

Bantam Tools WaterColorBot™ Disclaimers

Safe Handling of the WaterColorBot

1. **Lifting and Moving:** The WaterColorBot is compact and lightweight, but for safe handling, use both hands when lifting or moving it. Always lift from the metal frame—never from the easel, shafts, cable guides, or other moving parts. Avoid carrying the machine with a loaded paint set or water cups installed.
 2. **Heat:** The motors will become warm during normal operation. This is expected, but they should never become too hot to touch. If they do, power off and allow them to cool before resuming use.
 3. **Moving Parts:** The WaterColorBot has exposed moving parts, including belts, pulleys, and the brush-lift arm. Keep fingers, hair, loose clothing, cables, and other objects clear of the carriage, belts, and brush holder during operation.
 4. **Small Parts:** This product contains small components that may pose a choking hazard to children under 3 years old.
 5. **Magnets & Metal Clips:** The easel uses metal binder clips, which have strong springs. Keep these away from small children. Do not swallow or insert clips or any small magnetic accessories into the body.
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Electrical Safety

1. **Power Supply:** Use only the power supply provided with the WaterColorBot. Using an incorrect power source can cause damage or create a fire hazard.
 2. **Connection & Disconnection:** Turn off the WaterColorBot before plugging in or unplugging the power cable. Never unplug by pulling on the cord—grasp the plug instead.
 3. **Cord Safety:** Do not twist, bend sharply, pinch, or place heavy objects on the power cable. Keep it away from water, paint, and heat sources.
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Liquids and Painting Media

1. The WaterColorBot is designed for watercolor, gouache, ink, and other low-viscosity, water-based media.
 2. Keep all liquids away from the electronics enclosure, power supply, and ports.
 3. Always fill and empty water dishes away from the machine to reduce the risk of spills.
 4. In the event of a spill, immediately power off and unplug the machine before cleaning.
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Modification

Do not modify your WaterColorBot. Any modifications, including alterations to the electronics, firmware, or mechanical components, are at your own risk and will void the warranty. If your machine needs service, contact Bantam Tools Support for assistance.

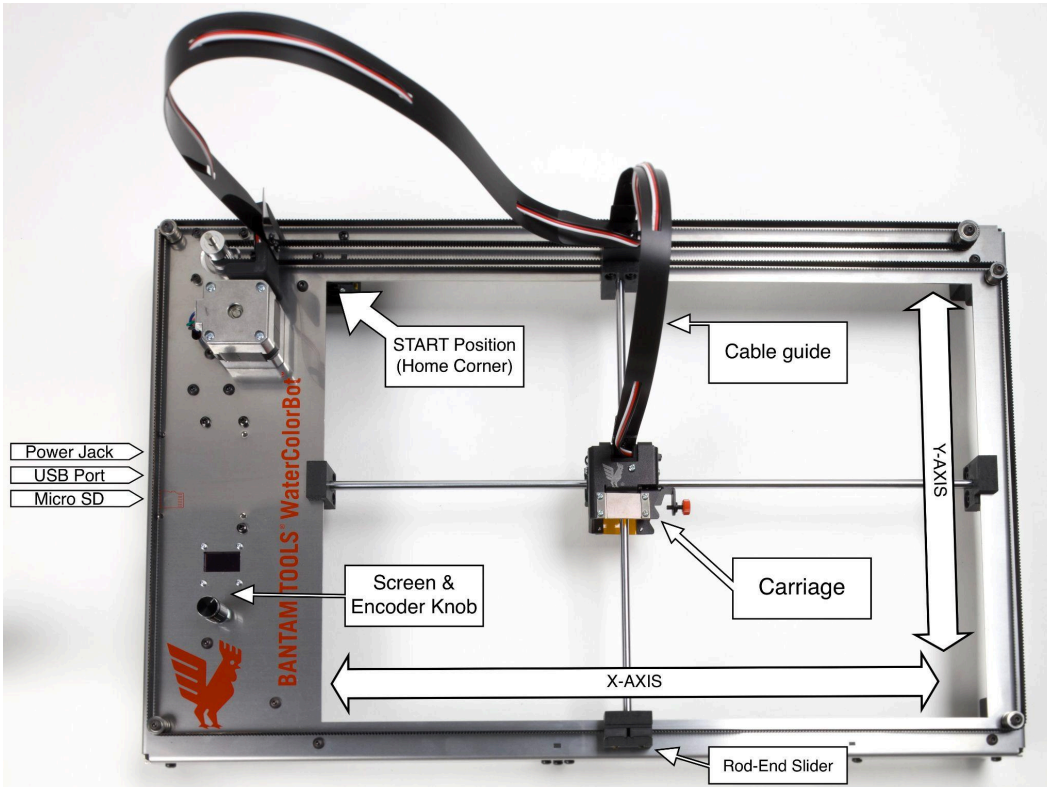
ESD Sensitivity

The WaterColorBot's electronics are protected against electrostatic discharge (ESD), but large static shocks to cables or connectors during operation can cause malfunctions. If the machine behaves unexpectedly after a static event, power cycle it to restore normal function.

