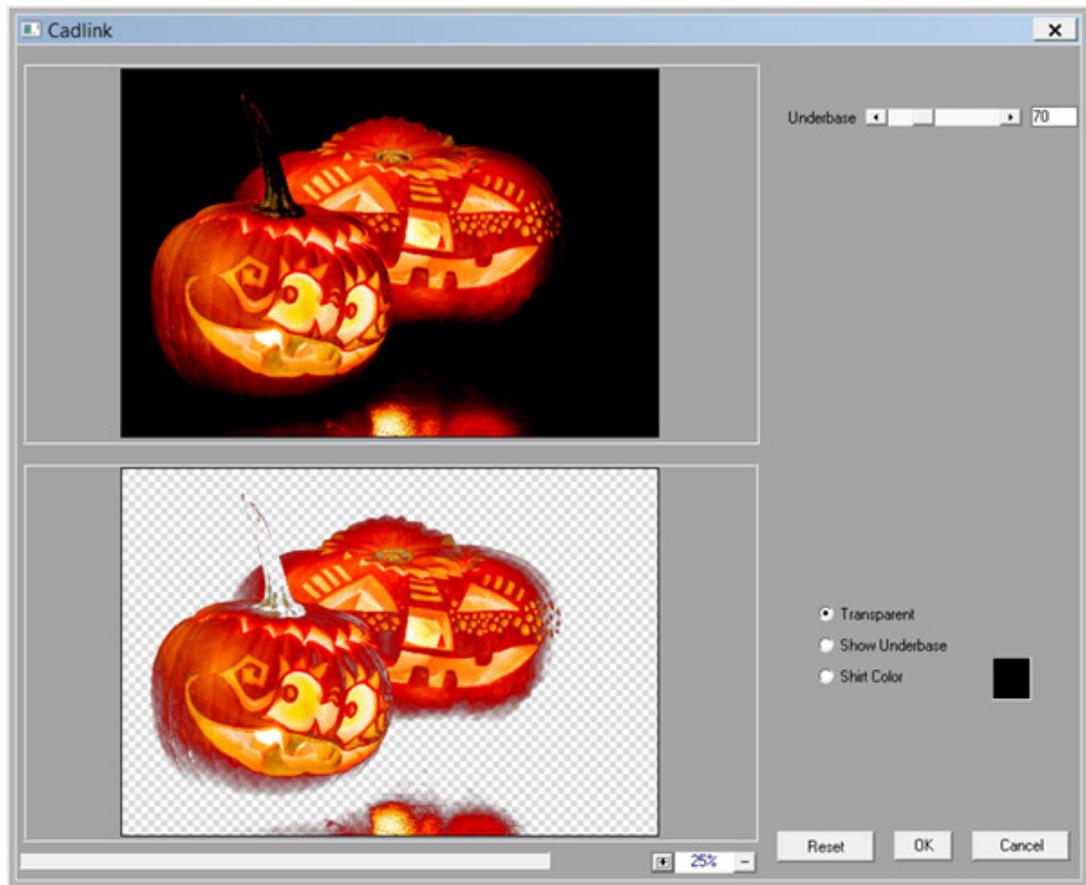
13. For most cases, the default settings for this filter dialog are acceptable.

14. In addition to removing the black background, the plug-in will also determine where white ink must be applied as an underbase to prevent the garment color from causing a color-shift in the printed image. To inspect where white ink will be applied, click the **Show Underbase** option.
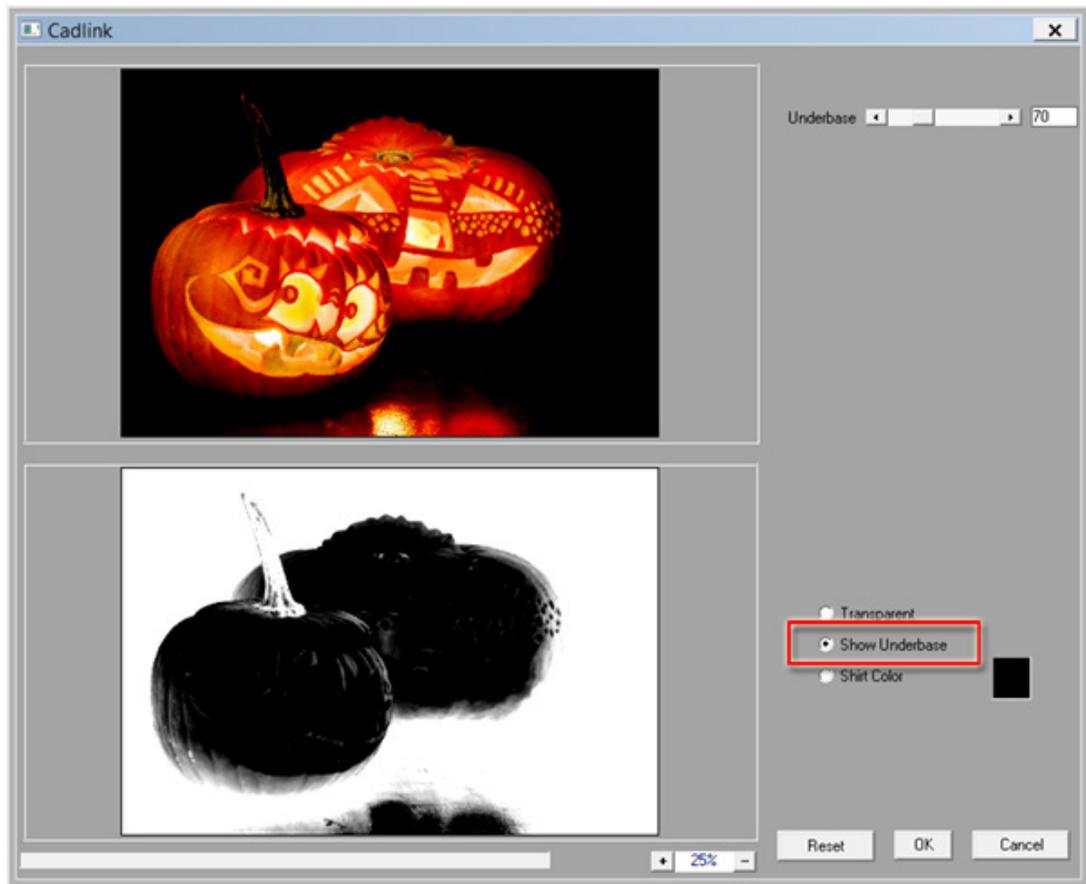
15. If you would like to simulate how the printed image will appear on the garment, then click the **Shirt Color** option and use the color picker.

16. Click **OK** to complete the operation, and the image will now be ready for printing.

Removing a White Background in PhotoShop

Suppose that the original image has a single layer, and the image is surrounded by an off-white background that is not desirable for printing. Like our example of removing a black background, we could use a Levels tool to adjust the right-hand (highlights) slider to remove luminance values in the highlight region. However, this risks affecting colorful highlight portions of the image.

If the background color is fairly uniform, then the **KnockMeColorOut** plug-in can be used. However, for a fairly complex background, such as the off-white background in our image, we can select and delete the white background as follows:

1. Choose the **Quick Selection Tool**

   The hot key is ' w ', though the tool is shared with the **Magic Wand** tool

   For older versions of PhotoShop that do not have the Quick Selection Tool, use the **Quick Mask** tool as an alternative.

2. Use the square bracket keys (' [' and '] ') to adjust the brush size.

3. Paint with the **Quick Selection Tool** to select the background of the image.

   Alternatively, paint the foreground, and then use **Select** menu >> **Inverse**

4. With the background selected, press **[Delete]** to erase the background.

5. For the erased regions, a light gray checker pattern is used to indicate unfilled (transparent) pixels of the image.

If there were a second layer beneath this layer, then it would now be visible within the erased regions.

Inspecting the Edges

Though removing the image background is acceptable for printing to white garment material, more work is required before the image is ready for black or color garment material. For example, if we create a black background layer and inspect the image, it is revealed that there is a faint white outline along the edges.
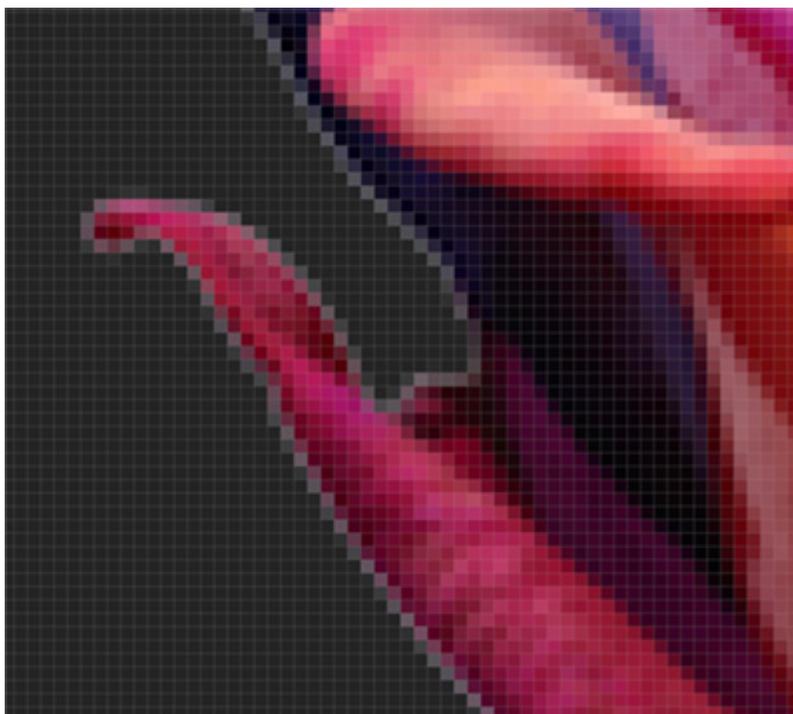
The faint white pixels are a result of anti aliasing, where the pixels have been varied in brightness to make the edges appear smoother when displayed on a computer display. These anti aliasing pixels are acceptable when printed to white garment material, but they will appear as a white outline when printed to black (or dark color) garment material.

We will fix this white outline for black or color garment material, though we must first define the white underbase region for this image.

Create a White Underbase

At this point, we have removed the off-white background, and the image is ready for printing to white garment material. However, for printing to black or color garment material, we must define a white ink underbase that prevents color shifts in the printed image.

> 6. Choose **Filter** menu >> **CADlink** >> **KnockMeColorOut**
>
> 7. A filter preview dialog will open, which previews how the image will appear with the selected color removed.
>
> 8. Click within the background of the top image to choose which color to remove.
>
>> Though we had previously removed the image background, this will indicate (to the filter) that the white ink underbase must be created for the foreground portion of the image.
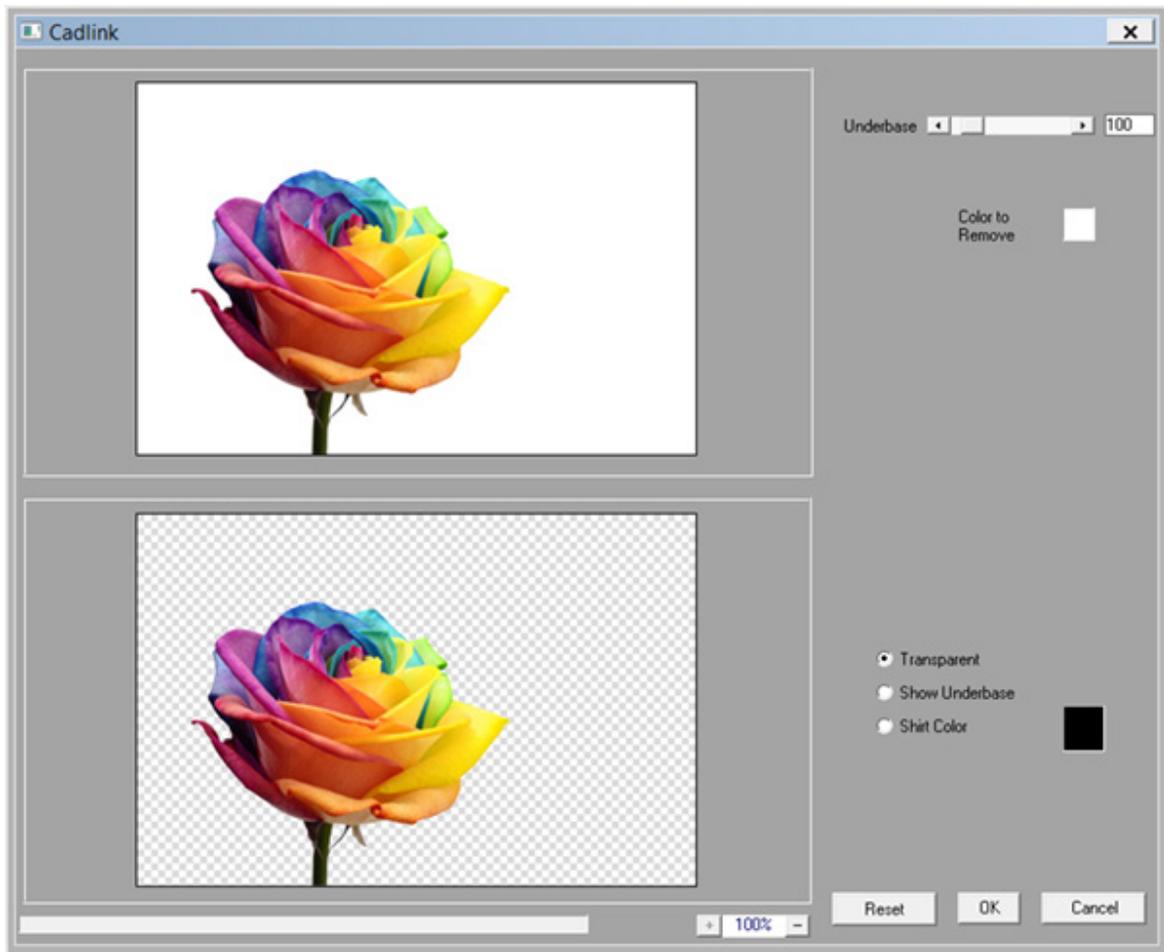
9. To inspect where white ink will be applied, click the **Show Underbase** option. Notice that the image has a good, solid black that indicates where white ink will be applied as an underbase.
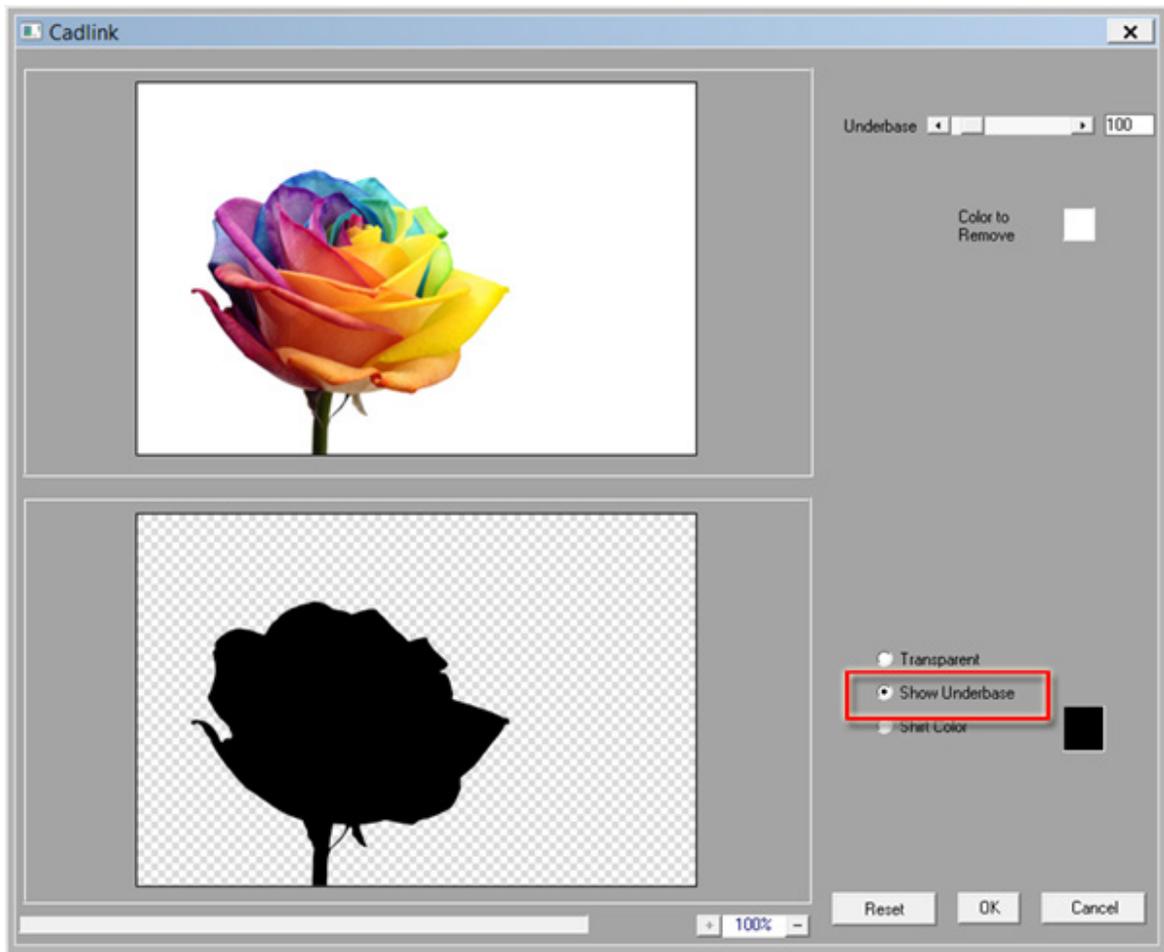
10. Click the **Shirt Color** option, and set the color picker to black. This will preview the image as it would appear on black garment material.
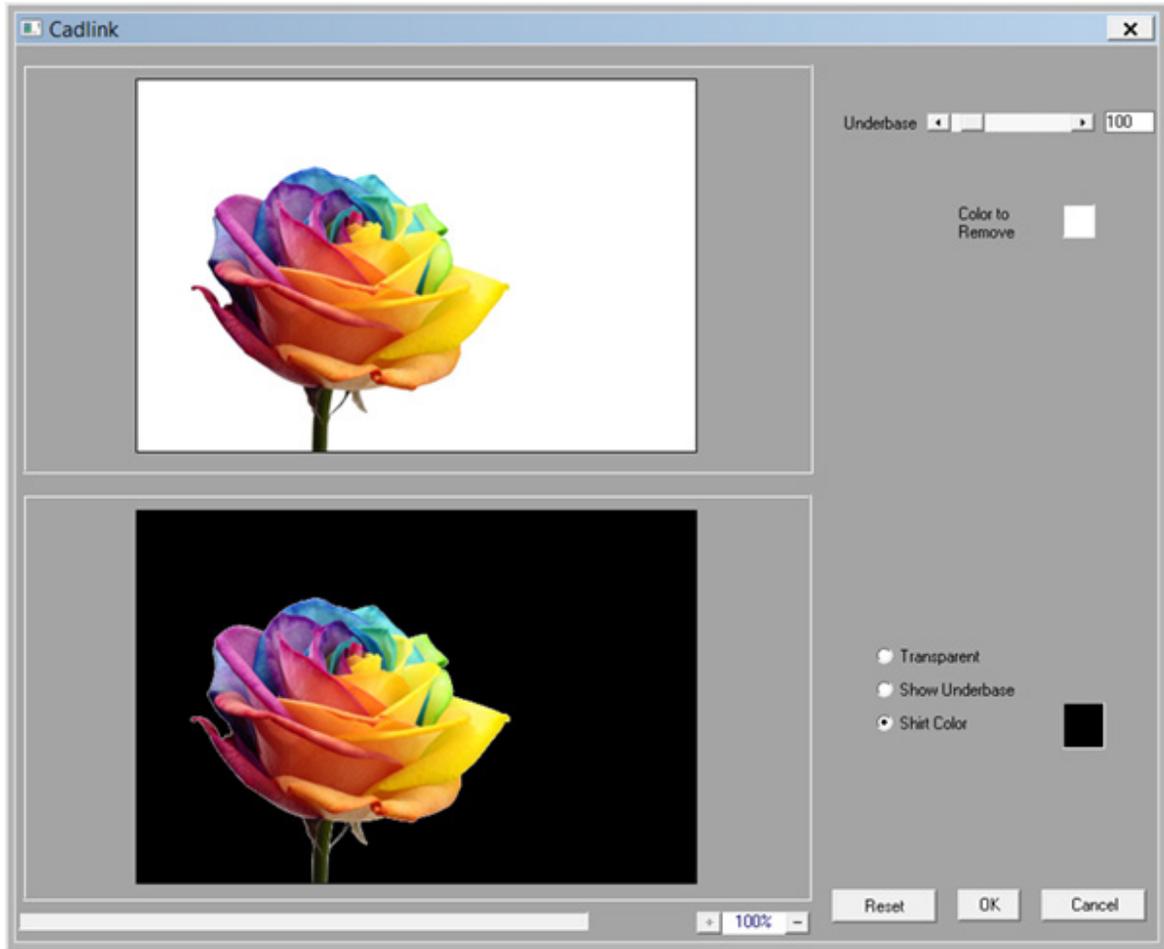
11. However, as mentioned previously, close inspection of the preview shows that the anti aliasing will cause a white outline to be visible when printed to black garment material.
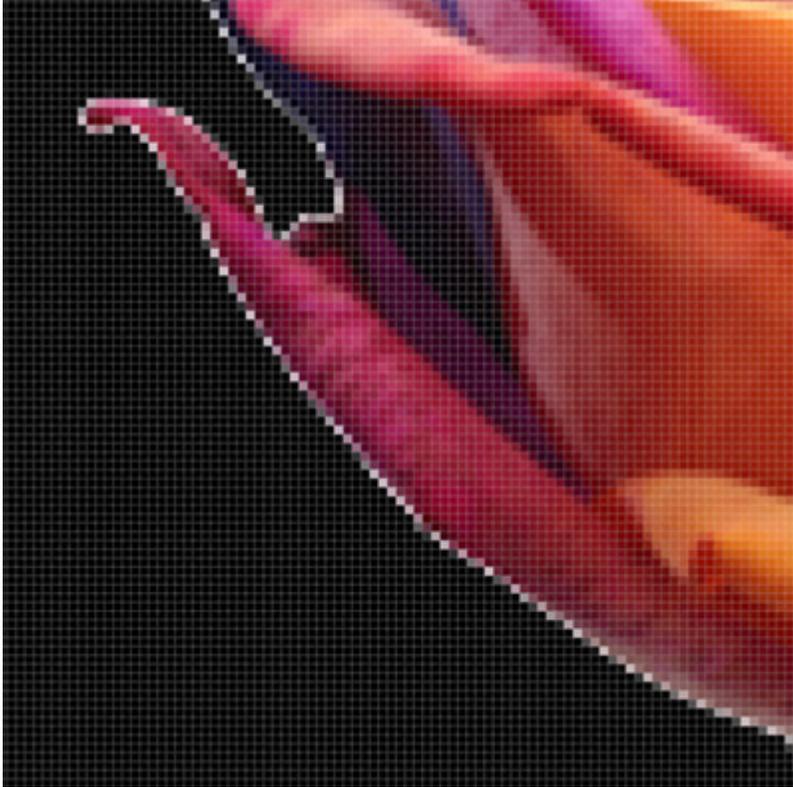
12. To fix this issue, the white pixels of the outline must be removed. However, we must first reduce the white underbase to compensate for removing the white outline.

13. As an extreme example, increase the Underbase slider = 800, which will cause the anti-aliasing pixels to disappear.
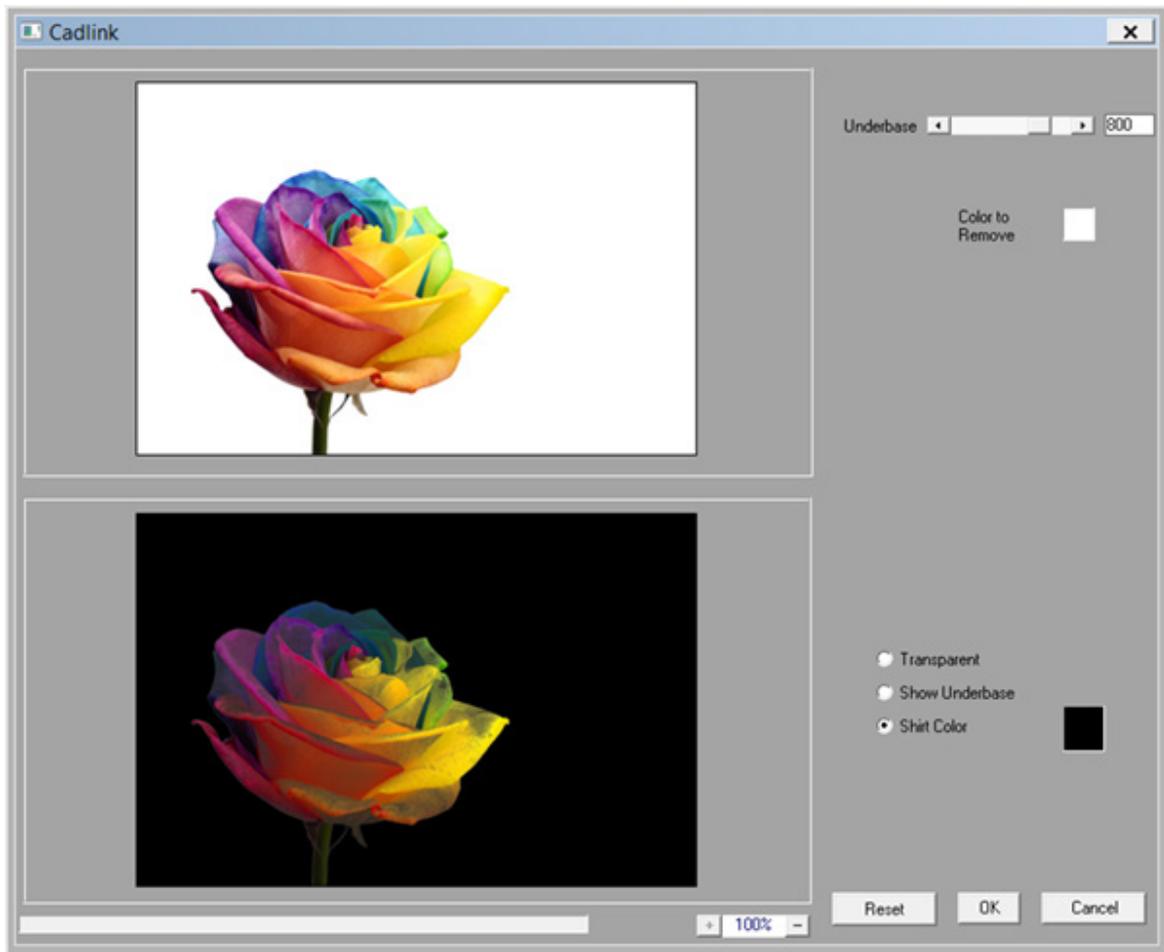
14. However, to inspect what effect this has on the image, click the **Show Underbase** option.

15. As revealed, setting the **Underbase** slider to 800 has caused much of the image to have less than 100% white ink underbase (as indicated by the gray tints).

