StitchPencil Handbook

Digitizing embroidery on iPad

Where the settings live, what each stitch type does, and how a design gets onto your machine.

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docs.stitchpencil.app

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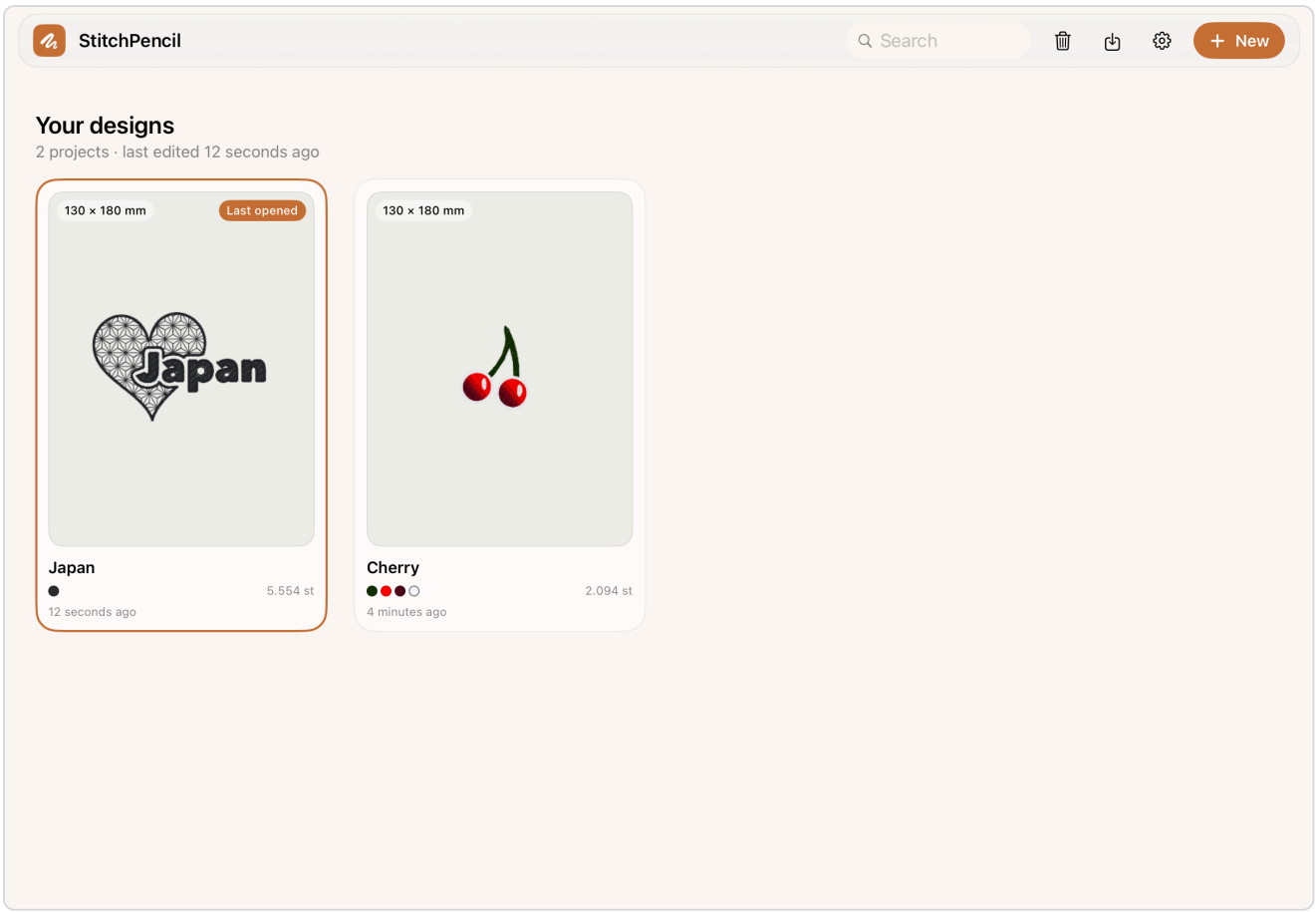
GETTING STARTED · CHAPTER 1

First launch — What do I see, what can I do?

What does StitchPencil show when I open it?

The **Gallery** — a grid of your saved designs. On a brand-new install it's empty, with a dashed stitch line, the note *"Start your first design"*, and a **Start new drawing** button. This isn't an error state; it's just what an empty Gallery looks like.



Empty Gallery with the Start new drawing button

How do I create my first project?

Tap + **New** in the top bar (or **Start new drawing** on the empty state). A **New Project** sheet opens with:

- **Name** — defaults to "Untitled", editable immediately
- **Hoop** — four presets (160×260, 130×180, 100×100, 130×80 mm) plus a **Custom** row with your own W×H in millimeters

Pick a hoop, adjust the name if you like, and tap **Create**. StitchPencil remembers the hoop size and unit you used last time, so the next new project starts from the same defaults.

What do I see right after creating a project?

The **editor**: an empty canvas sized to your hoop, the tool rail on the left (Run / Satin / Fill quick-access tiles, Points, Text, Shapes, Select), and the top bar with the project title, an undo/redo pair, a status chip with the design-check lamp (stitch count · colors · size), and Layers · Color · Export · Settings on the right. Nothing is selected yet — pick a tool from the rail to start drawing, or read the interface overview for a full tour of what everything does.

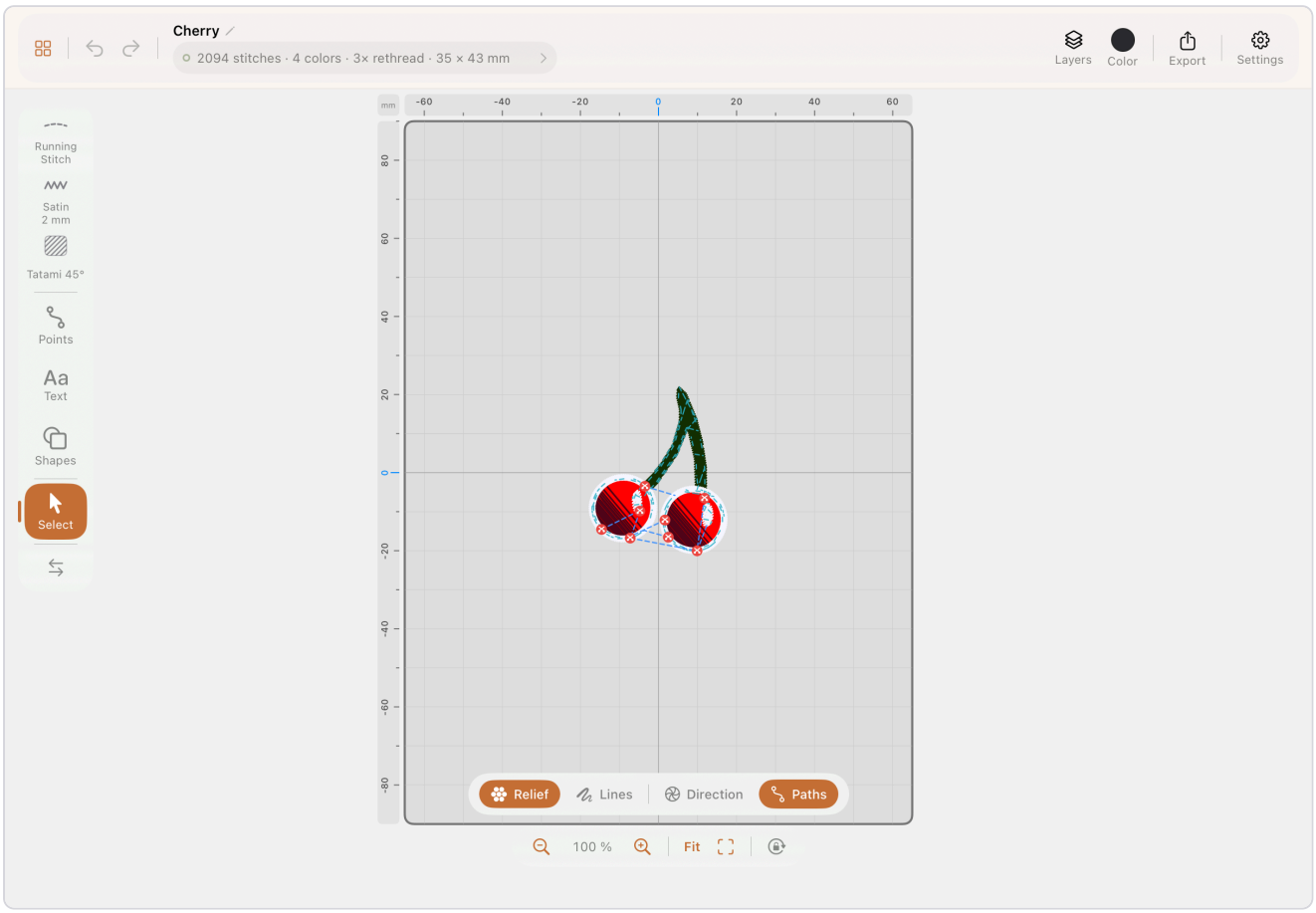
How do I get back to the Gallery?

Tap the small grid icon at the top-left of the editor. Any changes are autosaved before you leave — there's no explicit "Save" button to hunt for.

THE APP · CHAPTER 2

The editor at a glance — What does everything do?

The editor has four zones: a **top bar**, a **tool rail** on the side, the **canvas** in the middle, and a floating **zoom / display bar** along the bottom. Which side the rail sits on depends on your handedness setting — everything below reads the same either way.



The StitchPencil editor with a project open

What's in the top bar?

From left to right:

- **Grid icon** — back to the Gallery
- **Project title** — tap it to rename the project
- **Undo / Redo** arrows
- **Status chip** — a coloured dot plus a one-line summary (stitch count · color count · design size), and a button: tap it to open the **design check** described below
- **Layers** — opens the layers/sequence panel
- **Color** — the current drawing color swatch; tap to open the color inspector
- **Export** — opens the Export Center

- **Settings** (gear icon) — opens Project Settings for *this* project (hoop size, units, grid, fabric…). This is a different settings screen from the app-wide one in the Gallery.

What is the design check?

A report on whether the design will survive being sewn. Tap the status chip — the same pill also sits at the top of the Export Center, right before a file leaves the app — and it opens.

The dot is a traffic light showing the **worst** thing found, never an average:

- **Green** — density, stitch lengths, layering and machine limits all look fine.
- **Yellow** — it will sew, but something is worth a look.
- **Red** — either physics says no (enough thread piles up in one place to deflect the needle), or a machine limit is broken.

Only the machine limits actually stop an export, and those rows are marked **“blocks export”**. Everything else is advice: you decide whether to export it.

Every row carries a **measurement and a remedy** — “Fill 3: denser than you asked · set 0.35 mm, actually 0.24 mm” tells you what to change, where a score out of a hundred would not. Tap a row to jump straight to the thing it is about: the object is selected and the canvas frames it, so a finding about one column in a crowded design does not leave you hunting for it.

Some findings are about a **place** rather than an object — thread stacking happens in the overlap *between* objects, so there is nothing single to select. Those rows jump too: the canvas frames the worst place, outlines the places of **that one row** in its colour, and checks the objects that meet at the worst one in the Layers panel. Only the row you tapped — marking every row at once answers no question, it just lays boxes over the design. Zoom out with **Fit** to see that row’s outlines together.

What does the design check actually look at?

- **Density** — the cover stitches of each fill on their own, against the spacing you set. Underlay and satin edge are excluded, or every small framed shape would read as far too dense; the members of a gradient blend are counted together, or each would look half empty.
- **Stitch length** — how much of the design sits at the very short end, where thread frays and needles suffer.
- **Travel** — what share of the plan is thread crossing the *face* of a shape rather than covering it. Connections that hug a fill’s own outline are not counted: they ride in the row-end penetrations, where they neither show nor add bulk. Only the ones cutting across the middle can telegraph through the cover, and those are what the finding is about.
- **Trims and colour changes** — how many times the machine stops, and how often you rethread. The trims row also says **which colour** causes most of them and how many separate strokes it is drawn from, because every separate stroke ends in a cut. Where those strokes touch, the row suggests **Join** and names the saving — it tests that against the real geometry first rather than hoping. Where they do not touch, it says so just as plainly: joining would not remove those cuts — the thread cannot reach the

next stroke under cover, so a joined group cuts there too, to protect the look. The durable lever is drawing fewer, longer strokes.

- **Long uncut jumps** — thread left lying across bare fabric. A jump the machine *cuts* before making is not counted: that costs a tail to clip, not a thread across your design. The finding also says whether the worst jump runs **between** two objects (re-order them) or **inside** one (look at where the object starts, and at underlay or accordion fading, which sew in a separate pass and have to travel back).
- **Thread on the fabric** — a sewn connection lying on bare cloth with nothing over it. This is the one finding that catches a decision as well as a fault: **Thread to next object → Run** sews a visible connection on purpose, at any distance, and nothing else in the app says it is set — Paste style even carries the setting along to whatever you paste it on. The check measures the plan instead, so it reports the same thing whether you asked for it or a later shape moved off the connection. Connections hugging a shape's own edge are not counted, and neither is thread running under something stitched later — that is what hiding means.
- **Very small shapes** — anything that will sew as a knot rather than a shape.
- **Layers of thread** — measured on the actual stitch plan, not on outlines: overlapping shapes that end up covered are harmless, and what breaks needles is thread on thread. The report counts **places**, not just the worst one, so fixing one makes the number go down instead of promoting the next place into an apparently new finding.

  A layer is thread, not presence. For each object the check measures how much thread it actually lays down at that spot. A satin rung or a running stitch that only clips the corner lays a single thread — that is not a layer, it is yarn on its way somewhere else, and it does not count as one. Otherwise a thread passing through would weigh as much as a full tatami cover, and places would turn red that feel perfectly fine.

  The rows, filed by **cause** — because a count tells you how bad it is and never what to do about it:

  - **Thread piles up** — the red row. Enough layers in one spot to feel, and to push the needle off line. The advice follows what is actually there: the same colour over itself (a stroke drawn along an existing one) wants shortening or redrawing; a fill buried underneath can go with Overlaps; where different lines cross, shorten the one underneath so it ends inside the crossing — it is covered there anyway, so the picture does not change.
  - **Hidden stitches** — a fill ends up underneath later stitches. Select one of the checked fills and press Overlaps. What stays under the covering object is the overlap margin from Project settings: trimmed flush, the two edges would pull apart on fabric and a gap would open.
  - **Lines meet** — outlines and details cross. This is an **info row**, not a task: two lines that cross put two layers on that spot, and the only way to remove one is to leave a gap. Worth knowing for the next design — fewer, longer outline strokes mean fewer crossings.
  - **Fills overlap** — neighbouring fills share a border. Also an **info row**: they are meant to overlap slightly, or a gap opens when the fabric pulls. The width of that margin is in Project settings.