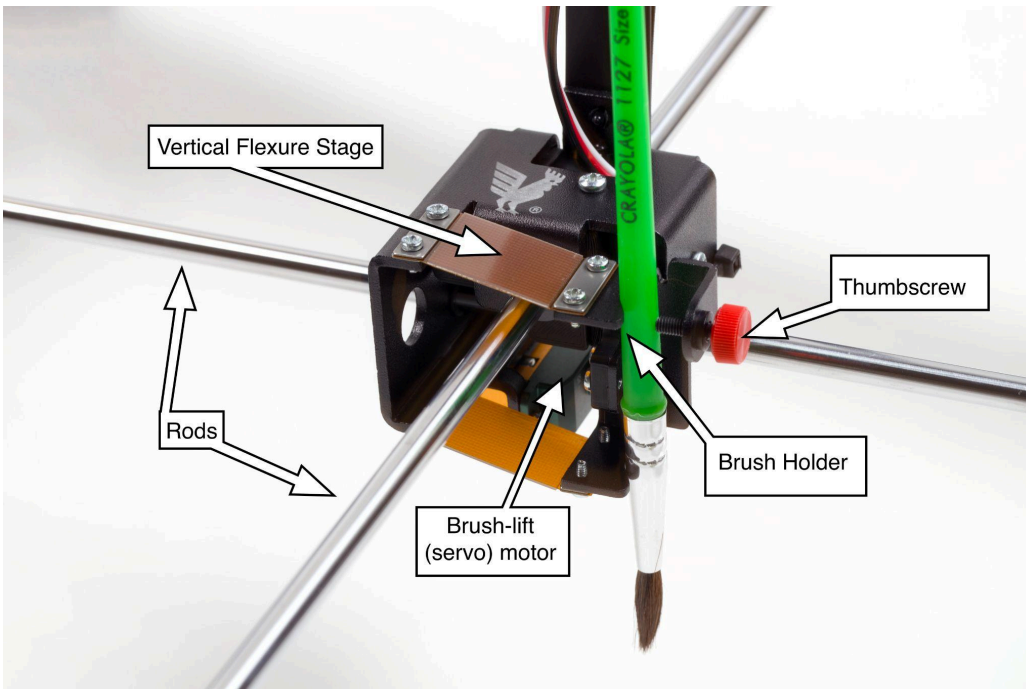
Bantam Tools WaterColorBot™ Anatomy

Let's take a brief look at what the different parts of the machine are called. We'll refer to many of these parts in the instructions, so it is helpful to know what's what.

Bantam Tools WaterColorBot Anatomy:



Carriage Anatomy:



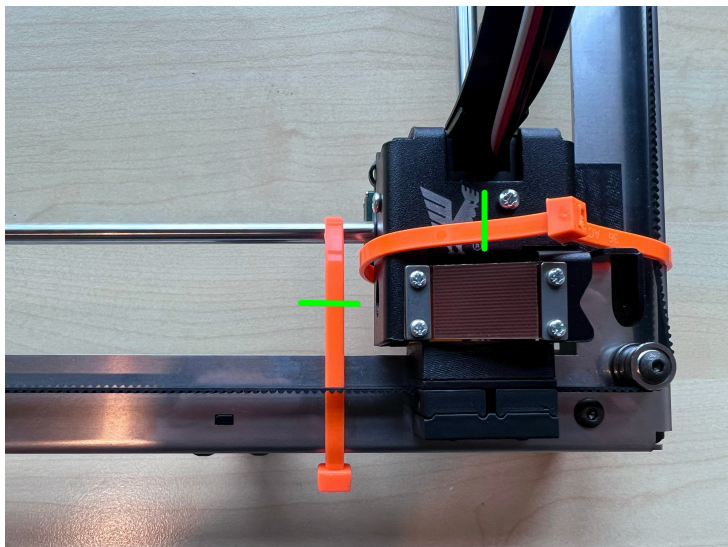
Bantam Tools WaterColorBot™ **What's in the Box**

Everything you need to start painting with your Bantam Tools WaterColorBot™:

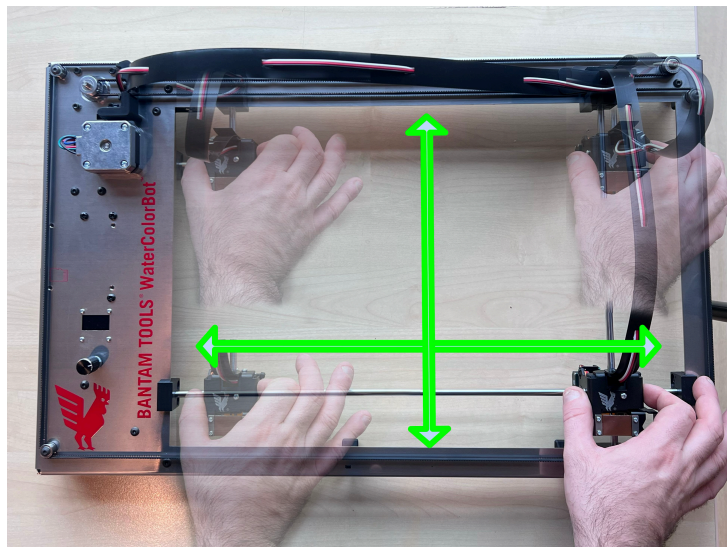
- Bantam Tools WaterColorBot™** — your new creative painting machine.
- Magnetic Stainless Steel Easel** — keeps your 9 x 12 watercolor paper flat and secure.
- Crayola Palette** — Hold your Paint & Water Pans in the right position.
- 4 XL Water Pans** — 1x2" inch, holds water for your painting sessions.
- Crayola® Watercolor Set & Brush** — perfect for getting started right out of the box.
- 2x additional water color brushes**
- Water Color Paper** — to get you started out of the box
- Power Cable** — to power your WaterColorBot™.
- MicroSD Card** — ready to load with your gcode files. When it is time to update the firmware, you'll put the firmware file on the sd card and update from the utilities menu on the screen.

