

Introduction

Disclaimer: The directions described below (X , Y , θ) refer to the nomenclature used in the PrintManager Print Queue Diagnostics Window Offsets Tab, and may differ from the naming conventions used in the Samba documentation. Here, X refers to the up/down web direction, with a positive change moving the image up-web relative to the other blades/printheads, and negative moving it down-web. Y refers to the cross-web direction, with a positive change moving the image towards the front of the printer, and a negative change moving it towards the rear of the printer. θ refers to a twist around the vertical axis.

Preparation/Tools Needed

- A. Printer with sufficient ink and sample paper
- B. 5/64" Allen Wrench for All Printbar Adjustments
- C. Small Flathead Screwdriver for Non-Samba Printhead Adjustments
- D. Samba Cross-Web (Y) Tool
- E. Samba Twist (θ) Tool
- F. Microscope/Eye Loop

Adjustment Units

- A. All Printbars: 100 microns (0.1mm) per revolution in Cross-web (Y) and Twist (θ)
- B. Non-Samba Printheads: 200 microns (0.2mm) per revolution in Y and θ
- C. Samba Printheads Y : From below, CCW = towards rear of printer, CW = towards front
 - a. 1 pixel (0.0212mm) per revolution
 - b. ~10 revolutions of total travel (5 pixels or 0.053mm in either direction)
- D. Samba Printheads θ : From rear of Dovetail, CW = push left side of PH, CCW = pull
 - a. Distance per revolution similar to Y , need to quantify with Samba Tool?
 - b. ~5 revolutions of total travel

Pixel Size by DPI (Samba Highlighted in Green)

DPI	300	360	400	600	1200
Pixel Size [inch]	0.0033	0.0028	0.0025	0.0017	0.0008
Pixel Size [mm]	0.0847	0.0706	0.0635	0.0423	0.0212
Pixel Size [microns]	85	71	64	42	21

Alignment Overview

1. Start with all Printbars and Printheads in the center of travel/nominal positions.
2. Start with all voltages at nominal multipliers, confirm good jetting with Nozzle Check.
3. Check temperatures, vacuum settings, and fly height for ink and substrate.
4. Select a color (often K) as a starting point to become the master alignment baseline.
5. Rough printbar alignment of baseline color to web path, within ~1-2 pixels.
6. Individual head twist alignment using Grey Level images.
7. Fine tune individual head alignment (X- and Y-direction/stitch) using Alignment images.
8. Repeat 5-7 on other colors, compare to baseline color.
9. Adjust voltages to balance colors between heads, revisit X-direction.

Individual Printhead Alignment Details

1. Twist: Around Z-axis, Physical Adjustment

- a. Test Image: *Twist-NozzleCheck_1200_4W*
- b. Look for evenly spaced lines at the Leading Edge of "Yaw Every 7th Line" section.
- c. With Leading Edge away from you, ignore the two furthest left lines. Every other line will be lower than the two on either side of it. Think of the staggered lines in groups of three, with the lower line in the middle. If the middle line is closer to the line to its right, turn the Samba Twist Tool CCW from the back of the dovetail. If the middle line is closer to the line to its left, turn the Samba Twist Tool CW from

the back of the dovetail.

2. Cross-web: Along Y-axis, Physical Adjustment

- a. Test Image: *Stitching_1200spacing_lines4W*
- b. Look for even spacing of lines at stitch junctions.

3. Voltage: Software Adjustment

- a. Test Image: *VoltageChk_1200_4W*
- b. Match darkness of colors using Print Queue Diagnostics Voltage Tab. Typical range of multiplier **0.9 to 1.2**
- c. Must be done before Down-web direction because voltage changes affect jetting speed and therefore down-web placement.

4. Down-web: Along X-axis, Software Adjustment

- a. Test Image: Alignment Pattern or *Stitching_1200spacing_lines4W*
- b. Line up the tops/bottoms of the patterns so the printheads begin printing at the same time across the width of the web.

5. Other Notes

- a. Start with the lowest pixel count/largest drop size because the higher DPI printheads are easier to make very small adjustments to.
- b. Align a darker, easy-to-see color first to create a baseline for the other colors to be compared to for blade alignment.

Appendix

Tools

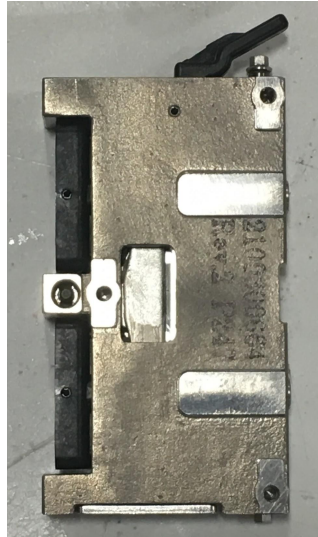


Samba dovetail Stitch/Y-adjustment Tool (PPSI P/N 00-30572)
Used with any hex driver handle.



Samba dovetail Yaw/Twist adjustment tool (PPSI P/N 00-30159)

Orientation



Rear View of Dovetail (view usually blocked by printbar mount) (PPSI P/N 00-24711)
Stitch/Y-adjustment screw seen in top right corner below the black locking tab.



Bottom View of Dovetail. Stitch/Y-adjustment screw seen in top left corner.