  Only the first two ask anything of you. The others sit below the real findings with an ⓘ and never colour the lamp.

The rule the whole report follows: **a colour means there is something to do, an ⓘ means there is something to know.** No row ever wears a signal and then tells you to leave it alone.

Each row also names the object involved in most of its places. On a hand-drawn design a handful of objects account for nearly everything, so that name is usually the answer to “where do I even start”.

Why does the check not report my seam?

Because it is not one. The check has two tolerances, and both model what actually happens on fabric.

Too few layers. A fill, the neighbouring fill it shares a seam with, the border around them and one line crossing — that is the everyday case, and three of those the app puts there itself: the overlap margin pushes neighbouring fills into each other on purpose, or a gap opens as soon as the fabric pulls. A report that calls that a defect teaches you to ignore it. So it takes more than the everyday case before a place enters the report at all.

Too small. A needle punches a hole about half a millimetre across, and a 40 wt thread lies barely half a millimetre wide. Anything smaller than a few needle widths square is not a patch of fabric at all — it is a few stitches of overlap. If you punch your fills with a little inward offset so no fabric shows through the seam, that is exactly what you get, and it is intentional. The check does not nag about it.

One exception: a genuine knot is reported at **any** size. Bulk is an area problem — fabric goes board-stiff, and that takes area. A deflected needle is a point problem: enough layers in one spot and it wanders or the thread breaks, however small the spot.

Why is the dot sometimes a hollow ring?

Because the check has not run since your last edit. It derives a second stitch plan to measure against, so it runs when you ask rather than continuously — and rather than show a green lamp it has not earned, it shows a hollow one. Tap it and it fills in.

What’s on the tool rail?

- **Run / Satin / Fill** — three quick-access tiles. Each remembers the *last preset you used* for that stitch kind. Tapping the tile that’s already active opens the **Stitch Library** popover instead of just re-selecting it — see Stitch presets & the HUD.
- **Points** — precision node-by-node digitizing, see Points & nodes
- **Text** — the lettering tool, see Shapes & text
- **Shapes** — curated starter shapes, same page as above
- **Select** — the arrange/transform tool, see Select & transform
- ⇄ at the very bottom — flips the whole rail (and every panel that docks beside it) to the other side. See Gestures for the full explanation.

What’s the floating bar at the bottom of the canvas?

Two rows:

- **Display segment** — `Relief` / `Lines` is an exclusive pair (Relief renders a realistic thread look; Lines is the flat schematic view used for digitizing). `Direction` and `Paths` are independent overlay toggles that show stitch direction arrows and machine travel paths. These affect the canvas preview only, never the exported file.
- **Zoom pill** — `−` / `+`, a live percentage, **Fit** (frames the current design, or the whole hoop if it's empty), and a viewfinder icon that always frames the entire hoop regardless of what's selected.

What does the ruler and grid show?

The ruler along the top and left edges is in millimeters or inches depending on your project's unit setting. The origin (0) is the hoop's center — StitchPencil's whole coordinate system is centered on the hoop, not its top-left corner, which matters if you're ever reading raw coordinates off a design.

THE APP · CHAPTER 3

App settings — What can I configure?

Where do I find the app settings?

In the **Gallery**, tap the **gear icon** in the top bar. This is a different screen from the small gear you see *inside* a project — that one is per-project settings. Anything in this sheet applies to the whole app, across every project.

What does “Appearance” control?

A System / Light / Dark segmented picker. “System” follows your iPad’s own appearance setting; the other two pin StitchPencil to one look regardless of the system setting.

Under it sits **Accent color**: a row of six — orange, indigo, teal, pink, green, graphite. Buttons, frames, highlights and the marks on the canvas all follow the one you pick. Orange is what ships and is unchanged by the setting existing. The row is curated rather than a free color picker on purpose: every tone is checked against the warm light chrome and the dark one, so no choice can leave you with a label you cannot read.

What does “Draw with finger” do?

It’s **off** by default — with it off, only the Apple Pencil draws, and a finger only pans/zooms/selects. This avoids accidental strokes from your palm resting on the screen. If you try to draw with a finger while it’s off, StitchPencil shows a one-time hint offering to turn the option on, so it’s discoverable without reading the manual.

What does the “Tool bar side” setting do?

Switches the tool rail — and every panel that docks next to it — between the left and right edge of the screen, for right- or left-handed use. You don’t have to come here to change it: there’s also a small ⇄ chip at the very bottom of the tool rail itself that does the same thing without leaving the editor. See Gestures for more on that shortcut.

What does “Add new objects at the end” do?

It decides where a freshly drawn object lands in the layer list. **Off** — the default — inserts it directly after the layer you have selected, so it sews next: the way a layer-based drawing app behaves. **On** puts every new object at the end of the list, where it sews last and covers everything under it. With nothing selected, both settings append.

Two things are worth knowing with it off. The object you just drew becomes the reference for the next one, so several strokes in a row stay together instead of scattering. And an object inserted in the middle can be covered by something that sews later — that is correct behaviour, not a glitch, and the Layers panel shows you exactly where it sits.

What is “Screen recording” for?

It draws every touch on top of the app, so a recording shows what your hand did. A capture card records the *screen*, and the screen says nothing about the hand: without this, a video of drawing is a video of shapes appearing by themselves, and nobody watching can tell a pencil stroke from a two-finger pan.

The **Apple Pencil** appears as a small purple point that grows with pressure — which is worth seeing, because pressure is what sets a satin column’s width while you draw. A **finger** appears as a wider teal circle. Both leave a short trail behind them, so a swipe reads as a swipe and a tap as a tap.

Hold last input sets how long a contact stays on screen after you lift, from 0.2 to 5 seconds, before it fades. A tap lasts a few frames; without the hold it is gone before the viewer has found it.

It is **off** by default, purely a display aid, and changes nothing about your design or the exported file.

What is the “Fit fills under satin borders” assistant?

When it’s on, drawing a fill *underneath* a closed satin border you already drew automatically snaps the fill’s edge to sit just inside that border — the two-step “draw satin outline, then draw a fill that matches it” workflow becomes one step. Turn it off if you’d rather size fills manually.

What does “Empty trash after 30 days” do?

Deleted projects sit in a trash area rather than disappearing immediately. With this on (the default), StitchPencil clears anything older than 30 days automatically the next time it starts. Turn it off if you want deleted projects to stay recoverable indefinitely.

What’s under “About”?

Read-only version and build-date information — handy to have on hand if you’re reporting a bug during the beta.

What does “Factory reset” do, and is it safe?

It’s a **destructive action**, deliberately placed behind two confirmation layers so it’s hard to trigger by accident:

1. Tapping **Factory reset…** opens a dialog with two distinct options:
    - **Reset, keep projects** — restores every app-wide setting (Stitch presets, HUD layout, color palettes, all the toggles above) to their defaults, but leaves your saved projects untouched.
    - **Reset AND delete all projects…** — the same reset, plus every project in the Gallery. This option asks for a *second*, separate confirmation before it does anything.

If you only want a clean slate for settings — say, to get back the original built-in Stitch presets — the first option is what you want. The second is genuinely permanent; there’s no undo once you confirm it.

THE APP · CHAPTER 4

Project settings — Hoop, units, grid and fabric

Where do I find project settings?

Inside the editor, tap the **gear icon** at the top-right of the top bar. This opens a popover distinct from the app-wide App settings in the Gallery — everything here is saved **inside the project file** and travels with it, including if you send the `.hoop` file to someone else.

Where do I change the hoop size?

Right at the top of Project settings: four presets (160×260, 130×180, 100×100, 130×80 mm) plus width/height fields and an **Apply** button for a custom size. The same preset list appears when you first create a project — this is where you change it afterwards.

How do I rotate the hoop?

The **Rotate hoop 90°** button, right below the hoop size — tap it repeatedly for successive quarter-turns. A **"Rotate design too"** toggle next to it decides whether your artwork rotates along with the hoop or stays fixed while just the hoop orientation changes around it.

Where do I switch between mm and inches?

The **Display units** segmented control (mm / inch) in Project settings. This is a **per-project** setting, not a global one — each project remembers its own preferred unit. Unlike tools where units are an app-wide preference, this one is per project: change it here, per project, not in the app settings sheet.

Where's the grid?

A segmented picker: **Off**, 1 mm, 5 mm, 10 mm or 25 mm (¼ in, ½ in, 1 in in inches). It never touches the stitched result.

With the grid on, a dragged selection catches its lines. The reference is the selection box's lower-left corner, and the catch reaches a quarter of the spacing — at most 0.5 mm — so a fine grid catches finely and leaves room to move freely between the lines. Dragging on always overrides the catch.

What does "Minimize color changes" do?

When it's on, StitchPencil batches objects that share a color together in the machine stitch-out sequence wherever it's safe to do so (i.e. without changing what's visually on top of what) — fewer thread changes at the machine. It's an optimization over your drawing order, not a replacement for it; see Layers & sequence for how the actual stitch-out order is shown and can be adjusted by hand.

What does "Cut thread when jumping" do?

A **Rarely / Normal / Often** segmented control right under "Minimize color changes". It sets how far the thread is allowed to travel from one object to the next before the machine cuts instead of dragging a conn-

ecting thread across.

- **Rarely** — the fewest machine stops, but longer loose threads to snip by hand once the hoop comes off.
- **Normal** — the default, and the right answer for most designs.
- **Often** — the tidiest sew-out, at the cost of more stops and more thread ends to secure.

Whatever you pick, connectors that end up **hidden under later stitching** are never cut — there is nothing to snip, so there is no reason to stop the machine. If you find yourself trimming a lot of threads by hand, move the control toward Often; if the machine keeps stopping, move it toward Rarely.

What does “Hide travels” do?

The default for Join. Switched on, connections inside a joined group run over thread that is already sewn instead of being cut: hidden under stitching that comes later, or doubled along a line. Where that is impossible the thread is cut anyway — no connection ever runs across bare fabric.

Switched off, the machine ties off and cuts after every member of the group. Some prefer the extra stops to any doubled thread.

Changing the default here also applies to the joined groups already in the project. Each group can still decide for itself afterwards: the switch of the same name sits in the group inspector.

What does “Smart satin ends” do?

Applies push/pull compensation at the point where two satin columns join, so the seam doesn’t visibly gap or overlap once the thread has pulled the fabric in during stitching.

What is “Crossing underlay”?

Off by default. When enabled, StitchPencil adds an extra underlay bar specifically where two satin columns cross each other, giving the intersection more stability under the top layer of stitching.

What does “Overlap under covers” do?

A **Tight / Normal / Generous** control sitting under Target fabric, because it describes the cloth rather than any one shape.

It sets how much of a fill Remove overlaps leaves tucked underneath the object covering it. Trim flush and the two edges pull apart on fabric until a gap shows along the seam; leave too much and you sew bulk nobody sees. Softer and stretchier cloth wants more. **Normal** is the default; nothing changes unless you move it.

Unlike its neighbours here, this setting does not regenerate anything on its own — it is read at the moment you run Remove overlaps, and that operation edits the object’s shape. Changing it later cannot un-cut what was already cut.

What does “Target fabric” affect?

A Woven / Knit-Jersey / Fleece-Towel picker. It drives density, underlay choice, and pull compensation throughout the whole project — stretchier fabrics get more underlay and a bit more pull compensation

omatically. The same field reappears inside the Export Center the moment a machine file is selected, so you can confirm or change it right before sending a file to your machine.

Concretely, on Knit/Jersey a fill's row spacing tightens to the value that sews closed on a T-shirt, pull compensation goes up a little, and the fill's underlay changes to suit stretchy cloth. Fleece tightens a little further and keeps a full lattice under the cover, because pile needs holding down. None of this is written into your objects — the compensation is applied while the stitches are generated, so switching fabric back restores the designed values exactly. The Fill inspector spells out the resulting row spacing underneath the density slider, so you can always see what the machine will really sew.

THE APP · CHAPTER 5

Gestures & hidden shortcuts — What's easy to miss?

Some things in StitchPencil are quicker with a gesture than with a button, and a few controls are easy to walk past. This page collects them all in one place.

How do I undo and redo without the toolbar buttons?

Two-finger tap anywhere on the canvas undoes; **three-finger tap** redoes. Both work in Select mode too — a first finger that has not moved yet gives its arrange gesture up when the second one lands. Finger-only — it deliberately does nothing with the Apple Pencil, and it won't fire if your fingers move before lifting (so it doesn't fight with panning or pinch-zoom).

If an edit ever disappears while you are zooming, this is what did it: pinching out from 100 % to 50 % takes more than one grip, and the brief two-finger touch *between* two grips can be short and still enough to read as a tap. A message says so when it happens — "Undone (two-finger tap)". You can switch the gesture off under **App settings → Input → Undo and redo by tapping**; the toolbar arrows are unaffected.

What does double-tapping with the Pencil do?

Toggles between **Draw** and **Select** mode. It follows whatever you've set as the system-wide Apple Pencil double-tap action in iPadOS settings, and it's automatically disabled while you're in the middle of node-editing or cutting a hole, so it can't interrupt a precision edit.

How do I switch the tool rail to the other side?

Two ways: the **Tool bar side** picker in App settings, or a small ⇄ chip at the very bottom of the tool rail itself — tap it and the whole rail, plus every panel that docks beside it, mirrors to the other edge instantly. Handy for right-/left-handed use without leaving the editor.

Why won't the canvas pan when I use the Apple Pencil?

By design — pinch-to-zoom and two-finger panning only respond to **finger** touches. The Pencil is reserved entirely for drawing and precision editing, so it can never accidentally scroll the canvas mid-stroke.

What does hovering the Pencil near the screen do?

On hardware that supports Pencil hover, StitchPencil shows a live rubber-band preview while you're in the Points tool — you can see where a node will land before you actually tap it down.

How do I favorite a Stitch preset for the floating HUD?

Long-press (or swipe) an entry in the **Stitch Library** popover and choose **Add to HUD**. Once you've favorited at least one preset, a small floating "puck" appears on the canvas; tap it to fan out up to 8 favorites

in a ring. You can drag the puck itself anywhere on screen — its position is remembered. See Stitch presets & the HUD.

How do I pin a color to this project without adding it to a whole palette?

Long-press a swatch in any catalog to **Pin to Project Colors**; long-press an already-pinned chip in the Project Colors strip to remove it again. See Color & thread.

How do I reorder layers?

Long-press a row in the **Layers** panel and drag — there's no separate "edit mode" to enter first. See Layers & sequence.

Is there a gesture for reshaping a gradient blend?

Yes — drag a divider on the **gradient bar** to redistribute how much of the gradient each color zone gets; tap a divider (rather than dragging it) to open a softness slider for that specific transition. See Blends.