Bantam Tools WaterColorBot™ Initial Hardware Setup

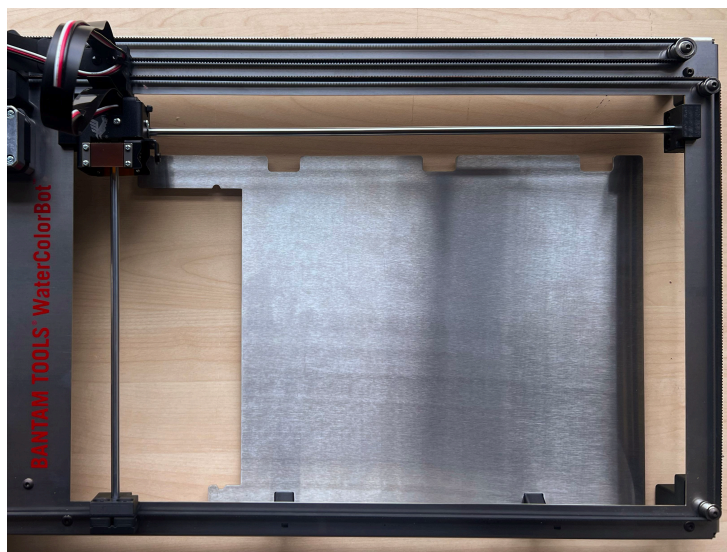
Step 1: Cut and remove the shipping cable ties.



Step 2: With power off, slide carriage through full travel to check smoothness.



Step 3: Align the easel securely against the two lower leg posts.

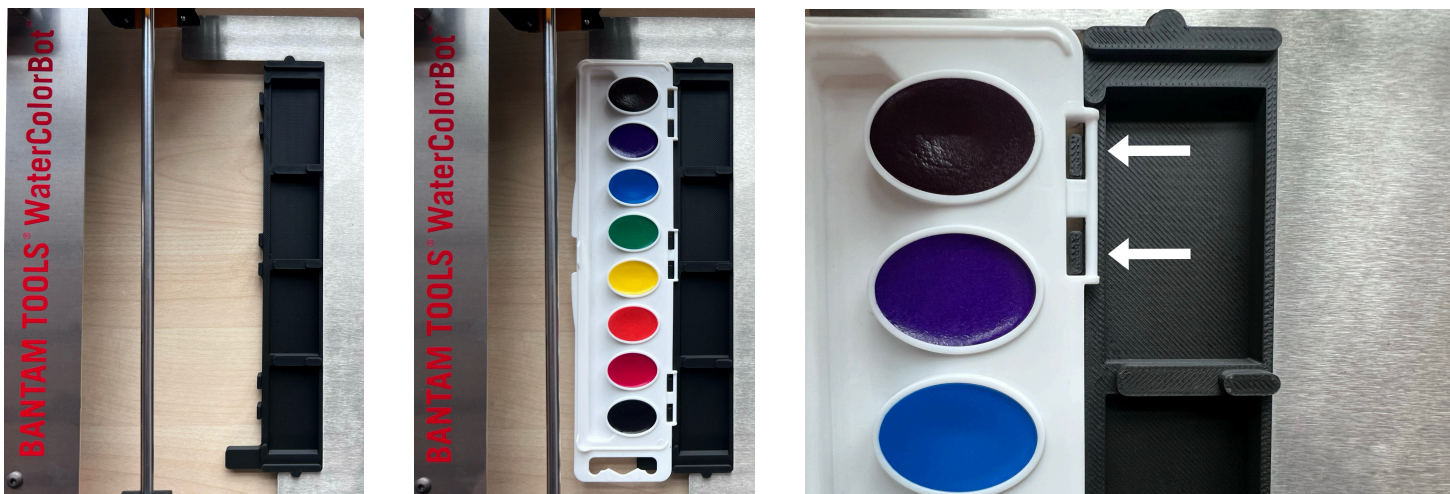


Step 4: de-hinge the Crayola paint set by unfolding it fully, then lift the lid upward to remove it.



Bantam Tools WaterColorBot™ Initial Hardware Setup

Step 5: Place the 4-Pan Palette, then the Crayola paint set into the pegs.



Step 6: Place the water dishes.



Use the included pipette to fill the dishes.

it can be faster to set the dishes in place after scooping a little water, then top them off with the pipette.

Depending on the style you are aiming for, it can be helpful to “activate” the paints before painting begins. This is commonly done in one of two ways: lightly spraying the entire palette with water, or using a dropper to activate only the next color, typically between tool changes.