16. This is not acceptable because the gray tints indicate where a color shift will occur in the printed image.
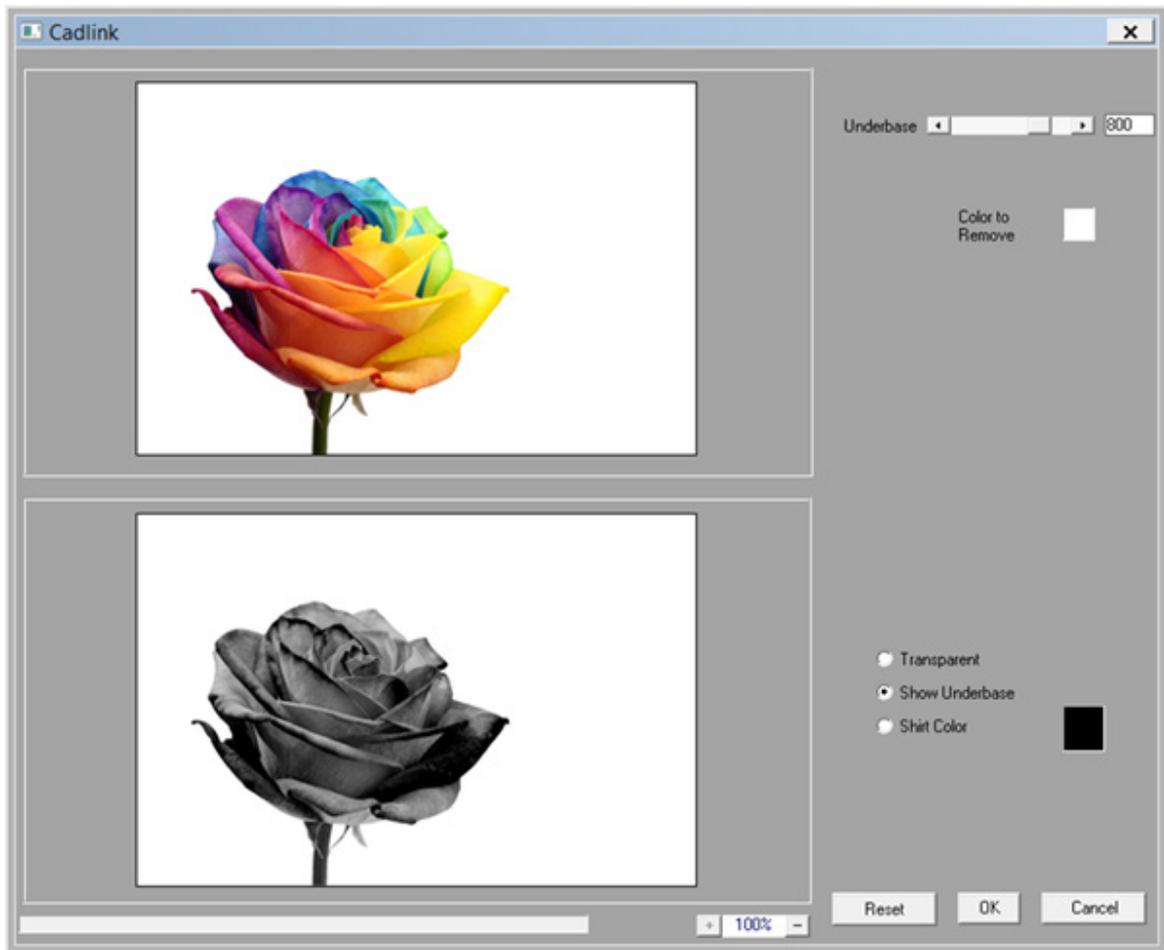
17. Again, click the **Shirt Color** option.

18. Reduce the **Underbase** to 100, and then gradually increase the slider until the anti-aliasing pixels have just disappeared.

For our example, we found that an Underbase of 190 could be applied without weakening the underbase. In other words, our initial increase of the Underbase to 800 was too much. Instead, the Underbase needed to be increased enough to compensate for the anti aliasing pixels, yet not so much that a weak underbase is applied for the artwork.
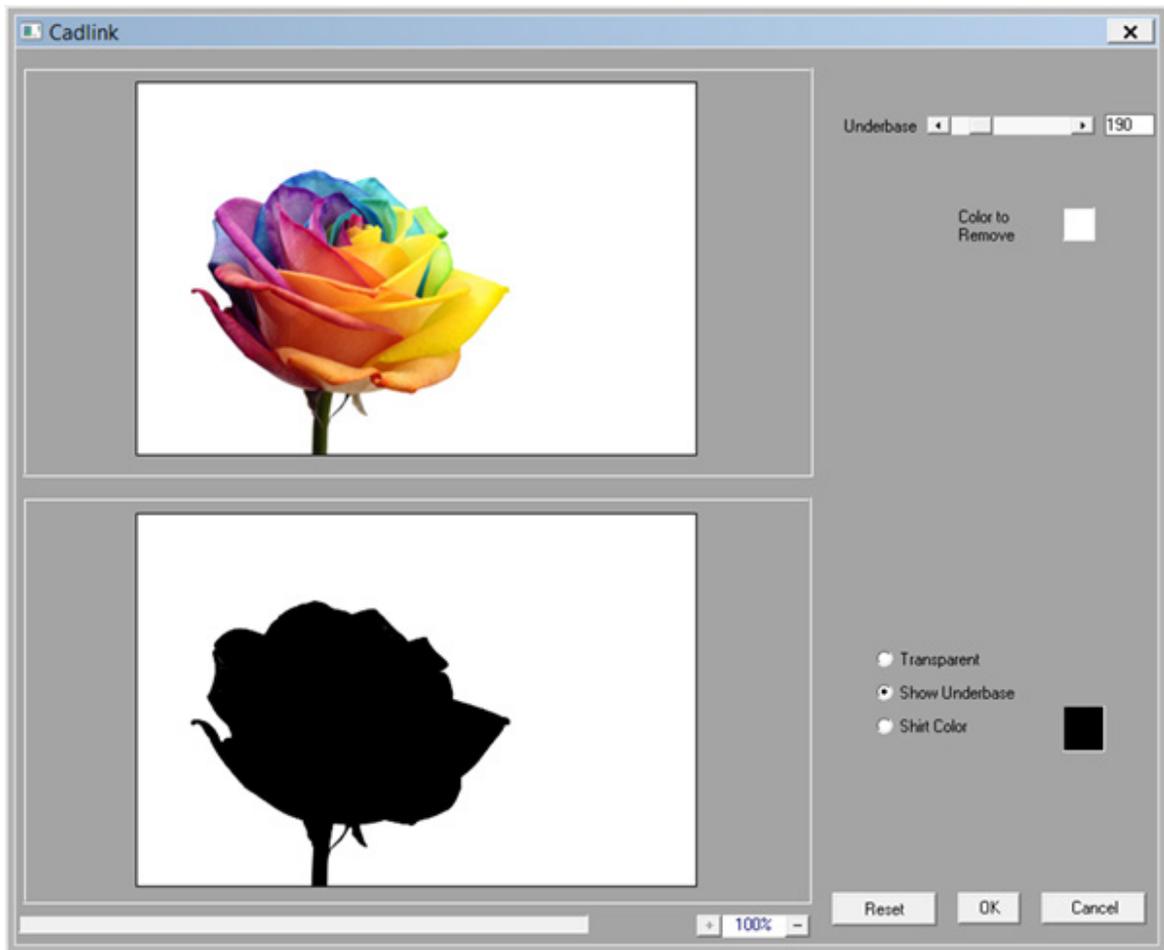
11. Click **OK** to complete the **KnockMeColorOut** operation.

Adjusting the Transparency Opacity

At this point, we have prepared the white ink underbase that is needed for printing to black or color garment material. However, we still have the white anti-aliasing pixels that were created when deleting the background of the original image. And before we remove the white anti-aliasing pixels, we want to create a mask that will protect the image.

12. Create a mask for the image outline (see **Quick Mask** in PhotoShop).

We essentially want to paint along the image edge, where there are white pixels from the anti-aliasing.

13. With the mask in place (only the white pixel outline is selected, choose **Filter** menu >> **CADlink** >> **Transparency Opacity**.

13. The **Transparency Opacity** dialog will open, which provides Levels-like controls for adjusting the image transparency.

14. Reduce the **White** slider from 255 down to 0, which will remove the partially transparent white pixels.

15. Click **OK** to proceed.

16. When comparing the image against a black background, the result is that the white anti-aliasing pixels have been removed.
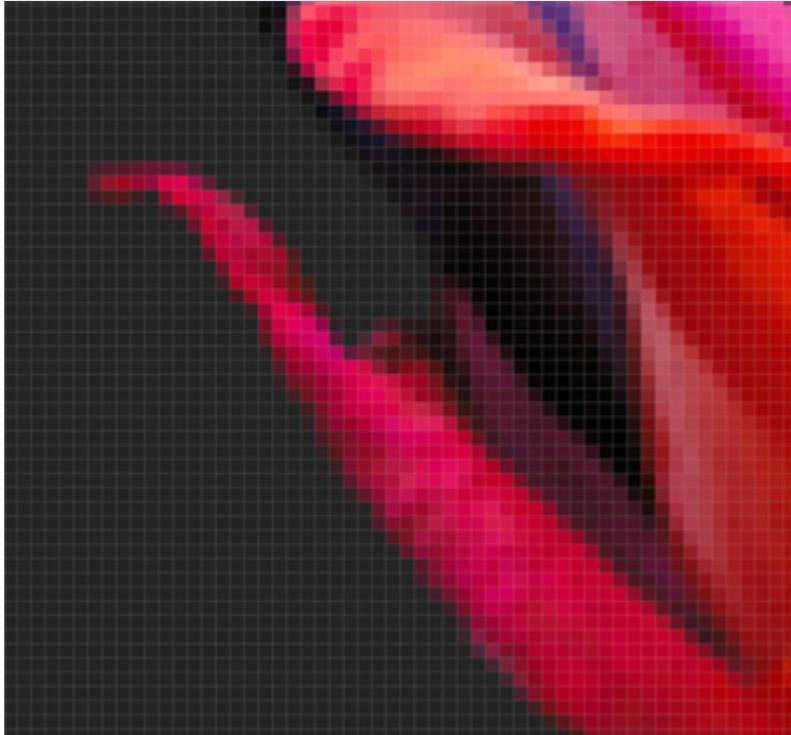
At this point, with the white underbase prepared, and the white anti-aliasing pixels removed, the design is ready for printing to black or color garment material. Since the design has already been prepared with a white underbase, the **Send to DTG RIP Pro C6** command can be used.

The DTG RIP Pro C6 Window

- The left-hand side of the DTG RIP Pro C6 window provides a queue-based repository for managing print jobs.
- The right-hand side of the window is the Visual Print Manager, which is used to confirm layouts before committing (i.e., placement of jobs on the material).
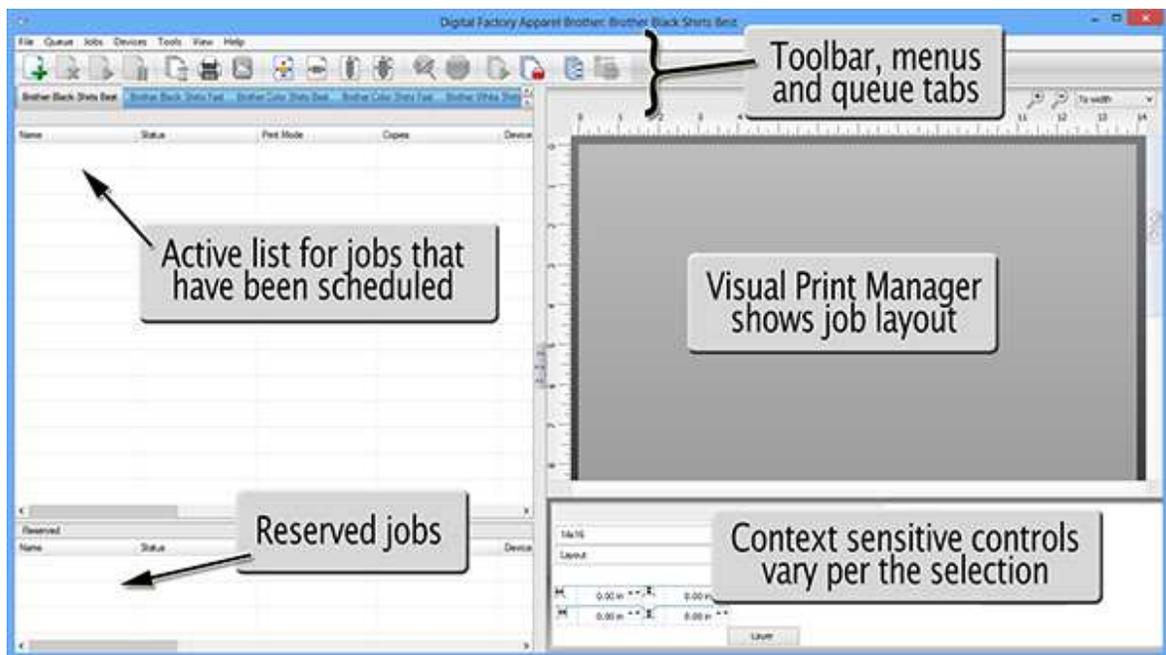
- Below the toolbar are the queue tabs, which provide an easy means of switching between queues. Note that several default queues have been created for black, color and white garment material.
- When a print job is received, it will be acted upon according to the properties of the given queue.
- Commonly, a queue is set to act upon a print job, which will cause the job to appear in the Active List, and its layout previewed in the Visual Print Manager.
- If a print job is not scheduled, then it will be listed in the Reserved List (i.e., the job is set aside until the user chooses to schedule the job).

The Basics

[?]Starting and Stopping Jobs

[?]Cancelling a Print Job

User Interface

Toolbar Controls

The Main Menu

Visual Print Manager Layout Preview

Previewing Raw Print Data

Starting and Stopping Jobs

- For a given queue, if the **Start Queue** button has been clicked, then jobs will proceed according to the schedule settings as set within the queue properties.

- If the **Stop Queue** button has been clicked, then all jobs will be placed on hold, regardless of the schedule settings within the queue.
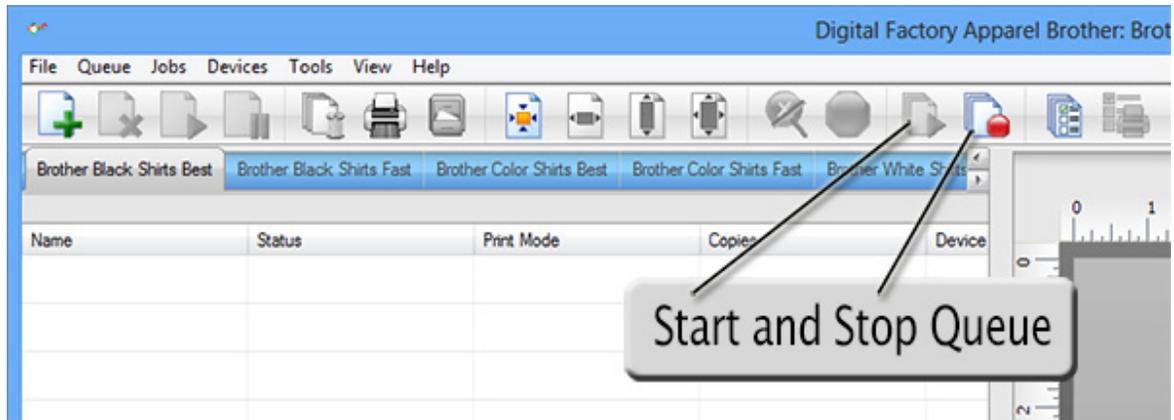
- To adjust the schedule settings of the queue, choose **Queue** menu >> **Properties** >> **Layout Manager** tab.

- If a print job is being held in the active list, then it can be printed by right-clicking the job and choosing **Print**.

Cancelling a Print Job

Should it be necessary to suddenly stop a job, use the following steps to cancel the job in a clean fashion, such that you can get started with the next job promptly:

1. Pause the job on the printer control panel.

2. In DTG RIP Pro C6, right-click the job and choose **Abort**.

3. Windows will open a **Port Locked** dialog. Do not close this dialog.

4. From the printer control panel, reset the printer. If there is no reset button (or procedure for resetting the printer), then turn the printer OFF. After powering OFF, power the printer ON after a short pause.

5. Return to the **Port Locked** dialog and click **OK** to continue.

At this point, the printer should be ready to process new jobs, and buffer data from the cancelled job will have been cleared.

Toolbar Controls

The Toolbar provides high-level queue management, such as starting and stopping the queue, clearing errors, and deleting jobs.
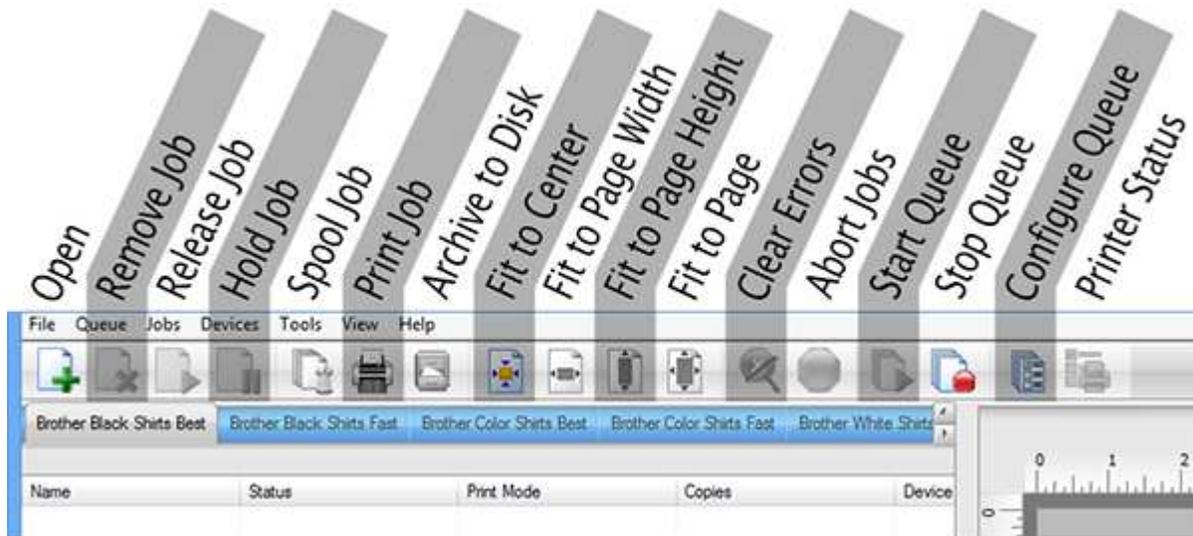
- **Open** - Open a browse dialog and choose an image file to print. The given file (e.g., EPS, BMP, TIFF, etc.) will be added as a job in the current queue.

- **Remove Job** - Permanently delete the selected job(s).

- **Release Job** - Release a held job for printing/cutting.

- **Hold Job** - Stop the job, regardless of whether the queue is stopped.

- **Spool Job** - Spool the print data without sending to printer. The spool file is retained on the hard drive, which can be previewed by right-clicking the job and choosing **View Raw Data**.

- **Print Job** - Begin printing the job (i.e., spool the job and send the print data to the printer).

- **Archive to Disk** - Store the job in an archive location, such that it can be restored at a later date.

- **Fit to Center** - Center the job horizontally and vertically on the material.

- **Fit to Page Width** - Scale the job to match the page width.

- **Fit to Page Height** - Scale the job to match the page height.

- **Fit to Page** - Scale the job without exceeding the page size.

- **Clear Errors** - If a problem occurs when printing (such as paper out), the print job will be put on hold. After the printing problem is resolved, use the **Clear Errors** item to remove the error flag.

  If a job has encountered an error condition, then the job properties will summarize the errors. The job properties also include a detailed Log of the tasks that were completed before the error was encountered (see the Log tab).

- **Abort Jobs** - Cease further processing of the job.
- **Start Queue** - For the current queue, process jobs as they are received, per the queue properties.
- **Stop Queue** - Hold all jobs in queue, regardless of the queue scheduling settings.
- **Configure Queue** - Open the **Queue Properties** dialog for the given queue.
- **Printer Status and Settings** - Query the printer for its current panel settings.

The Main Menu

- The **File** menu provides tools for importing images directly into a queue, rather than from a graphic design application. The imported image can be from either an image file (e.g., BMP, JPEG, etc.), or a desktop scanner.

- The **Queue** menu provides controls for creating and adjusting queue parameters.

- The **Jobs** menu provides controls for adjusting selected jobs.

- The **Devices** menu provides tools for installing printers, customizing print mode settings, and printing test pages to confirm quality.

- The **Tools** menu provides controls for adjusting the interface and system preferences.

File Menu

The **File** menu provides tools for loading images into a given queue for printing.

- **Import File** - Open a browse dialog and choose an image file to print. The given file (e.g., EPS, BMP, TIFF, etc.) will be added as a job in the current queue.

- **Find Files** - Open a search dialog to locate a specific image file. Search criteria includes location, filename, file type, and modification date.

- **Get from Gmail** - Use a Google e-mail account to receive job files, which can then be loaded into DTG RIP Pro C6.

Queue Menu

The **Queue** menu contains the basic queue controls.

- **Manage Queues** - Open the **Queue Manager** dialog, which is used to create queues for new printers, set the output port for the given device, and add printers to the Windows Control Panel.

- **Start** - Same as the **Start Queue** toolbar button. Start the current queue and process each print job according to the queue properties.

- **Stop** - Same as **Stop Queue** toolbar button. Hold all jobs in queue, regardless of the queue scheduling settings.

- **Clear Job Errors** - If a problem occurs when printing (such as paper out), the print job will be put on hold. After the printing problem is resolved, use the **Clear Errors** item to remove the error flag.

  If a job has encountered an error condition, then the job properties will summarize the errors. The job properties also include a detailed Log of the tasks that were completed before the error was encountered (see the **Log** tab).

- **Properties** - Open the **Queue Properties** dialog.

Jobs Menu

When a print job is received in a queue, the **Jobs** menu controls can be applied to that job. Select the job and then choose from the **Jobs** menu. Alternatively, these controls are available from the context menu when right-clicking the job.

- **Restore Jobs** - Manage archived print jobs.

- **Select All** - Selects all jobs in queue.

- **Select None** - Clear current selection.

- **Remove** - Delete the selected job.

- **Rename** - Change the job name.

- **Open Page** - Spooled jobs are considered closed because they contain the print data that is ready for sending to the printer. Use Open Page to discard the spool data, such that the unspooled job is available for scaling, rotating, etc.

- **Locate Job** - Highlight the job as it appears in the Visual Print Manager.

- **Release** - Release a held job for printing.

- **Hold** - Stop the job, regardless of whether the queue is stopped.

- **Abort** - Cancel the selected job (i.e., cease sending data to the printer).

- **Clear Error** - If a problem occurs when printing (such as paper out), the job will be flagged with an error and put on hold. After the printing problem is resolved, click **Clear Error** to remove the error flag.

  If a job has encountered an error condition, then the job properties will summarize the errors. The job properties also include a detailed Log of the tasks that were completed before the error was encountered (see the **Log** tab).

- **Add to Layout** - This command is applied to unscheduled jobs. The given job will be moved into the Active List and its layout shown in the Visual Print Manager.

- **Print** - Begin printing the job (i.e., spool the job and send the print data to the printer).

- **RIP Only (Preview)** - Spool the print data without sending to printer. The spool file is retained on the hard drive, which can be previewed by right-clicking the job and choosing **View Raw Data**.

- **Archive to Disk** - Store the job in an archive location, such that it can be restored at a later date.

- **Generate Preview Image** - Generate a thumbnail of the job that is displayed in the Active List. Thumbnails can be automatically generated per **Tools** menu >> **Options** >> **Preview Options**.

- **Properties** - Open the **Job Ticket Properties** dialog, which displays all the settings that the job "inherited" from the queue properties.

- **Show Log Console** - When printing or spooling a job, this option will open a log window. The log information is the same as can be viewed within the job properties.

Devices Menu

The **Devices** menu provides tools for installing printer support files, cutter device drivers, customizing print mode settings, and printing test pages to confirm print quality.

- **Manage Devices** - Open the **Manage Devices** dialog, which is used to install new printers and cutters, and check for support file updates.

- **Manage Print Modes** - Open the **Print Mode Manager** dialog, which is used to organize the print modes that have been installed for a given printer.

- **Manage Print Media** - Define media dimensions (i.e., page size) in terms of sheets, rolls, and templates.

- **Manage Processes** - Configure the operations that can be assigned to color vectors within a job (i.e., cut paths, half cut, etc.).

- **Printer Properties** - Query the printer for its current panel settings.

- **Print Test Page** - Both test pages and preset swatch charts can be printed from the **Print Test Page** dialog. Simply click one-or-more test pages (use **[Ctrl]** to click multiple pages), and then click **OK**.

  > **Note:** Test pages should be printed to white garment material in order to avoid potential color shift issues with respect to black or color garments.

  [?]Test Page

  [?]Ink Limit Target

  [?]Max Ink Page

  [?]CMYK Test Page

  [?]Profile Test Chart

  [?]Profile Test Chart Extended

  [?]CADlink CMYK Swatches

  [?]CADlink RGB Swatches

  [?]CADlink Lab Swatches

- **Quick Print Test** - One or more of the charts from the **Print Test Page** dialog can be designated for the **Quick Print Test**. The charts are selected as follows:

  1. Choose **Devices** menu >> **Print Test Page**.

  2. Select each chart that should be part of the test.
     Use **[Shift]** and **[Ctrl]** to select multiple charts.

  3. Tick the "**Use current selection for Quick Print Test**" checkbox.

4. Click **OK**.

5. To print the selected charts, choose **Devices** menu >> **Quick Print Test**.

Test Page

Devices menu >> **Print Test Page**

This **Test Page** is specifically designed to help recognize changes due to tonal adjustments. For example, the individual tints can be checked by referring to the tint percentage boxes, whereas the overall balance is checked by looking at the color graduation.

See also [Removing a Color Cast](#)

Ink Limit Target

The **Ink Limit Target** is primarily used to determine a good "starting point" with respect to ink limit settings when creating a new media profile.
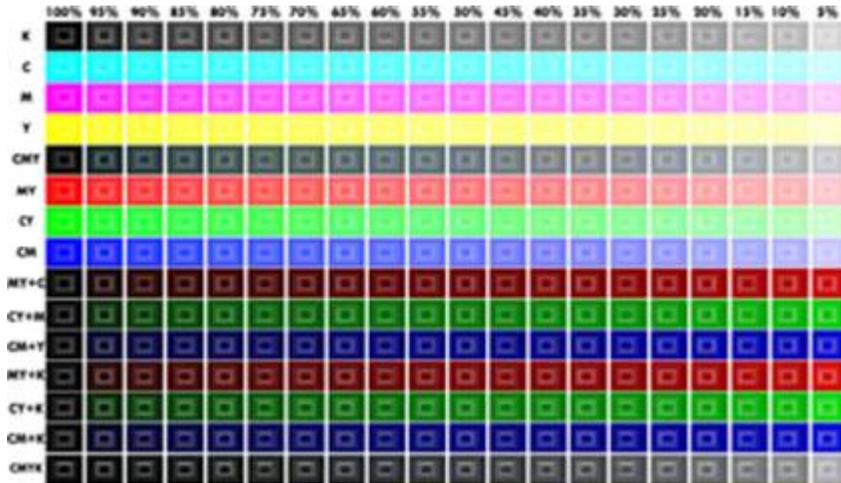
Max Ink Page

The **Max Ink Page** is used to help identify the best Max Ink setting for your printer. By comparing this chart when printed at different Max Ink levels, the optimum Max Ink can be determined simply by choosing the chart that looks best for the given media. This choice is based entirely upon your own judgment and preference.

CMYK Test Page

Devices menu >> **Print Test Page**

The **CMYK Test Page** is an older target for internal use by *CADlink Tech Support*. For a newer target, please refer to the Profile Test Chart.

- The gradient bars along the bottom are a useful indicator of problems in grayscale gradient (should be uniform).

- For the various images, there are many fine details that can become blurred if there is not enough ink being laid down.

- Likewise, the image colors are used to confirm that good saturated red, orange and yellow are being produced.

Profile Test Chart

The **Profile Test Chart** has been modified from its previous layout, and several new test images are included.

- The gradient bars are a useful indicator of any transition problems in grayscale or color gradients. The gradients should remain uniform.

- The RGB and CMY swatches are provided as a check that good saturation of these colors is being obtained.

- Likewise, the image colors are used to confirm that good saturated red, orange and yellow are being produced.

- For the various images, there are many fine details that can become blurred if there is not enough ink being laid down.

Profile Test Chart Extended

Devices menu >> **Print Test Page**

Aside from changes to the base profile test chart, the extended version has the same elements as it had previously.

- A selection of PANTONE® color swatches.

- A collection of progressively smaller sentences, which are used to confirm that small text details are not being lost.

- A grayscale image of a watch, which is used to verify that details are not becoming blurred.