STITCHES · CHAPTER 6

What is a Stitch? — Objects, presets and parameters

What does StitchPencil mean by a “Stitch”?

A **Stitch** is StitchPencil’s basic unit of embroidery: one drawn object plus the recipe that turns it into actual machine stitches. Every Stitch has a **kind** — Run, Satin, or Fill (Tatami) — and a set of parameters specific to that kind (length, width, density, angle…). The kind determines which parameters exist; the parameters determine exactly how the needle moves.

Two related but distinct things share the name “Stitch” in the app, and it’s worth keeping them apart:

- A **preset** is a named, reusable Stitch — “Running Stitch,” “Satin 2 mm,” “Tatami 45°” — stored in your Stitch Library. Presets are what the tool rail’s quick-access tiles remember.
- An **object** is one specific Stitch you’ve actually drawn on the canvas. It *starts* from a preset’s parameters at the moment you draw it, but from then on it’s independent — editing the object later never changes the preset it came from, and editing the preset later never reaches back to touch objects you already drew with it.

How do I create a Stitch object?

Pick a tool on the rail — **Run**, **Satin**, or **Fill** — and draw: a stroke for Run or Satin, a closed shape for Fill (or use Shapes / Text to place a ready-made one). StitchPencil’s engine generates the actual stitch plan live as you draw, using whichever preset is currently active on that tool’s rail tile. Points is a fourth way in — precision node-by-node placement instead of a freehand stroke, for the same three kinds.

How do I change a Stitch’s settings after it’s already drawn?

Switch to **Select**, tap the object, and its inspector opens with every parameter live-editable — drag a slider and the stitches on canvas regenerate immediately, so you’re always looking at the real result, not a preview. This is the same inspector regardless of whether the object came from a built-in preset, one of your own, or was drawn from scratch.

Sliders are not the only way in. Tap the number beside a parameter and a keypad opens right there: the current value, the unit, and the range the parameter allows, before you change anything. Type 3.8 and it stays 3.8 — no dragging for a value you already know. A number outside the range is not refused, it lands on the nearest value the parameter can hold. The iPad keyboard never comes up, and the slider stays visible next to the pad.

What do the common parameters actually mean, kind by kind?

The three kinds don’t share one parameter set — each solves the “how densely do I cover this with thread” question differently:

Kind	Core parameters	What they control
Run	Stitch length, Passes	How far apart needle penetrations sit along the line; how many times the line is re-stitched (3+ passes = bean stitch)
Satin	Width, Density (auto), Pull compensation	How thick the zigzag column is; how tightly packed the zigzags are (follows width automatically); how much the digitizing widens to counter fabric pull
Fill / Tatami	Angle, Density, Stitch length, Pattern	The compass direction of the scanline rows; the spacing *between* rows; the spacing *within* each row; the row-offset pattern (Diagonal/Brick/Scatter/Wave/Chevron/Ring)
Sashiko	Motif, Scale, Angle, Stitch length	Which lattice pattern covers the shape; the lattice cell size; its rotation; the running-stitch spacing along the lattice lines

The throughline across all of them: **too dense** wastes thread, slows the machine, and can stiffen or even tear lightweight fabric; **too sparse** looks thin and may leave gaps in coverage. Every default preset is tuned to a sane middle ground — the built-in presets are a safe starting point precisely so you don't have to find that balance from zero.

Do all kinds have underlay, and where is it?

Satin and Fill do; a Run has nothing to stabilize, so it doesn't. In both cases it's an **Underlay** toggle in the object's inspector with an **Auto / Light / Standard / Firm / Custom** ladder — same names on both, but different passes underneath, because a column and an area need different support. The details are on the Satin and Fill pages.

If you never touch it, **Auto** follows your project's Target fabric, which is the right answer for most work.

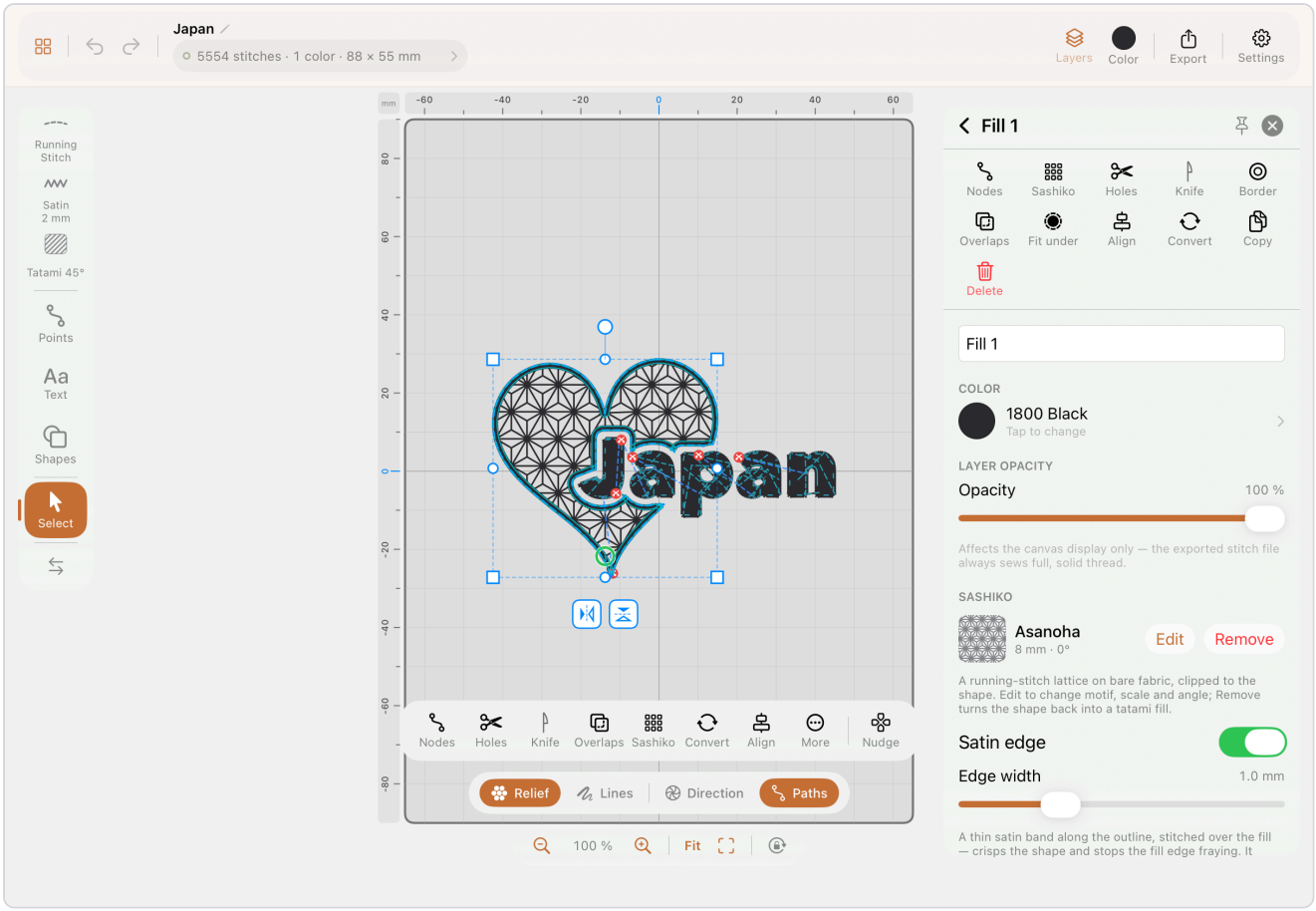
Where does an object start stitching?

At its **entry point** — the little green circle that appears on the outline whenever the object is selected. StitchPencil picks it automatically (hollow ring), and you can drag it anywhere along the outline to pin it yourself (filled circle). It's worth knowing about because it decides where the object's one visible seam ends up. See Select & transform.

Does opacity or color count as a "Stitch" setting?

Color and **Layer opacity** exist on every object regardless of kind, but they're not part of the generation recipe — color is which thread it sews in, and opacity is a canvas-preview-only dimmer (the exported file always sews full, solid thread). See Color & thread and Layers & sequence.

Below is a Fill object's inspector — note how the Sashiko section, Satin edge toggle, color and opacity all sit together in the same panel described above:



Fill object inspector showing color, layer opacity, and Sashiko settings

STITCHES · CHAPTER 7

Running stitch — Length, passes and bean stitch

What is the Run tool for?

A simple line of straight stitches following your stroke — for outlines, fine detail, or as a connector between other objects. It's the leftmost quick-access tile on the tool rail and remembers the last Run preset you used.

What does "Stitch length" do?

Sets the distance between needle penetrations along the line. Shorter lengths (around 2 mm) look denser and finer; longer lengths (3–4 mm) sew faster and use less thread but look coarser up close. A shorter stitch length also follows tight curves more faithfully, since the line is approximated by more, smaller straight segments.

What are "passes", and what is bean stitch?

Passes control how many times the needle travels the same line: **1×** is a plain running stitch, and **3× or more** is what's usually called **bean stitch** or **triple run** — the machine goes forward, back, and forward again over each segment, which builds up a visibly thicker, bolder line than a single pass. StitchPencil offers 1/2/3/5/7 passes; 3 is the traditional "bean" default.

Do pencil pressure and smoothing affect a Run stitch?

Both are configured per-Stitch-preset in the **Pencil** section of the stitch editor, not here directly — smoothing settles out small hand-tremor in your stroke, and (where your hardware supports it) pressure can drive line weight live as you draw. See Stitch presets & the HUD for where those live.

When would I use Run instead of Satin for an outline?

Run is the right tool when you want a thin, single-pass-weight line, or when you're connecting two shapes with an invisible-in-the-final-piece travel path. If you want a heavier, filled band of stitching along a stroke instead, that's Satin.

STITCHES · CHAPTER 8

Satin — Width, density and edge behavior

What is the Satin tool for?

A zigzag column of stitches that fills the width of your stroke — the classic look for letters, borders and thick outlines. Draw a stroke and StitchPencil builds two “rails” (the column’s edges) from it automatically.

Satin also comes the other way round: draw a closed **outline** and let the shape decide the width. That is the satin area — for pupils, leaves and petals.

What does “Width” control, and is density automatic?

Width is the column’s thickness in millimeters — the distance from one rail (edge) to the other. A narrower column reads as a fine line; a wide one reads as a bold, solid band. Density (how tightly the zigzags are packed along the column’s length) follows the width automatically via **auto-spacing** — a wider column gets proportionally wider stitch spacing so it doesn’t become absurdly dense, without you having to tune the two independently. In practice this means: change Width, and the column simply looks thicker or thinner while staying visually consistent — you don’t also have to hunt for a matching density value.

Width runs from 1 to 20 mm. No machine format carries a stitch much longer than about 12 mm in one throw, and in practice a stitch much over 10 mm snags. So a wide column is sewn as a staggered split — several narrower passes side by side, their penetrations scattered so they don’t line up as a seam.

Over foam the split holds off as long as it can, to 12 mm, because a penetration in the middle of a puff column compresses the dome instead of spanning it. Past 12 mm even a foam column is split, and it will come out flat down the middle — the design check warns you before the machine does.

What is pull compensation, and why does it scale with width?

Stitching pulls fabric in slightly along the direction of the zigzag, which can make a satin column look narrower on fabric than it does on screen. Pull compensation widens the digitized column very slightly to counter that — and it scales **proportionally with column width**, since a wide column pulls in more than a thin one.

What do the underlay firmness options mean?

Auto / Light / Standard / Firm / Custom — the underlay is a lower stitching pass that stabilizes the fabric before the visible satin top-stitching goes down. Firmer settings add more underlay stitches for stretchier or looser fabrics.

- **Auto** — narrow columns get a center run plus a zigzag; wide ones add an edge run along both rails. Where that threshold sits follows your project’s Target fabric.
- **Light** — center run only.
- **Firm** — the full stack (edge run, center run, zigzag) at any width.
- **Custom** — you pick the individual passes yourself.

When should I use Custom underlay?

When a specific column needs something the ladder won't give you — a wide column with only an edge run, say, or a zigzag with no center run underneath. Switching to **Custom** opens toggles for the three underlay types, and it opens them **already showing whatever the ladder was building for that object**, so you start from what you have rather than from a blank slate.

The stack always sews in the same order regardless of the order you tick the boxes: edge run, center run, zigzag. Very narrow columns still drop the zigzag automatically — at that width it would only produce loose strays.

What does 3D Foam / Puff mode do?

Stitching over embroidery foam is not a satin setting any more — it is a **puff section**, a layer group that owns the foam and everything it needs: the placement outline, the machine stop, the tack run that perforates the foam, the cover density, and the decision at every open end. Select your columns and use **Convert → 3D Puff**.

It has its own page: 3D Puff — stitching over foam.

Wide satin without foam is a separate thing: above the normal threshold, wide columns automatically get a staggered split (several narrower passes instead of one very wide one) so they stay stitchable.

What is Accordion fading?

A second colour made of fabric instead of thread. The stitch spacing travels along the column from your set density to a looser one, so the cover opens up and what shows through the gaps is the material you're stitching on. One thread, one width — only the rhythm changes.

Five rungs in the **Fading** picker, no curve editor: the shape lives in the profile, and all you pick is which way the column opens.

- **Off** — an ordinary satin column, unchanged.
- **Fade out** — opens toward the end of the column.
- **Fade in** — opens toward the start.
- **Both ends** — dense at both ends, open through the middle.
- **Feather** — opens in bands, which reads as fur or feathers.

Three things follow automatically once a fade is on:

- **Auto spacing steps aside.** It exists to keep density even as a column widens; with a fade the unevenness *is* the effect.
- **The underlay thins with the cover**, by the same proportion rather than by a fixed amount, so it never stays dense under a stretch that is meant to open.
- **The underlay stays out of the open stretches.** Support that shows through the gaps would defeat the whole thing, so the open zones get none — and where a hidden stretch is long enough to be worth its own thread, it is sewn as a separate pass and the machine trims before travelling to the cover.

Because the fabric is doing half the work, this needs contrast: a fade over thread-coloured fabric shows nothing.

Can a whole word fade instead of each letter?

Yes — that's the difference between setting **Fading** on a single object and on a **group**. A per-letter fade looks like a mistake rather than an effect, so when you set it on the group, the fade runs across the entire group along its longer side and the letters open one after another.

What happens at a tight curve or sharp corner?

Three things, all automatic.

Short-stitching de-stacks the inner edge of a tight curve or cap, so stitches don't pile on top of each other.

A corner is mitred or capped, depending on how sharply it turns — the same rule the big desktop programs use. This is the one you'd notice most if it were missing: a satin column is built by stepping out sideways from its centerline, and at a corner the outside edge has to run out *past* the corner point to make the tip — the sharper the angle, the further. Without it a corner comes out blunt, and the tip of a V, an M, a star ray or a leaf simply isn't there.