Bantam Tools WaterColorBot™ Quick Start

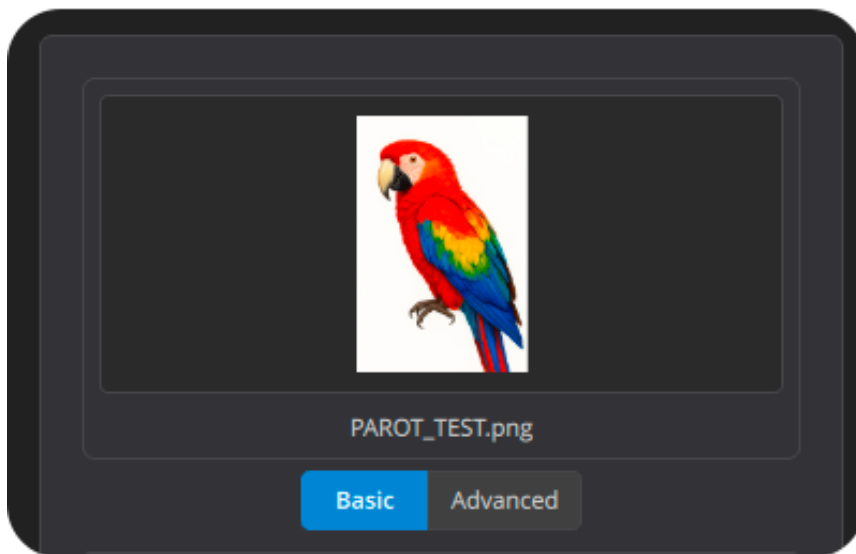
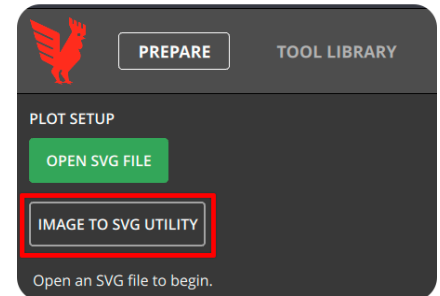
1. Bantam Tools Studio - Launch the Software

1.1 Open Bantam Tools Studio. Please reference the Bantam Tools Studio Guide and your licensing email for instructions on how to install.

1.2 Select **WaterColorBot** as your machine.

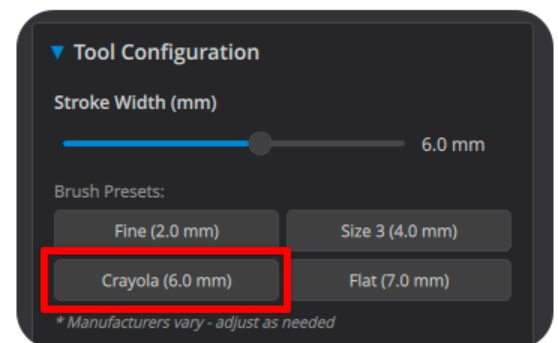
2. Image Processor - Creating an SVG

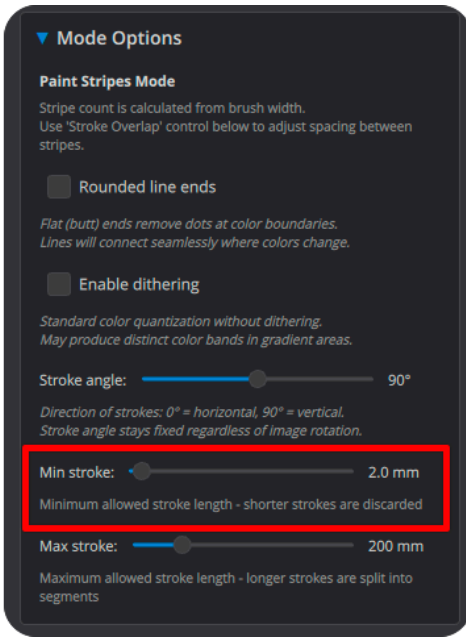
2.1 Launch the Image Processor by selecting **Image to SVG Utility**.



2.2 For this quick start, we will use the built-in image of a parrot. Note that the parrot image is on a white background, which provides strong contrast between the subject and the background. High contrast images generally produce better results and are something to keep in mind when selecting your own source images.

2.3 Next, open **Tool Configuration** and select **Crayola (6.0 mm)**. This does not configure tools on the WaterColorBot itself. It only tells the Image Processor how to generate SVG paths that will later be used for painting.

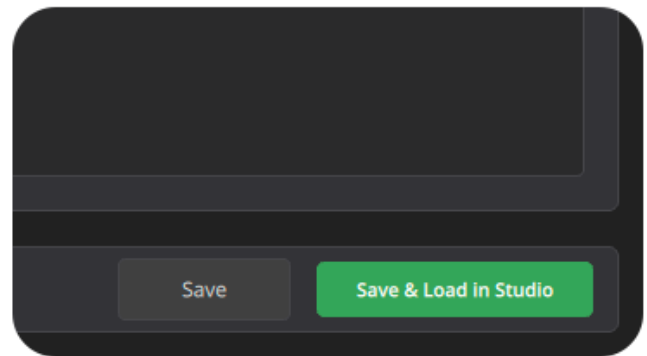




2.4 Open **Mode**, scroll down, and adjust the **Minimum Stroke** setting. For this example, set it to **2 mm**. While very short strokes can be useful for stippled effects, most watercolor applications benefit from longer brush movement to deposit pigment in a more natural, painterly way.