- Several spiral patterns that are part of a line test to verify that line fragments are not being created.
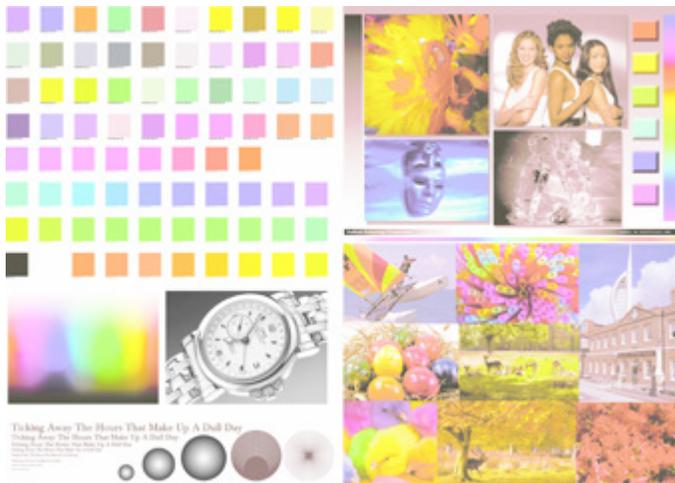
CADlink CMYK Swatches

Devices menu >> **Print Test Page**

- The **CADlink CMYK Swatches** are composed of 24 CMYK swatch charts, where each chart consists of 0 to 100% magenta along the x-axis, 0 to 100% cyan along the y-axis, with 0 to 100% yellow for each chart.

- The first twelve charts have no black, so they contain only CMY swatches.

- The last twelve charts repeat the CMY swatches, except black is added to each swatch as follows: 5% black in the top-left, 10% black in the top-right, 20% black in the bottom-left, and 30% in the bottom-right of each swatch.
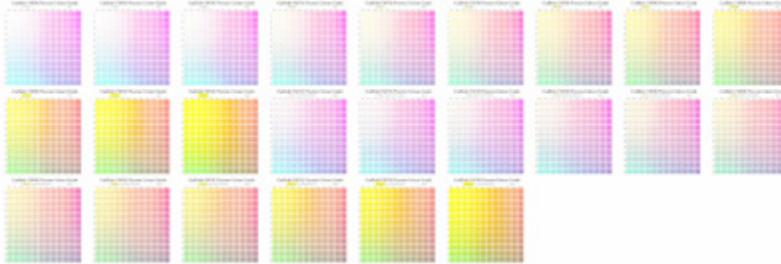
CADlink RGB Swatches

Devices menu >> **Print Test Page**

- The **CADlink RGB Swatches** are composed of 12 RGB swatch charts, where each chart consists of 0 to 100% green along the x-axis, 0 to 100% red along the y-axis, with 0 to 100% blue for each chart.

CADlink Lab Swatches

Devices menu >> **Print Test Page**

- The **CADlink Lab Swatches** are composed of 13 L*a*b* swatch charts, where each chart consists of [-128..127] b* along the x-axis, [-128..127] a* along the y-axis, with decreasing amounts of Lightness per chart (100 to 0).
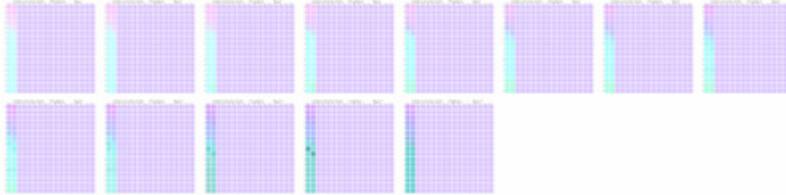
Tools Menu

The **Tools** menu provides access to RIP settings, such as allocated RIP memory, cut file location, and concurrent print job processing.

Options Dialog

The **Options** dialog provides interface preferences and RIP system settings.

- **General** - Provides basic controls for customizing the DTG RIP Pro C6 interface.
- **Storage and Archiving** - This tab indicates where the production files are stored when the queues are processing jobs, and the location of archived jobs.
- **RIP** - Allocate memory for the RIP, and set the relative priority of jobs with respect to other Windows applications.
- **Processing** - Spool extra jobs whilst waiting for the current print job to finish.
- **Preview Options** - Adjust the thumbnail image quality for jobs in the active list.

Printing Direct to Port

- **Direct to Port** - This is a diagnostic tool that sends print data to a specific computer port, so as to confirm that data is being received by the print that is connected to that port.

General Interface Settings

Tools menu >> **Options** >> **General** tab

The **General** tab provides basic controls for customizing DTG RIP Pro C6:

- **Show splash screen -** When launching DTG RIP Pro C6, this checkbox controls whether the DTG RIP Pro C6 Apparel - Epson Edition splash screen will be displayed.

- **Always on top -** If this checkbox is ticked (ON), then DTG RIP Pro C6 will always remain in the foreground "above" other windows.

- **Automatically track items -** If this checkbox is ticked (ON), then selecting a job in the active list or archive list will display details about that job in the Media Settings pane. When OFF, it is necessary to select a job in the Visual Print Manager in order to display such details.

- **Set display units -** Choose the unit of measurement that will be used throughout Digital Factory.

- **Set decimal places -** Choose the precision of measurements used in DTG RIP Pro C6.

- **User hidden dialogs** - DTG RIP Pro C6 uses warning dialogs to confirm whether a given action should proceed. Such warning dialogs have a checkbox that can be checked to prevent that warning dialog from reoccurring. However, if there is a new user that is learning how to use DTG RIP Pro C6, then click the **Reset All** button to force all dialogs to be shown again. Alternatively, click **Advanced** to select which warning dialogs to show.

Storage and Archiving

> **Tools** menu >> **Options** >> **Storage and Archiving** tab

This tab indicates where the production files are stored when the queues are processing jobs, and the location of archived jobs.
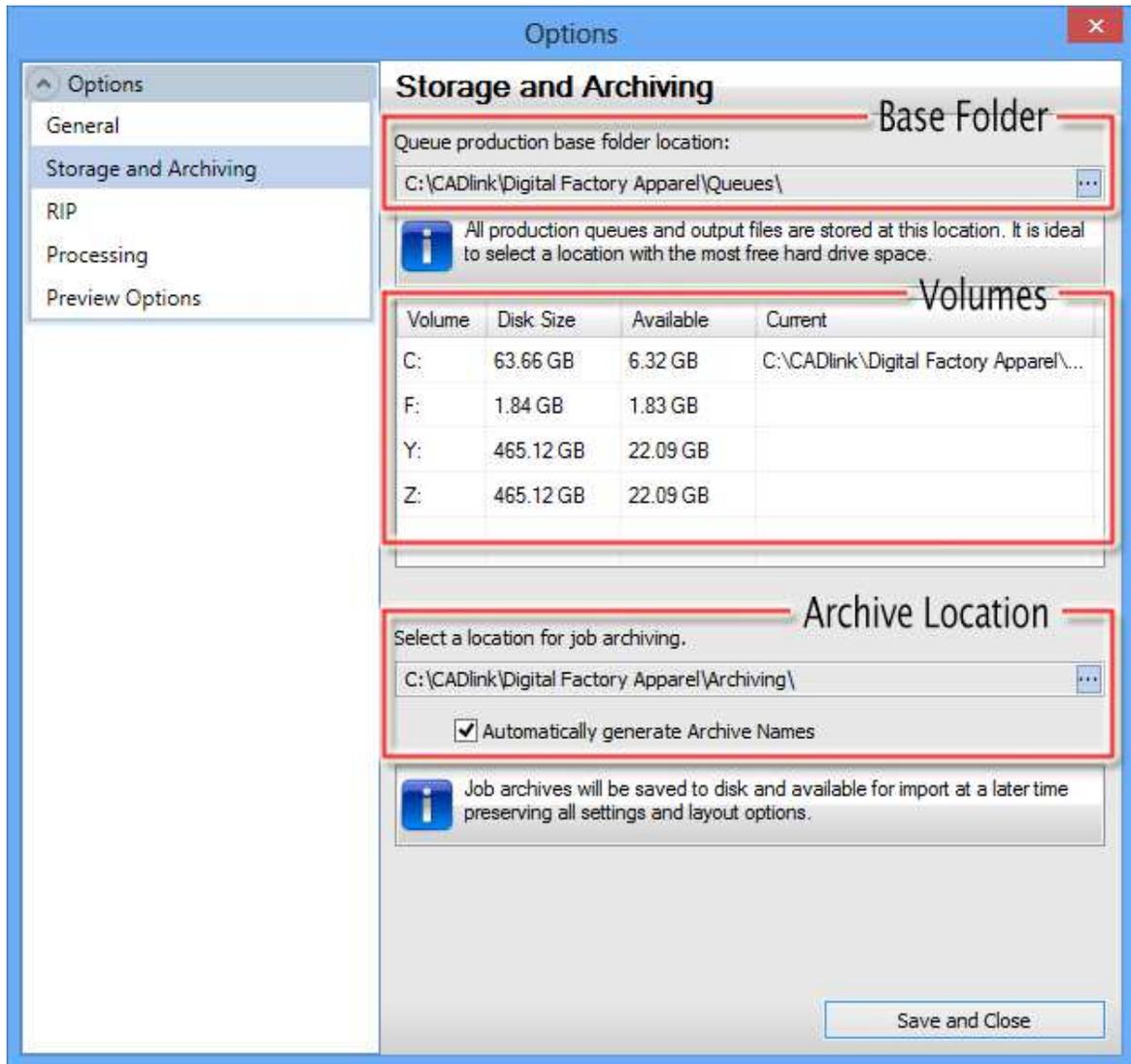
- **Base Folder** - This is the hard drive location where queue settings will be stored. By default, this location is set during DTG RIP Pro C6 installation.

- **Volumes** - The volumes are all the possible storage locations wherein the Base Folder can be set, such as a hard drive or flash drive.

- **Archive Location** - The archive location is the directory where archived jobs will be stored. This needs to be a location that can be accessed later to restore the given job.

RIP System Settings

Tools menu >> **Options** >> **RIP** tab

The **RIP Settings** are used to specify the resources that are available for spooling (rasterizing or RIP'ing) print jobs. These controls will directly influence the workstation that is performing the RIP calculations.

RIP System Location

The **RIP System Location** explicitly states the directory to which the <u>RIP engine</u> for DTG RIP Pro C6 has been installed. This information is provided to help CADlink Tech Support diagnose issues quickly.

RIP Memory Allocation

Memory refers to the maximum amount of workstation memory (RAM) that may be used by the queue when creating a spool file. If more than this limit is required, then Virtual Memory (VM) will be used. Virtual Memory refers to hard drive space that is used to supplement RAM. Virtual Memory is used to effectively provide applications with more RAM than the workstation has installed. However, accessing hard drive space is much slower than real memory.

RIP Priority Level

All software processes have a **Priority Level** that determines how the workstation processing time is shared amongst the processes (different software applications). Normally, processes are assigned equal priority levels by default, but modifying the priority of individual processes is acceptable where this improves overall workstation performance.

If the **RIP Priority Level** is increased, then print jobs will be processed faster, though this will be to the detriment of all other software processes that are running on the workstation. Other processes will simply require more time in order to complete their operations.

Conversely, if the **RIP Priority Level** is decreased, then print jobs will require more time to complete.

Processing

Tools menu >> **Options** >> **Processing** tab

Concurrent Jobs

Though DTG RIP Pro C6 can spool a print job quickly, there is still time required to send the spool data to the printer (say over a network). In addition, the printer has a physical limit with respect to how quickly ink can be laid upon the media.

Instead of waiting idle for a spool file to be completely received by the printer, DTG RIP Pro C6 can begin creating spool files for subsequent print jobs concurrently. However, please note that only one spool file is being compiled at any given time. The **Maximum number of concurrent RIPs** limits the number of spool files that can be compiled in advance of the job that is currently being spooled.

Preview Options

See also: Previewing Raw Print Data

By default, when a new job is received by the DTG RIP Pro C6, its name is listed in the Active List of jobs, a thumbnail image of the job is shown next to its name, and a thumbnail preview of the job is shown in the Visual Print Manager. Typically, these thumbnail previews are of medium quality, though the preview quality can be increased using the Preview Options.
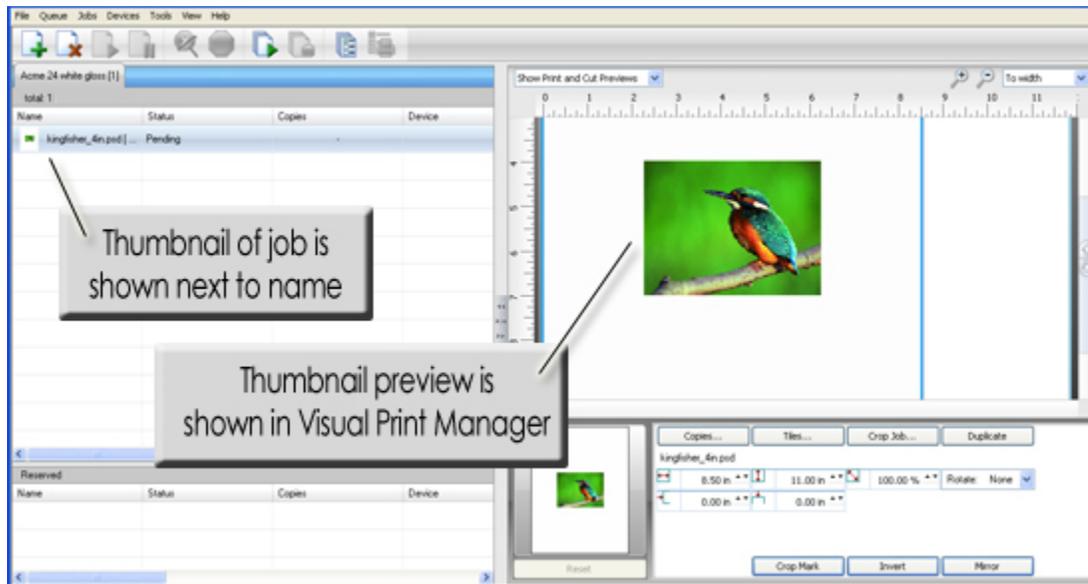
- **Generate thumbnail previews** - Clearing this checkbox (OFF) will prevent thumbnail previews from being automatically created. However, previews can be manually created by right-clicking the given job and choosing **Jobs** menu >> **Generate Preview Image**.

- **Preview quality** - Adjusts the screen resolution of the generated preview. Higher quality will require the greatest amount of time in generating the preview.

- **Gamma adjustment** - Adjusts the relative brightness of the generated preview.

- **Preview image bits per pixel** - Limits the number of color shades that can be assigned to a given pixel. Choosing **1 bit per pixel** will create preview colors that appear blotchy.

- **Limit number of previews** - By default, when multiple jobs are received at the same time, thumbnail previews will be methodically generated one-by-one. Use the slider to increase the number of previews that are generated in parallel.

Print Direct to Port

Tools menu >> **Direct to Port**

Note: This is a quick, specialized method of sending a print job in order to test that the computer port is communicating data to the printer.

This tool will open a **Send to port** dialog in the top-left corner of the DTG RIP Pro C6 window. Image files can be drag-and-dropped onto this dialog to initiate a print job, and the job will bypass the queue and be sent directly to whichever printer is connected to that port, without any processing. As such, the print quality will be negligible, and the practical reason for using this tool is to confirm that data is being communicated to the printer.

From the drop-list, choose the port where the print jobs will be sent. To the right of the drop-list, click the ellipsis button (three dots) to edit the port settings.
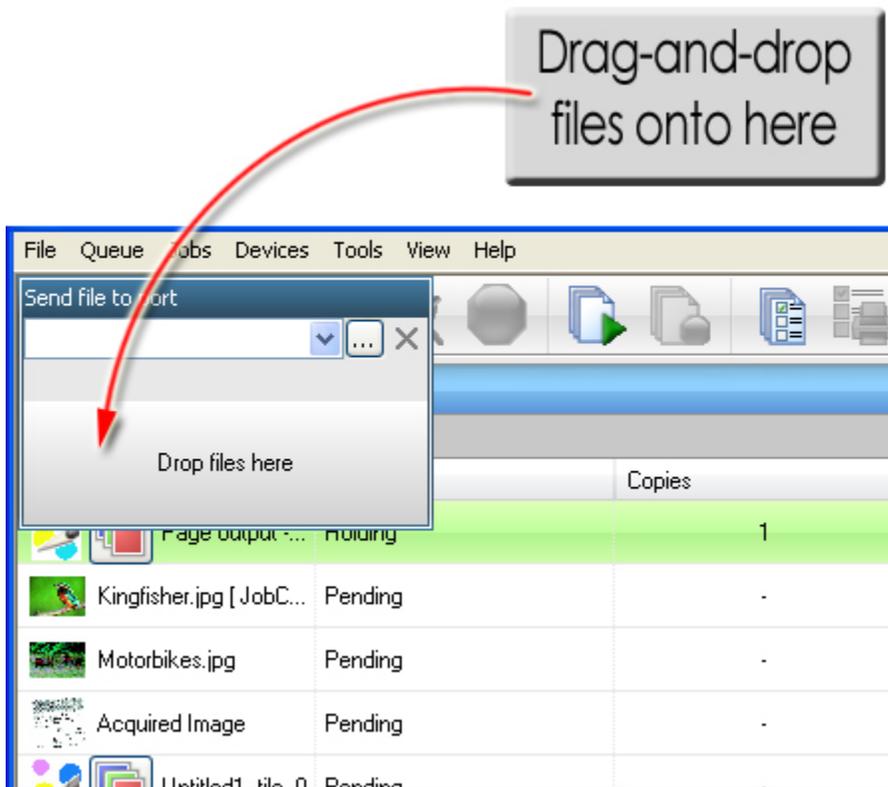
Visual Print Manager Layout Preview

View menu >> **View Visual Print Manager**

The Visual Print Manager is the right-hand side of the DTG RIP Pro C6 window, which previews jobs as they will be positioned upon the media. In addition, as jobs are added to the Visual Print Manager, they are grouped as sections of the media. For example:

- If jobs are being paginated into separate sections of the media (i.e., Auto Page), then Job 1 will be within Section 1, Job 2 within Section 2, etc.

- If jobs are being nested (i.e., Auto Nest), then several jobs could be within Section 1, more jobs within Section 2, etc.

    Note: For nested jobs that have significant white space, using the **[Ctrl]** key when dragging will allow the jobs to overlap.

Regardless of whether jobs are being paginated or nested, it is possible to click (i.e., select) either an individual job, or a section that contains one-or-more jobs. The Visual Print Manager controls will vary according to whether a job or section is selected.
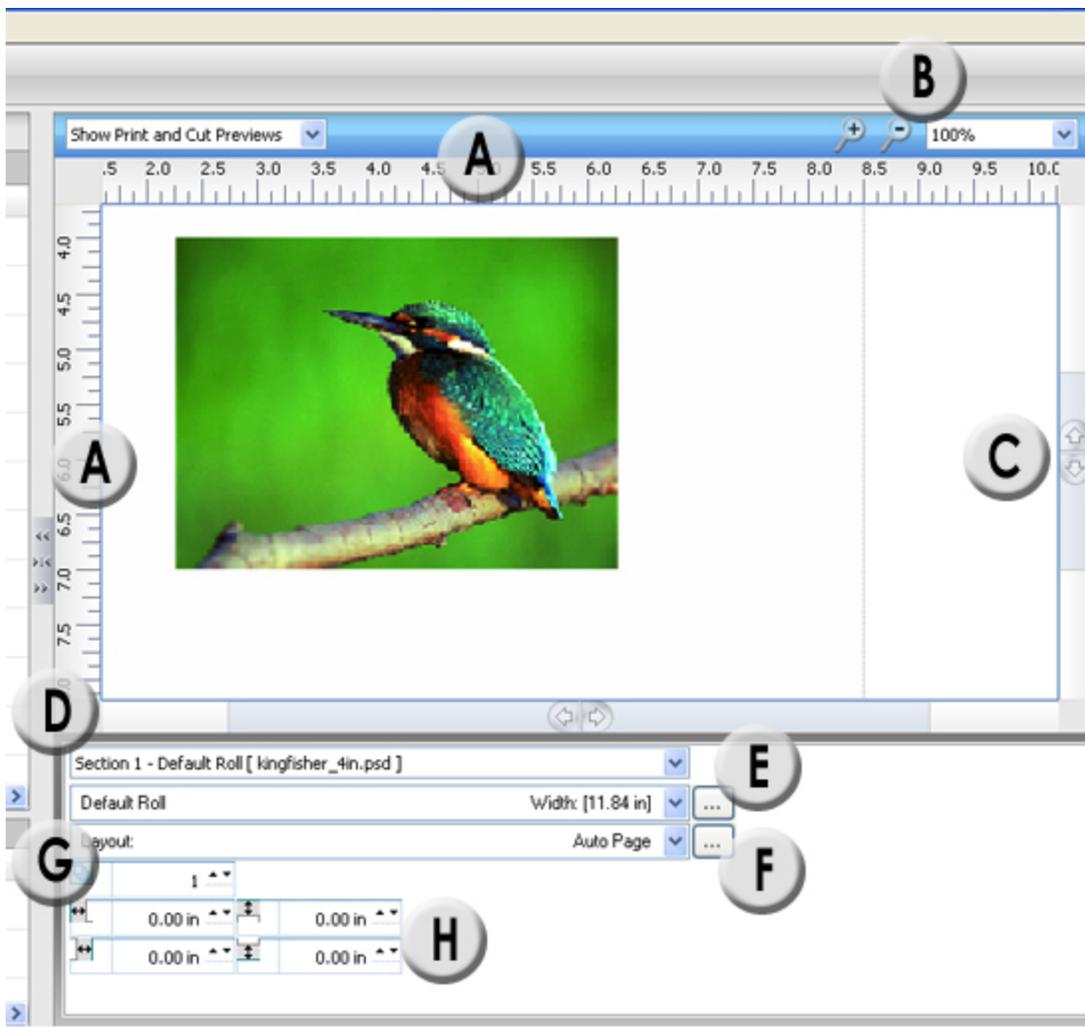
Controls with No Job Selected

(A) **Rulers** - The units shown here are set per **Tools** menu >> **Options** >> **General** tab >> **Set display units**.

(B) **Zoom** - Adjust the magnification of the preview view.

(C) **Scroll Control** - When there are more jobs than will appear within Visual Print Manager, use the scroll control to browse the jobs. Here are three scrolling methods:

      1. Click and drag the scroll control.

      2. Click the up or down arrow of the scroll control.

      3. In the list of jobs, click the job that you want to view.

(D) **Section** - Select a specific region of the media, where one-or-more jobs have been grouped. For example, select **Section 3** to view the jobs that have been nested within the third section of media.

(E) **Media** - Display the size and margins of the media.

(F) **Layout** - Set the **Layout mode** according to the **Layout Manager** tab of the **Queue Properties** dialog.

(G) **Copies** - Create copies of the selected **Section**.

(H) **Margins** - Set the margins for the selected **Section**.

[?]Context Controls with Job Selected

[?]Creating Copies

[?]Tiling Jobs

[?]Cropping a Job

[?]Invert the Job

[?]Scrolling Within the Visual Print Manager

Context Controls with Job Selected

When a job is selected, the context-sensitive controls at the bottom of the Visual Print Manager can be used to adjust the settings of the selected job (as opposed to the selected **Section** of media).
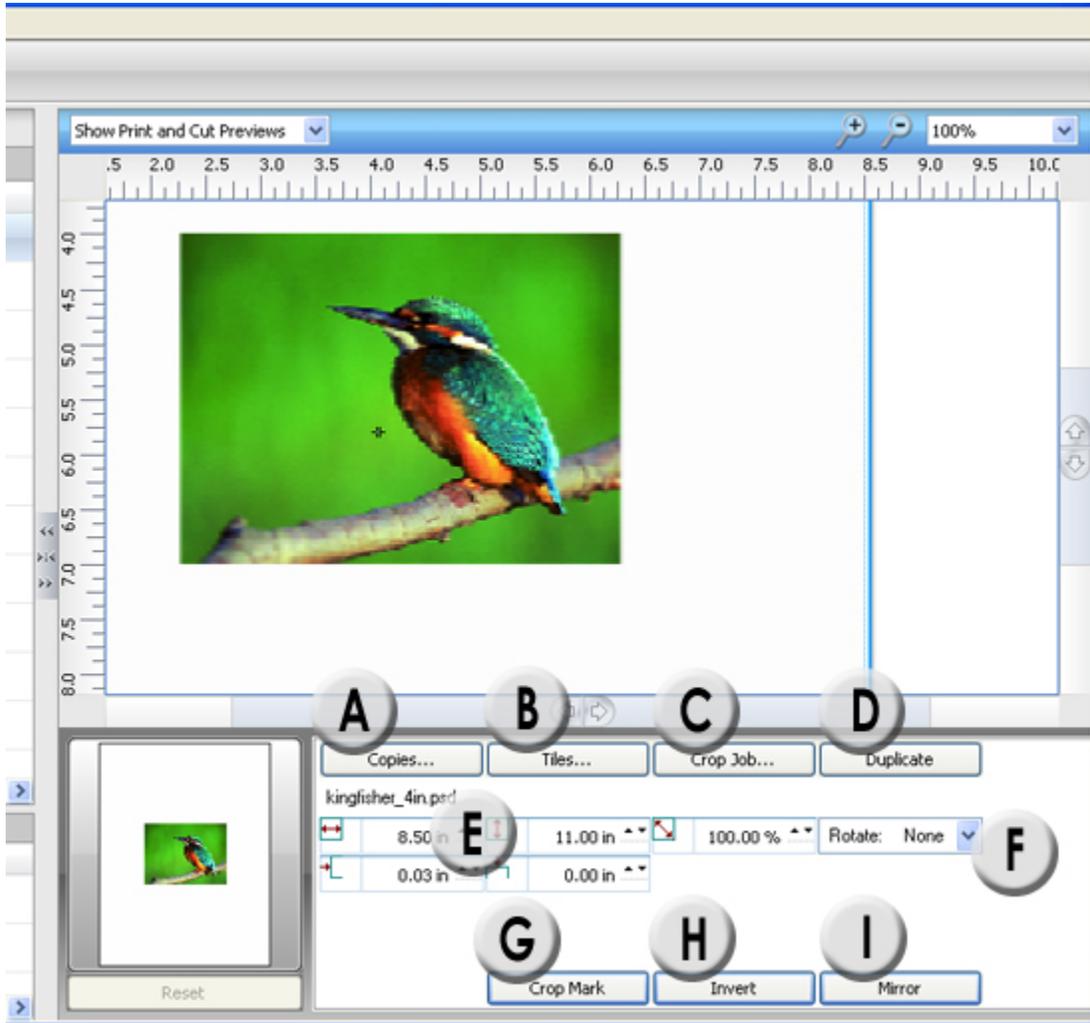
(A) **Copies** - Create copies of the selected job.

(B) **Tiles** - Opens the **Tiling / Cropping** dialog in tile editing mode, which provides tools for dividing the job into tiles.

(C) **Crop Job** - Opens the **Tiling / Cropping** dialog in crop editing mode, which provides tools for defining the size and position of the cropped area.

(D) **Duplicate** - Create a single copy of the selected job.

(E) **Job Size, Position, Scaling** - Adjust the parameters of the selected job.

(F) **Rotate** - Choose the job rotation in increments of 90 degrees.

(G) **Crop Mark** - This button is a toggle. Clicking once will place crop marks at the corner bounds of the job, whereas clicking again will hide the crop marks.

(H) **Invert** - This button is a toggle. Clicking will alternate the image between positive (i.e., a normal image) and negative (i.e., a tonal inversion of the image).

(I) **Mirror** - Flip the job horizontally.

Creating Copies

When copies are created within DTG RIP Pro C6, only the original selection will be rasterized, and the copies will reuse the rasterization data. In comparison, if multiple copies of a job are sent from the given design application, then all such copies will be rasterized individually (i.e., more processing time and overhead would be required).

Create Copies of a Job

1. In the Visual Print Manager, select the job.
2. Click the **Copies** button, and handles will appear to the right and bottom of the copies.
3. Drag the handles to create copies.
4. Alternatively, click the **Copies** button again, and the **Modify Copy Group** dialog will open.
5. This dialog can both specify the number of copies, and the spacing between copies.

Create Copies of a Section

1. In the Visual Print Manager, select the **Section**.
2. At the bottom of the Visual Print Manager, increment the **Total times to output page** field.