- **Mitred** — the two legs meet in a point, and the band runs out past the drawn vertex to build it. This is what a moderate corner gets, and what keeps a star's tips sharp.
- **Capped** — when the tip would have to reach more than twice the band's half-width past the corner, the point is bevelled instead, and the rungs fan around a single inner knee. That is what a hand digitizer does at a spike, and it is why a very sharp point doesn't fly off into a needle-breaking spear.

You switch nothing on, and there is no setting to get wrong. A **warning** appears only when the column is genuinely too wide to bend around a curve that sharp — the inner edge would pinch into a starburst. It says the radius it measured, and it can mark the spot on the canvas.

Why does the width slider stop, and what is the orange part of the track?

Two different limits, and they mean different things.

The orange zone is the outline limit — a mark, not a wall. Past it, a band this wide stops edging the shape and starts covering it: the arms of a star meet in the middle and the outline reads as a solid blob. The slider still goes there, because a deliberately fat band is a legitimate choice, and a caption under it says what is happening — for a genuinely solid shape a Tatami fill is the cleaner way to get there. Where the mark sits depends on the shape: a 40 mm star runs out of room at around 6 mm, a circle of the same size not until well past 30.

The hard stop is the corner limit, and there the knob really does refuse. The sharpest corner in a closed shape can only carry so much band before the geometry stops being buildable — on that same 40 mm star, around 10.7 mm. Push the slider against it and it stays put; on release a message says *"Width stops at 10.7 mm — the corners cannot carry a wider band."* Typing the number in gives the same answer, and this is the reason a shape no longer degenerates into an undefined blob when you keep dragging.

Shapes with no sharp corners have no hard stop at all — a hexagon's 120° corners never bind, and its slider runs the full range.

If I scale a satin object, does the band get wider?

No. A band whose width is a **setting** — the uniform ones the Shapes tool and ordinary drawn rings produce — keeps its millimetres when you scale the object. Drag a 3 mm star from 44 mm across to 60 mm and it is still 3 mm of satin; only the shape grew. That is what the machine cares about, and what the desktop programs do.

The exception is a band whose width **is** the drawing: a pressure-drawn stroke, per-node widths set in the Points tool, and lettering. There the width is part of the artwork, so it scales with it.

Density, stitch length and pull compensation are physical millimetres in every case, so they never scale — the stitch count adapts by itself.

How do I control exactly where the satin rails run, point by point?

Switch to the Points tool and use its Line vs. Pairs chip — Pairs lets you place the two rail edges independently instead of deriving them from a single centerline stroke.

How does Satin relate to Sashiko?

A **closed** satin border can host a Sashiko fill underneath it as one combined action — but an *open* satin path can't; you'd convert it to a fill first. See the Sashiko page for the exact rule.

Can I turn a satin column into running stitches along it?

Yes — **Convert → Run**, which asks how many, up to six.

1 Run (centre) is what Convert → Run always did: one line down the middle. Ask for more and they spread evenly across the band's width — three sit at a sixth, a half and five sixths across it.

The lines follow the column's own rungs, so they hold their spacing around a curve and through a mitre — where offsetting a centreline would fold over itself on the inside of the bend. None of them sits exactly on a rail, because a run sewn on the edge of a shape reads as a wobble and falls half outside on a curve.

Use it for a quilted look, for a stroke shaded with two or three passes, or for a band too wide to sew as satin on the fabric you have.

STITCHES · CHAPTER 9

Fill (Tatami) — Angle, density and fill patterns

What is the Fill tool for?

A closed region filled edge-to-edge with rows of straight stitches — the standard way to cover a large area. Draw a closed shape (or use one from Shapes) and pick Fill from the rail.

What does increasing or decreasing Density actually look like?

Density is the gap between one row of stitching and the next. Turn it down (tighter spacing, sometimes shown as a smaller millimeter value) and rows pack closer together — fuller, more opaque coverage, more thread used, and on lightweight or stretchy fabric, more stiffening. Turn it up (wider spacing) and the fill gets faster and lighter, but past a certain point the base fabric starts to show through between rows. There's no universal "correct" value — it's a trade-off you make per fabric and per design, which is why it's an editable slider rather than a fixed constant.

What's the "Satin edge" toggle I see on some Fill objects?

A thin satin band stitched along the fill's outline, in the same thread as the fill itself — it crisps up the edge and stops the fill's raw border from fraying, without needing a separate Border object. Toggle it on and an **Edge width** slider appears to set how wide that band is (typically kept quite thin, around 1 mm). This is different from adding an explicit Border — Satin edge is a lightweight, same-color finish built into the Fill object itself.

What does "Angle" do, and what if my shape curves?

One fixed direction for every row in the fill. For a shape that curves — a banana, a wavy ribbon — a single angle can look wrong on part of the shape; draw a **flow line** instead, right below the Angle slider, to have the rows follow the curve rather than a straight compass direction.

What do density and stitch length control?

Density (row spacing) sets how close together the parallel rows of stitching sit — tighter spacing gives fuller coverage but uses more thread and can stiffen fabric more. **Stitch length** sets the spacing of the needle penetrations *within* each row.

The two are less interchangeable than they look. Coverage depends on **density alone**: the thread laid down per square millimeter is exactly one divided by the row spacing, and stitch length does not enter into it. What stitch length changes is how many needle penetrations that same thread costs — a 4 mm row stitch puts down as much thread as a 2.5 mm one with about a third fewer holes in the fabric, which on knits usually looks better rather than worse. So if a fill looks thin, tighten the density; lengthening or shortening the stitch will not close it.

Why does my fabric still show through — and what should density be?

On jersey with ordinary 40wt thread, coverage closes at a row spacing near **0.20 mm**, and the change is abrupt — 0.22 mm can still speckle. The factory Tatami presets start at **0.25 mm**, which is the right value for stable woven cloth; on Knit/Jersey the app tightens it for you. That is why the fabric setting matters so much.

Does thread weight change the density I need?

Yes, and the app cannot know which spool is on your machine — so this one is yours to set. The number on the cone (40, 60, …) is a fineness figure, not a length: higher means finer. It describes mass per unit length, and a thread's *width* — which is what actually covers fabric — grows with the square root of that. A 60wt therefore lies down roughly 80 % as wide as a 40wt, and wants roughly 80 % of the row spacing to cover the same way.

Starting from 0.20 mm for 40wt, that gives a rule of thumb. Treat it as a starting point and sew a test swatch with your own thread:

Thread	Row spacing for comparable coverage
30wt (thicker)	~0.23 mm
40wt	**0.20 mm**
50wt	~0.18 mm
60wt	~0.16 mm

The density slider goes down to 0.15 mm, so there is room for finer thread. The automatic fabric compensation only tightens so far by itself; a value you set below that is always kept as you set it. Do remember the rest of the setup: finer thread usually wants a finer needle, and the same area needs more metres of it.

Two things follow. If your fill looks open on a T-shirt, check that the project's fabric is set to Knit/Jersey rather than Woven — the compensation only happens when the app knows what it is sewing onto. And an object keeps the density it was created with. If an older design looks thin, set its density explicitly — or copy the style from a fresh object.

And the open end of the slider — what are 2 or 3 mm good for?

Rows this far apart no longer cover, and for two jobs that is the point.

One is the **knockdown**: a coarse grid sewn before the design itself, flattening the pile of towelling, fleece or plush. Without it the motif sinks between the loops and comes out fuzzy. The **Knockdown** stitch in the fill list is set up for it: 2 mm row spacing, 0° angle, no underlay, no pull compensation. The angle is 0° because ordinary fills sit at 45° — the design then crosses the knockdown instead of sinking into its gaps.

How to use it:

1. Finish the design.

2. Pick the **Knockdown** stitch and drop a rectangle over the design with Shapes, a little larger than the design itself.
3. Move it to the bottom of Layers so it sews first.

On colour: in the colour of the first design object the two merge into one colour block and you save a thread change. In a fabric tone the margin sticking out past the design disappears — at the cost of one re-thread.

The other job is the **open fill as an effect**: between 1.5 and 2.5 mm the fabric colour mixes visibly into the shade instead of being covered.

The slider runs to 3.0 mm. Two things step back up there. The automatic fabric compensation leaves a grid this open alone — otherwise towelling, of all fabrics, would have tightened the knockdown right back up. And the check stops calling a fill open once something sews over it: then it is a foundation, not the face.

What are the six fill patterns, and how do I choose?

Opened from the pattern grid in the Fill inspector:

- **Diagonal** — the default weave, an even zigzag look
- **Brick** — a calmer, offset-row look, like brickwork
- **Scatter** — randomizes the row offset to hide any visible seam lines
- **Wave** — the rows themselves undulate
- **Chevron** — a zig-zagging texture phase
- **Ring** — rings that follow the shape's own outline inward rather than a straight scanline direction, useful for organic shapes where you want the texture to read as "wrapped around" the form. Ring is a solid fill of true parallel offsets, not a decorative curve family: coverage stays even across the shape, and holes are respected

Can I get a pattern into the surface without a second colour?

Yes — that's Carving, a block further down this same inspector. You draw a line and the fill's own needle holes line up on it, so a groove appears in the stitched surface for almost no extra stitches. Ten patterns come built in.

Are Guided fill and Sashiko in this picker?

No — both are separate, deliberately distinct paths. Guided fill is entered via the object's flow-line tooling described above; Sashiko is its own motif-lattice mode reached from the object's action grid, not from this pattern list, since it replaces the whole fill rather than just choosing a texture for it.

The same goes for the satin area: it takes over the whole cover, so it is a button under this picker (**Fill with satin (turning)**) rather than a seventh pattern. Your row texture is remembered and comes back when you leave it.

Do fills have underlay too, and what do the firmness steps mean?

Yes — and on knits it's the difference between a clean fill and one where the fabric shows through between rows. The Fill inspector has its own **Underlay** toggle with the same **Auto / Light / Standard / Firm / Custom** ladder as Satin, but the passes underneath are different:

- **Light** — edge run only, along the inset contour. Right for stable woven fabric and small shapes.
- **Standard** — edge run plus one coarse cross pass under the cover stitching.
- **Firm** — edge run plus a full diagonal lattice.
- **Auto** — follows the project's Target fabric: knits and pile get the lattice automatically.
- **Custom** — pick the passes yourself. Like satin, it opens pre-filled with whatever the ladder was already building for that fill.

Two sliders sit below: **Underlay spacing** (1.2–3.0 mm, how far apart the underlay rows sit) and **Edge inset** (0.2–1.0 mm, how far inside the outline the edge run stays so it doesn't peek out from under the cover).

What is "Remove Overlaps" and does it belong here?

It's a separate action (in the object action grid, not the Fill inspector) that hides fill stitches which end up hidden underneath later objects — see Cut, combine & convert.

STITCHES · CHAPTER 10

Satin area — a shape filled edge to edge with turning satin

What is a satin area?

A closed shape filled from edge to edge with satin: long, glossy stitches laid straight across the shape, one beside the next. Because each stitch spans the full width at its own spot, the direction of the stitching follows wherever the shape leads — around a curve the stitches fan with it, at a taper they get shorter. That is what gives a pupil, a leaf or a petal its sheen: the light runs along unbroken threads instead of catching on the many short stitches a tatami fill is made of.

It is the opposite of our Satin column: there you draw the **centreline** and set a width; here you draw the **outline** and the form *is* the width.

How do I make one?

Two ways, same result:

- Pick the **Satin Area** stitch and draw a closed shape, exactly like a fill. It lives under the **Fill** tile, not the Satin one: tap the Fill tile, tap it again to open the Fill stitches, and pick Satin Area there.
- Or select any existing fill and press **Fill with satin (turning)** in its inspector, right under the pattern picker. Your row texture is remembered; **Back to tatami** returns it.

The idea behind it is simple: the outline is cut open at its two **ends**, and the two halves become the long sides of the shape. The needle goes back and forth between them, exactly as it does between the two edges of a satin column. That is why the settings feel familiar: density and underlay behave here just as they do on a column.

Where do the ends come from?

From the shape. The two sharpest points of the outline are the ends: a crescent's horns, a leaf's tips. Where a shape has only one sharp point — a petal, round along the top — the second end sits straight opposite it. On shapes like these there is nothing for you to set.

When the shape is ambiguous, or you want the stitches to turn differently, drag the two handles on the canvas — the green ring and the red ring, the same handles a column uses for entry and exit. Your ends are then kept with the object; **Reset ends** hands the choice back to the shape.

What shapes are wrong for it?

Compact shapes. A circle or a square has no ends, and its stitches would run 20 mm from edge to edge. Past the machine limit of 10 mm every throw is split in the middle, so it sews — but as a blob with a seam line, not as a band. The inspector and the design check say so; use a tatami fill there.

Shapes with holes. A stitch running across the shape would have to span the hole, and it would lie loose on the fabric there. So a satin area with a hole sews as a tatami fill instead, and the check tells you. Cut the

shape so each part is a plain band without a hole, or leave it as a fill.

Can I puff it?

Yes. A satin area goes into a 3D puff section like a satin column, and the foam sits under the whole region. There is one difference, and it is a good one: the area has no open ends — its two tips close the foam by themselves, so no end bar is needed and none is sewn. Columns in the same section keep their caps, domes and points exactly as before.

What about density, underlay and caps?

Density is the satin density (0.4 mm is the column default). **Underlay** is the satin ladder — light, standard, firm — measured on the area's mean width like on a column. **Caps** do not exist here: the tips of the shape are the caps, there is nothing to extend at a point of zero width.

STITCHES · CHAPTER 11

Flow — Guiding stitch direction along a curve

What problem does Flow solve?

A Fill's Angle is **one fixed direction for every row** — great for a straight-edged shape, but visibly wrong on anything that curves: a banana, a wave, hair, a curved letter. Flow replaces that single angle with a **guide line you draw by hand**, and the stitch rows bend to follow it instead of marching in one compass direction. It's the difference between rows that look mechanically uniform and rows that look like they were digitized by someone who actually looked at the shape.

The Fill inspector states the distinction directly:

> *"Unlike the Angle slider (one fixed direction for all rows), a flow line makes the stitch rows follow the curve you draw — perfect for curved letters. Draw several lines to steer different regions."*

How do I add a flow line?

Open the object's inspector, find the **Flow lines** section (below the Angle slider), and tap **Draw flow line**. Draw a stroke across the shape in the direction you want the rows to follow. You can draw **more than one** flow line on the same shape — each one steers the rows in its own region, so a complex form can have different areas flowing in different directions without needing to be split into separate objects.

Can I edit a flow line after drawing it?

Yes — a drawn flow guide gets draggable handles on the canvas, the same as any other path: drag a handle to reshape the curve, and the fill rows regenerate live to match. This makes Flow an iterative tool — draw a rough guess, then refine it by dragging until the rows actually sit the way you want.