2.5 For this tutorial, these are the only Image Processor settings that need adjustment.

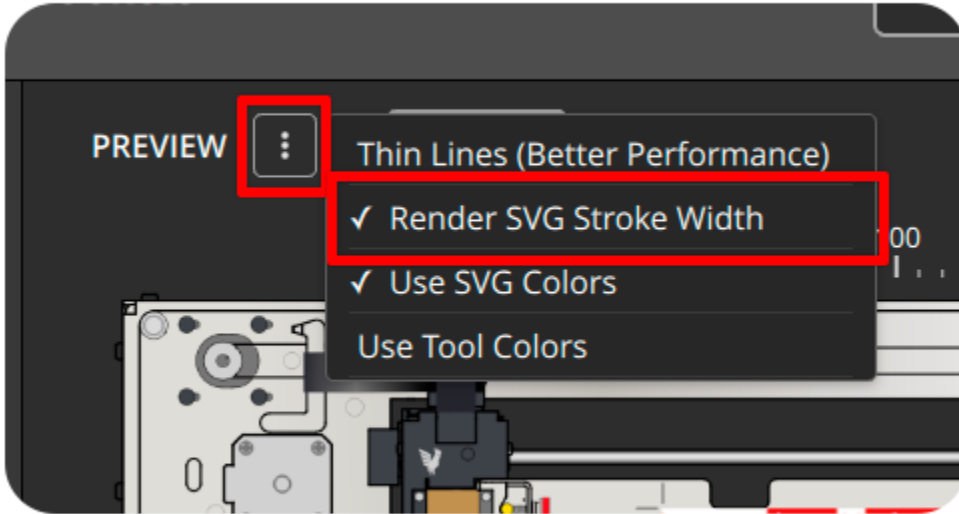
2.6 Now select **Save & Load** in Studio, found in the bottom right corner. Save the SVG to your desktop or another convenient location. When you click save, the SVG will also be loaded directly into Bantam Tools Studio.



3. Preparing your SVG File to Paint

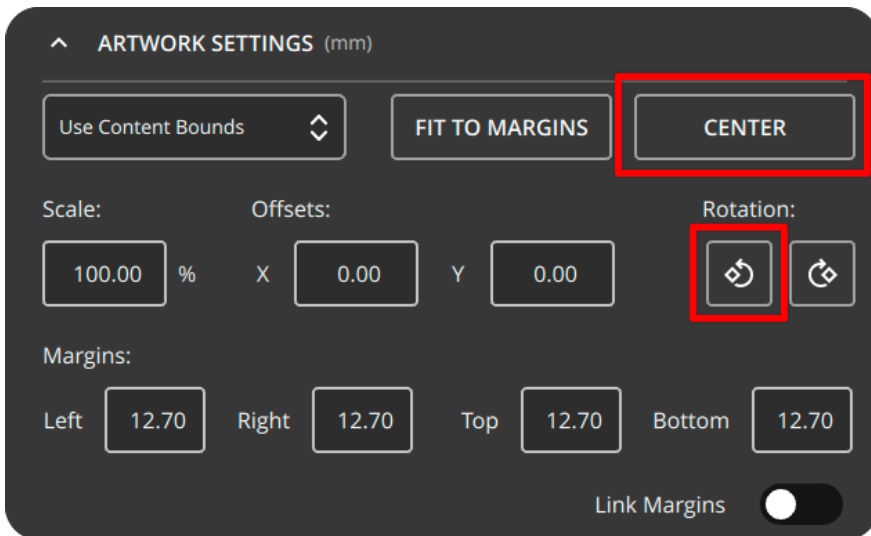
3.1 You will notice that the preview now looks different. The displayed paths represent where the brush will travel, not how the paint will appear. There are no fills, no simulated blending, and no preview of watercolor flow. The preview shows motion only. The painting emerges during execution.

3.2 In the preview window, use the small dropdown menu and select **Render SVG Stroke Width** for a clearer visualization of the brush travel.



3.3 Your paper settings should already be correct for 9 × 12 inch watercolor paper. No adjustments are needed at this stage.

3.4 Next, open **Artwork Settings**. You will see that the artwork is loaded in portrait orientation. To paint this on the WaterColorBot, **rotate the artwork using the rotation controls** until it is properly oriented. Then **click Center to center it** on the page.