Tiling Jobs

For a new print job, suppose that the Visual Print Manager shows a red highlight where the job exceeds the media bounds.
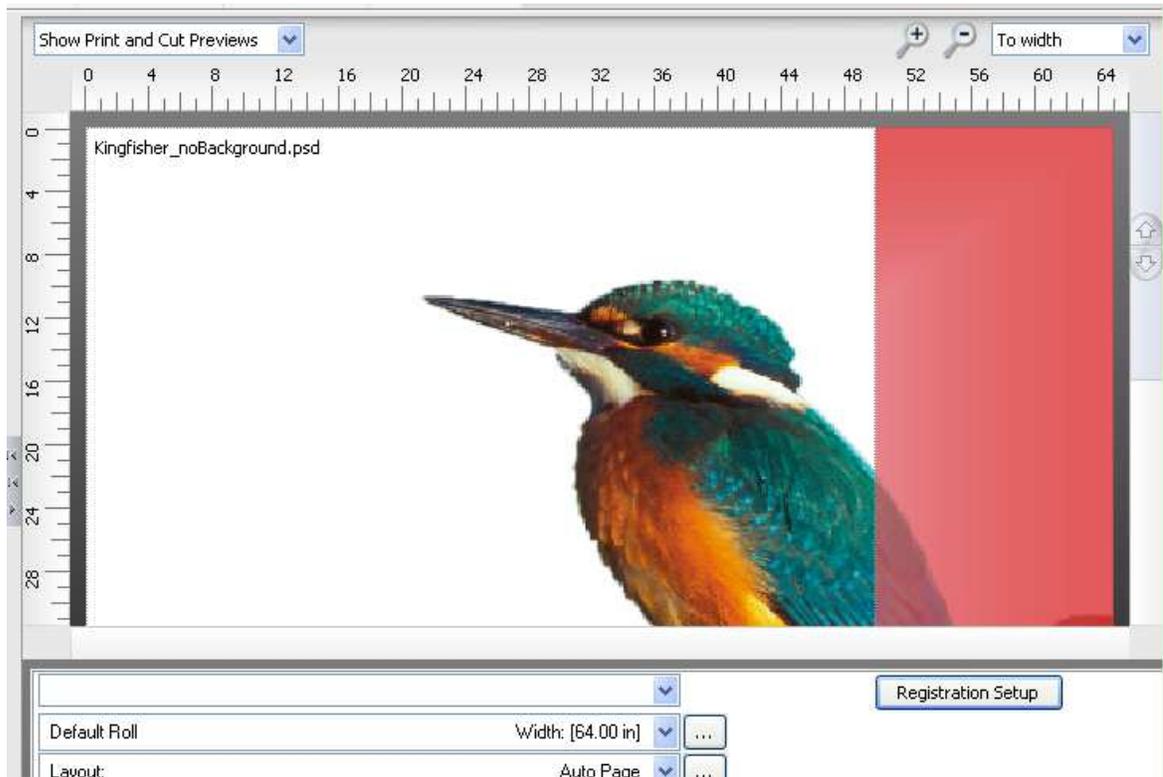
1. Select the job and click the **Tiles** button.
2. The **Tiling Setup** dialog will open.

DTG RIP Pro C6 - Epson Edition
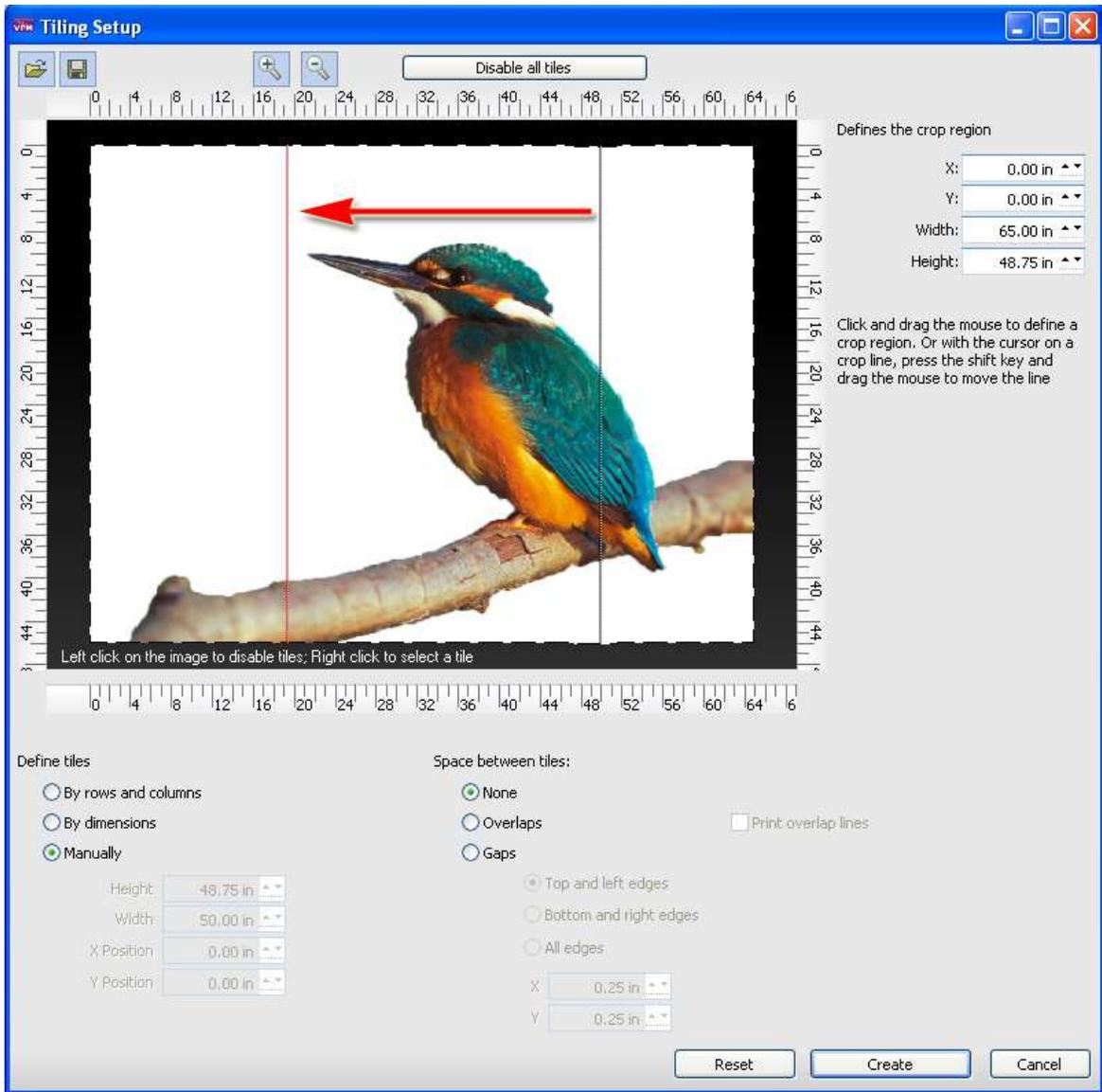
3. By default, the job will shown with a tiling line that indicates where the job exceeds the media.

    Depending on the extent of the tiling requirements, additional tile lines will be created as necessary.

4. Click the **Manually** option.

5. Drag to reposition the tiling line, such that any seam from the tile line will be minimized.

6. If necessary, click the **Overlaps** option and define the amount of extra artwork that will be printed per tile.

    > **Note:** If the **Print overlap lines** checkbox is enabled, then a dashed line will be printed to indicate where the overlap begins.

7. If necessary, drag additional tile lines from the sides of the dialog preview.

8. Click the **Create** button to close the **Tiling Setup** dialog.

9. The tiles will now be shown in the Visual Print Manager.

10. To output the job, right-click the job in the active list and choose **Print**.

Cropping a Job

1. Select the job and click the **Crop Job** button.
2. The **Tiling/Cropping** dialog will open in crop mode.
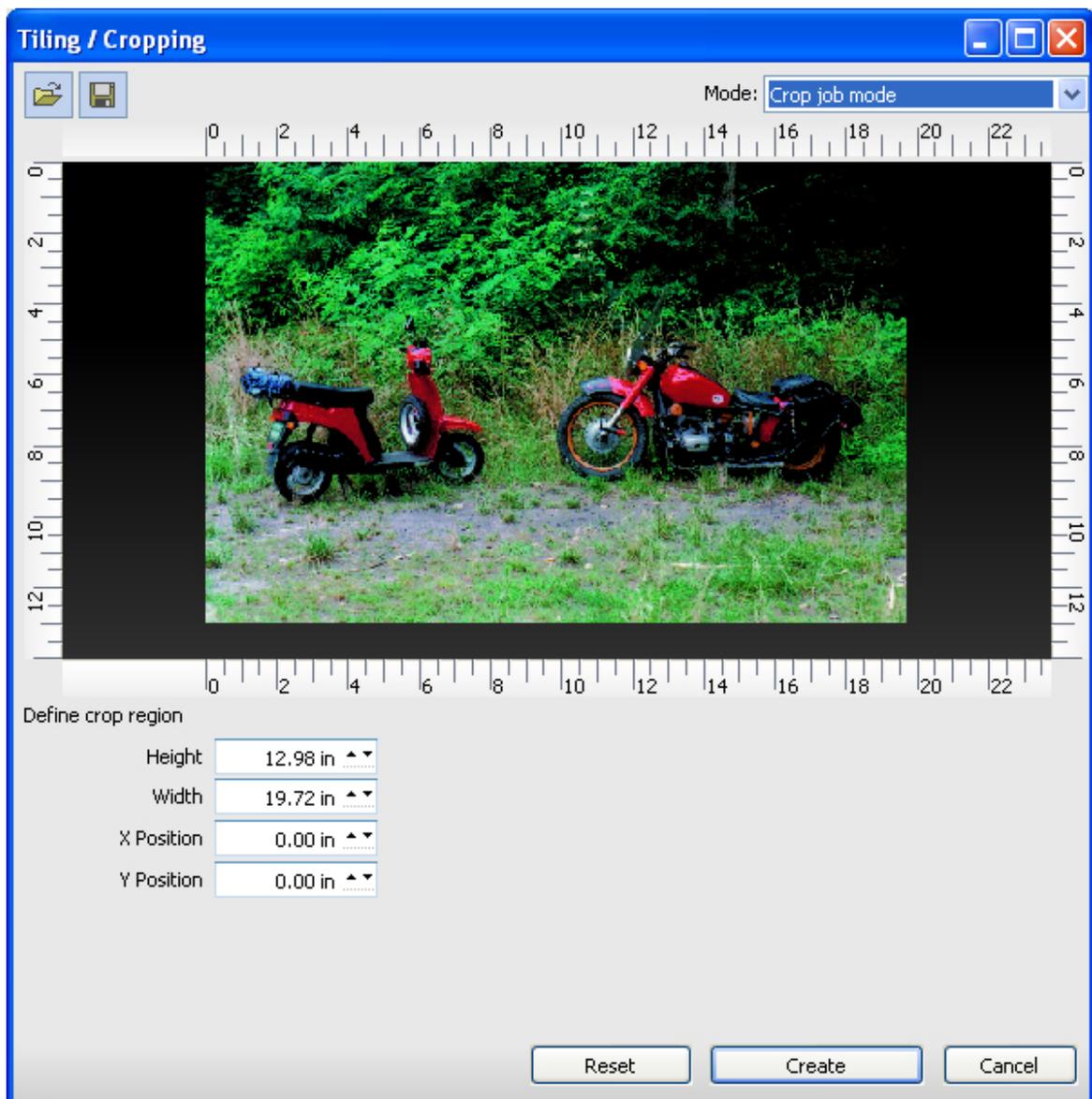
3. From the edges of the image preview, drag crop lines to define the crop region.
4. If necessary, click and drag the crop region for positioning.
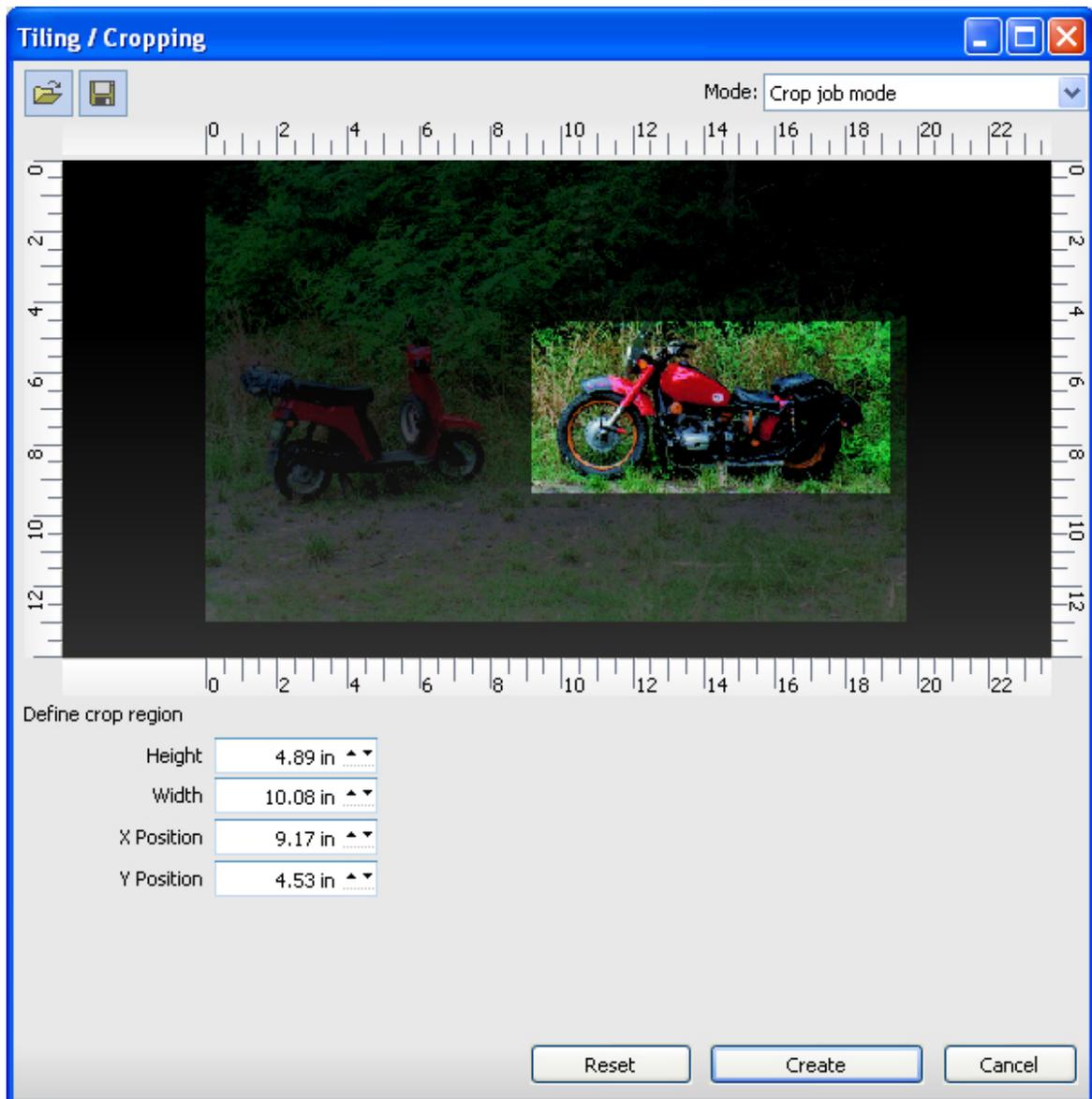
5. Click the **Create** button, and the cropped region will be visible in the Visual Print Manager.
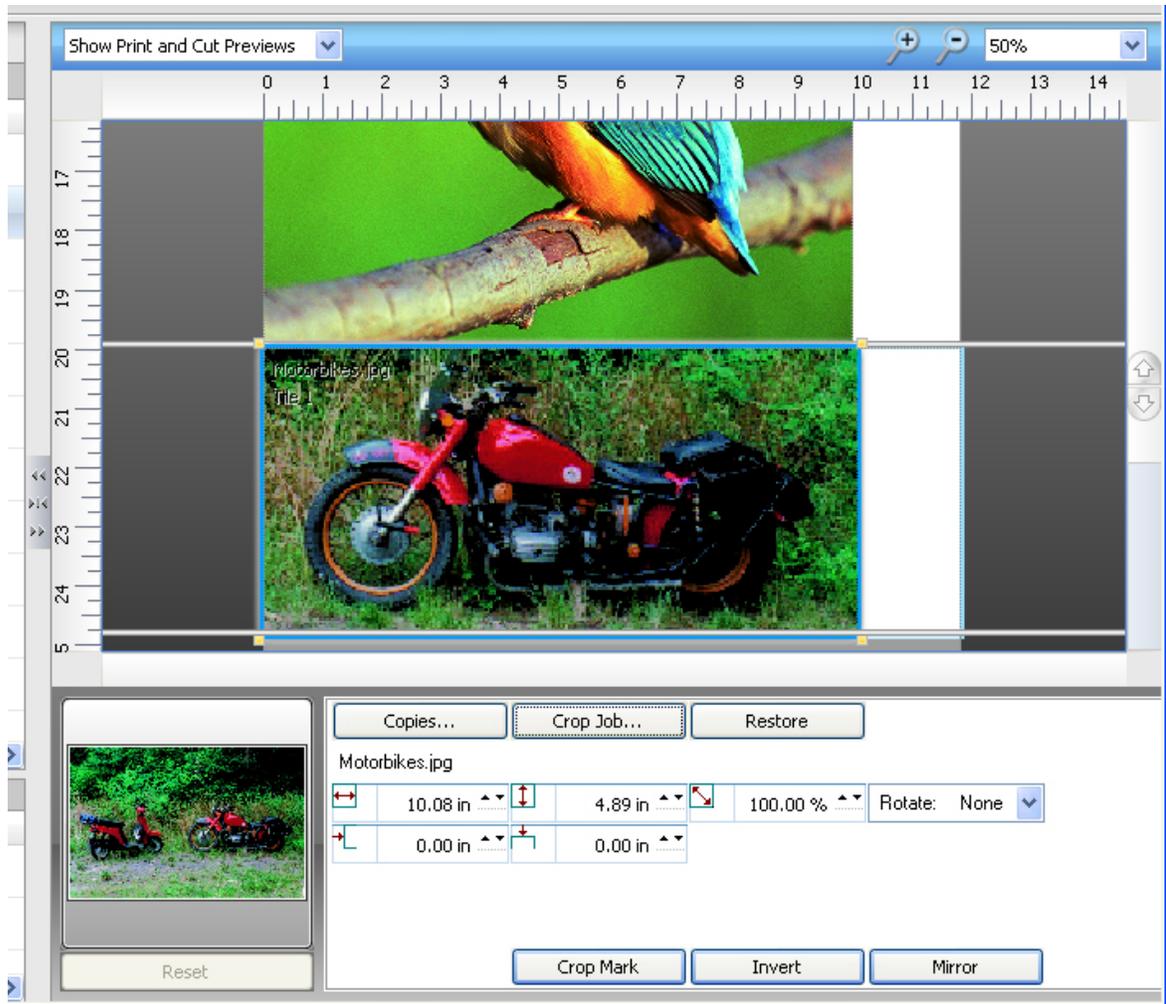
Invert the Job

The **Invert** button is a toggle that converts the selected job between positive and negative. When inverted, light areas will become dark, and vice versa. In color images, color reversal will also occur, with red areas becoming cyan, green areas becoming magenta, and blue areas becoming yellow.
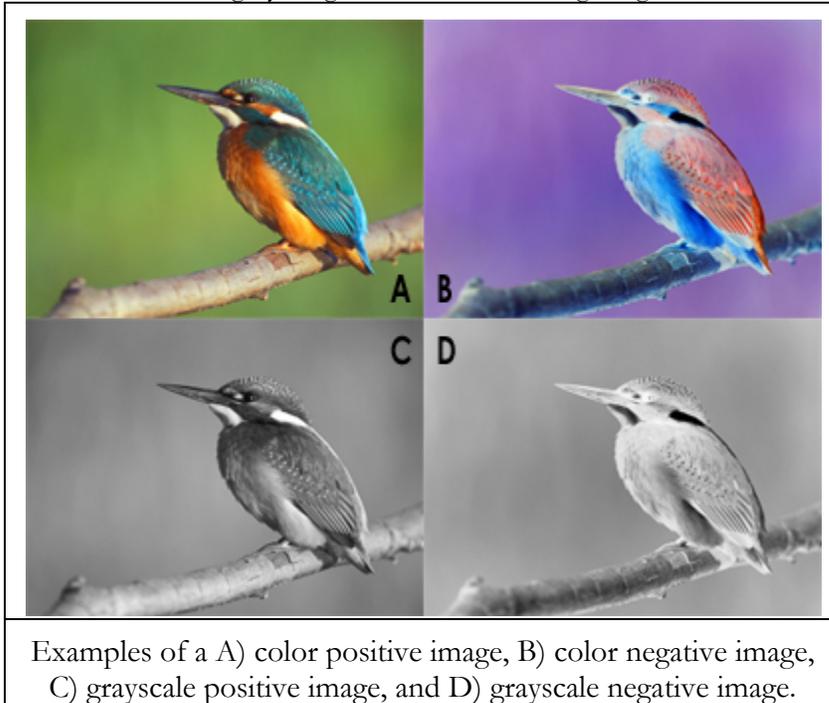
Examples of a A) color positive image, B) color negative image,
C) grayscale positive image, and D) grayscale negative image.

Scrolling Within the Visual Print Manager

When there are more jobs than can be shown within the Visual Print Manager, use the scroll control to browse the layout.
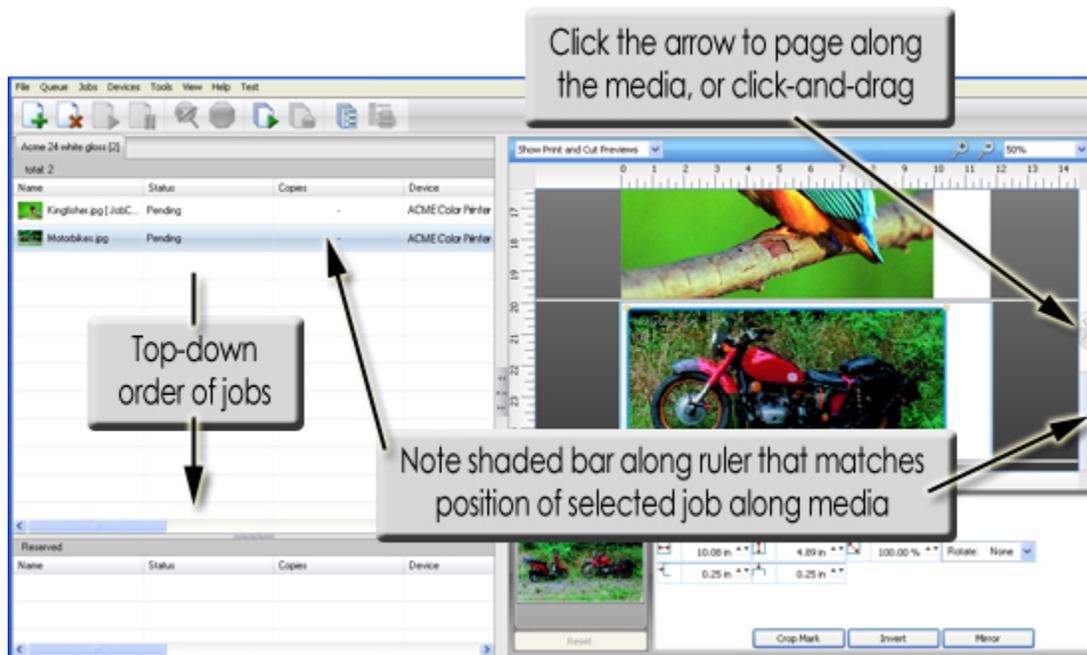
From the above screenshot, note the following:

- Several print jobs have been received on the left, and the second job has been selected.

- On the right, the layout of the second job is previewed within the Visual Print Manager.

- Because there are more jobs than will fit in the Visual Print Manager, a scroll control is available for browsing up/down.

- Note that there are two ways of using the scroll control.

- First, click-and-drag the scroll control to move the preview.

- Second, click the arrows within the scroll control to page the preview.

- Also notice the shaded area (within the ruler bar) that moves then you adjust the scroll control. The shaded area indicates your current position with respect to the total length of the layout.

- For example, if the shaded area is near the bottom of the ruler, then the Visual Print Manager is showing jobs that are positioned near the end of the media.

Previewing Raw Print Data

Print data can be examined on-screen prior to printing. This is typically done in order to confirm the print data that is available in each color channel.

For example, suppose that a grayscale image needs to be printed, and the expectation is that only the black (K) channel will receive print data. This can be confirmed in the following manner:

1. Click the **Stop Queue** button to pause the grayscale-only print job in the queue.

2. Right-click the job and choose **Spool Only**.

3. When the job has finished spooling, its **Status** will indicate **"Holding [Job spooled]"**

4. Right-click the job and choose **View RAW data**.

5. Click the **Plane Select** button. Each of the color channel checkboxes will be ticked.

6. Untick the **Black** checkbox.

7. The preview should now be blank because the CMY channels should not be receiving data for a grayscale-only job.

> **Note:** Colors appear differently on monitors than they appear when printed. As a result, the **View Raw Data** feature will not show colors on the screen exactly as they will appear when printed.

Variable Dot Printers

For printers that provide variable dot halftone support, note that a monitor display is not capable of previewing variable dot output because a monitor display contains only one size of pixel on-screen. Further, the limited number of monitor pixels may cause the preview to appear faded, though this fading will not be present in the actual print.

[?]View Raw Data Controls

Controls for Previewing Print Data
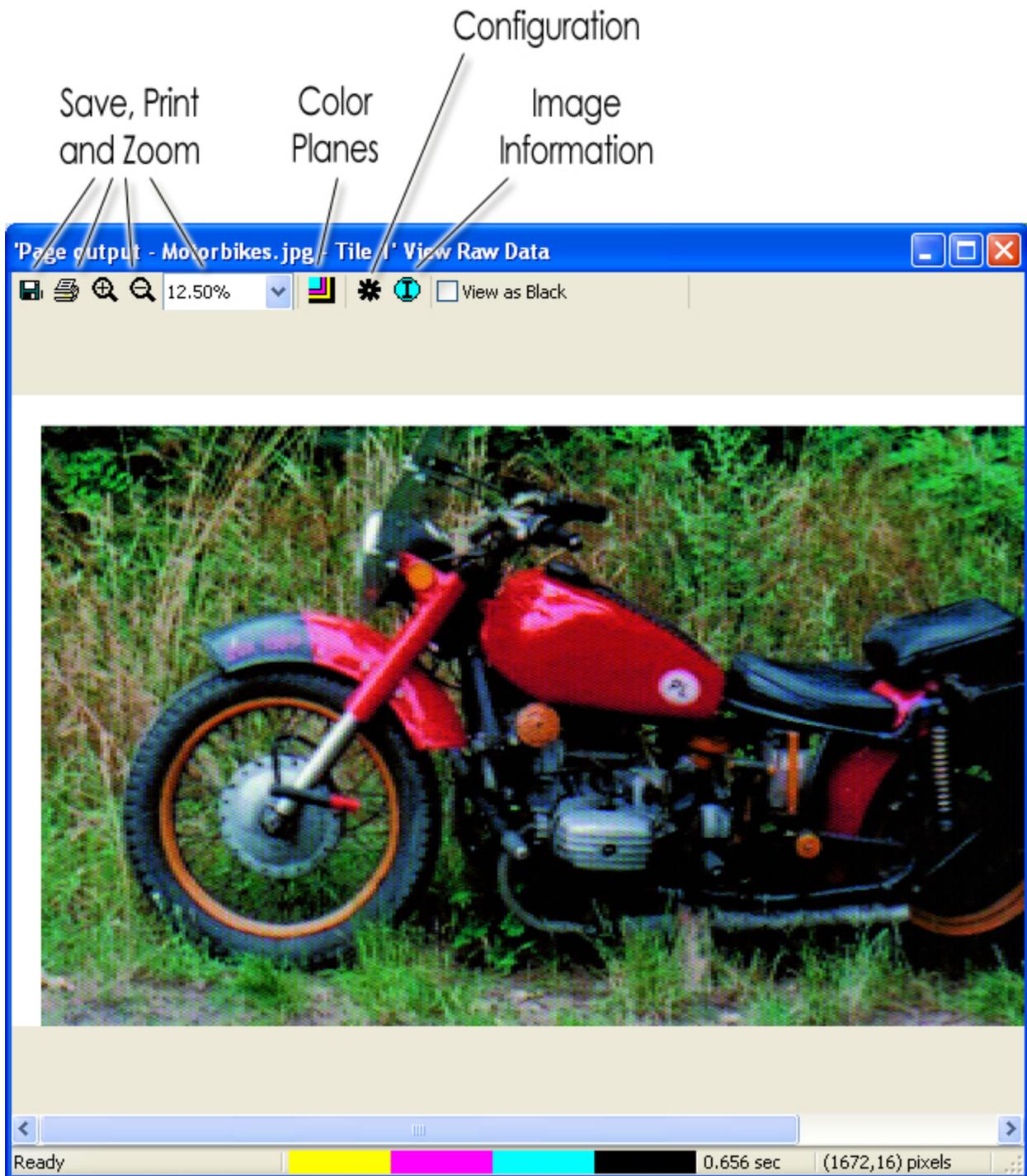
Save

Select the **Save** button to save the picture as a bitmap image for comparisons or later viewing.