Does Flow work on Blends too?

Yes, and at two levels: each individual color layer in a Blend can have its own flow, or — for a blend made of several fill objects grouped together — flow can be set **once at the group level** so every member follows the same guide consistently, rather than having to draw and match a separate flow line on each piece by hand.

Does Flow work on Text?

Only after the text has been converted to outlines. Live, still-editable text doesn't expose Flow — convert the letters to paths first, then apply Flow to the resulting shapes exactly as you would to any other Fill.

What does it mean if I see a flow warning?

If the guide lines you've drawn create a field that turns too sharply or contradicts itself in some region (rows would have to bend further than they physically can), the inspector shows a warning caption pointing at the problem area. It's a diagnostic, not a hard block — but it's telling you the result in that spot may look strained, and usually the fix is redrawing that particular flow line with a gentler curve.

STITCHES · CHAPTER 12

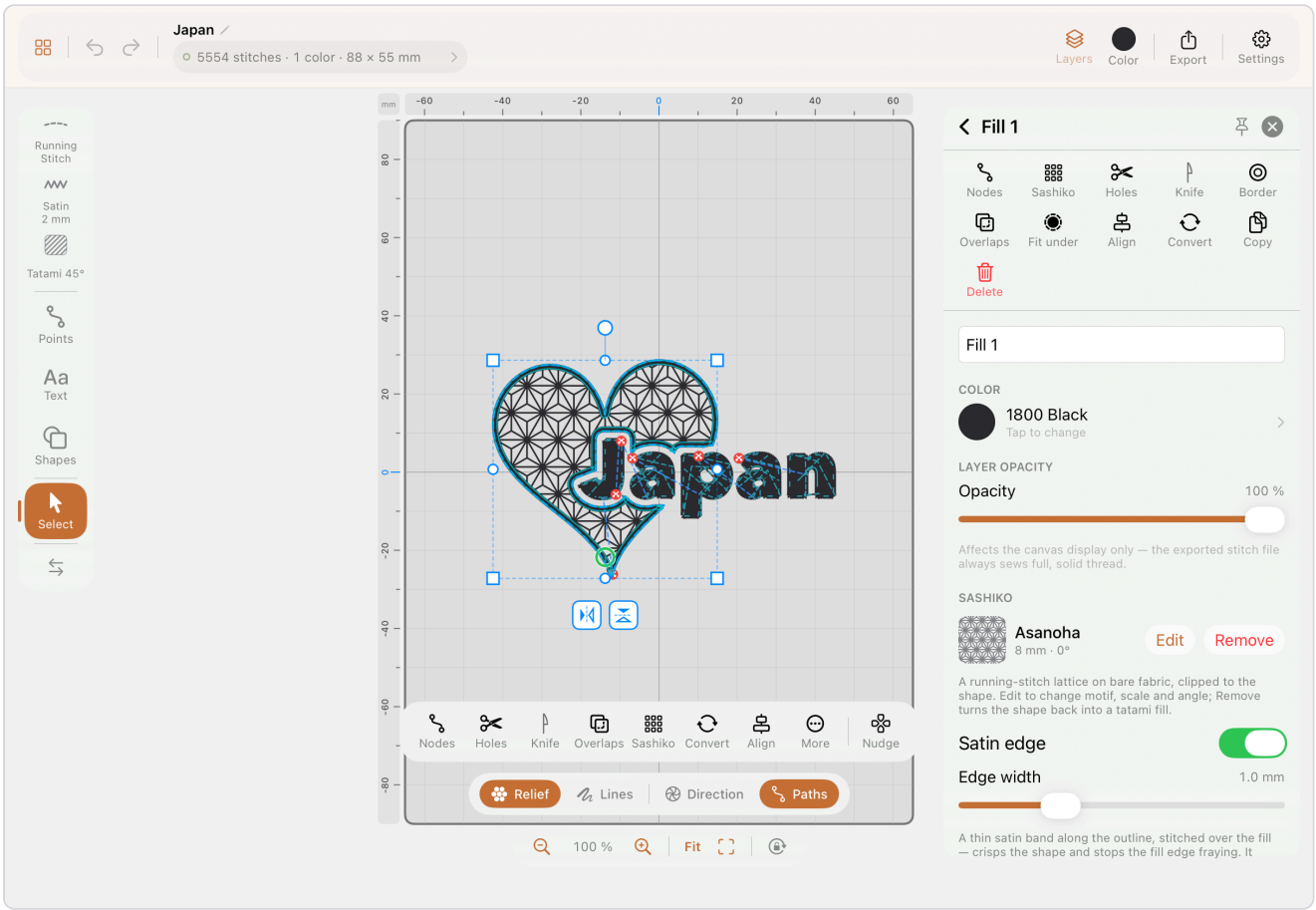
Sashiko — Machine-adapted Japanese pattern fills

What is Sashiko?

Machine-adapted **Sashiko-style** stitching (刺し子) — StitchPencil covers a shape with one of seven traditional lattice motifs, worked as a single continuous line rather than the hand-sewing dash-and-gap look. The Sashiko sheet itself opens with this exact caveat at the top, since it's easy to expect a literal running-stitch-with-gaps and see something different:

> *"Machine-optimized Sashiko-style stitching. The traditional Japanese hand-stitching technique inspires the look; this pattern is adapted for embroidery machines."*

Once applied, a Sashiko fill's inspector shows a compact summary — motif, scale, angle — plus an **Edit** button back into the full sheet, sitting right alongside the object's ordinary Color and Layer opacity fields:



Fill object inspector with a Sashiko summary and Satin edge toggle

Why isn't there a gap between dashes, like real Sashiko?

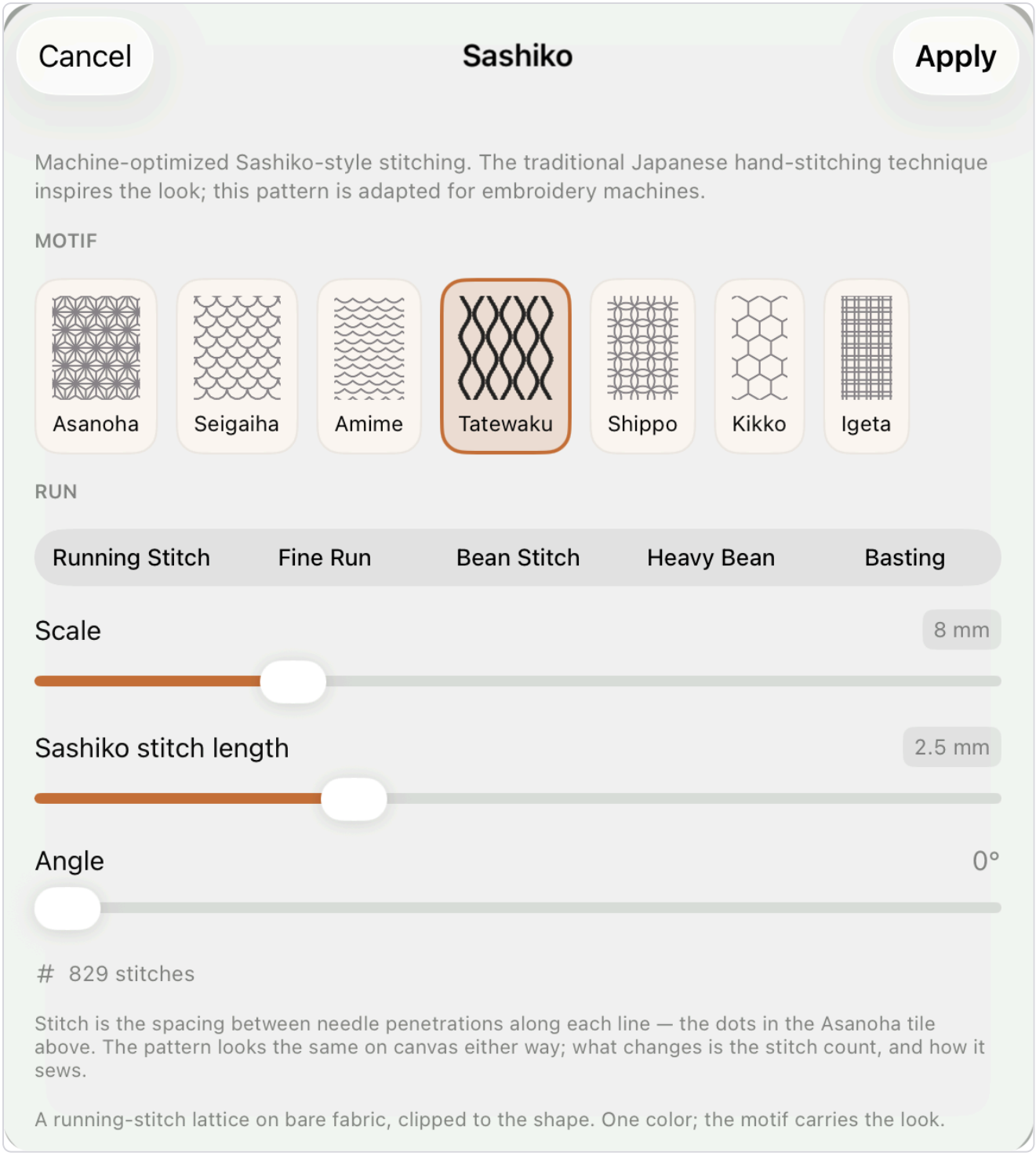
A machine can't leave thread hanging in mid-air the way a hand-sewn dash-gap-dash can — every "gap" would need a trim and a jump, which is slow and looks messy at the machine. StitchPencil instead stitches the whole motif as one **continuous running stitch**, and lets the lattice geometry itself carry the visual pattern. That's also why the sheet has a stitch **length** slider but no gap control.

Where do I turn a shape into Sashiko?

Select the object and tap **Sashiko** in its action grid — it opens a dedicated sheet, not the Fill pattern picker (Sashiko is deliberately left out of that picker, since it replaces the whole fill rather than adding a texture option to it).

What can I choose in the Sashiko sheet?

- **Motif** — seven tiles: Asanoha, Seigaiha, Amime, Tatewaku, Shippo, Kikko, Igeta. Each tile is a live preview rendered from the same engine as the canvas, so what you tap is exactly what you get.



The Sashiko sheet with its seven motif tiles, Tatewaku selected

- **Run** — a picker of your own Run presets (Running Stitch, Fine Run, Bean Stitch, Heavy Bean…); picking one sets the stitch length and pass count together, since Sashiko is traditionally worked in a heavier thread and a bean-style multi-pass is how a machine gets that weight.
- **Scale**, **Stitch length**, **Angle** — sliders, with a live **stitch count** so you can see the cost of a setting before committing to it.

What are the individual motifs?

- **Asanoha** (hemp leaf) — the iconic six-point star lattice on a triangular grid. The densest of the set and the most obviously “Sashiko”.
- **Seigaiha** (blue ocean waves) — rows of overlapping scallops, read as fans of waves.
- **Amime** (fishing net) — staggered rows of shallow wave scallops, an open, airy net. Much lighter than Seigaiha at the same scale.
- **Tatewaku** (rising steam) — vertical lines that swell and pinch in mirrored pairs. The one **directional** motif: the Angle slider turns the steam, so it’s the natural choice when the pattern should follow the shape rather than sit in it.
- **Shippo** (seven treasures) — interlocking circles whose overlaps carve out petals.
- **Kikko** (tortoise shell) — the plain hexagonal honeycomb.
- **Igeta** (well curb) — the woven ”#” of paired parallel lines.

All seven tiles show the same amount of fabric at the same scale, so what looks denser in the picker really is denser on the shape.

Which objects can I apply Sashiko to?

Only a **fill**, or a **closed** satin or run. This is a deliberate rule, not a bug: Sashiko needs a closed region to lattice across, and a fill’s outline (or a closed satin/run’s outline) becomes the frame that keeps the pattern clean all the way to the edge. An **open** satin or run can’t host it directly.

What happens when I put Sashiko on a closed satin ring?

The outline stays what it is, and the lattice appears as a **second object underneath it** — the satin frame sews on top, the grid fills the area the frame encloses. Not the band of the satin itself: the opening inside it. Both rows carry a chain glyph in the layer list, the same mark a joined group gets.

The two behave as one shape from then on. Drag, scale, rotate or flip the frame and the grid comes along; edit a node on the outline — you forgot a corner — and the lattice re-cuts itself to the new shape. You only ever edit the outline, never the grid separately.

Reopening **Sashiko** on the same outline edits that lattice rather than stacking a second one on top. **Remove** deletes it and leaves the outline standing.

I have an open satin path — why won’t Sashiko apply?

Convert it to a fill first (**Convert** in the action grid), then apply Sashiko to the resulting fill. That extra step is intentional: an open stroke has no natural “inside” for the lattice to cover, so StitchPencil asks you to make that decision explicit rather than guessing.

Can I give a Sashiko fill a clean stitched edge?

Yes — the same **Satin edge** toggle available on any Fill object works on a Sashiko fill too, adding a thin same-color satin band along the outline (with its own Edge width slider) so the lattice ends cleanly at the

border instead of just stopping. See Fill (Tatami) for the general explanation.

Can I combine Sashiko with a gradient Blend?

No — Sashiko and Blend are mutually exclusive on the same object, gated both directions in the UI.

Does Sashiko work with Live Text?

No, only path-based objects (drawn shapes, converted shapes) — not live, still-editable text.

STITCHES · CHAPTER 13

Points & nodes — Precision digitizing

What is the Points tool for?

Precision, tap-to-place digitizing — instead of drawing a freehand stroke with your finger or Pencil, you place individual nodes one at a time and StitchPencil connects them. It's the tool of choice when you want exact control over a path, or when you're tracing something with sharp, deliberate corners.

What's the "Line vs. Pairs" chip I see for satin?

When you're placing nodes for a **Satin** object, a small chip in the bottom context bar switches between **Line** (you place one centerline, and StitchPencil derives both rail edges from it plus a width) and **Pairs** (you place the two rail edges independently, node by node) — useful when a satin column needs to taper or shift unevenly in a way a single centerline-plus-width can't express.

Does the Pencil do anything special in Points mode?

On hover-capable Apple Pencil hardware, hovering near the screen shows a live rubber-band preview of where the next node will land, before you actually tap it down.

How do I edit an existing path's nodes?

Once a path is focused for node editing:

- **Drag a handle** to move a node
- **Drag along a segment** between two nodes to bend it into a curve
- **Tap a segment** to insert a new node there
- **Double-tap a node** to delete it
- **Drag the orange grip** next to a selected node to change how WIDE the column is at that spot

How do I fix one spot that came out too wide?

A stroke drawn with Pencil pressure carries its width along its length — thin where you were light, thick where you pressed. That is usually the point. But when the line itself sits perfectly and one place came out too thick, the object's Width slider is the wrong tool: it moves all of it.