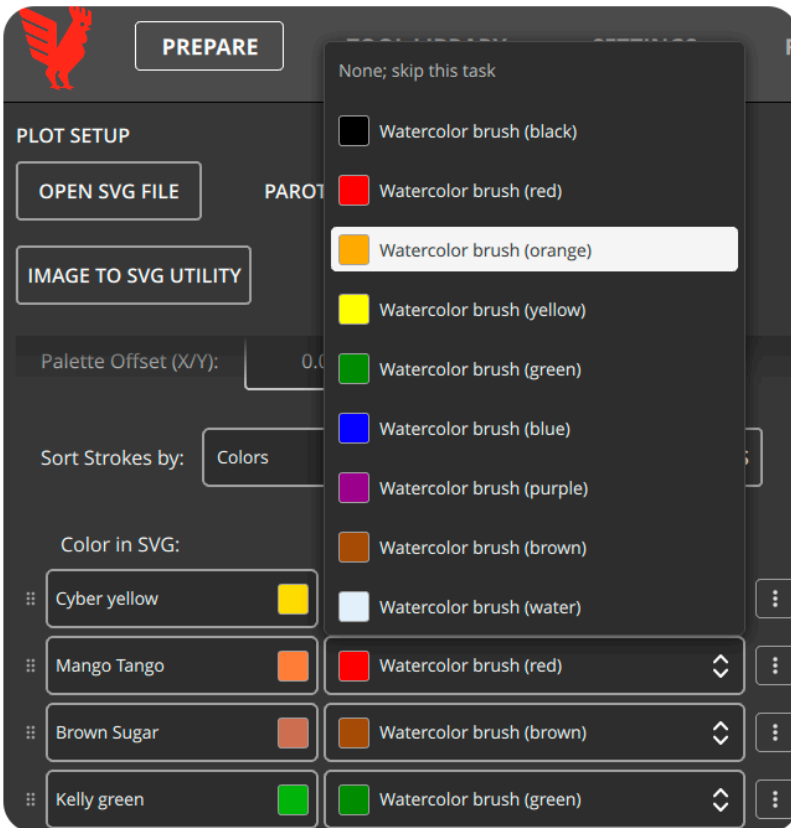
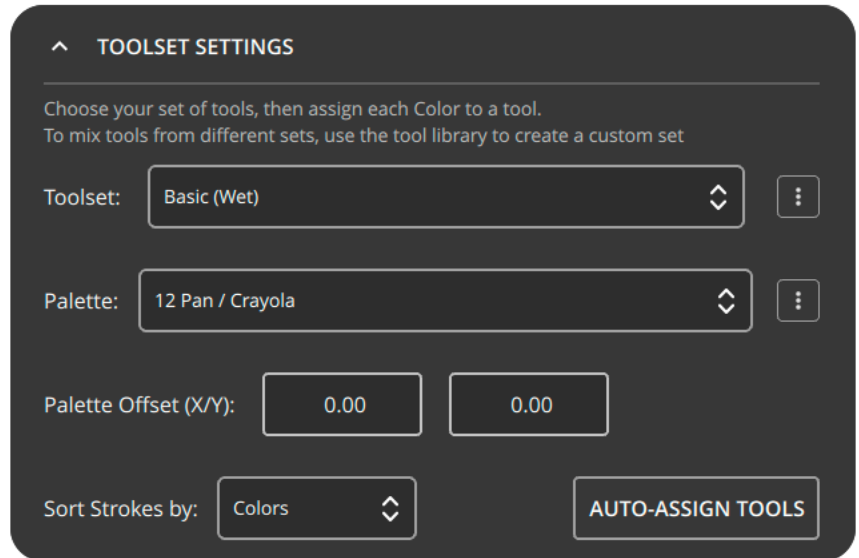
3.5 Open **Toolset Settings**.

3.6 Set **Toolset to Loaded Brush (Wet)**.

This selects a preset from the tool library. WaterColorBot includes multiple toolsets that handle balancing or scraping pigment in different ways. For now, we will use the most basic option.

3.7 Set **Palette to 12 Pan / Crayola**.

This defines the physical palette layout. While other palette accessories are available, this tutorial assumes the standard Crayola palette with four water basins and a Crayola watercolor set.



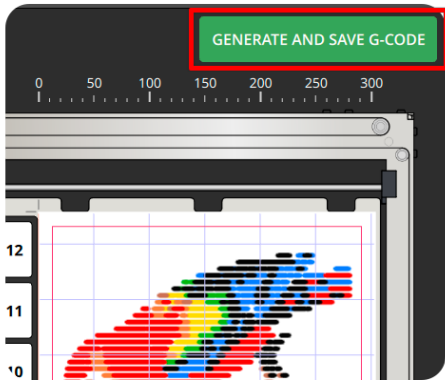
3.8 Click **Auto Assign Tools**. Studio will attempt to match brushes from the toolset to colors in your SVG. For this example, the color orange may intentionally be assigned incorrectly. **Select the tool assigned to orange and change it from red to orange. The goal is to match the colors from your image to the colors available in the paint set.**

3.9 You may also want to reorder the painting sequence. Painting from light to dark is generally recommended. Move red so it comes just after orange, and move brown so it comes just before black. **To reorder colors, click and drag them within the SVG color list using the reorder gripper on the left side that looks like 6 dots.**

3.10 You are now ready to generate G-code for WaterColorBot.

4. Saving & Transferring your G-Code

4.1 In the top right corner, click **Generate and Save G-Code**. Save the file somewhere easy to find, such as your desktop.



4.2 After saving, the setup sheet will appear. This sheet contains details about each layer in the painting file. Click **Save Setup Sheet** to generate a PDF. Keeping this PDF with your G-code can be helpful as a reference for layer order and tool behavior. Also if you decide to make another, you'll have a reference for the settings you used to make the image.

4.3 You can now either select **Open File Location** to manually copy the file to an SD card, or select **Upload via USB** if WaterColorBot is connected to your computer with a USB cable.

Behavior:
Prime/Wash action: Dip 6 times in locations 12, 11, 10, 9, at Water depth, after tool change, and before other actions.
Pre-Refill action: Dip 3 times in location 10, at Water depth, each refill cycle, before main refill action.
Refill action: Every 200.0 mm of travel, dip 3 times in location 4, at Paint depth.
Post-Refill action: Disabled.

Watercolor brush (red)
Color name: Red
Color: ■ (#FF0000) Pen Up: 12.00 mm

DONE **SAVE SETUP SHEET**

OPEN FILE LOCATION **Upload via USB**

5. Getting The Machine Ready to Paint

5.1 Once the file is transferred, move over to the WaterColorBot.

5.2 From the home screen, **select Browse Files**, scroll to your parrot file, and **press the encoder knob to select it**.

5.3 The machine will home and move into the brush down position.

5.4 Continue to the next sections for inserting a brush and securing paper.

Tip: Before starting, you may want to use the included dropper to lightly moisten the paint pans and get them “activated”.