Print

Select the **Print** button to print the preview. For example, the preview can be printed to a desktop printer for use as a sample.

Zoom Tools

Select **Zoom In**, **Zoom Out**, or select a **Percent Zoom** to view the image as a whole, or particular sections within the image.

Color Planes

Clicking the **Planes Select** button opens the **Select Planes to View** dialog. The color channels used to print the image will be listed. Unchecking color channels is useful as a means of confirming the inks that will be used when rendering the image.

For example, suppose that a CMYK printer is being used to print a grayscale image using only the Black (K) channel:

1. Click the **Plane Select** button. Each of the color channel checkboxes will be checked.

2. Uncheck the **Black** checkbox.

3. The preview should now be blank because the CMY channels are not being sent data.

The **Background** color picker will indicate the media color. Alternatively, the color picker can be used to simulate different media colors.

1. Click the **Background** color picker.

2. Choose color that best matches the media color.

3. Click OK to view the spool data on the new media color.

Configuration

Click the **Configure** button to open the **Preview Configuration** dialog.

- **Treat Process as Spot** - This option is typically off. However, when viewing color separations that are a combination of process and spot colors, setting this option = ON can help to obtain an improved view of the color blends.

- **Show True Pixels Resolution** - Many printers have different horizontal and vertical resolutions. The image that appears in the viewer is automatically adjusted to account for this, when **Show true pixels resolution** is unchecked. Checking **Show true pixels resolution** will show the image without this automatic adjustment, which will cause the image to appear stretched.

- **Cache Size** - If the viewer is drawing too slowly, and additional memory is available on the hard drive, then increase the size of the memory cache to increase the viewer speed.

- **Units** - Select the units of measurement from the drop list (**pixels**, **inches**, or **centimeters**). The units of measurement appear in the bottom right corner of the **View Raw Data** dialog.

Image Information

Clicking the **Image Info** button will open an **Image Info** dialog. The dialog includes a list of information specific to the image including the printer, resolution, color planes, image size, and file location.

View as Black

Check the **View as Black** option to change the background color to white, and all other colors to black, within the image preview.

Queue Properties

A queue is a repository for print, where jobs are collected (and inspected) before being sent as output to the given device. Often, multiple queues are created for a printer, so as to collect jobs for different media types (e.g., white garment material versus black garment material). From a designer's point of view, a queue appears like a print destination, and printing a design will cause that design to be collected within the given queue.

Beneath the main menu, a tab for each queue is available, and clicking the tab will display its contents (i.e., jobs in the Active List and on the Visual Print Manager). Queue properties are applied to jobs when they are received in the queue, and the queue properties can be edited in either of the following ways:

- Choose **Queue** menu >> **Properties**.
- In the Toolbar, click the **Configure Queue** button.
- Double-click the queue tab.
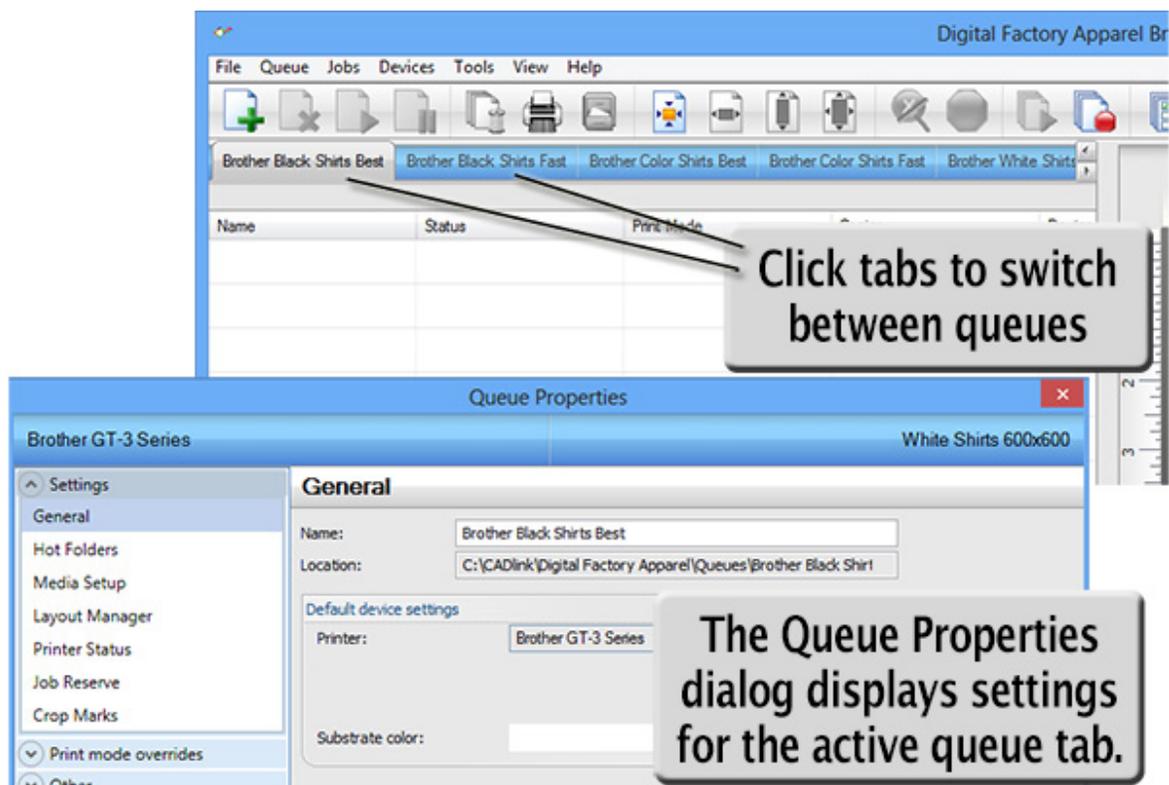
Settings

[?]General Tab

[?]Hot Folders Tab

Media Setup Tab

Layout Manager Tab

[?]Printer Status Tab

[?]Job Reserve Tab and Archiving

[?]Crop Marks Tab

Print mode overrides

> **Note:** There are also **Advanced Queue Property** tabs, though they are for specialized use and are only revealed via **Tools** menu >> **Options** >> **General** tab >> **Show advanced settings and options**

Printer Options Tab

ICC Profile Tab

[?]Halftones Tab

[?]Layer Profile Tab

Other

Costing Tab

[?]Log Tab

[?]History Tab

General Tab

When the **Queue Properties** dialog opens, the default view will be that of the **General** tab. Further controls are accessible through the other tabs that are arranged along the left-hand side of the dialog.

The **General** tab displays the fundamental queue settings, such as the queue name, the type of printer for which jobs are being accumulated, the print mode (i.e., media profile) that will be used when printing, and the cutter that will be used to perform cut paths.
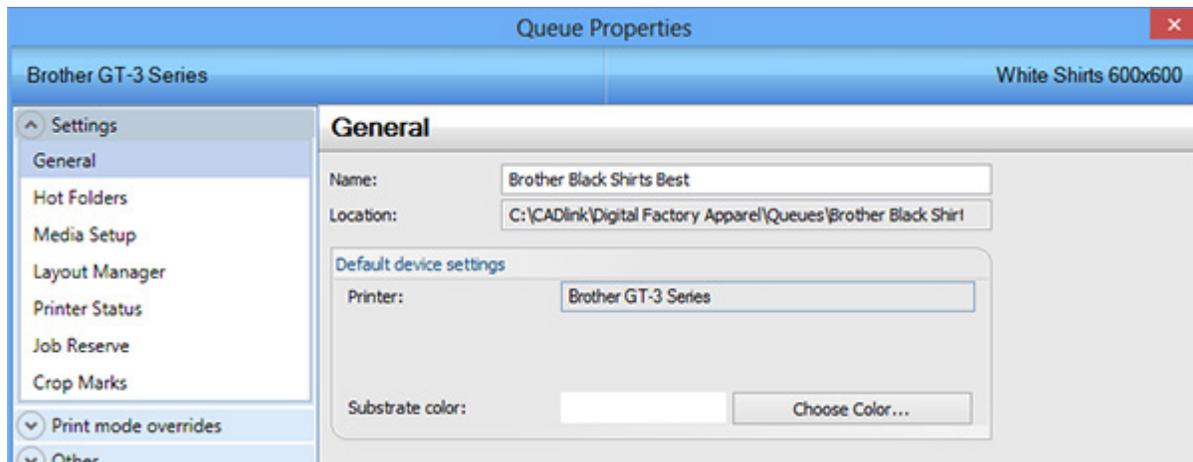
- **Name** - This is the print destination that this queue will appear as when users send a print job from their design application.

- **Location** - This is the explicit directory where job files are stored when being processed by the queue.

- **Printer** - The printer model for which this queue is accumulating jobs. The choice of print mode depends on the printer. To change the printer model, go **Queue** menu >> **Manage Queues**.

- **Substrate Color** - This is the background color used in the Visual Print Manager, and it has no bearing on the printed output. Set this color according to the material color, so that you can preview job layouts on the expected color (e.g., set the color as black for black media).

Hot Folders Tab

Queue menu >> **Properties** >> **Hot Folders**

A Hot Folder is a specific directory that the queue will monitor for new design files. When a design file is placed in the hot folder, it will be automatically detected and added to the queue as a print job.

Typically, a hot folder is used by other graphic designers on your computer network. They will copy their jobs into the Hot Folder, and your workstation queue will then be able to process those jobs. However, please note that other graphic designers will need the proper file access permission (as granted by your network administrator) to copy files into the hot folder.

Create a hot folder as follows:

1. Click the checkbox for the type of hot folder.
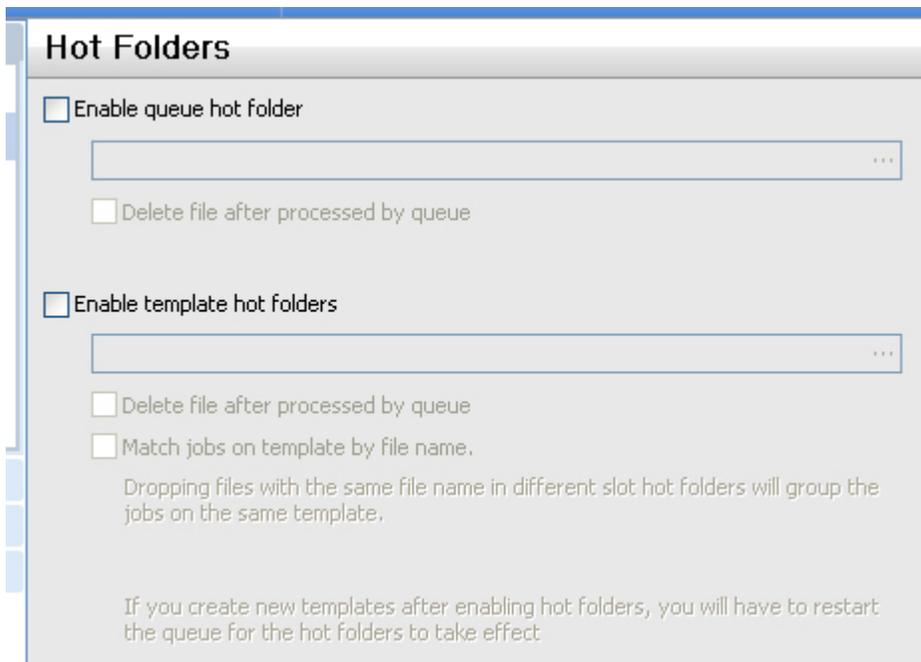
- **Enable queue hot folder** - Create a standard hot folder that will add new print jobs according to the queue properties.
- **Enable template hot folder** - Create a template hot folder, where the layout of print jobs will be assigned according to a template that you have configured (see **Media Setup Tab** for more information about templates).

2. A browse dialog will open.
3. Choose a directory and click **OK**.

The directory must be initially empty, or it cannot be selected as a hot folder.

In the case of a Template Hot Folder, a [template name] directory will be added to the queue directory. Likewise, sub-directories of '1', '2', '3', and so on will be added, such that copying a design file into the given sub-directory will place the job in that slot location.

Media Setup Tab

Use the **Media Setup** tab to specify the size and margins of the material that has been loaded into the printer. These settings will dictate the placement of jobs in the Visual Print Manager, such that you can visually confirm job layouts before committing to a print.

Since multiple queues can be created for a given device, it can be useful to create a queue for each size that will be in frequent usage.
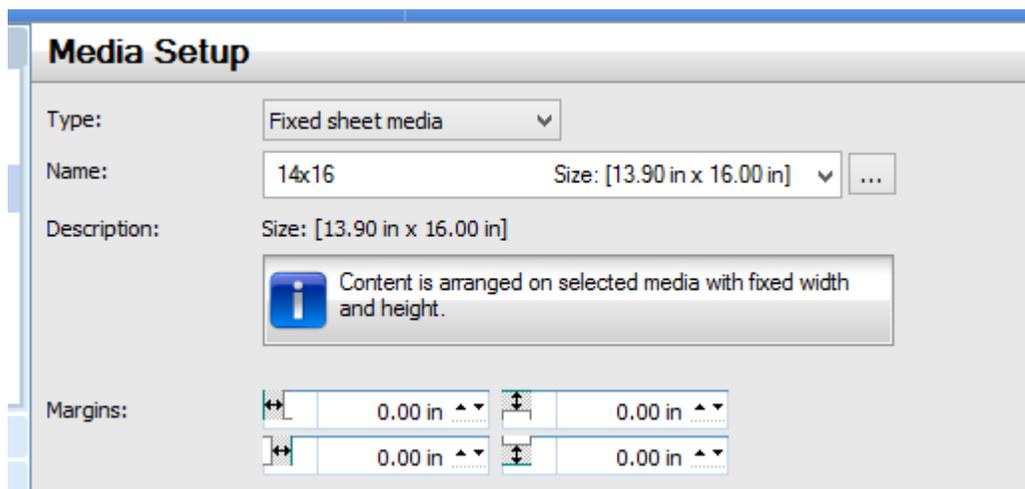
- **Type** - There are four classifications of media, two of which are common (roll and fixed sheet), and two that are special classifications (automatic sheet and templates).

  Roll media – Preview jobs according to a specific roll width.

  Fixed sheet media – Preview jobs in terms of a fixed page width and height.

  Templates – Use this setting when you have defined a template, which is a custom media type for arranging decals and similar volume batch production runs.

- **Name** - Once the type of media has been selected, this drop-list allows you to choose from the available sizes. In addition to predefined sizes, you can create custom settings using the **Printer Media Manager** dialog.

  Note: To create a custom setting for rolls, sheet and templates, use **Devices** menu >> **Manage Print Media**.

[?]Creating a Custom Page Size

[?]Creating a Page Layout Template

Creating a Custom Page Size

> **Note:** For certain printers, graphics are printed with respect to the center of the page. As such, creating custom page sizes on some printers can cause incorrect positioning of the graphics.

Depending upon the printer model, the available printing area can be either a fixed page size, or a roll of material described as having a specific roll width.

1. Choose **Devices** menu >> **Manage Print Media**.

   Alternatively, click **[...]** on the **Media Setup** tab.

2. The **Printer Media Manager** dialog will open.

3. From the **Show media for** drop-list, choose the printer that the page size applies to.

4. Click the **Add New Print Media** button.

5. In the **Create New Media** dialog, click the desired media type.

   - For roll and sheet, the subsequent dialog will query for the dimensions and margins, and you must enter a name by which the "page size" will be referred to.

   - For templates, please refer to the subsequent section, Creating a Page Layout Template.
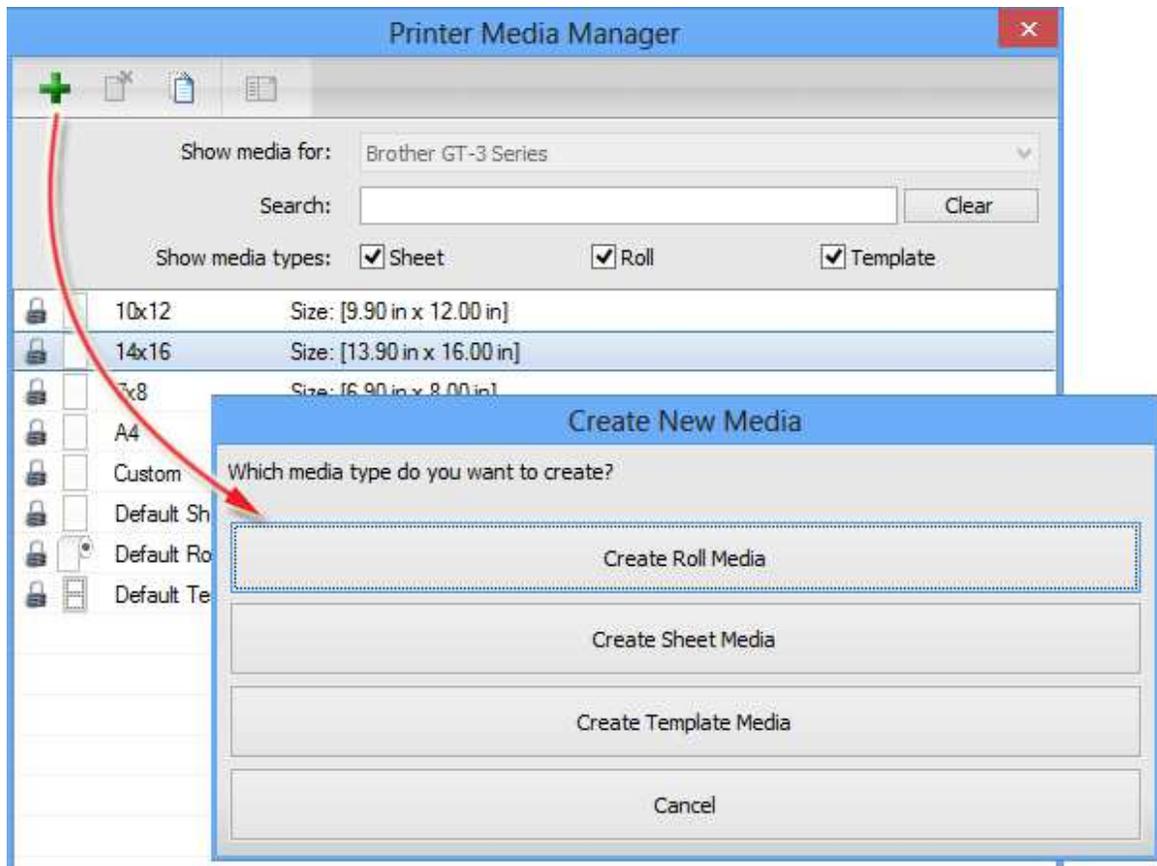
Creating a Page Layout Template

A template has an overall width and height (i.e., the available printing area of the garment), and the template contains a specific number of "slots," each of a given width and height. The slots are placeholders into which a received job is placed. Not only can a template allow you to automatically place a print job at a given location, there can be multiple duplicate slots that place the print job at multiple locations, such as for decals or similar batch jobs.

Using a template eases the work required to obtain frequently used layouts, and when a template is used in conjunction with a Template Hot Folder, this provides an means of using templates to create layouts with minimum user-interaction with the queue interface. For example, a hot folder can be used in conjunction with an Internet front end, such that customers upload a design file that is subsequently placed in the given hot folder for printing (see the earlier Hot Folders Tab section).

Now, in continuing from step (5) of the previous section (Creating a Custom Page Size), the **Create New Media** dialog prompted you to choose the type of media. Suppose that you clicked the **Create Template Media** button:

6. The **Template Setup** dialog will open.
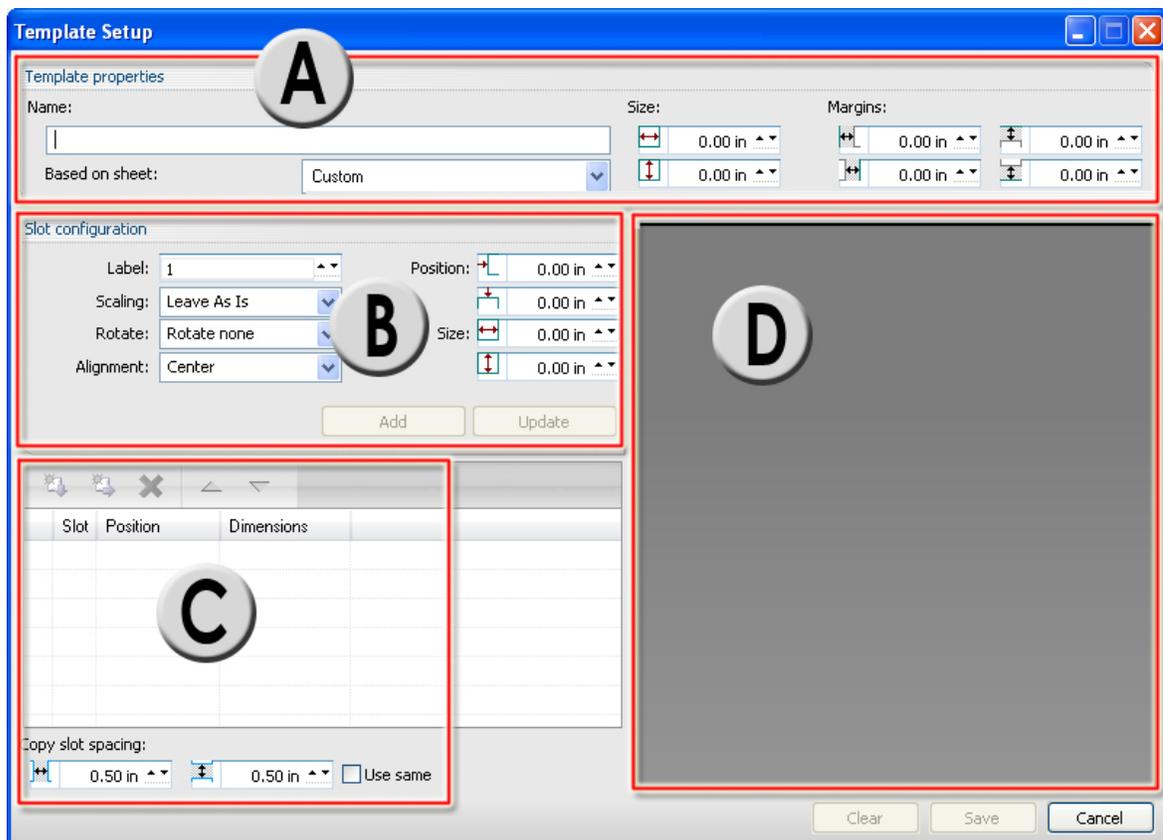
7. In area (A), type a name for your template and specify its overall dimensions.
8. In area (B), specify the size of a given slot (i.e., the expected size of a placed job).

> **Note:** When creating a slot, define its Alignment, Scaling and Rotate settings before creating copies of that slot. Otherwise, any changes will need to be applied per each copy.

9. Click the **Add** button, and the first copy of the slot will appear in areas (C) and (D).

10. In area (C), select the slot and copy it either down and/or to the right, thereby filling the media with duplicates of that slot. When a design is received into the queue, all of these duplicates (i.e., the entire series) will be filled with the same artwork.

Optionally, to include a different series of slots as part of the same template:

11. Create an extra copy in the position that you want to have a second type of slot.

12. In area (D), click the extra copy, such that it is the current selection.

13. In area (B), increment the **Label** = 2.

14. Repeat steps (7) through (10) to place copies of the new slot.

These are all slot #1

These are slot #2
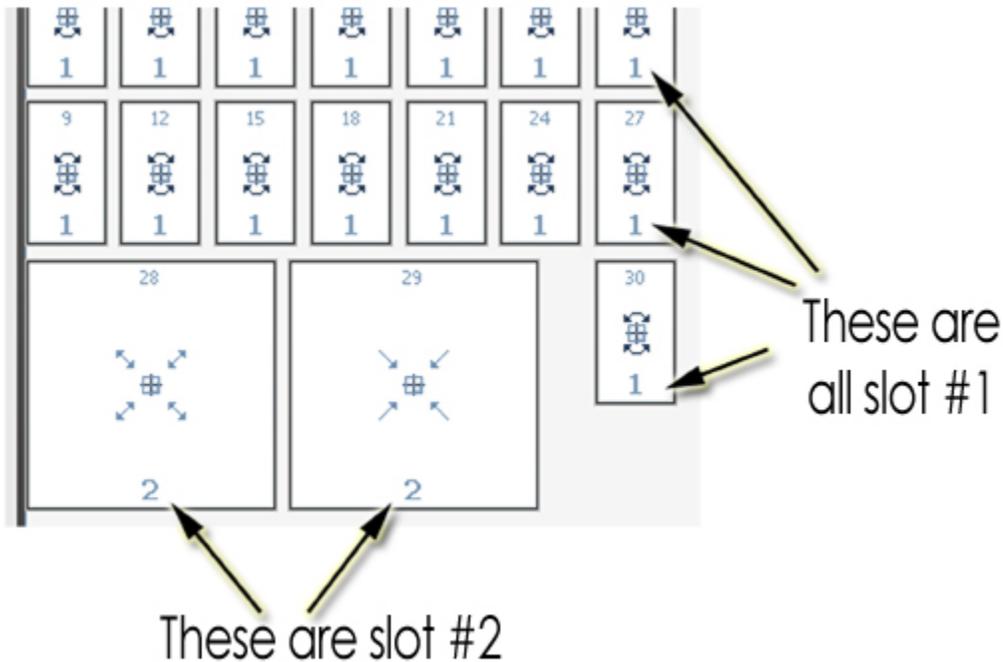
Layout Manager Tab

Note: The available controls can vary according to the printer model, and whether **Tools** menu >> **Options** >> **Show Advanced Settings** is enabled.

The **Layout Manager** tab controls how jobs are scheduled when received in the queue. In effect, these controls can force all jobs to be collected, so that the operator can confirm the job layouts before proceeding with a given print.

If the queue is **Stopped**, then all jobs are automatically placed on **Hold**, regardless of the **Output Scheduling** settings.

Layout jobs as they arrive

- **ON** - Enabling this checkbox causes received jobs to be placed in the Active List, and their layout is shown in the Visual Print Manager.

- **OFF** - Received jobs will be placed in the Reserved list. In such cases, the job needs to be manually moved to the Active List in order to print the job.

Mirror job on import

Reverse the job, such as for printing to clear transparent vinyl, where the vinyl will be applied to the window interior.

Page Overlay

If the "Process multiple page jobs as overlay" checkbox has been ticked, then the color layers within a job (i.e., CMYK and spot color layers) will remain "stacked," as opposed to being nested as separate jobs.

Layout jobs right to left

Alternate the starting edge from which jobs will be positioned within the Visual Print Manager.

Close Page on [given action]

Closing a page refers to the Layout mode, where jobs are being collected (and perhaps nested) within a predefined page size or media roll. For any "Close Page" checkbox, this indicates a condition upon which collecting/nesting jobs is considered finished, and the job(s) are ready for printing.

Scheduling Settings

> If the queue is Stopped, then all jobs are automatically placed on Hold, regardless of the **Output Scheduling** settings.