Select the node at that place — or tap the path to **insert** one exactly there, which places it with the width it already has — and drag the **orange grip** that appears beside it. It sits at half the column's local width, with a smaller twin on the far side: the change is symmetric, so the centreline you tuned stays exactly where it is.

The change eases back to what it was on either side, so what you get is a swell or a taper rather than a dent. Below 1 mm the cover reads as a line rather than a column, and 20 mm is as wide as a column goes — the grip stops at both. (Past roughly 10 mm the column is sewn as a staggered split rather than one very wide throw, so it stays stitchable; see Satin.)

Blue grips move the line, orange grips change its width. And the object-wide Width slider still works on a column you have shaped locally: it scales the whole profile, so the thinnest place lands on the slider's value and everything you shaped keeps its proportions.

A letter I drew came out angular. Can I round it afterwards?

Yes — that's what **Smooth** is for. Open the object for node editing and you'll find a Smooth slider in the inspector, from 0 % (leave it exactly as drawn) to 100 %.

What it does is lay a curve through the nodes you already have. It does not move them, does not add or remove any, and does not redraw the shape: the path still passes through every node, it just arrives and leaves in a curve instead of a kink. So the outline you positioned stays where you positioned it, and a stroke that came out as a chain of short straight segments reads as one continuous bend.

Corners survive. A sharp turn is treated as a deliberate corner — the tip of a V, the inside of an L — and stays sharp no matter how far you push the slider. Smoothing rounds the wobble, not the design.

Drag the slider and the stitches follow live, so you can stop at the point where it looks right rather than guessing a number. One drag is one undo step.

On an O or any closed ring it works the same way, all the way around the loop, including across the point where the ring closes — there is no seam at the start node.

On a satin column the two rails follow the smoothed centreline together, so the column keeps the width you gave it at every node. And on a puff section, smoothing the columns also moves the placement outline and the tack run with them — they are derived from the same shape.

Smooth lives in the node editor and works on one object at a time, deliberately: it is a shape edit, and shapes are edited per object.

What controls only show up while a node is focused?

Make start (choose which node the machine begins stitching from), **Make smooth / Make corner** (toggle a node between a curved and an angular join), **Reverse direction**, and **Simplify nodes** (reduce an over-dense path to fewer control points). These live only in the focused node-editing inspector state — you won't find them anywhere else.

What does Simplify nodes actually change?

Only the number of nodes, never the shape. Every candidate it considers is built exactly the way the column will be built, then measured against the edges the object already has: it is only accepted if no edge moves more than 0.35 mm and no stitch turns more than 12°. A hand-set column of 107 nodes on a straight run collapses to a handful; the mitred end that gives the shape its corner keeps its node, because dropping it would move the edge.

If nothing can go without changing the shape, nothing goes, and a message says so rather than leaving you to wonder whether the button worked.

What are the coloured grips on a selected node?

- **Blue** — the node itself. Drag to move it.
- **Orange** — the column's width at that node, one on each side. They move together, so the node stays on the centre.
- **Purple**, on a dashed leader — the angle of the stitches at that node. It only appears at an end that is genuinely angled, which normally means an end the Knife cut on a slant. Drag it to re-aim that end; the rest of the column does not move.

A green ring marks the first stitch and a red one the last — those are markers, not grips.

STITCHES · CHAPTER 14

Shapes & text — Starter shapes and lettering

What's in the Shapes popover?

A curated library of ready-to-stitch starter shapes. The first row is the plain geometry — **circle, rectangle, triangle, heart** — for the shapes hardest to draw steadily by hand; after those come star, hexagon and the rest, plus a broader set of icon-style artwork (animals, plants, everyday objects). Tap **Shapes** on the tool rail to open the popover, tap a shape to insert it in the Stitch you have active — a fill preset gives a filled silhouette, a satin preset an outline band in that width, a run preset an outline. The line drawings in the library (hummingbird, paperclip, Saturn and the like) always arrive as a run: their paths outline strokes rather than enclose an area, so a satin band along one traces both sides of every stroke and the shape disappears. They are immediately editable like anything you'd drawn by hand — move, resize, rotate, or send it through Convert to change its stitch kind.

What is the Text tool, and how do fonts differ?

Tap **Text** to open the lettering sheet and browse a categorized font library. Fonts fall into two families that stitch very differently:

- **Stroke fonts** (labeled Bean / Heavy / Satin style) — single-line letterforms stitched as a Run or Satin, good for smaller or more delicate lettering
- **Filled / outline fonts** — always stitched as a Tatami fill, for bold, solid block lettering

Can I set text on more than one line?

Yes — press Return in the text field and the next word starts a new line. A line break used to be replaced by a space, which turned a two-line name tag into one long line; it is now a real break.

Two settings appear as soon as there is a second line, and stay hidden while there is only one:

- **Line spacing** as a multiple of cap height, 1.0× to 3.0×, with the resulting distance shown in millimetres beside it. A multiple rather than a fixed length, so resizing the whole text keeps the lines in proportion.
- **Alignment** — left, centred or right — for how lines of unequal length sit against each other.

The block grows downward from the first line, so adding a line does not move what is already placed, and a blank line keeps its space. Everything else works on the block as a whole: width and slant, the stitch style, per-letter colours, and a drawn baseline, which carries the second line parallel to the first rather than flattening both onto the curve.

Can I make a font narrower, wider or slanted?

Yes — two settings in the text sheet, under Height and Spacing.

Letter width sets how wide the letters are drawn relative to their height, 50 % to 200 %, with 100 % the width the face was designed at. Narrow a name to fit a small hoop without making the letters shorter;

widen one to fill a jacket back. The spacing you dialled in is left alone — it is its own setting, so condensing the letters does not silently close the gaps too.

Slant leans the letters, −30° to +30°, giving an italic to faces that do not ship one. The shear is about the baseline, so the letters keep standing on the line rather than sliding off it. It does not change the spacing either.

Reset width and slant appears once you have moved either one, and puts both back. Both settings apply to stroke and filled fonts alike, and a design saved before they existed opens exactly as it was.

Can I use umlauts and accents?

Yes — ä ö ü, é è ê, ñ, å and the rest of the common accented letters work in every font, upper and lower case. Where a face was drawn without them, the mark is composed: the letter plus its own small stroke, sitting on the letter's shoulders. That is how the machine sews an accent in any case — the needle lifts between the letter and the mark.

ß is the exception. It is a letter in its own right, not a letter with a mark, so a font either has it or does not — twenty-three of the thirty stroke fonts do, seven do not. Nothing is invented in its place: if the font you picked cannot draw a character, a note appears under the text field saying so and naming fonts that can. Write `ss`, or pick one of those fonts.

Can I put text on a curve?

Yes, three ways, all under **Baseline** in the text group's inspector. A baseline is a guide only — it is never stitched.

Bend is the quickest, and the one most words want. The slider says how many degrees of a circle the word itself covers: to one side of the middle it arches up, to the other it curves down, and at 0 it stands straight. The line is not drawn here, it is derived — so the arc always belongs to the word standing on it. Retype the text, change the face or the size, and the arc re-fits itself around the same point instead of leaving the letters hanging off the end of yesterday's curve. Turn it far enough (from about 280°) and the arc closes into a full circle: a word wrapped all the way round, which is what a badge wants.

Draw baseline puts the Pencil in your hand: draw one stroke and the word lands on it. The line is smoothed like every other stroke you draw, and if you bring it back to where it started, it closes into a ring the word runs around.

From a shape takes the line from something already in the design — the shape library's circle is a true circle, which no hand can draw. The path is copied, so the shape itself stays what it was: still sewn, or deleted afterwards, as you like.

A drawn or borrowed line gets one more control. **Position** moves the word along the line. Drag the **dot on the baseline** with the Pencil and the word travels with it — that is the whole gesture; the slider is there when you want an exact number. Either way the word's middle sits where you put it, and the whole drag is one undo step. The dot and the dashed baseline appear while the word is selected with the **Select** tool; the dot takes the app's accent colour. **Flip** puts the text on the other side of the line and turns it round in one act; it already starts on the readable side, so you only need it when you deliberately want the

other one — the underside of an arch, for instance. **Straight again** takes the line — or the bend — away, and the letters return to their row.

Move, resize (from a **corner** handle) or rotate the group and a drawn baseline goes with it, keeping its size relative to the letters. A bend needs none of that: it is an angle, and an angle survives any size. An **edge** handle stretches unevenly, which a typeface cannot do, so that converts the group to plain paths — undo brings the text back.

The letters stay the shape the font drew them: each one is rotated as a whole, not bent. That reads better on a tight curve — and when a curve is too tight for the size, the honest fix is a gentler curve or smaller letters, not a distorted letterform.

Can I edit letters after placing text?

Yes — use **Convert to Outlines** to turn live, still-editable text into ordinary path objects (one path per letter), after which you can node-edit individual letterforms exactly like any other shape. Once converted, text is no longer “live” (you can’t re-type it), so do this once you’re happy with the wording. Converted letters collapse into one row per letter in the Layers panel, with a chevron to disclose each letter’s individual node-editable path.

STITCHES · CHAPTER 15

Stitch presets & the favorites HUD

What's the difference between the tool rail tiles and the Stitch Library?

The **Run / Satin / Fill** tiles on the rail are quick access to whichever preset you used last for that kind. Tapping the tile that's *already* active — rather than switching to it from a different tool — opens the full **Stitch Library** popover instead, with every saved preset of that kind listed.

What can I do to a preset from the Library list?

Swipe an entry for **Duplicate**, **Delete**, or **Edit**, and swipe (or long-press) for **Add to HUD** — a star that favorites it for the floating HUD described below. There's also a **New Stitch** button at the bottom of the list to start one from scratch.

What does the stitch editor let me change?

Opened by tapping an already-active preset, or via **Edit**: the preset's **name**, a purely cosmetic **tag color** (six fixed swatches — this is never the actual thread color, just a label), every parameter for that stitch kind (length, width, density, passes, and so on), and a **Pencil** section unique to presets:

- **Smoothing** (Streamline) — settles out small hand tremor in your stroke
- **Pressure sensitivity + Intensity** — on supported hardware, live band-width preview as you draw, driven by how hard you press

This is the one place Apple Pencil pressure and smoothing behavior actually live — per Stitch preset, not as a single global setting.

Can I delete a built-in preset?

No — built-in presets can be edited and duplicated, but not deleted, so there's always a known-good fall-back to return to (or via Factory reset).

What is the floating HUD, and how do I move it?

Once you've favorited at least one Stitch via **Add to HUD**, a small round "puck" appears floating over the canvas. Tap it to fan out up to 8 favorites in a ring for quick access without opening the Library popover at all. You can drag the puck itself anywhere on screen — StitchPencil remembers where you left it.

STITCHES · CHAPTER 16

Blends — Gradient fills across up to three colors

What is a Blend?

A gradient fill across up to **three colors** within one fill region, with control over where each color sits and how soft the transitions between them are — useful for shading, sky gradients, or any area that shouldn't read as one flat color.

How do I turn a fill into a Blend?

Tap **Blend** in the object's action grid (or a group's action grid, for a blend that spans several fill objects together).

What does the gradient bar do?

It's the main control surface, shown in the group inspector once a Blend exists: **drag a divider** between two color zones to redistribute how much space each color gets across the gradient; **tap a divider** (instead of dragging it) to open a softness slider for that specific transition, so you can make one boundary crisp and another very soft in the same blend.

What do the per-layer sliders control?

Each color layer in the blend has its own **position**, **softness**, and **intensity** sliders, on top of the shared divider controls — for fine-tuning one color's presence in the gradient independently of the others.

What are "Flow lines" in a Blend?

The same Flow tool shared with plain Fill fields: draw a guide line across the shape and the stitch rows bend to follow it, rather than running in one fixed compass direction — useful when a gradient needs to follow a curved form (a cheek, a wave) rather than a straight scanline angle. In a Blend it can be set once at the group level so every color layer follows the same guide.

Can I change or lock the angle for a whole group of blended fills?

Yes — angle can be **locked at the group level** so every member fill shares one consistent direction, with the axis re-derived automatically as you adjust it, rather than having to match each member's angle by hand.

Can I copy a Blend recipe to another fill?

Yes — copy the blend "recipe" (colors, positions, softness) from one fill and paste it onto a different fill shape, rather than rebuilding the same gradient by hand each time.

Can I combine a Blend with Sashiko?

No — Blend and Sashiko are mutually exclusive on the same object.

The check says a transition is abrupt. What is it measuring?

How many stitch rows land in the crossfade — not how wide the crossfade is.

Two colours turn into a gradient by alternating their rows until the eye stops resolving them individually. That takes rows to alternate. If too few stitch rows fall inside the overlap, the interleaving stops reading as a mix and starts reading as stripes, and at the low end the two colours simply meet at an edge with no overlap at all.

The finding names the position along the gradient as a percentage, so there is somewhere to look. Two things fix it: widen that transition on the gradient bar, or lower Density so more rows fall inside the width you already have.

Row spacing is why the same gradient can be fine on one design and abrupt on another. A transition 4 mm wide holds eleven rows at 0.35 mm and six at 0.65 mm — so a blend that works at one row spacing reports itself at another, and a small motif reports what the same recipe did happily at twice the size.

This is advice, not a limit. A deliberately hard colour break is a legitimate look; the check only makes sure it is the one you chose.

STITCHES · CHAPTER 17

3D Puff — stitching over foam

What is 3D Puff?

A strip of embroidery foam is laid on the garment, the design is stitched **over** it, and the foam that isn't covered by thread is torn away afterwards. What stays is a raised, domed letter or shape — the effect you know from cap fronts and varsity jackets.

The foam does nothing on its own. Everything depends on the stitching: it has to be dense enough to hide the foam, wide enough for the foam to rise inside, and — the part most people miss — it has to **perforate** the foam along the outline so the excess breaks off cleanly instead of stretching and fraying.

Why is it a "section" and not a checkbox on the object?

Because one piece of foam is one piece of foam. Its density, its placement outline, its machine stop and its tack run belong to the whole group of columns sitting on it, not to any single one of them. In StitchPencil that group is a **puff section** — a layer group with its own inspector — and everything the foam needs is decided there once.

How do I make one?

Draw your satin columns, then either:

- **group them first** — select the rows, **Group**, then **Convert → 3D Puff** on the group, or
- select them all directly and use **Convert → 3D Puff**.

Several columns at once is the normal case, not the exception: an F is three strokes, an i is a stem and a dot. They become one section either way. If the columns are already a joined group, the section inherits that.

Only satin qualifies. A fill cannot puff — the foam needs a column with two edges to rise between, and a tatami surface has no such edges.

What does the machine actually do?