5.5 When everything is set up and ready, press the encoder knob once more to begin painting.

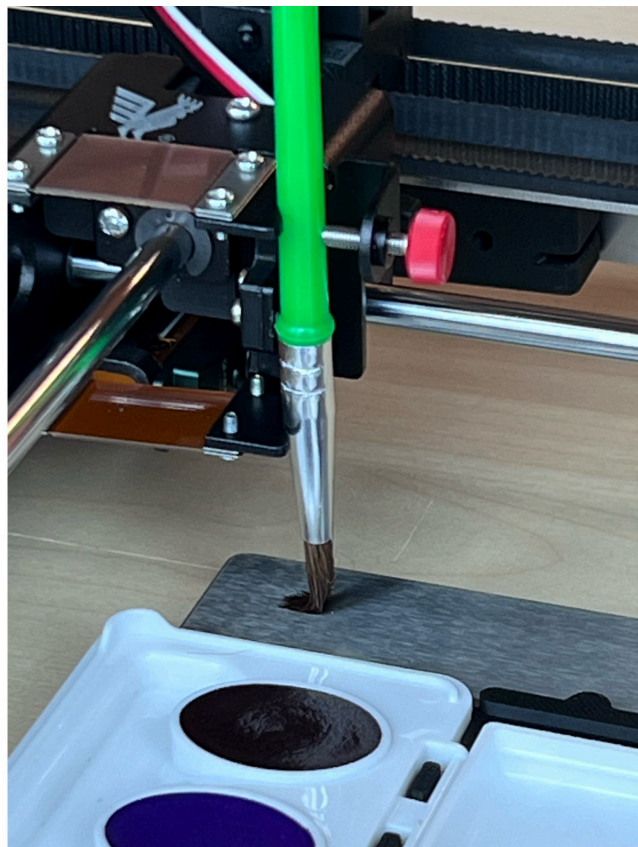
Bantam Tools WaterColorBot™ Inserting A Brush

Inserting your brush begins only **after you have selected and loaded a file**. The machine will home, then move the brush holder to the brush loading position for you.

Place your brush into the tool holder. Lower it to the extended section of the easel until the bristles reach the point where you want them to contact the page. If you want the bristles to compress, lower the brush a bit further. When the brush is how you want it to be while painting on the page, screw down the brush holder.



Less contact = thinner stroke width



Compressed contact = thicker stroke width

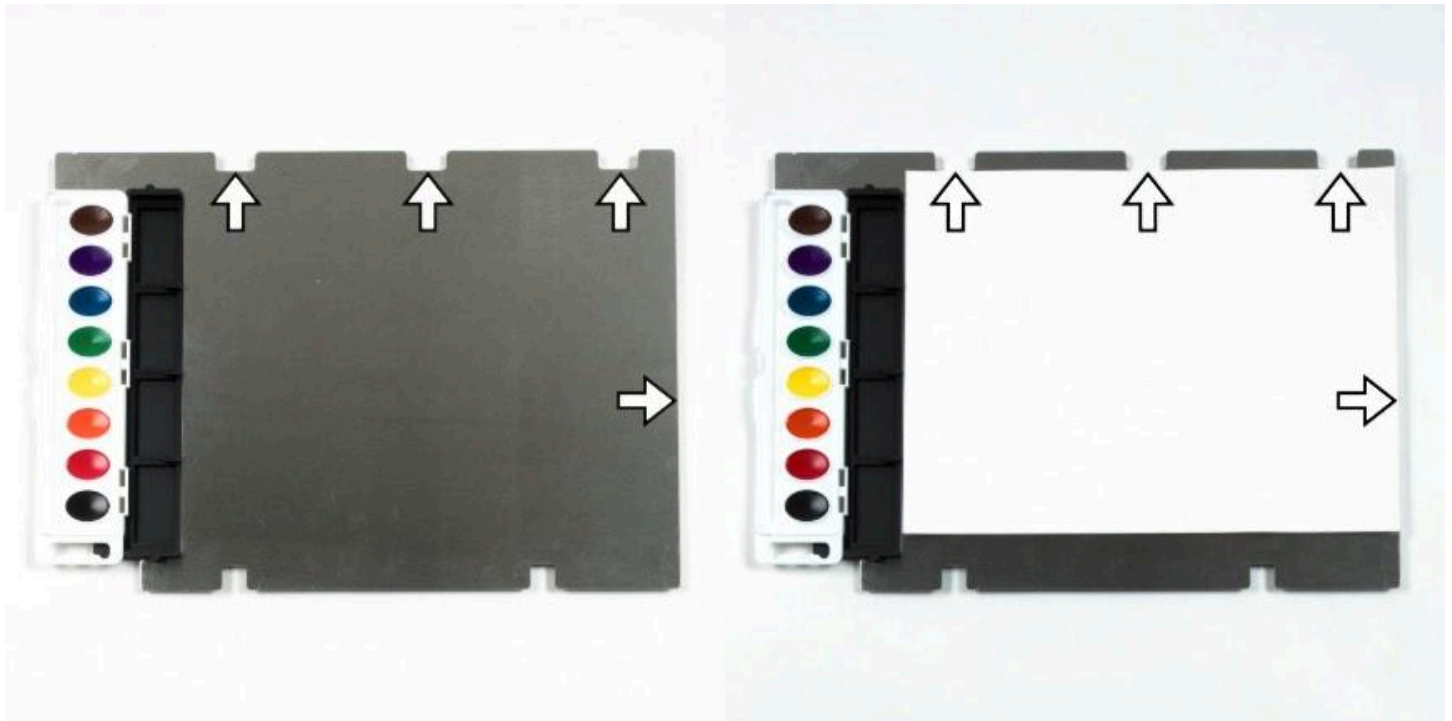


Bantam Tools WaterColorBot™ Paper Holding

Indexing the Paper

Accurate paper indexing ensures the painting aligns correctly with the WaterColorBot coordinate system.