Output scheduling is used to choose how jobs are scheduled when received by DTG RIP Pro C6.

Scheduling Settings

> **Note:** If the queue is Stopped, then all jobs are automatically placed on Hold, regardless of the **Output Scheduling** settings.

Output scheduling is used to choose how jobs are scheduled when received by DTG RIP Pro C6. Common scheduling scenarios are:

- For print jobs, spool print jobs as they are received, but holding the spool file until the appropriate media has been loaded.

- For print and cut jobs, printing the jobs as they are received, but holding the cut portion until the printed media has been loaded into the cutter.

- For lamination of print and cut jobs, holding the cut portion until after the printed media has been laminated.

The three drop-lists are variable depending upon whether the queue is setup with a printer-only, a cutter-only, a printer with stand-alone cutter, or a hybrid printer that supports cut operations.

- **For print jobs** - This drop-list determines how the queue will proceed when a print-only job is received (i.e., there is no cut data).

- **For cut jobs** - This drop-list determines how the queue will proceed when a cut-only job is received (i.e., there is no print data).

- **For print and cut jobs** - This drop-list determines how the queue will proceed when a job is received that contains BOTH print data and cut data.

Printer Status Tab

Queue menu >> **Properties** >> **Printer Status**

Displays the current printer status, and provides maintenance options according to the given printer model. Consult the printer operator manual for explanations about the available controls.

Job Reserve Tab and Archiving

Queue menu >> **Properties** >> **Job Reserve**

From the main DTG RIP Pro C6 window, the Reserve List is a short list for your frequently printed jobs. Sending a print job involves compiling a PostScript file into a spool file, and then the spool file is sent to the printer. When a job has been completed, it can be added to the Reserve List as a PostScript and (optionally) spool file for reuse.

- **Enable job reserve** - When a job has completed printing, its PostScript file will be added to the Reserve List.

- **Save spool file on job reserve** - Enabling this option will cause the compiled spool file to be reserved (i.e., avoid spending time compiling the PostScript into a spool file).

Note: Where the spool file has been archived, re-sending the job does not require the time that was spent compiling the spool file (potentially several minutes, depending on the workstation and the complexity of the print).

Note: A spool file requires comparatively much more hard drive space than the corresponding PostScript file.

Archiving Jobs for Future Reuse

In addition to reserving jobs for later use, jobs can be archived as a combined JBK file that contains both the job and log data, such that the JBK can be safety stored (i.e., backups) and then restored at a later date. Restoring jobs in this fashion eliminates time spent re-spooling a file, and avoids any

"guess work" related to the job settings, etc. Archiving also preserves the log and notes related to the job, such that job specifics can be referenced.

Setting the Archive Location

The archive location is the directory where archived jobs will be stored. This needs to be a location that can be accessed later to restore the given job.

1. Go **Tools** menu >> **Options** >> **Storage and Archiving** tab
2. Near the bottom of the tab, the location for job archiving is indicated.
3. To change the archive location, click the ellipsis button.

Archiving a Job

To archive a job, the job must be in either the Active List or Reserved List.

1. Select the job and then choose **Jobs** menu >> **Archive to disk**.
2. The archived job will appear as a JBK file in the archive location.

Loading an Archived Job

Loaded jobs will be placed in the active queue.

1. Click the queue tab to make it active.
2. Go **Jobs** menu >> **Restore Jobs**.
3. The **Restore Job Tickets** dialog will list the available archives.
4. Select the desired archive and click the **Restore Archive** button.

Crop Marks Tab

Crop marks are simple ' + ' symbols that are printed at the print job bounds. Such crop marks usually serve as a visual guide for trimming the media by hand, or aligning printed pieces in a layered assembly.
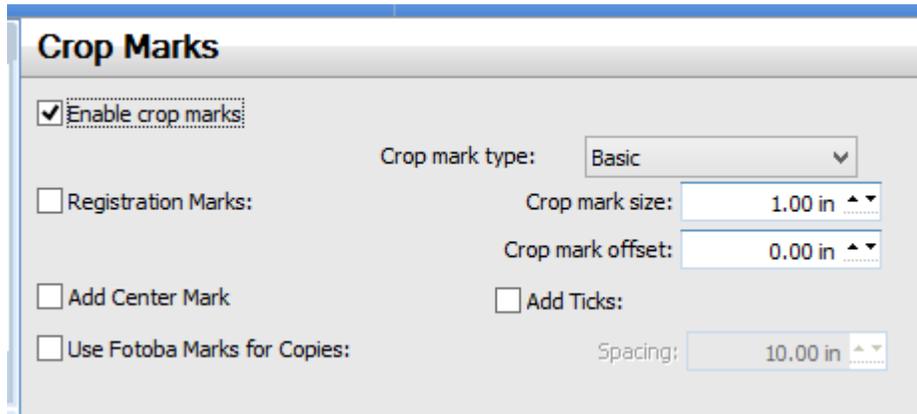
- **Crop mark offset** - By default, the crop marks are flush with the job edge, though this can be varied by increasing the offset.

Printer Options Tab

> **Queue** menu >> **Properties** >> (Print mode overrides) **Printer Options**
>
> **Note:** If layers are enabled on the **Layer Profile** tab, then **Printer Option** tab controls will not be available.

These printer-specific options are defined within the print mode, such as plane order, knife speed, etc. Please note that these options vary according to the printer model. For more information about these settings, please consult the operator manual that was provided with the printer.
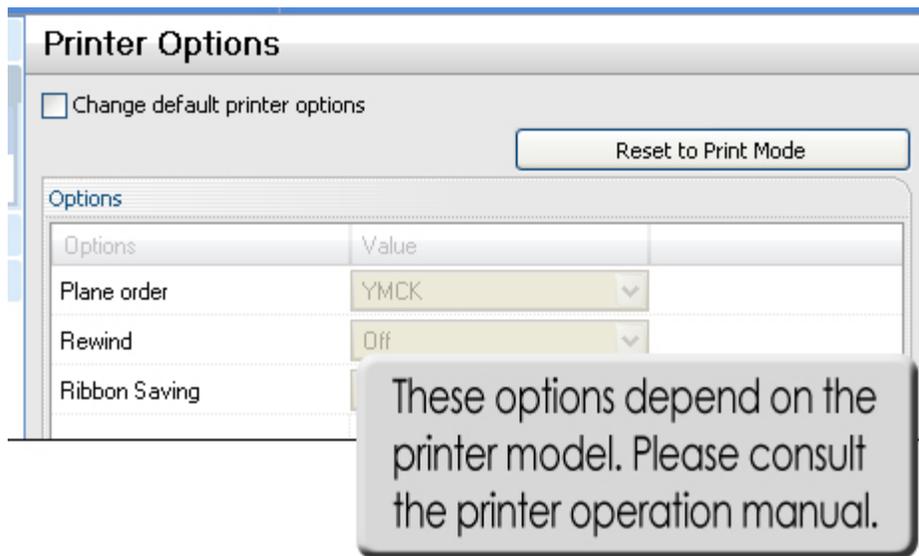
Printer options vary according to manufacturer, but there are common settings that we can discuss here. When adjusting the printer options, we want a good compromise between print quality and printing speed. For example, by reducing the speed at which ink is applied to the media, more ink can be absorbed to obtain richer colors. Alternatively, applying less ink will avoid sacrificing speed, though the image will be less vibrant.

- Over inking and banding are the two major problems that can occur when adjusting printer options.

There will always be certain media that are unsuitable for use in a particular printer. If after trying various changes and you see no real improvement, then it may be that the media will never produce the results you are looking for, and perhaps you should look for a different version of the media to try.

The following sections describe common printer options and the common terminology. When adjusting the printer options, use these examples as a guide to recognize and help resolve problems that can occur in your test pages.

[?]Printer Mechanical Issues

[?]Resolution

[?]Print Direction

[?]Head Passes

[?]Print Speed

[?]Scan Interval

[?]Dry Time / Heater Settings

[?]Dot Size

[?]Feed Calibration

[?]Ink Passes

Printer Mechanical Issues

There are a variety of mechanical issues that can affect the quality of your prints, such as misfiring print heads, head misalignment, and so on. Being of a mechanical nature, none of this is something that the software can control. So before you start calibrating, make sure that your printer is working properly by testing it versus existing calibrated media. It is very important that you confirm the printer is setup and running correctly before attempting to calibrate new media.

- Perform a print head test to ensure that all nozzles or jets are firing reliably.

- Follow the printer manufacturer recommendations as per cleaning and maintenance.

- Confirm that the print head height is correct. Low height will produce splashing of ink, whereas high height will cause spraying.

Resolution

- Changing the Resolution will have the most dramatic effect and for almost all printers is the master control for quality and performance.

- Lower resolution settings result in lower quality images, but at faster output times.

Print Direction

- This control determines whether the print head will lay down ink in a single direction (Uni-directional), or in both directions (Bi-directional).

- Printing bi-directionally will typically require half the time of uni-directional.

- However, uni-directional is more likely to produce banding (see comments about **Head passes**) and cause issues with over inking (i.e. the media being unable to absorb the ink easily).

- In the **Novice** and **Advanced Calibration Wizards**, if areas of the Calibration Chart or the Grayscale Chart seem too wet or take too long to dry, then set the Print Direction to uni-directional to try and correct this problem.

Head passes

- This is also sometimes labeled **Print Quality** or **Microweaving**.

- It controls the number of times the print head has to pass over the media in order to print all the pixels in a single line.

- More head passes will result in better quality but slower performance.

- For example, the following figure illustrates the difference between two head passes and four head passes.

- By increasing the head passes, you reduce the visible banding that occurs with an ink jet printer.

- Simultaneously, this slows down the speed at which the ink is applied to the media, thereby providing more time for ink absorption.
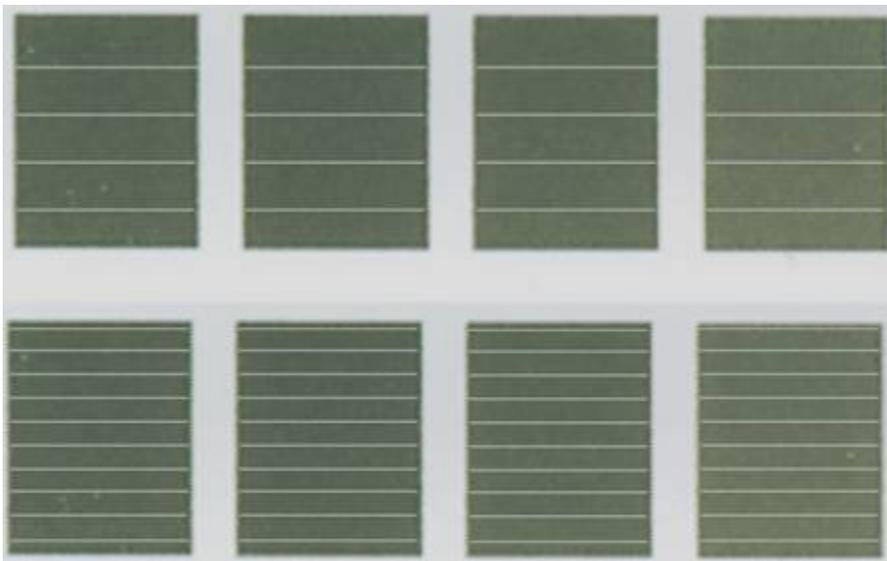
The first row uses two head passes, which produces more visible banding than the four head passes used in the second row. (In this example, the image has been adjusted to make the banding more visible)

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Print Speed

- Also known as **Scan** speed or **Carriage** speed.
- Some printers allow user control over the speed that the print heads move back and forth.
- The faster the print head speed, the faster the print production.
- However, the faster the print head speed, the less accurate the control of the ink droplets on the media and thus the lower the print quality.

Scan Interval

- This will put a delay in at the end of each head pass.
- Adjusting this option is the least preferred because it slows printing speed dramatically.
- However, adjusting the scan interval may be required for difficult media.

Dry Time / Heater settings

- Correct heater settings can assist in allowing faster print processing speeds.

- These controls are usually available with solvent ink printers which employ heaters to pre-heat the media before it reaches the printer heads and heaters after the print heads to assist in drying.

- It may be necessary to test the effects of adjusting the heater settings.

- Generally, increasing the temperature of the heaters, or increasing the drying time, will improve ink absorption in the media.

- Factors affecting drying time are: the humidity in the print environment, the thickness of the media, the ability of the media to absorb the ink especially in dark areas of prints, the speed the printer is set for, and whether the print direction is "uni" or "bi" directional.

- Common effects of overheating are: the media buckles causing printer head strikes, shrinkage of media, and/or the media adhesive loses its effectiveness.

Dot Size

- The Dot Size is sometimes included as part of the resolution setting.

- On some printers you can control the dot size (or sizes) used.

- Bigger dots put down more ink, so you can reduce the total volume of ink by reducing the dot size.

- However, if the dot size is set too small, then the resulting colors may appear dull and washed out.

- For example, the following would indicate three distinct print modes that vary only in ink volume:

    A. 720x720

    B. 720x720 HD

    C. 720x720 MD

- By convention, HD = High Density, and MD = Maximum Density.

- In terms of relative ink volumes, having no designation indicates less ink than High Density (HD), which itself is less than Maximum Density (MD).

- Sometimes you will see print modes that have been named something like 720x720 HD2. This would indicate a higher density than High Density (HD), yet still less than Maximum Density (MD).

- The goal in varying the ink density is to provide a dense enough 100% of each primary ink (CMYK) to produce good strong colors, without applying so much ink as to cause media absorption problems.

- For most media, your High Density (HD) setting is used to indicate the best overall option.

Feed Calibration

- Also called **paper feed adjust**, allows detailed control over the paper feed mechanism.
- This will not help with any sort of over inking, but will have the greatest effect on reducing banding (see comments about head passes).
- The media manufacturer may know a specific feed calibration that should be used with a particular media.

Ink Passes

- Puts down multiple coats of ink.
- The available options are typically 1, 2 and 3, where 2 coats will put down twice as much ink as 1 coat.
- This option should only be adjusted with media that can absorb large volumes of ink.
- Increasing the ink is typically used where you want heavy saturation, such as backlit film.

ICC Profile Tab

> **Queue** menu >> **Properties** >> (Print mode overrides) **ICC Profile**
>
> **Note:** If layers are enabled on the **Layer Profile** tab, then **ICC Profile** tab controls will not be available.

ICC profiles are a "snapshot" of the range of colors that a given input or output device is capable of rendering. In the screenshot (below) are shown the color profiles used in the RIP process to reconcile the image colors that will be obtained in the finished print.

- Input profiles represent the colors as seen when displaying the design on a monitor. It is recommended that these be set according to the graphic design application being used.

- Output profile represents the colors that the printer is capable of reproducing.
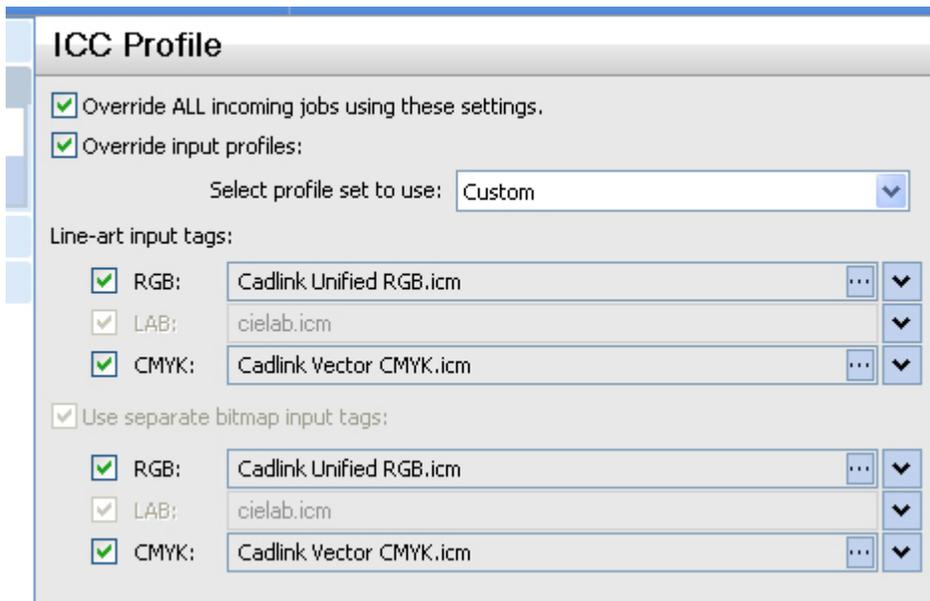
[?]Input Profiles

[?]Select Profile Set to Use

[?]Output Profiles

[?]Override Output Profile

[?]Apply ColorTune to Grayscales

[?]Rendering Intents

Input Profiles

By default, the input color profiles are determined by the print mode. For input profiles, it is possible to differentiate between line art and bitmaps, as well as color spaces (RGB, LAB, CMYK).

In order to produce the highest quality color reproduction, it is recommended that the input color profiles match the monitor display that was used to create the design. This can be done by using an industry standard input profile, or by using specialized equipment to profile the monitor.

When the queue is installed, the default location for input color profiles is under the following path:

- [Hard drive] \ CADlink \ DTG RIP Pro C6 \ ICM

Select Profile Set to Use

Above the input profiles is a drop-list that determines the profile settings.

- **Original** - Reset any changes to the input profiles.
- **Enhanced** - Use the enhanced input profiles provided by CADlink. These are the recommended choice of input profiles.
- **Get from print mode** - Use the input profiles as indicated in the print mode.
- **Custom** - Choose the individual input profiles.

Output Profiles

By default, the output profile is determined by the print mode.

The output profile should closely represent the colors that the printer is capable of reproducing. In order to produce the highest quality color reproduction, it is recommended that an output profile be created for your specific printer, such that the output profile takes into account the media, inks, and operating environment of the printer.

Override Output Profile

The **Soft Proof** profile is used to simulate that output on a secondary printer. For example, it may be the case that the final job will be completed on a press, but a proof is required on a high-quality inkjet. In this case, the choice of **Soft Proof** would be set for the press, and the **Output** profile will be set for the inkjet. The inkjet output will then be limited to simulate how the press output would appear.

Apply ColorTune to Grayscales

Typically, grayscale images do not use ColorTune and therefore will print using the black (K) channel only, in which case this option can be left at its default, **Off**. Exceptions where this option would be used are:

- To print grayscale images using CMYK grays (as an RGB image would), then checking this option will obtain consistent grays for both CMYK and RGB images.

- For some printers, the black (K) ink is not gray, but is rather more of a muddy brown. In this case, check this option if you observe that better grays are obtained by using CMY inks.

For grayscale images that have been generated from Adobe PhotoShop™, part of the PostScript generated by Photoshop sets the CMY transfer curves equal to the black (K) channel. Unfortunately, this means that the linearization curves in the print mode would then be incorrect. However, using the default **Apply ColorTune to grayscales = OFF** will bypass any issues caused by the Photoshop generated PostScript (i.e., linked EPS files).

Rendering Intents

To maintain minimal color variations between devices and production stages, the RIP must typically do more than perform simple mapping between the gamuts of workflow devices. Any color variations must be predictable, such that unwanted variations can be quickly eliminated, and consistent output produced. Where direct mapping between gamuts is not possible, alternative mappings must be applied to reproduce the original concept of the image.
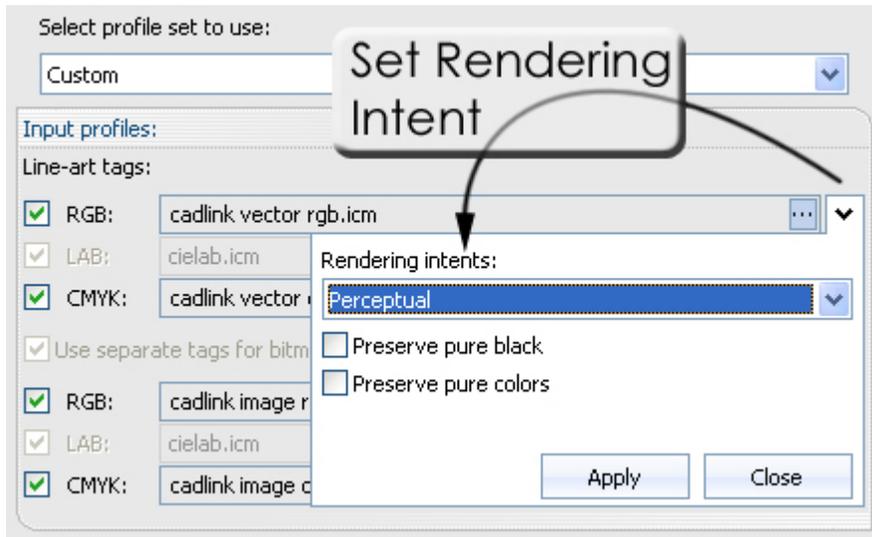
Perceptual Mapping

This is the default technique, which is considered to produce more realistic images and photos than Absolute, Relative or Saturation mappings.

Almost the entire gamut is mapped to the target gamut, such that the relationships between colors are maintained. Since the human eye is more sensitive to changes in color, rather than to specific color wavelengths, the resulting image will appear quite similar to the original.

Though this reduces the dynamic range of the input gamut, smooth color transitions in the original image are maintained.

Relative Mapping

Colors that are not reproducible in the target gamut are replaced by an in-gamut equivalent, which attempts to preserve the lightness and hue of the original colors.

Saturation Mapping

The entire gamut of colors are scaled to the brightest possible saturation. The chroma is kept constant, though lightness values may be adjusted.

Absolute Mapping

Colors that are not reproducible in the target gamut are simply replaced by their nearest in-gamut equivalents. Unfortunately, this technique can produce noticeable hue shifts. And potentially, several discrete colors may all be replaced by a single color, such that abrupt edges are produced in previously smooth regions of the image.

Preserve pure black

When printing in a CMYK mode, checking this option will force black to be printed only on the black (K) channel (i.e., no CMY inks).

For example, suppose that your printer is set to print CMYK, but you want to ensure some text to print with only the black (K) channel. Set the text fill color as CMYK = (0, 0, 0, 100), and the Preserve Pure Black option will ensure that the text is only 100% black with no CMY inks.

Preserve pure colors

When printing in a CMYK mode, checking this option will force cyan, magenta, and yellow to be printed only on their respective channels. For example, an object fill of CMYK = (100, 0, 0, 0) will print 100% on the cyan (C) channel with no MYK inks.

Halftones Tab

Queue menu >> **Properties** >> (Print mode overrides) **Halftones**

Note: If layers are enabled on the **Layer Profile** tab, then **Halftones** tab controls will not be available.

For the best results when printing separations, the halftone settings should be set within your design application. Otherwise, the black channel halftone defined within the given print mode will be used.

At the top of the **Halftones** tab are two options: **Override print mode halftoning** and **Enable halftoning**. If both of these options are unchecked, then the halftone information within the print mode will be used.

- If the **Override print mode halftoning** option is ticked, then the job will be printed without any halftone processing. Jobs are not usually printed without halftone information, unless an artistic effect is being sought.

- If the **Enable halftoning** option is also ticked, then the Halftones tab settings will be used.

Halftone Settings

- **Frequency** - The halftone frequency is measured in Lines Per Inch (lpi), which indicates the resolution of the dot shape.

- **Angle** - To avoid unexpected patterns from appearing in the final print, each of the CMYK separations must be printed at specific angles. The choice of angles is quite subjective, though specific angles may be preferred according to the printing technology being used.

- **Shape** - Depending on the software application, there are a wide variety of shapes to choose for your halftone dots. The choice of shape depends on what you consider to produce good detail in your prints. For example, round and elliptical shapes are common, though test prints can determine whether other shapes are valid for a given artwork.

Halftoning Options

- **Enable application halftoning** - Tick this option to use the halftone information that was set within the design application.

- **Enable application spot function** - Tick this options to use the dot shape that was set within the design application.

Layer Profile Tab

With the latest DTG RIP Pro C6 - Epson Edition, we introduce new, versatile tools that provide significant control over the way in which inks are laid upon the material. Previously, each queue had a single "print mode" that defined all of the printer configuration settings (resolution, printer options, ink levels, etc.) that would be used when processing a job through that queue.

In the new system, the **Queue Properties** dialog now has a **Layer Profile** tab that provides the following:

● The ability to inspect the printer configuration settings that will be applied with each printer pass of a given job. For example, an initial pass that lays down white ink is distinct from a subsequent CMYK or spot color pass.

● For each of these "printer passes," a print mode is used to define the printer configuration settings that will be used with the given pass. For example, an initial white ink pass might use an "Underbase 600x600" print mode, whereas the subsequent color pass has a "Black Shirts 1200x1200" print mode.

● For the color channels that the printer can fire within a given pass, you have control over which channels will be fired. For example, if there are bleeding issues when printing yellow ink, then create a printer pass wherein yellow is printed on its own. As another example, if the yellow ink tank was empty when printing a CMYK job, then print the job again with only the yellow channel enabled.

[?]Enabling Layers

[?]Bitmap Processing Options

[?]Preparing an Alpha Channel

[?]Alpha Options

[?]White Underbase / Highlight Options

[?]CMYK Color Adjustments

Enabling Layers

Though configuring printer passes for a given queue provides significant flexibility in how inks are applied when printing a job, note that the ability for you to configure a printer pass will depend upon the particular requirements of your printer model.

● For example, some printer models might be configured to use only a single printer pass, with the **White** channel staggered with the other (color) channels.

● On the other hand, there can be printer models configured for multiple printer passes, where **White** is configured as a single channel on its own printer pass, followed by a color pass.

The following screenshot labels the main elements of the **Layer Profile** tab.
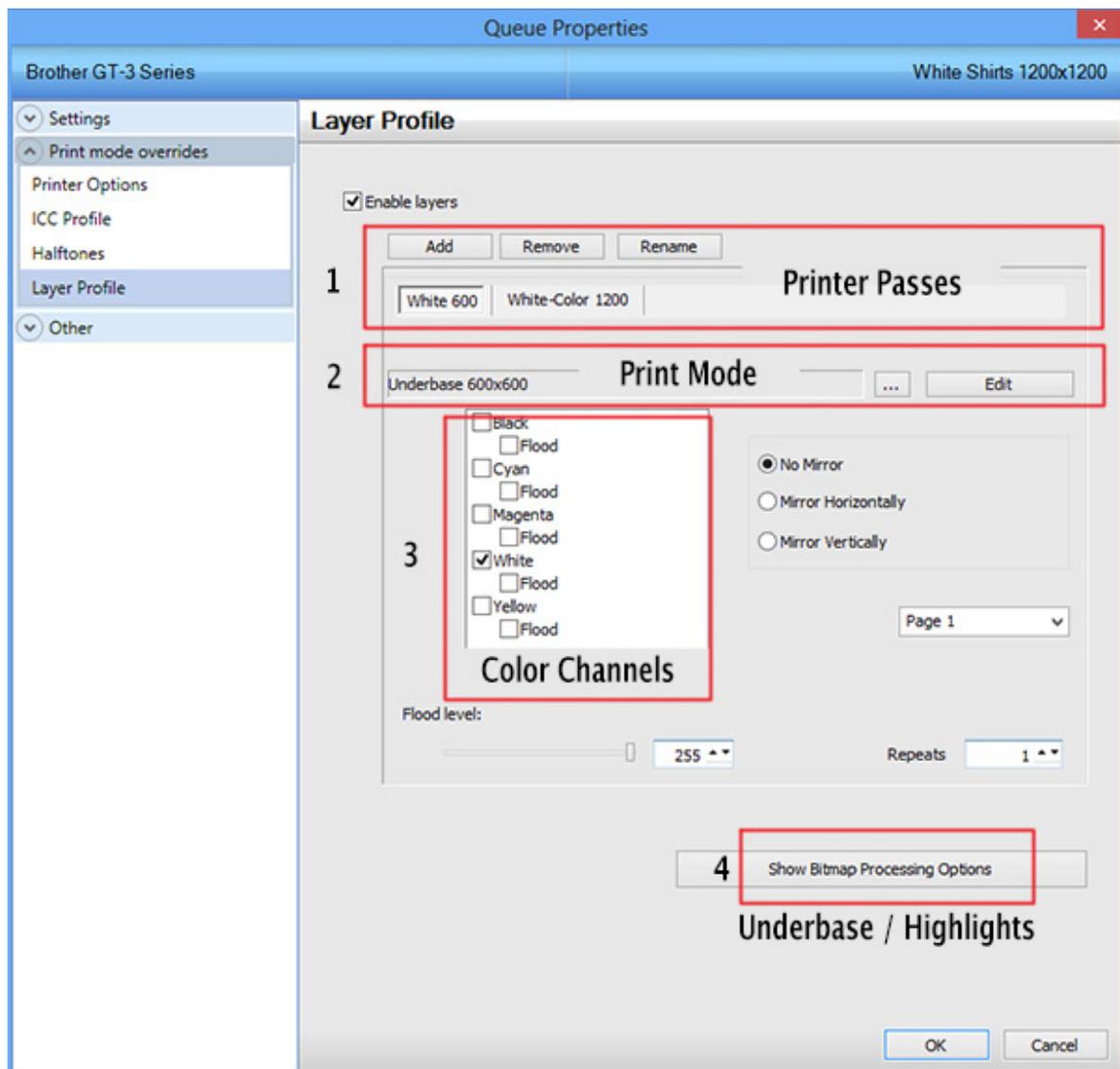
(1) **Printer Passes** - Two passes are defined, each of which has a button: "White 600" and "White-Color 1200". Note that the "White 600" button has been clicked.