The section sews four things, in this order:

1. **The placement outline.** A single running stitch around the shape, on bare fabric. This is the guide you lay the foam over — you can see exactly where it belongs.
2. **A stop.** The machine pauses. You lay the foam on (a strip roughly half an inch bigger than the design, taped or sprayed down) and start it again.
3. **The tack run.** A short, dense bean stitch exactly on the outline. This is the perforation, and it is the single most important step for a clean result. It also holds the foam down before any column starts.
4. **The columns**, sewn over the foam at foam density.

You can switch the outline, the stop and the tack run off individually — they appear as their own rows inside the group in the layer list, so you can see when each of them happens. Switch off the tack run if you work with spray adhesive, but know that you are switching off the perforation with it.

Why does an open end need a cap?

Take a column that just stops in mid-air. The cover stitches run across it, side to side — but nothing runs **along** its end. There is no line of needle holes there, so the foam under the tip has nothing to tear along: it stays attached, and it pokes out from under the thread as a visible fluff of foam.

A **cap** is a short bar of satin sewn across the end. It does two things: it holds the foam edge in, and it carries the tear line around the corner so the excess breaks off along the outline instead of stopping dead at the tip.

What can I choose at an end?

Tap an end mark on the canvas, or use the list in the section inspector. Five answers:

- **End cap** — the trade's bar. It reaches a little past the column on each side, which is exactly why it works: the safety margin means no loose stitches hang over the foam edge. The side effect is that it reads as a serif, which can make a handwritten letter look like Times New Roman.
- **Rounded** — the last half-width of the column closes off inside its own width. Nothing sticks out. It looks the way you drew it; it gives up the bar's safety margin, so a stubborn scrap of foam can survive at the very tip.
- **Tapered** — the column runs out over about two widths to a rounded point. This is the trade's own alternative to the bar, and the natural choice for script and brush lettering.
- **Open** — no cap at all, deliberately. Right where you want the foam edge to show, or where you know something else covers it.
- **Manual** — see below.

Rounded and tapered shape the **geometry**, not just the cover: the placement outline and the tack run follow the new shape, so the tear line closes with it. That matters. A tapered cover over a square tear line would leave foam corners that nothing can tear off.

Whatever you pick, the design check keeps asking until every open end has an answer. That is deliberate: an undecided end is the one that goes wrong at the machine.

What happens if I make a puff column wider than that?

Nothing stops you — the export stays open at any width. But two things happen, and the design check names both.

Over 8 mm the cover starts floating over the dome instead of gripping it. Add the pull compensation a foam cover needs on top of your width, and the thread has further to travel than the foam is holding.

Past a certain width it stops being a matter of taste. What has to fit in one throw is the STITCH, and a foam cover's pull compensation is sewn on top of the width — so the column throws a longer stitch than it is wide. No machine format carries one much longer than about 12 mm in a throw, so StitchPencil splits it,

and the extra penetrations land in the middle of the column. On flat satin that is invisible and correct. On foam it is a row of needle holes straight down the crown of the dome: the puff comes out pressed flat exactly where it should be highest, and no amount of tension or stabilizer fixes it afterwards.

The design check names the exact place and how far it runs — “reaches 11.8 mm over 4.1 mm”. Tap the finding and the canvas frames it with an amber ring, so you know which node to narrow.

It only counts stretches long enough to matter. The taper every stroke ends with is not a finding, and neither is an end you built by hand — that decision is already in the section, and the check respects it.

The fix is to narrow the column, or to draw it as two columns side by side with their own domes.

What about the places where two columns meet?

They are not ends. An F has six column ends but only **three** that face the air — the other three are joints: the top bar runs into the stem, the middle bar butts into its side.

StitchPencil finds those by itself and treats them accordingly:

- **No cap** is sewn there, and you are not asked about them.
- A small **overshoot** a hand-drawn stroke made past the corner is trimmed back so the tip stops just under its neighbour’s cover. Past that it is taken as a shape you meant to draw: a stem drawn deliberately through and beyond its bowl stays exactly as long as you drew it.
- The **sew order** is set so the column that ends into another goes first — the covering column comes down on top afterwards and buries the seam.

Joints are marked on the canvas with a small chain glyph and listed in the section inspector, so you can see that they were recognised.

Why is there a width band instead of one width?

Foam needs about 6 mm of column to rise inside. Below that it’s a dense rope, not a dome. But if the app simply set every column to 6 mm, a stroke drawn with Pencil pressure would lose the thing that made it worth drawing.

So the section has a band — 6 mm at the thin end, 10 mm at the thick end by default. A drawn column is fitted into it and keeps its own swell. The 10 is not a matter of taste: no format carries a stitch longer than about 12 mm in one throw, and over foam one throw is all you want, and the foam cover needs its pull compensation on top of that, and past a certain width the cover starts to float over the dome instead of gripping it.

Watch out when you **scale** a finished section — the widths scale with it, and a letter shrunk to fit the hoop can quietly leave the band. StitchPencil says so when it happens; nudge the band sliders to refit.

What does the section decide for me?

On foam, four settings move from the object to the section, and the object’s satin panel stops showing them:

- **Cover density** — set for you on foam, denser than an ordinary satin. Denser than ordinary satin, because the cover has to hide the foam *and* perforate it.
- **End caps** — per end, as above.
- **Underlay** — off. Underlay's whole job is to compact the fabric before the cover; under foam it just crushes the dome.
- **Short stitches** — off. On fabric they keep thread from stacking on the inside of a curve; on foam they dig a line of holes exactly where the dome should stay whole.

Pull compensation stays yours, but never goes below a floor on foam — the cover has to reach *around* the dome instead of sitting on top of it. A higher value wins.

What is the manual mode for?

Sometimes you want to build an end yourself: a shape the three presets don't cover, a decorative cap, a tapered end with a specific angle. Set that end to **Manual** and the app takes its hands off — nothing is sewn there, nothing is asked about it, and the design check stays quiet.

You then draw your own satin and put it in the section. It is a full member from that moment: it sits on the same foam, it is included in the placement outline and the tack run, its own ends take part in the joint detection, and it takes its place in the sew order. Everything in the section is on the foam — that is the rule that makes this predictable.

The end mark on the canvas turns into a pencil glyph, so a month later you can still see which ends you took over.

What does the design check say about a puff section?

- **Open ends with no decision** — how many of them, until you've answered each one.
- **Column too narrow.** Between 4 and 6 mm is the cord zone: it sews, but it comes out as a dense rope rather than a dome.
- **Column too wide** — wide enough that the cover starts to float over the dome instead of gripping it, and the pull compensation pushes the stitch past what the machine sews in one zigzag.
- **Covers crossing** — two columns overlapping away from their ends. The foam is pressed flat there and the tear line is interrupted. Joints are not reported: a meeting by design is not a defect.

Converting back

While anything sits on foam, **Convert** offers exactly one thing: the way back off it. Under the heading **Satin (off the foam)** you pick which satin preset the columns should return to — the presets are right there, no submenu.

A satin area can go on foam too, and it needs no end decision at all: its two tips close the foam by themselves, so no bar is sewn there.

Run and Fill are deliberately not offered there. They would leave the objects *inside* the section: the placement outline only counts satin columns, so the foam would be laid out for a shape that is no longer outl-

ined, while the object keeps sewing at foam density with no tear line around it. The route to a fill still exists, it is just honest — take the column off the foam first, then convert it with the ordinary menu.

The width comes back relatively: the column keeps whatever dynamic it has and only its thinnest place is rebased — on the width it was originally drawn at, which the section remembers, or on the preset's width when it doesn't.

Density and underlay come from the preset you picked, not from the foam values — otherwise a flat column would be left sewing at twice the density it needs.

Practical notes for the machine

These are not app settings, but they decide whether the result is clean:

- **Foam colour close to the thread colour.** Never a contrasting one. Whatever the cover does, tiny specks show at the rim and at the tips — matching foam makes them invisible.
- **2 or 3 mm foam** for most work. Thicker gives more height and less forgiveness.
- **Slow down** — around 500 stitches per minute is the usual advice, with slightly tighter top and bobbin tension.
- **Tear the excess away** by hand, then go over the piece with a heat gun on its lowest setting or a hot hairdryer. That shrinks back the last fibres at the tips — the step that makes the difference between "good" and "clean".
- **Not for laundry-heavy garments.** Foam does not enjoy repeated hot washing, tumble drying or dry cleaning. Caps, jackets and bags are its natural home.
- **Stitch everything that is not puff first.** The foam goes on last, over finished flat embroidery.

STITCHES · CHAPTER 18

Trapunto — raised areas from an outline

What is trapunto?

A raised area made by trapping padding under the fabric. Where 3D Puff builds height with foam *under a satin column*, trapunto builds it with wadding *inside a shape*: the outline is sewn twice, and the padding goes in between.

The sequence on the machine is: sew the outline into the wadding, cut the wadding back along that line, lay the top fabric over it, sew the same outline again. What is left is a soft, quilted relief with a crisp edge — the look of a hand-quilted monogram rather than a puffed-up letter.

Why is it a “section” and not a setting on the object?

Because both passes have to be the **same** line. If they were two objects you edited by hand, one curve change would put them out of register and the padding would show along the edge. In a trapunto section both passes come from one geometry, so they cannot drift apart.

It is the same idea as a puff section: the machine stops, the marks and the extra passes belong to the shape as a whole, so they live on a layer group with its own inspector.

How do I make one?

Draw the outline with the **running stitch**, then select it and choose **Trapunto**. You will find it:

- on the selection bar when a group row is selected (the scissors button), or
- in the **Convert** menu — from the object inspector, the group inspector, or a multi-selection.

Several outlines can go into one section. The new group is called **Trapunto** and is selected for you.

Only a running stitch qualifies. A satin column or a fill cannot become trapunto — the technique needs a line to sew twice, not a covered surface — and the entry simply is not offered for them.

What does the machine actually do?

With the defaults, and in this order:

1. **Position mark 1** and **Position mark 2** — two L-shaped corners, top left and bottom right of the shape, sewn on the bare stabiliser.
2. **Machine stop** — lay the wadding on and tape it down.
3. **Shaping pass** — the outline sewn into the wadding. This is the line you cut along.
4. **Machine stop** — cut the wadding back and lay the top fabric over it.
5. **Your outline** — the same path a second time, now through the fabric.

Everything is one thread colour, and the stops are plain machine stops, not colour changes.

The section does **not** baste the wadding down. Soft padding tears when you pull a basting thread out of it, so the material is taped instead — that is your job at the machine, and it is the one step the file cannot do for you.

What are the position marks for?

They are a target to lay the wadding against. The machine sews them before anything else, on the empty stabiliser, so you can align a piece of padding without guessing where the shape will land.

Two settings control them, in the group inspector under **Position marks**:

- **Distance from the shape** — how far outside the shape the corners sit. 0 to 50 mm, 10 mm by default.
- **Leg length** — how long each arm of the L is. 2 to 30 mm, 8 mm by default.

The marks never leave the hoop. If the distance you asked for would push them outside, they sit as far out as they fit and the caption below the sliders says so.

Turning **Sew position marks** off removes them — and with them the first machine stop, because that pause rides on the last mark. You then get one stop instead of two, and you lay the wadding on before you start.

Can I turn the pauses off?

Yes — **Pause for the hand work** in the group inspector. Off means the file runs straight through and you stop the machine yourself at the right moment. Leave it on unless you have a reason: the stops are what make the technique work unattended up to the point where hands are needed.

How do I get back out?

- **Plain run** (in the Convert menu, with the object rows selected) gives you the bare outline back, unchanged.
- **Expand to layers** (group inspector) turns every generated step into an ordinary editable layer and removes the recipe. Use this when you want to hand-tune one of the passes — after that they are separate objects, and keeping them in register is up to you.

Those are the only two conversions a trapunto section offers: Satin and Fill leave the menu while it exists. Widening the outline into a band or flooding it into a surface would leave the section sewing its marks, its stops and a shaping pass for a shape that no longer has a line to cut the wadding along.

What is the basting brush, and is it part of this?

No — it is its own stitch preset, useful with trapunto but independent of it. Pick **Basting** in the run stitch library and draw: you get a long-stitch line, 8 mm, one pass, with no tie-in or tie-off, so it pulls out cleanly afterwards. Use it to hold an appliqué or a piece of fabric down while the rest sews.

A basting line is marked as such: a teal badge in the layer row, a dashed teal line on the canvas, and a stitch length range of 4 to 12 mm instead of the usual run range. It always sews one pass — a doubled line is thread you cannot pull out again.

The design check watches for the one mistake that ruins it: if another object stitches over your basting before the next machine stop, it warns you, because once thread lies across the basting you can no longer pull it out.

How does trapunto differ from 3D Puff?

	3D Puff	Trapunto
Built from	satin columns	running-stitch outlines
Material	embroidery foam, under the stitching	wadding, under the fabric
The shape sews	once, densely, over the foam	twice, from one geometry
Result	a hard, domed relief	a soft, quilted relief
Hand work	tear the foam away afterwards	lay in, remove, cover

Both pin the sewing order for the whole design while they exist, so the colour optimiser cannot reorder the phases.

STITCHES · CHAPTER 19

Appliqué — a piece of fabric under a satin edge

What is appliqué?

A patch of fabric held down by stitching instead of by thread alone. Where a fill covers an area with thread, appliqué covers it with **cloth** and stitches only the edge — far fewer stitches, a soft hand, and a chance to bring in a print or a texture that thread cannot do.

StitchPencil builds it as a **section**, the same idea as 3D Puff and Trapunto: the machine stops, the helper lines and the hand work belong to the shape as a whole, so they live on a layer group with its own inspector.

How do I make one?

Draw a **closed satin ring** — a satin column whose path comes back to where it started — then select it and choose **Appliqué**. You will find it:

- on the selection bar, for an object, a group row, or a multi-selection, and
- in the **Convert** menu of the object and group inspectors.

Several rings can go into one section: that is one piece of fabric with several openings, not several patches.

Only a closed satin ring qualifies. The ring *is* the covering edge, and its width is the cover width — a running stitch has no edge to cover with, and an open column leaves the patch unfinished at both ends, so the entry is not offered for them.

What does the machine actually do?

With the defaults, and in this order:

1. **Placement line** — the ring's own contour as a plain running stitch on the bare fabric. It shows exactly where the patch goes.
2. **Machine stop** — lay the appliqué fabric over the marked area and fix it (spray adhesive, a pin, a piece of tape — StitchPencil does not prescribe a method).
3. **Tackdown** — the same contour again, sewn through the fabric to hold it down.
4. **Machine stop** — trim the excess fabric back to the tackdown line.
5. **Your satin ring** — the cover, sewn last, burying both helper lines under it.

Steps 1 and 3 follow the ring's contour, so the cover lands on top of them by construction: no helper stitch is ever left visible on bare fabric.

What can I set?