If you are using standard 9 × 12 inch watercolor paper, begin by placing the paper against the **right edge of the easel**. Slide the top edge of the paper upward until it aligns with the **three alignment notches** located along the top of the easel. These notches define the reference position for standard paper sizes.



see the following page for instructions on securing the paper.

Securing the Paper

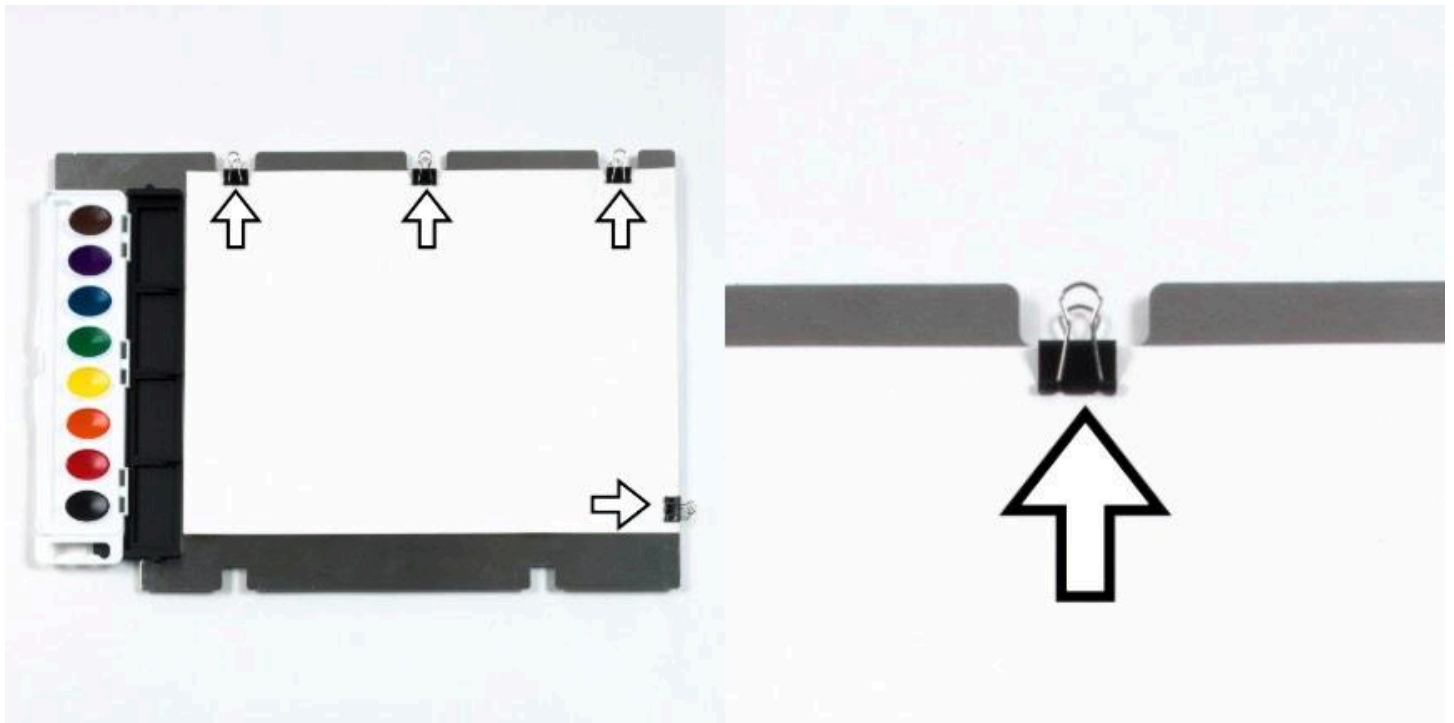
Once aligned, secure the paper using one of the following methods.

Option 1: Binder Clips

Use the included binder clips to hold the paper in place.

- Three notches along the top edge of the easel are designed to provide clearance for binder clips
- Place one clip in each of the three top notches
- For additional stability, we recommend adding a fourth clip at the bottom right corner of the paper

This method is quick and works well for most standard painting sessions.



Option 2: Magnets

The easel is made from stainless steel and works very well with magnets.

- Place magnets along the edges of the paper to hold it flat
- Ensure magnets do not intrude into the painting area
- This method is especially useful for heavier paper or longer paint sessions

Notes

- Always confirm the paper is fully seated against the right edge and top notches before starting
- Small alignment errors can compound over long paintings

Bantam Tools WaterColorBot™ Bantam Tools Studio™

The Bantam Tools WaterColorBot™ primarily runs files generated using Bantam Tools Studio. Bantam Tools Studio is the core software used to prepare, preview, and send painting files to the machine.

For general operation of the software, including installation, interface overview, file import, and non painting workflows, we strongly recommend referencing the Full Bantam Tools Studio Guide. In particular, the **Painting with Bantam Tools Studio** section of that guide is the authoritative reference for how Studio handles paint, brushes, palettes, stroke sequencing, and painting specific settings, and should be reviewed before working with WaterColorBot.