> If the **Add** button is clicked, then you are prompted to type a meaningful name for the new printer pass.

(2) **Print Mode** - This is the print mode for the selected pass. Each pass can have its own distinct print mode. To make changes, either click **[...]** to choose a different print mode, or click Edit to modify the current print mode.

> **Note:** When the **Layer Profile** tab is enabled, this will cause some of the other **Queue Properties** tabs to be disabled. However, these disabled tabs will actually be available by clicking the **Edit** button.

(3) **Color Channels** - These checkboxes control which color channels are active for the selected pass. Ink is output for checkboxes that have a tick.

> The "Flood" checkboxes will cause the entire area of the material to be printed with that ink, per the Flood level slider.

(4) **Underbase / Highlight** - Clicking this button reveals additional bitmap options for adjusting underbase or highlight settings.

Bitmap Processing Options

Queue Properties >> **Layer Profile** tab >> **Show Bitmap Processing Options**

An alpha channel is essentially a grayscale bitmap, wherein the gray values indicate a special form of blending that should be applied within the design. Often, an alpha channel is associated with transparency/opacity because the grayscale values are used to indicate transparent regions.

In addition to transparency effects, DTG RIP Pro C6 provides several tools that can adapt an alpha channel to improve the overall appearance and quality of the printed design.

● **Underbase** - The alpha channel can be used to indicate where white ink should be applied as an underbase, such that printing the CMYK design is not affected by the underlying black or color garment material.

● **Highlight** - For white and gray areas within the CMYK design, a highlight will print additional white ink to enhance such areas to make them more vibrant. Again, the alpha channel is used to control where highlights are applied.

● **Color Boost** - For colorful designs that use transparency to achieve specific effects, the Color Boost can be used to enhance the vibrancy of the colors.

● **Finish** - In printing applications that would benefit from applying a protective varnish, the alpha channel can be used to apply the varnish to specific regions of the printed design, particularly where it helps to emphasize the subject matter.

Preparing an Alpha Channel

For PhotoShop, Illustrator and CorelDaw, the easiest means to prepare an alpha channel is by using the Send to DTG RIP Pro C6 plug-ins. The alpha channel is automatically prepared using the color values within the design. In this case, it is not necessary to manually create an alpha channel.

For graphic design applications that support alpha channels, a custom alpha channel can be designed, though the design file must then be imported into DTG RIP Pro C6. Note that the file format must support alpha channels, such as PNG, PSD or TIFF files.

Spot Channels in PhotoShop

Note that PhotoShop permits additional alpha channels that are commonly referred to as "spot channels." Like an alpha channel, a spot channel can be used to define a custom grayscale, though the following restrictions apply:

● Since PNG files do not support spot channels, either PSD or TIFF files must be used instead.

● The exported file must not contain any transparency, otherwise the transparency will be used in Digital Factory Apparel instead of the spot channel information. To remove such transparency, flatten the entire design to the Background layer. For example, this can be done in PhotoShop by using the **Layer** menu >> **Flatten Image** command.

Alpha Options

The **Alpha Options** are used to determine how the alpha channel within the job will apply a spot color. Note that the printer pass must be configured with a print mode that supports spot colors, otherwise these controls will not be available.

> **Note:** If an alpha channel has been created for use as a white underbase, then **Alpha Options** can be set to **NONE**, and the **White Underbase / Highlight Options** can be set to **Underbase**.
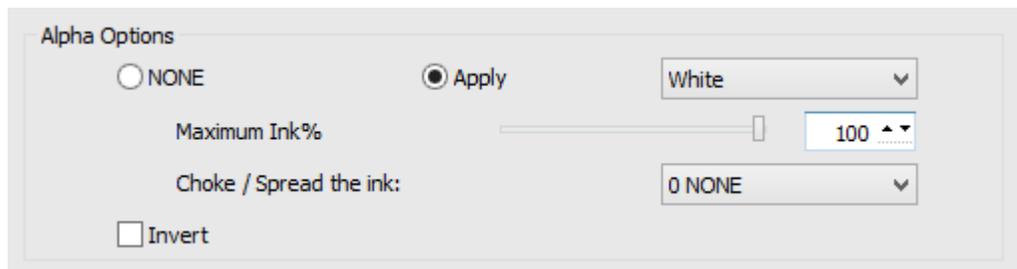
- **Maximum Ink %** - This restricts the amount of spot color ink that will be printed at 100%. Reducing this slider will constrain the volume of ink, in effect influencing the Separation Curve for that spot color.

> **Note:** To apply greater control over the spot color ink, use the **Separation Curve** tab (click **Edit** to modify the print mode).

- **Choke / Spread the ink** - Choking (negative values) will slightly reduce the spot color area, whereas a Spread (positive values) increases the area.

   The drop-list values are measured in pixels, so the correct setting will depend upon the original resolution of the image. For example, a 300 dpi image will produce better results than a low resolution image.

   A **Choke** is used to avoid registration errors or bleed issues. For example, by slightly choking a White underbase, there is less likelihood that a registration error would allow the white to be visible along the edge of the overlying color pass.

   Too much choke can affect the quality of small objects, text in particular. Additionally, when printing to a non-black surface, the resulting small object can appear to have a faint stroke/outline. As a general guideline:

   Black material - Avoid a choke greater than 5 pixels

   Color or clear material - Avoid a choke greater than 2-3 pixels

A **Spread** serves to ensure coverage, such as a protective coating that is applied atop the color pass. Again, this reduces the concern that a registration error would cause a portion of the artwork to be exposed.

- **Invert** - Reverse the grayscale image that is defined by the alpha layer, such that light becomes dark, and vice-versa.

White Underbase / Highlight Options

These options only apply to the White channel, where alpha channel (transparency) data can be used to create either a white underbase, or white highlights.

Underbase - Click this option to create a white underbase that will prevent black or color material from interfering with the job colors.

Highlight - This option enables the **Highlight white** setting. A highlight is additional white ink that is printed to regions of the job that are already white, so that the white is more prominent. For example, after printing an underbase white pass, the CMYK pass can include highlight white to boost the white areas.

Underbase strength - This setting reduces the white underbase according to the amount of black that will be printed in the subsequent CMYK color pass. For example, when printing to a color garment, such as a red T-shirt, it is a waste to print white ink before printing black, since this will merely add more ink for the garment to absorb.

- When **Underbase strength** = Strong, the white underbase will be printed at full strength according to the alpha layer.
- For settings less than Strong, the underbase will be adjusted according to the amount of black that will be printed in the overlying CMYK color pass.

Maximum Ink % - This restricts the amount of white ink that will be printed at 100%. Reducing this slider will effectively limit the volume of white ink.

Choke the Underbase - The values in the drop-list are measured in pixels. Choking will slightly reduce the area of white ink to avoid white from "peeking" out when there are registration or bleed issues.

CMYK Color Adjustments
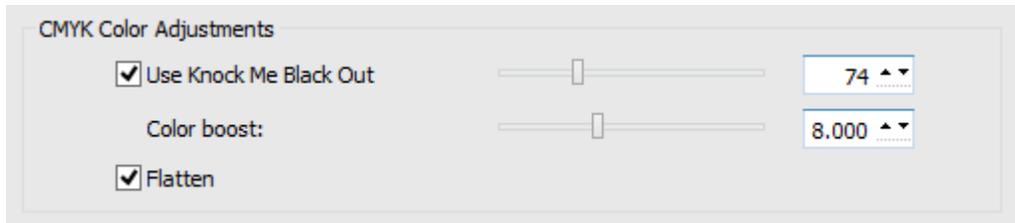
KnockMeBlackOut

When printing to black garment material, this option utilizes the KnockMeBlackOut plug-in to automatically remove black from the CMYK pass. In this manner, black within the image will actually be provided by the garment, rather than by laying down extra black ink.

● When evaluating black within the job image, a grayscale of the image is used, where the grayscale values vary from 0 (black) to 255 (white).

● The default slider value is 74 because the queues for black garment material use print modes that have been profiled according to a slider (grayscale) value of 74.

● Lighter portions of the job with grayscale values less than the slider value are unaffected.

> For example, decreasing the slider will cause more of the image to be considered "dark," so less ink will be printed in order to let more of the black garment show through (i.e., the printed job will appear fainter and perhaps overwhelmed by the black material).

● Darker portions of the job with grayscale values greater than the slider value will have black removed (i.e., print less black ink).

> For example, increasing the slider will cause previously dark regions to be considered as "light," so those areas will be printed with an otherwise normal amount of black ink (i.e., more than would have been at the default of 74).

When using KnockMeBlackOut, you can optionally adjust the **Separation Curve** tab for the **White** ink channel, so as to adjust the amount of white ink that is printed where the black substrate blends (i.e., 74) into the color of the image being printed. However, the print modes for black garment material were profiled with the appropriate separation curve adjustments, so additional manual edits are likely unnecessary.

Flatten and Color Boost

The Flatten and Color Boost settings are used to control how CMYK color data is processed in conjunction with transparency data. For example, in the following screenshots, the left is the original color image, the middle is transparency data, and the right is the printed result when combined.

- With Flattening enabled, the original color data is flattened according to the transparency information, and the right-hand result is printed.

- If Flattening were disabled, then the left-hand original is how the print will appear.

In effect, the alpha channel is being used as a guide for laying down a white underbase, and the alpha channel is also used to restrict the printing of the CMYK to only where a white underbase has been printed.

The **Color Boost** setting only applies when Flatten = ON, and it is used to compensate for reduced saturation caused by flattening the color data.

The amount of color boost should vary according to the amount of underbase white, so that colors are not washed out. As such, the amount of boost depends upon the material color. For example, a darker material color (e.g., black) requires more underbase white, which consequently needs more color boost. In comparison, lighter material color (e.g., red, cyan) requires less underbase white, and thus less color boost.

Generally, a boost between 2 and 8 is typical, with higher values suited for darker material.

Costing Tab

Queue menu >> **Properties** >> (Other) **Costing**	

The **Costing** tab is used to collect ink usage data and estimate the production costs associated with completing print runs. As more data is collected, an average trend in ink usage should be apparent, thereby providing greater ability to predict anticipated material needs for upcoming jobs. Likewise, you will be able to predict materials usage for a given job within the queue.

[?]Costing Values

[?]Costing Options

[?]Estimating Costs for a Held Job

Costing Values

Material Cost

The material cost can be calculated in one of three ways:

- **Per Unit** - This is a fixed price per print; typically used for T-shirts and other fixed price items when printing.
- **Per Square Foot** - This will calculate the price based on the actual area printed.
- **Per Square Meter** - This will calculate the price based on the actual area printed.

Surface Treatment Cost

This can be used for a number of different material treatments. For example, pre-treatment for T-shirt printing or lamination in large format sign printing

- **Per Unit** - This is a fixed price per print; typically used for T-shirt pre-treatment and other fixed price items, where the surface treatment is fixed or largely an estimated fixed price.
- **Per Square Foot** - This will calculate the price based on the actual area printed.
- **Per Square Meter** - This will calculate the price based on the actual area printed.

Black, Color and White Ink Costs

This value is always entered per litre.

- If necessary, you will need to calculate your cost per litre. This is done by dividing the volume of purchased into a litre, and then multiplying by the cost.
- For some printers, printing <u>black ink</u> is cheaper, so the cost of Black ink can be tracked separately. Likewise, <u>white ink</u> can sometimes be more expensive.

Color and White Ink Passes

Use these fields to specify the number of passes the printer makes when printing a color pass (or the white pass when printing white).

- The costing interface cannot "lookup" the number of printer passes that are currently set, so it is necessary that you set this value manually.
- If desired, separate queues can be configured to manage jobs for different numbers of passes. For example, a "black T-shirt" queue for jobs that require two white passes, and a "light-color shirts" queue for jobs that require one white pass.

Ink Contingency

- With all inkjets, there is a certain quantity of ink waste that occurs during head cleaning and other routine maintenance tasks.

- The amount of ink used in these tasks will depend upon the printer model, and the number of jobs in regular production runs (i.e., if printing large volumes, then the wastage during maintenance is a small percentage).

- By entering an **Ink Contingency** percentage, this allows you to account for ink wastage, which can be factored into the operating costs of the printer (e.g., entering 2% will indicate the cost associated with performing head cleaning and similar maintenance).

Labor Cost

All printing requires some labor, from loading the materials, to pre-treatments, lamination, and packaging for shipping. There are three approaches for including these costs:

- **Per Unit** - This is a fixed price per print (e.g., T-shirts), where the labor is typically the same for each item.

- **Per Square Foot** - This will calculate the price based on the actual area printed using the value per square foot.

- **Per Square Meter** - This will calculate the price based on the actual area printed using the value per square meter.

Tax Costs

- **Tax 1** - This is calculated as a percentage of the total job cost.

- **Tax 2** - If this is set as an "Additive Tax," then it is calculated to include the value of **Tax 1** (i.e., to comply with tax requirements in certain countries/states).

Time

This does not affect the cost and is just for information purposes.

- **Per Unit** - This is a fixed time per print, as is typical for T-shirts and other fixed printing, and application timed items.

- **Per Square Foot** - This will calculate the time based on the actual area printed using the value per square foot.

- **Per Square Meter** - This will calculate the time based on the actual area printed using the value per square meter.

[?]Costing Options

Costing Options

Often, different print applications can incur significantly different costing results, be this from material costs, labor costs, pre-treatment costs, etc. For more accurate data, arrange your queues to handle specific types of jobs, and then track the data on a per queue basis.

Record Costing Data

- Tick this option to enable the recording of job costing data. This option can be enabled at both the queue- and job-level.

- Collected data can be exported in .CSV format, which can be imported to Excel and other relational databases for accounting and generating reports.

- Once this data has been loaded into a database, additional statistics can be generated by evaluating the job data over time (e.g., weekly trends, monthly trends, total labor investment, etc.).

Notes

Click the **Notes** button to add a text description, such as general reminders and comments.

Dot Profiles

For costing to be calculated, it is necessary to specify the ink volumes per the individual pixels that are printed. These volumes vary according to the print resolution and similar factors. Typically, this information is provided in the printer driver (if available), or you can insert your own estimates. Consulting a specification sheet for the printer can also be of use.
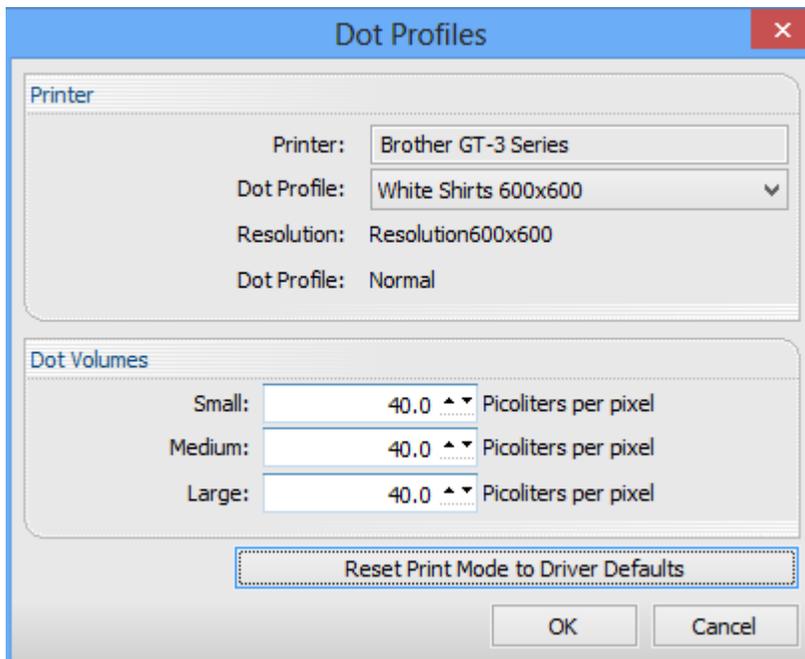
Estimating Costs

Once the **Costing Values** have been set within the queue properties, the estimated cost of a received job can be determined as follows:

1. Suppose that the given job has been spooled (i.e., right-click and choose **RIP Only**).
2. Right-click the job and choose **Properties >> Show For Page Content**.
3. The **Job Ticket Properties** dialog.
4. Click the **Costs** tab.
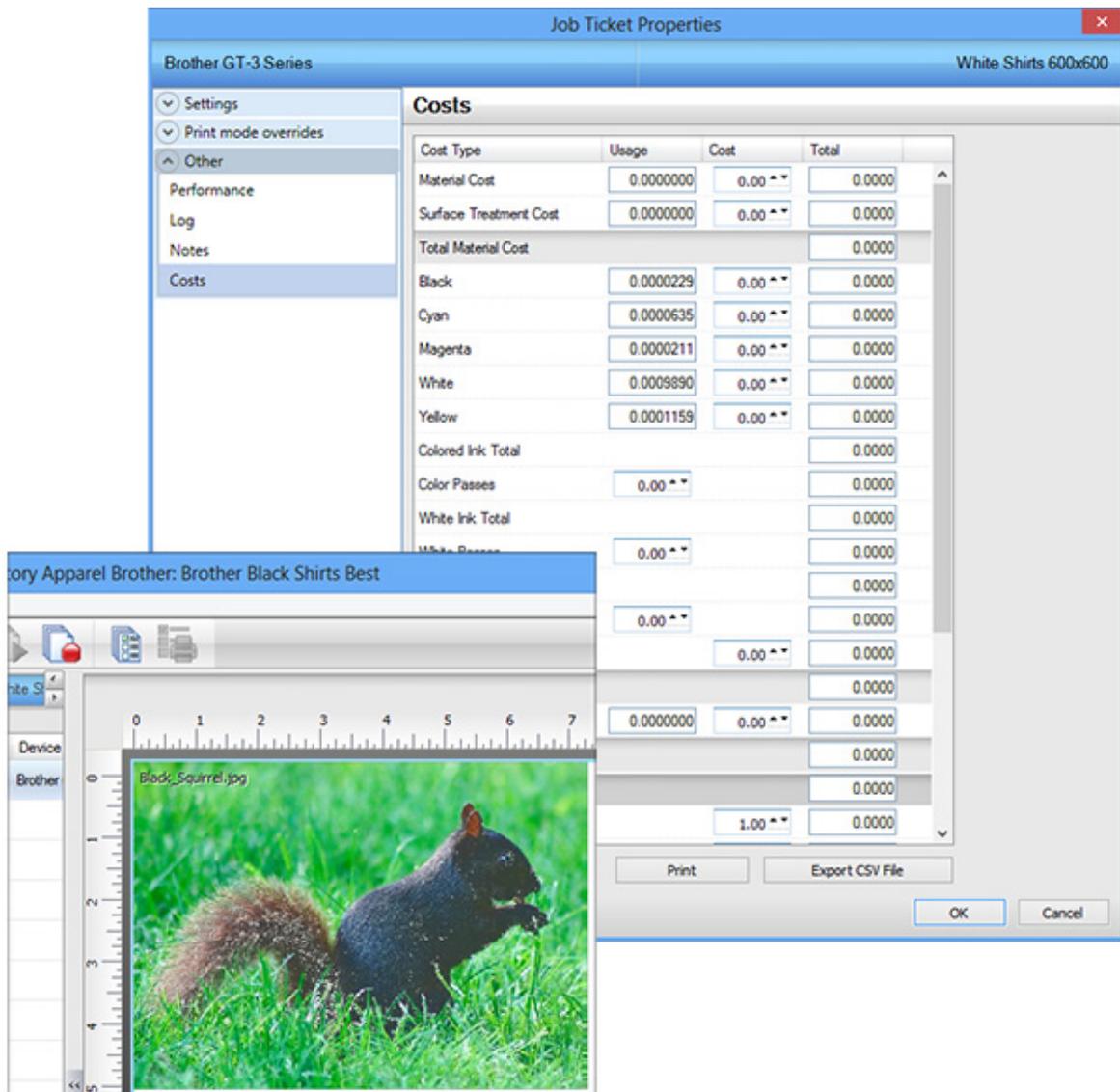
The values listed on the **Costs** tab will reflect the information entered within the **Costing** tab of the **Queue Properties** dialog. However, adjustments to these values can be made on the **Costs** tab. For

example, perhaps it is necessary to change the tax percentage, or the ink contingency, or the number of passes from what was previous set.

Print

Click the **Print** button for a simple draft of the job data.

Export CSV File

- By exporting the job data in .CSV format, the data can be imported to Excel and other relational databases for accounting and generating reports.

- Once this data has been loaded into a database, additional statistics can be generated by evaluating the job data over time (e.g., weekly trends, monthly trends, total labor investment, etc.).

Log Tab

Queue menu >> **Properties** >> (Other) **Log**

Jobs menu >> **Properties** >> (Other) **Log**

The **Log** is used to review statistics about print jobs as they are processed through the queue. In the event of problems, CADlink Tech Support can use this information to help provide a solution.
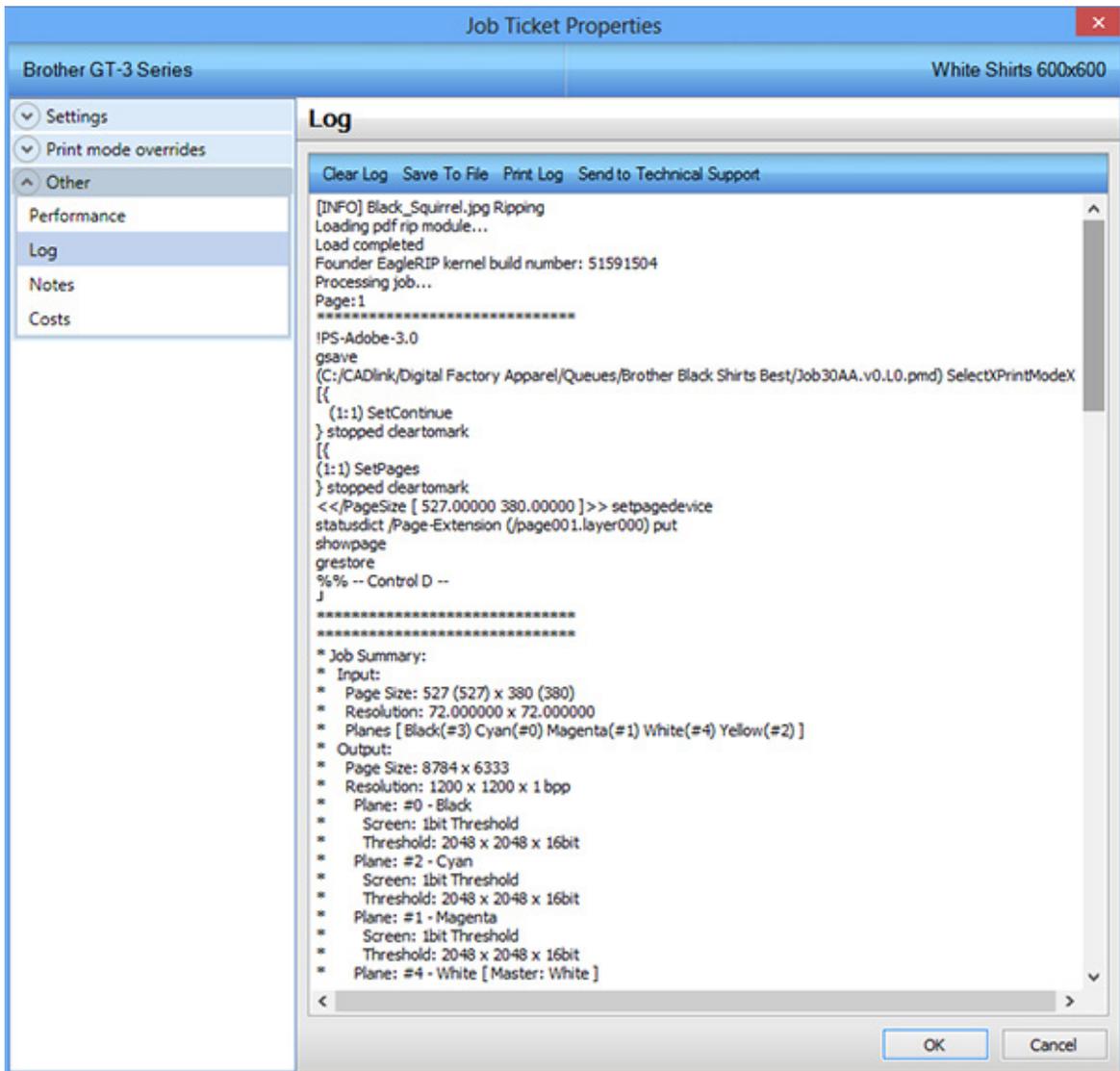
History Tab

To maintain a history of the print jobs that have been processed by the queue, follow the steps below.

1. Choose **Queue** menu **>> Properties** dialog **>> History** tab.

2. Tick **Enable job history** to view the History of jobs in the queue.

The **History** tab will show the number of jobs processed, any errors, and the total process time of all jobs. The jobs are listed below with their start times, their individual process times, and any errors are noted.

Click **Clear History** to remove the jobs from the History list, and clear the **Total jobs processed**, and **Total process time** fields.

Advanced Queue Properties

For DTG RIP Pro C6, these tabs are considered to be less frequently needed, and are hidden to reduce the complexity of the user interface. However, these tabs can be revealed via **Tools** menu >> **Options** >> **General** tab >> **Show advanced settings and options.**

[Color Adjustments Tab](#)

[Separation Curves Tab](#)

[Max Ink Tab](#)

[Variable Dot Setup Tab](#)

[Performance Tab](#)

Color Adjustments Tab

Queue menu >> **Properties** >> (Print mode overrides) **Color Adjustments**

Note: These are advanced tab controls that are hidden by default. To reveal these controls, tick the **Tools** menu >> **Options** >> **Show advanced settings** checkbox.

Note: If layers are enabled on the **Layer Profile** tab, then **Color Adjustments** tab controls will not be available.

The **Color Adjustments** tab adjusts the color levels of the print job. These adjustments are not typically required because the ICC profile is created for use with a specific calibration. As such, performing color adjustments will actually distort the color accuracy of the ICC profile.

One reason for color adjustments would be to create an artistic effect. However, the main reason for color adjustments is to compensate for non-standard media and inks, where the cost of producing a new ICC profile is prohibitive.

Making color adjustments by eye is neither quick nor easy, especially when adjusting the curve of individual color planes. Unless very experienced in color theory, the wisest advice is to keep any changes simple. For example, if adjustments were made to Shadows for Cyan, Highlights for Magenta, and Midtones for Yellow, all without checking the results of each step, then there would be confusion over which adjustment caused a given effect.
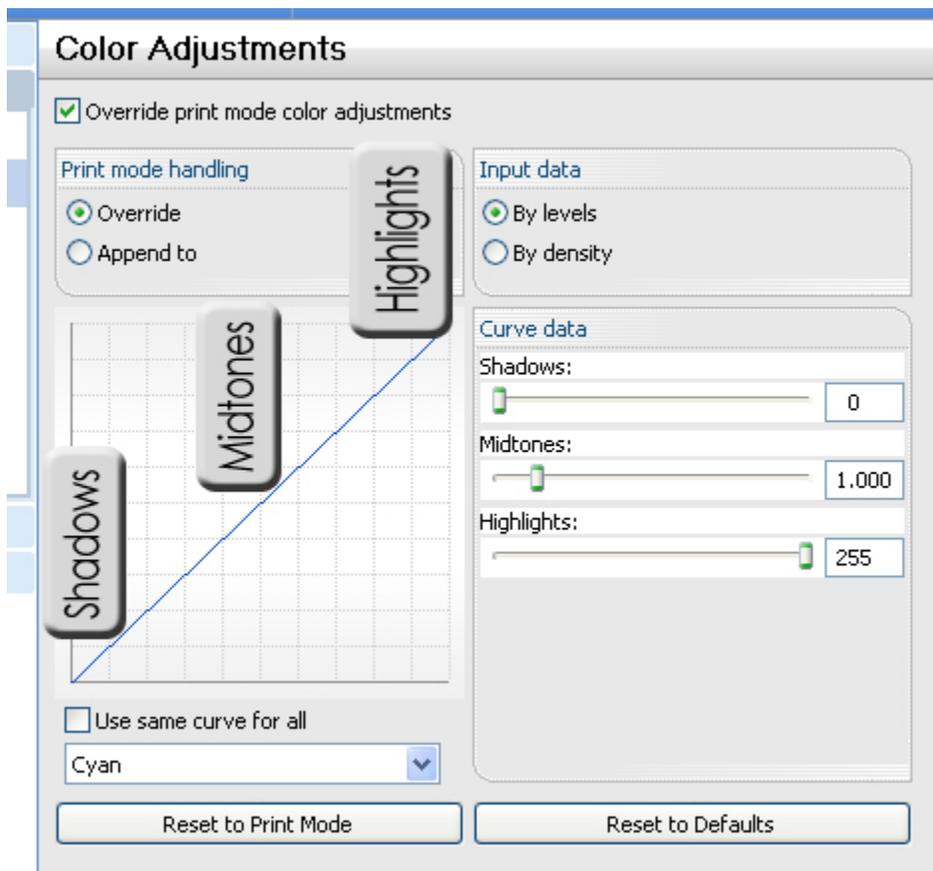
[?]Tonal Correction

[?]The Shadows Slider

[?]The Midtones Slider

[?]The Highlights Slider

[?]Density Curve

[?]Removing a Color Cast

Tonal Correction

Apply tonal correction first by adjusting all the colors together (using the same curve for all CMYK color planes).

- Use the **Shadows, Midtones**, and **Highlights** sliders to lighten or darken the image (higher values to lighten, and lower values to darken).

- The easiest way to adjust the tonal range is to adjust the highlights first, then the shadows, and lastly the midtones.

- Once the midtones are correct, the highlights and shadows can be further tuned.

Printing a Test Page

> **Devices** menu >> **Print test page** >> **CADlink Test Page**

All adjustments should be checked by using the **CADlink test page**, which is specifically designed to help recognize changes due to tonal adjustments. For example, the individual tints can be checked by referring to the tint percentage boxes, whereas the overall balance is checked by looking at the color graduation.

> **Note:** When the test page looks correct, perform an additional test using a photographic image.

- If the 5% tint box appears to be empty and the 10% tint box appears too light, then reduce the white point (**Highlights** slider) by ten. If after another test these tint boxes appear too dark, then incrementally raise the white point and continue printing test pages.

- Similarly, if the 90% to 100% tints are too dark, then increase the dark point (**Shadows** slider) by ten. If after another test these tint boxes appear too light, then incrementally reduce the black point.

The Shadows Slider

The **Shadows** slider adjusts the black point, which is the lower end of the curve. Increasing the **Shadows** value causes the darkest parts of the print to be recognized as pure black, which also causes the darkest details to be lost in the shadows. Generally, the purity of printed black depends on many factors, such as how many colors are being used. Use the mouse to adjust the **Shadows** slider.

The Midtones Slider

The **Midtones** slider adjusts the gamma curve, which affects the midtones without changing the black and white points (the lower and upper ends of the curve, respectively). Raising the midtone of a color plane results in laying down less ink on the media for that color. Use the mouse to adjust the **Midtones** slider.

The Highlights Slider

The **Highlights** slider adjusts the white point, which is the upper end of the curve. Lowering the **Highlights** value causes the lightest parts of the print to be recognized as pure white, which causes the lightest details to be lost in the highlights. Use the mouse to adjust the **Highlights** slider.
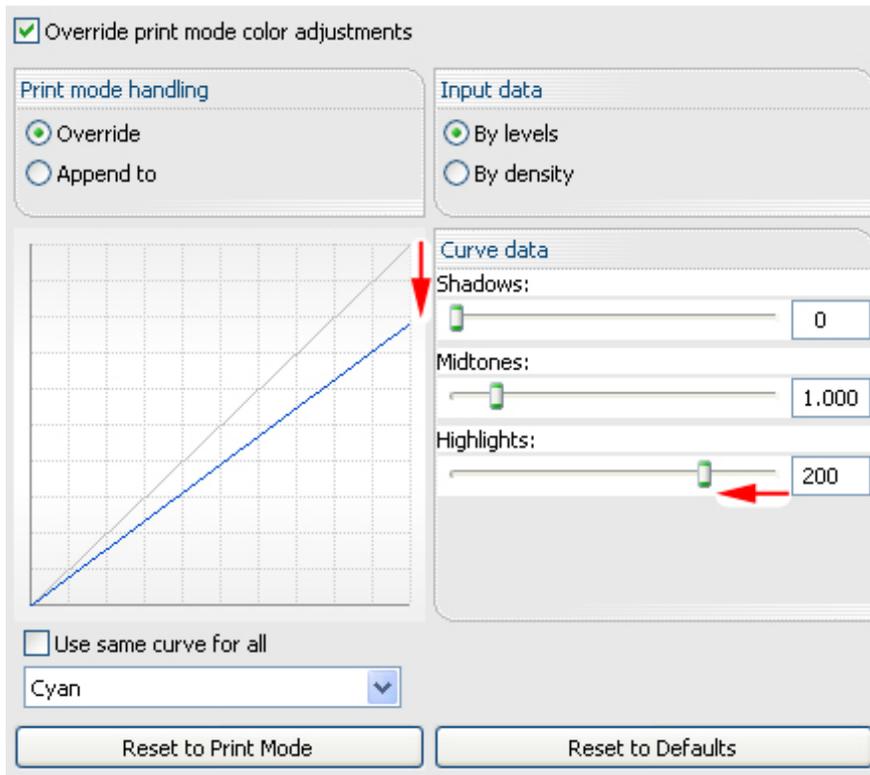
When both **Highlights** and **Shadows** are adjusted, the contrast between light and dark areas will be more pronounced. However, light and dark details will be lost as those tones were forced to either 0% or 100%.
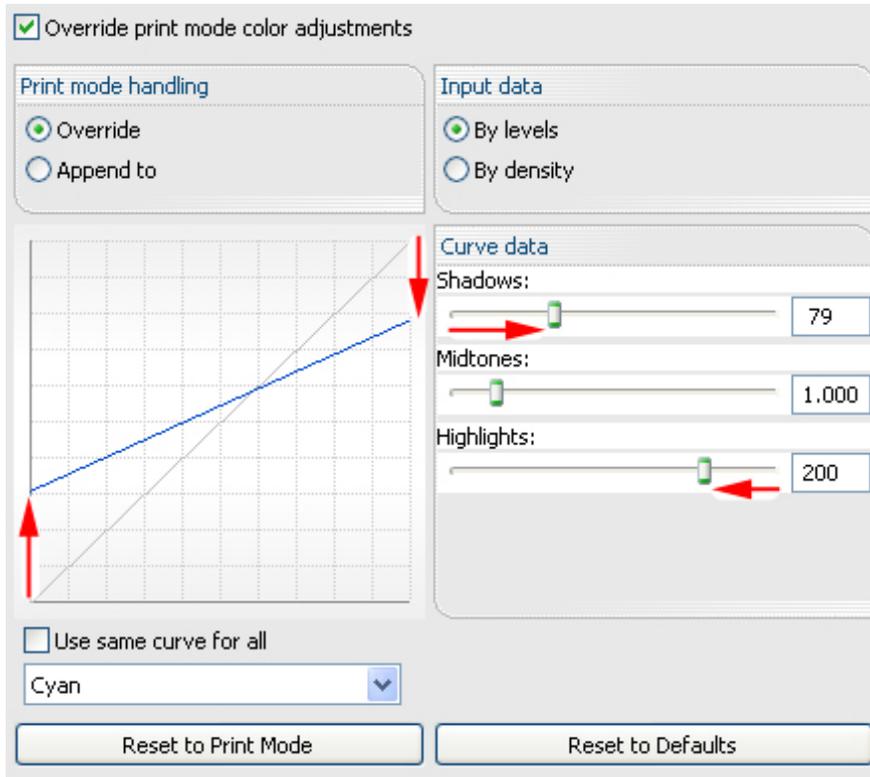
The **Highlights** and **Shadows** controls are useful for preserving details on printers that are incapable of differentiating the darkest and lightest pixels accurately. By adjusting the white and black point values, more of the image details will fall within the range that the printer is capable of rendering.

Density Curve

The **Density Curve** is used to set densitometer values for each color plane. This curve is similar to using the X-Rite colorimeter, though lower-cost hand held devices may instead be used, and the data must be entered manually.
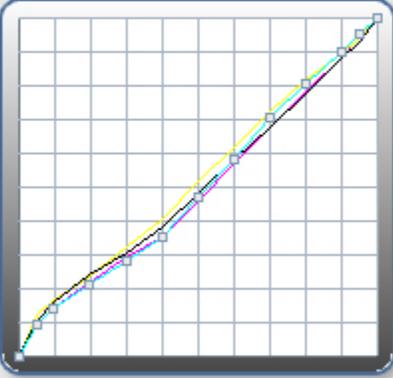
Removing a Color Cast

A color cast is a visual imperfection that is usually caused by a dominant ink (or set of inks). Depending on the complexity of the imperfection, the solution will be either simple or complex.

Simple Solution

In the simple case, removing a color cast is possible by adjusting the tonal settings of the individual colors that are causing the cast. Begin by adjusting the overall tonal balance. The color balance may then be adjusted using the **Midtones** slider for each offending color individually.

> **Note:** As previously mentioned, use Print test page (**Devices** menu) after each adjustment. When all adjustments appear complete, perform a final test by printing a photographic image.

Complex Solution

Where a complex color cast must be removed, the primary consideration is that each adjustment will affect the overall color balance of the image. Decreasing one color (say Magenta) will increase its opposite color on the color wheel (Green).
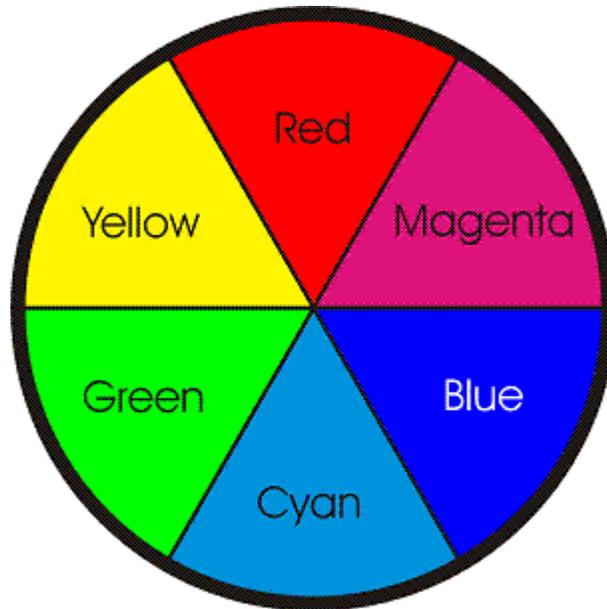
The effect occurs because Green is composed of both Yellow and Cyan. Reducing Magenta effectively increases the proportions of Yellow and Cyan (relative to the previous CMY proportions). Effectively, the image will appear greener.

Before solving this problem, note that the choice of color model is not significant. However, the recommendation is to choose the same color model used by the output device.

The first step is to identify the color(s) that are causing the problems. This is a personal talent that develops with experience, so continue to practice. The **Print test page** (**Devices** menu) is a useful starting tool when identifying problems with color. All the necessary ingredients for judging color

reproduction are contained in this file. Analyzing the hue wheel (printed as a 1" border), will reveal any bias towards a particular color.

The CMY (composite black) graduation will give the best indication of how well the CMY inks are balanced. Film Recorders usually produce a pure grayscale, whereas standard color reference systems (SWOP, PANTONE, EuroScale, etc.) produce a gray that has an acute Magenta tinge.

> **Note:** If the desired output will ultimately be rendered on an Offset Press, then it may be preferable to reproduce the Magenta tinge.

Once the problem colors are identified, the alternatives are:

1. Raise the midtone value of the problem color, which will result in a less saturated print.

2. Lower the midtone values of the non-problem colors, which will result in a more saturated print.

3. Combine alternatives (1) and (2) by raising the midtone value of the offending color, while also lowering the midtone values of the other colors.

Further Solutions

When working with color models, though the chosen model may be CMYK, Green may still be adjusted by modifying Magenta (which is the complement of Green in the color wheel). For example, increasing the amount of Magenta will reduce the green in the final print.

Where one color is dominant, such as an overall Yellow tinge to the whole page, the solution may be to reduce the **Shadows** slider for Yellow. This will reduce all areas of the page that have a large percentage of Yellow (90% - 100%), which will therefore have an immediate effect.

> **Note:** A color swatch from one of the standard reference systems (SWOP, PANTONE®, EuroScale, etc.) is an invaluable aid in the process of color correction, and well worth the investment. Using a color swatch will show exactly what the end result should be, allowing a direct comparison with the tints and graduations using **Devices** menu >> **Print test page**.

Separation Curves Tab

Queue menu >> **Properties** >> (Print mode overrides) **Separation Curves**

Note: These are advanced tab controls that are hidden by default. To reveal these controls, tick the **Tools** menu >> **Options** >> **Show advanced settings** checkbox.

Note: If layers are enabled on the **Layer Profile** tab, then **Separation Curve** tab controls will not be available.

Warning: Changing the *separation curves* will invalidate the *color adjustment* settings for the corresponding curves. The color adjustment settings will likely require adjusting following any changes to the separation curves.

Some printers are capable of printing a wider range of color hues for cyan, magenta and black, by mixing inks of the same hue together. For example, a printer might use two inks, cyan and light cyan, or three inks, light, medium, and dark cyan. By using two or three different inks of cyan, and mixing them together, the color is adjusted to give the maximum range of color density. For these printers, the color calibration is adjusted automatically so that the correct amount of ink is used for each color plane, for example cyan and light cyan.

In the example below, the default print mode settings are shown for the selected printer. The straight line on the graph represents cyan, while the curved line represents light cyan. The percentages of cyan ink are shown in the **Curve data** section.

- The x axis (horizontal line) represents the percentage of ink input into the curve data (for example, to get 50% cyan).

- The y axis (vertical line) represents the percentage of ink output from the particular printer in order to get the ink density requested through the curve data input.

- The top right corner of the graph represents 0, 0 where no ink has been input or output.

- The bottom left corner of the graph represents 100,100 where maximum ink has been output.
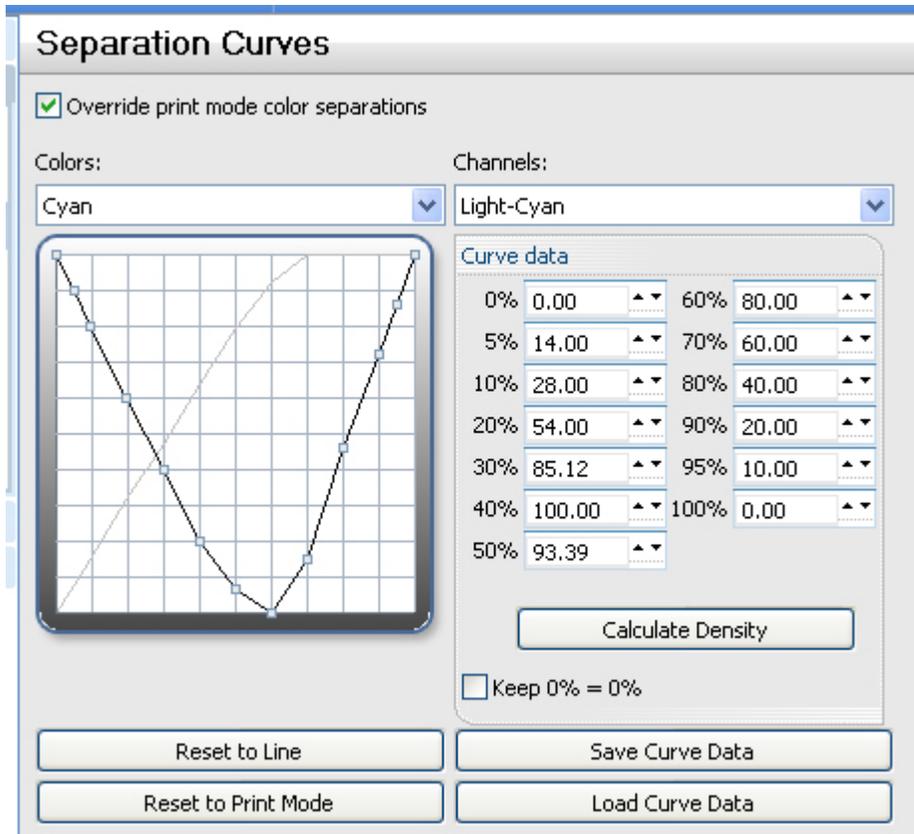
Adjusting the Ink Density

To adjust the ink density, follow these steps:

1. Select **Queue** menu **>> Properties** >> **Separation Curves** tab.

2. Check **Override print mode color separations**.

3. From the Colors drop-list select the color to adjust.

4. From the **Channels** drop list select the color plane to adjust. The darker line on the graph represents the channel selected to edit, while the lighter line(s) represent the remaining channel(s).

5. Adjust the curve data percentages to the preferred settings, or select **Load Curve Data** to load previously saved curve data.

After each adjustment, print a test page to verify the results (**Devices** menu >> **Print Test Page**).

Max Ink Tab

Ink Volume Adjustments

Queue menu >> **Properties** >> (Print mode overrides) **Max Ink**

Note: These are advanced tab controls that are hidden by default. To reveal these controls, tick the **Tools** menu >> **Options** >> **Show advanced settings** checkbox.

Note: If layers are enabled on the **Layer Profile** tab, then **Max Ink** tab controls will not be available.

The ink volume is the physical quantity of ink that is applied when printing, which is regulated by the MaxInk setting within the print mode. Each print mode is assigned a MaxInk setting that is appropriate for the inks and media that the print mode was designed for. However, if the wrong print mode is used, then the risk is that the ink volume will be incorrect, either applying more ink than the media can readily absorb (producing bleeding and loss of details), or not applying enough ink (causing colors to appear faded).

When creating a media profile, part of the process is to print a series of Max Ink charts, which are essentially the same detailed image repeatedly at different Max Ink settings. The charts are then inspected to identify the highest quality chart, and it is the Max Ink setting for this chart that is set within the media profile.

Sometimes an incorrect print mode is intentionally used when it is considered to be a "close" match for the substitute media. For example, a print mode for glossy white media (from one manufacturer) can be sometimes be appropriate for glossy white media (from another manufacturer). In such a case, the Max Ink setting would be adjusted to compensate for the slightly different absorbency of the substitute media.

The following points highlight the **Max Ink** tab controls:

- The **Maximum Ink Level** setting is the target ink volume that will be used when ink volume needs to be reduced.

- The **Blend In Ink** settings (**From, To**) are the range of inks for which the Max Ink setting will be enforced. If the volume of ink falls within this range, then the volume will be adjusted to below the Maximum Ink Level. Though the ink volume is reduced, the proportion of blended inks will be maintained to avoid harsh gradient transitions.
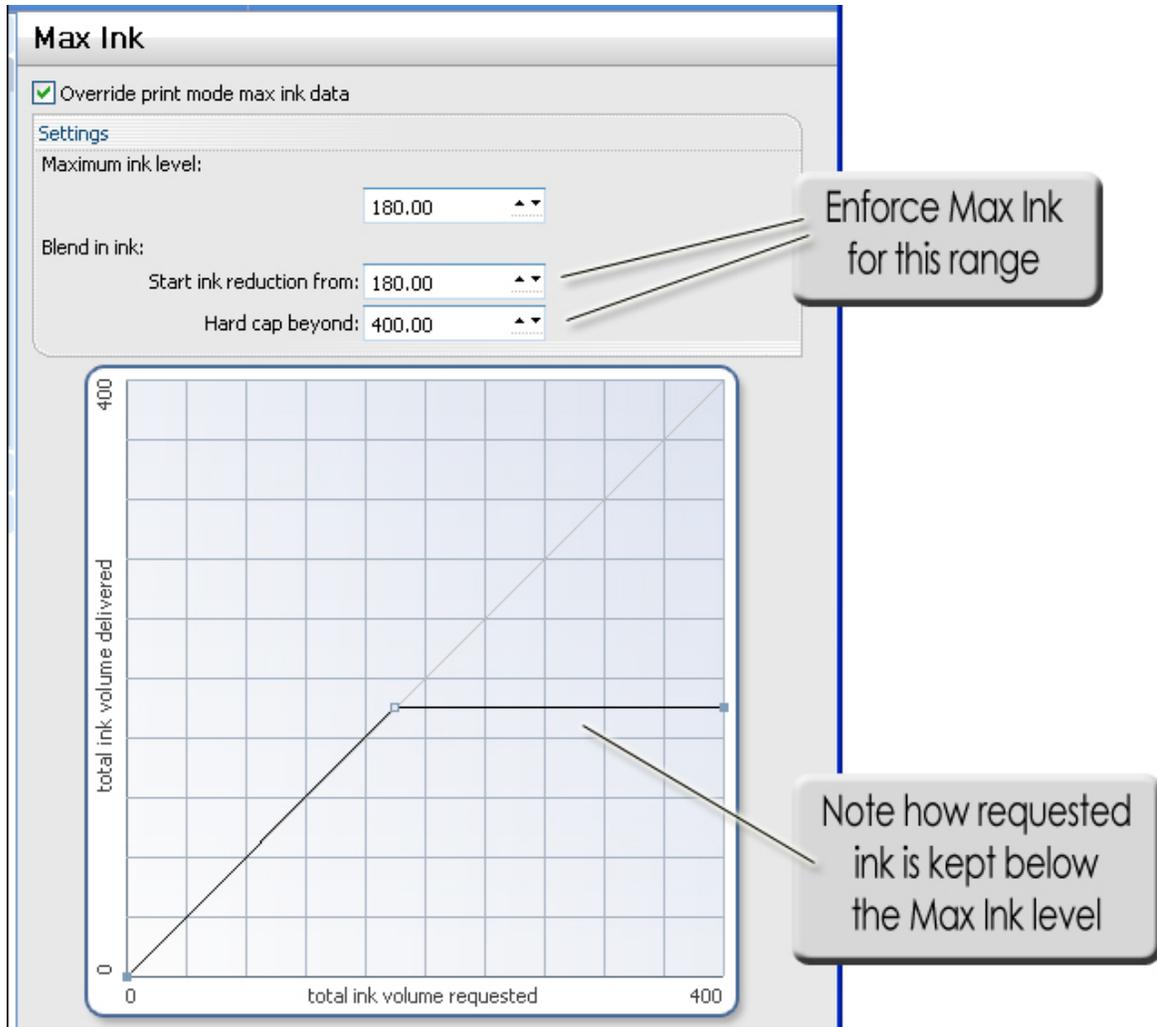
- The graph (within the dialog) depicts the **Maximum Ink Level** and **Blend In Ink** settings. The horizontal axis represents the **Total Ink Requested**, and the vertical axis represents the **Total Ink Delivered**.

- For the range of the graph that falls within the **Blend In Ink** bounds, note that the graph typically becomes a horizontal line to indicate how ink volume will be attenuated to the **Maximum Ink Level**.

- Note that the graph has adjustment handles that can also be used to modify the **Max Ink** settings.

Variable Dot Setup Tab

Queue menu >> **Properties** >> (Print mode overrides) **Variable Dot Setup**

Note: These are advanced tab controls that are hidden by default. To reveal these controls, tick the **Tools** menu >> **Options** >> **Show advanced settings** checkbox.

Note: If layers are enabled on the **Layer Profile** tab, then **Variable Dot Setup** tab controls will not be available.

The Variable Dot Setup provides exacting control over small, medium and large dot usage on variable dot printers. This provides the ability to set the thresholds for how dot sizes transition throughout the print. However, adjusting these thresholds will typically require that the ICC profile be recreated for the given printer model.

Performance Tab

Note: These are advanced tab controls that are hidden by default. To reveal these controls, tick the **Tools** menu >> **Options** >> **Show advanced settings** checkbox.

Sending a print job involves processing the job into a spool file, and then the spool file is sent to the printer. The choice of print mode determines the RIP resolution at which the job is processed. High resolution print modes tend to produce higher quality prints, though this requires more time to process and spool jobs. So to reduce printing time, it is common practice to simply choose a lower resolution print mode.

As an alternative to manually using a low resolution print mode with certain jobs, the **Performance** tab can be used to automatically reduce the RIP resolution according to the job complexity. For example, with simple line art or text that has been scaled up to fill a large banner, DTG RIP Pro C6 can determine that the maximum RIP resolution is not necessary in order to retain print quality.
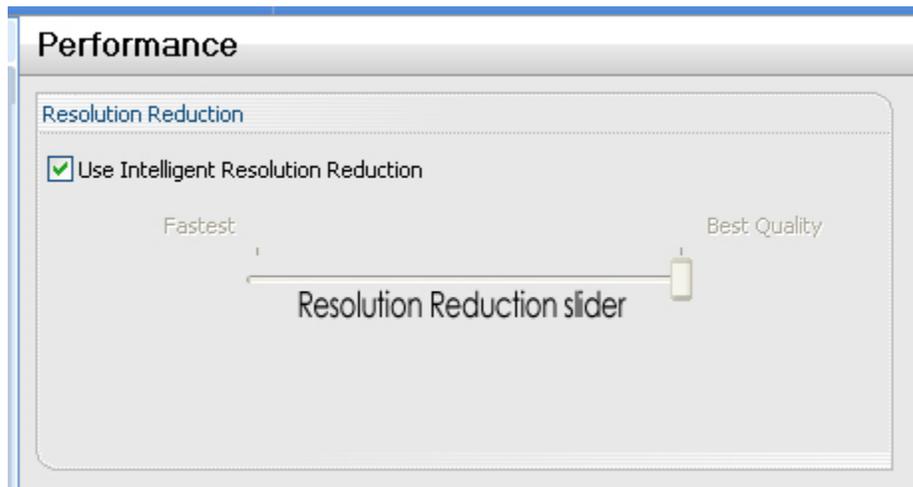
Use Intelligent Resolution Reduction

- If this checkbox is ticked (**ON**), then DTG RIP Pro C6 will perform calculations for each job to determine whether a lower RIP resolution can be used.

- For jobs that would suffer at lower resolution, they will be processed at the resolution that is set within the print mode.

Resolution Reduction Slider

- If the checkbox is clear (**OFF**), then the **Resolution Reduction** slider will become active.

- This slider provides a manual means of adjusting the relative amount of resolution reduction that will be applied.

- If the slider is set to the far-right (i.e., **Best Quality**), then jobs will <u>always</u> be processed at the maximum RIP resolution (per the print mode). In other words, with the slider set to Best Quality, no resolution reduction will occur.

- If the slider is set to the far-left (i.e., **Fastest**), then jobs will be processed at the bare minimum RIP resolution of 72 dpi. This can be suitable for jobs that are composed of simple line art or text, though detailed jobs can potentially appear blotchy.

- Generally, manual adjustment of the slider (between **Fastest** and **Best Quality**) requires finding a happy medium. This will rely upon evaluating small printed samples at varying slider positions. For example, if batches of jobs are expected to have a certain level of detail, then perform small tests (at varying slider positions) to determine the most efficient setting for those jobs.

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Once you have evaluated your CADlink product and determined the features and support that are of value to your shop, contact CADlink Sales for further information about features that pertain to your shop configuration. CADlink Sales will be able to provide advice about available packages based on your shop requirements.

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