The section's inspector has three controls:

- **Tackdown** — **Running** (a double run, 2 mm) or **Zigzag** (an open zigzag, always narrower than the cover so it cannot peek out). Running is the default: it is invisible under the cover and quick. Zigzag

grips a fraying fabric better.

- **Pre-cut piece** — for a patch you cut in advance (by hand or on a cutting machine). The trim stop disappears, since there is nothing left to trim.
- **Machine stops** — on by default. Turning them off leaves the lines but not the pauses, for a machine you stop yourself.

Can I get the stops back if I delete them?

Yes. The pauses appear as their own rows in the layers panel, and deleting a row is the same as switching its option off — delete the trim stop and the section simply becomes a pre-cut one. The inspector shows the same state, whichever way you got there.

What does the worksheet say?

Every stop is named with the hand work it asks for and the material it needs: *lay the appliqué fabric*, *place the pre-cut piece*, *trim the fabric back*. The worksheet prints it in the order the machine reaches them, so the person at the machine can follow along without knowing the design.

How do I get rid of it?

Plain satin ring, in the same Convert menu. The section dissolves, the helper lines and stops go with it, and your ring is left exactly as it was — same path, same width.

Is there a cutting file for the patch?

Not yet. Cutting the fabric in advance (and telling StitchPencil about it with **Pre-cut piece**) works today, but exporting the outline for a plotter or cutting machine is still on the list.

STITCHES · CHAPTER 20

Carving — relief in a single colour

What is carving?

A line you draw into a fill that the fill's **needle holes line up on**. Nothing extra is stitched in a second colour and almost nothing extra is stitched at all — the rows that were going to be sewn anyway put one of their penetrations exactly on your line. Where enough holes sit in a row, the thread parts a little and the surface reads as a **groove**: relief in one colour, for the price of a handful of stitches.

That is the whole idea, and it is also its limit. Carving cannot draw in a second colour, and it cannot make a mark where there are no rows to borrow holes from.

Where do I find it?

Select a **fill** and scroll its inspector to the **Carving** section, below the fill pattern and above the underlay. It is a fill-only feature: satin columns, running stitches and Sashiko fills have no Carving section, because there is no field of rows for the holes to line up in.

How do I draw a carve line?

Tap **Draw carve line** (**New motif** once you have one) and draw on the shape with the Pencil. The button reads **Drawing…** while the pen is armed, and a banner says *"Draw a carve line — the needle holes line up on it"*.

Keep drawing and every further stroke joins the **same motif** — a club takes three strokes and still repeats as one club. The pill at the bottom counts *"N strokes in this motif"*; **Done** puts the pen down. There is no Cancel, because every stroke is its own undo step.

Clear removes all motifs from the object; the trash button in a motif's row removes just that one.

Why is my line barely visible?

Because it runs **along** the fill rows instead of across them. A row can only give up a hole where it meets your line, so a line crossing the rows at a right angle collects a hole every quarter millimetre or so, while a line lying parallel to them gets one hole per row spacing — about four times fewer. That is not a setting, it is the geometry of a tatami fill.

StitchPencil measures this and says so: when a worthwhile stretch of your line runs with the rows, a warning box appears telling you how much of it stays faint, and offers **Turn the fill to N°** — one tap, and the rows cross the line everywhere. Turning the motif instead (see **Rotation** below) does the same job from the other side.

What do Rotation and Size do?

Rotation turns the motif in place, −180° to +180°. **Size** scales it from 25 % to 400 % of what you drew. Both act on the whole motif, and both are the quick fix for a pattern that fights the fill angle.

What is “Repeat over the fill”?

It tiles the motif across the whole shape instead of leaving it where you drew it.

- **Spacing** is the gap between the copies, edge to edge, 0 to 40 mm.
- **Offset every other row** staggers alternate rows so the repeat doesn’t read as graph paper.

Each stroke repeats **on its own**, so adding another stroke enriches the pattern rather than rearranging it. What you drew stays where you drew it; the copies step outwards from there.

What is in the motif library?

From library opens a sheet with two sections. **Patterns** holds ten built-in tiles; **Your motifs** holds what you have saved, and starts out saying *“Motifs you save land here — draw one, then tap the disk.”*

Tapping a built-in pattern drops it into the fill, centred on the shape, and sets spacing and stagger to the values that tile was designed for. Tapping one of your own inserts it centred, at the size you drew it, and leaves the spacing alone.

To save one, tap the **floppy disk** in the motif’s row, give it a name and tap **Save** — a motif saved that way can be dropped into any fill later. To delete one, long-press its tile in the library and choose **Remove**.

Which patterns are built in?

Ten textures, all line work rather than filled shapes, sized so a normal motif shows six to ten repeats rather than three:

- **Waves** — a running wave, the plainest of the set.
- **Arches** — a row of arcs, staggered.
- **Scales** — overlapping scallops, staggered.
- **Basketweave** — four short lines in three directions, woven.
- **Diamond** — a closed lozenge, the one geometric grid.
- **Net** — two crossing diagonals, an open mesh.
- **Bricks** — offset dashes with a tight 1.2 mm spacing, so the courses read as a wall.
- **Meander** — a continuous Greek key.
- **Feather** — a spine with four pairs of plumes.
- **Spiral** — two and a bit turns, staggered.

Sashiko motifs are deliberately not among them — Sashiko is its own stitched fill, not a groove.

Can I edit a motif’s shape after drawing it?

Yes — **Nodes** in the motif’s row opens the ordinary node editor on it. The freehand stroke is fitted to a curve first, so you get real handles rather than a hundred sample points.

The nodes of **every** stroke of the motif are shown at once, and dragging one belonging to another stroke simply hands the editing over to that stroke — no tapping around to pick one first. The count under the

panel is the motif's total, which is what you can see on screen. **Smooth** irons all strokes by the same radius, and **Simplify nodes** thins them all with one shared tolerance, reporting *"Simplified: A → B nodes"* — or saying outright that every node is needed.

Tap the path to insert a node, **drag** the path to bend it into a curve. A carve stroke has no start and no end that matter, so there is no Reverse direction, and it is never offered to close the path.

Does carving show in the stitch player?

Yes. The Stitch player marks every penetration that landed on a carve line in a tinted dot — darker than the thread on a light colour, lighter on a dark one — and the marks appear as that part of the design is sewn, not from stitch 0. Pinch to zoom in up to 8× and drag to pan, which is usually what you need to judge whether a groove will actually read.

That view is also the honest one: where your line runs along the rows you will see the dots thin out.

How many stitches does carving cost?

Almost none. A carved row gets one penetration moved onto the line rather than a new pass over the shape, so the stitch count barely moves — check it in the status pill before and after if you want the number for your own design.

EDITING TOOLS · CHAPTER 21

Select & transform — Moving, scaling and flipping objects

How do I select an object?

Switch to **Select** on the tool rail, then tap an object on the canvas — its inspector opens automatically (a run/satin/fill/blend inspector depending on its kind) and handles appear around it.

How do I select more than one object?

Drag out a **marquee** across the canvas. Selection is shape-aware rather than purely bounding-box based, so a marquee that just grazes a ring's bounding box (like the empty middle of a letter "O") won't accidentally pull it in.

What can I do with the on-canvas handles?

- **Drag inside the shape** — move it
- **Drag a corner handle** — scale uniformly
- **Drag an edge handle** — stretch along a single axis only (available on Fill, Run and Satin objects)
- **Rotate handle** — rotate freely, with snap points every 15°
- **Flip** — horizontal or vertical mirroring of the selection, also from the handles

None of these are sliders in a panel — they're all direct manipulation on the canvas itself, which is why there's no separate "Transform" menu to look for.

Do my stitch settings change when I scale something?

No — the geometry scales and the plan is re-generated, so density, stitch length and pull compensation stay the physical millimetres you set and the stitch count adapts by itself.

A satin band keeps its width too, as long as that width is a setting rather than the drawing: scale a 3 mm star up by half and it is still a 3 mm band around a bigger star. The exception is a band whose width *is* the artwork — a pressure-drawn stroke, per-node widths from the Points tool, and lettering — where the width scales with the shape. See Satin.

One thing to watch: scaling a **3D Puff** section can push its columns out of the foam band it was set up for. The app says so in a message and tells you which width it now wants.

How do I get something straight again?

The rotation handle measures the **dominant edge direction** of what you've selected — for a rectangle all four edges agree on the answer — and its snap points sit where that direction lands on a multiple of 15°, **plumb included**. So a rectangle you drew 3° crooked clicks straight at −3°, not at some multiple of the angle you happened to start dragging from.

While you drag, a badge on the handle reads the selection's **deviation from plumb**, not the angle you've turned so far: drag until it says 0, and at the level stop it says **Level** outright. That one stop grabs harder than its neighbours (±4° against ±2.5°) because it's the one people are hunting for. Drag on and you override any of them — the snap forgives near-misses, it doesn't insist.

Three more ways, all in **Align**:

- **Straighten** — one tap, with the measured skew on the label ("Straighten (−3.2°)"). It's also on a **double-tap of the rotation handle**, which additionally opens a keypad for typing an exact angle.
- **Straighten to "Name"** — appears when a multi-selection contains pieces that are crooked by *different* amounts. It levels the **whole selection rigidly** by the named piece's skew, so a motif punched into a rectangle turns with its rectangle and keeps its registration. You name the plumb that matters; StitchPencil doesn't average.
- **Straighten each** — the opposite choice for the same situation: every piece onto its own plumb, each about its own center, so nothing moves out of place. A group counts as one piece — a word is never taken apart.

When the selection has no shared direction, the handle stops promising one: no absolute snap points, no **Level** badge. A circle has no edge direction at all and doesn't get a vote either way.

Can I type an exact angle?

Double-tap the rotation handle. A small pad opens right at the grip: a keypad for the degrees to turn by (with a sign, so −7.5 turns the other way), and above it a **Straighten** button carrying the measured skew when the selection has a direction to measure. It is the same keypad the sliders use, so a number you type is a number you get.

Does the grid do anything, or is it just drawn?

With the grid on (Settings → project), a **moved** selection catches the grid lines. The reference is the selection box's lower-left corner, one per axis, and the catch reaches a quarter of the grid spacing — at most half a millimetre. So a fine grid catches finely and leaves room to move freely between the lines, and every catch puts the edge *on* a line rather than somewhere between two. Keep dragging and you slide past it. Turning the grid off makes it purely visual again.

How do I move something by an exact amount?

Nudge — in the Selection Action Bar and in the object's action grid. It opens a small arrow pad that stays put while you work: four directions, the step size in the middle, and the distance you've moved so far on the line underneath.

- **Tap the middle to change the step**: 0.1 / 1 / 5 mm (0.01 / 0.05 / 0.25 in on an inch project). 0.1 mm is deliberately the finest rung — that's the grid machine files are written on, so it's the smallest move that survives the export.
- **Hold an arrow to repeat**, rather than tapping thirty times.
- **The whole session is one undo step.** Nudge a dozen times, press undo once, and the object is back where it started. Pause for a moment and the next nudge begins a fresh step, so you can also unw-

ind in stages.

The pad works on whatever a drag would move: a single object, a drilled-down group member, a whole group, a multi-selection, or a reference image.

How do I center an object?

Align, in the same two places. The first three entries center the selection in the hoop — both axes, or one at a time.

Below them, if the selection is sitting on top of something, there's an entry for each object underneath, **named**: "Center on "Fill 1"". StitchPencil doesn't pick one for you — a guess about position is one you'd have to check every time, so the menu says which object it means and you choose. When nothing lies underneath, that part of the menu simply isn't there.

Centering means the object's **bounding box** — the same box whose handles you see on the canvas, so what you grab is what gets centered. On a strongly asymmetric shape (a crescent, a comma) that isn't the same as its visual balance point; it is, however, what every drawing tool means by "center", and the one you can predict.

What if the object I'm centering is bigger than the one underneath?

It still centers — and StitchPencil says so afterwards, because the object you aligned to has just disappeared under the one you moved. A brief message names it; undo is right there if that wasn't what you wanted. Objects of the same size don't trigger it (blend layers are copies of one another, so "larger" would be untrue of them).

What is the small green circle on my selected object?

That's the **entry point** — the spot where the machine starts stitching this object, and therefore where its one visible seam ends up. It shows on every selected object, right on the outline.

- A **hollow ring** means StitchPencil picked the spot for you. It aims for the shortest sensible travel from wherever the previous object finished.
- A **filled circle** means you pinned it yourself.

How do I move where an object starts stitching?

Drag the green circle along the outline. It snaps to the nearest point on the shape — including the edge of a hole, if you drag it there — and pins itself where you let go. The whole drag is a single undo step.

This matters most on **closed shapes**. A hexagon, a ring, a letter O has no natural start, so the seam lands wherever the geometry happens to begin — which is often a corner, exactly where it shows. Drag the entry to the middle of an edge, or to a spot another object will later cover, and the seam disappears into the design.

How do I get the automatic entry point back?

Select the object, open **More** in the Selection Action Bar, and choose **Reset entry point**. The option only appears while an entry is actually pinned. After that the circle goes hollow again and StitchPencil picks the spot for you as before.

What's in the Selection Action Bar?

A small floating bar near your selection, holding what a hand reaches for while drawing: **Nodes**, **Knife**, **Convert**, **Align**, **More**, and **Nudge** beyond the divider. On a single object it is those six whatever you selected — the bar does not change length under your hand.

Everything you decide once per motif sits behind **More**, in sections: Cut holes and Zones, then Blend, Sashiko and Contour, then Overlaps, then Copy/Paste style, Reset entry point and Delete. Groups and multiple selections have their own bars, with Join, Merge and Border among them.

Nothing is bar-only: the object inspector shows every one of these as a tile in its action grid, which is the better place to browse when you are looking for something rather than reaching for it. See Cut, combine & convert for what each one does.

EDITING TOOLS · CHAPTER 22

Cut, combine & convert — Knife, Punch, Contour, Border, Join, Merge, Convert

These live in the action grid you see once an object or group is selected (see Select & transform).

What does Knife do?

Splits a Run, Satin or Fill into two separate objects along a line you draw across it — the machine equivalent of cutting a shape in half with scissors, but done before stitching, so you get two independently editable objects afterward.

On a **satin column** the cut keeps the angle you drew. The knife cuts both edges of the column where your line crosses them, so the new end runs *along your line* rather than square across the column. That is what lets you build a sharp corner by hand: cut two columns at matching angles and butt the two cut faces together, the way a picture frame is mitred. The rest of the column is untouched — only the end you cut changes.

The cut end keeps its angle through everything that follows: Simplify nodes, the width slider, and Merge. In the node editor that angle appears as a purple grip beside the node, and you can drag it to re-aim the stitches at that end.

What does Punch do?

Uses the selected object as a **stencil**, stamping its shape as a cut-out ("knockout") into whatever fill objects sit underneath it, so those fills stitch *around* the punched shape instead of solidly covering it. Options include an **offset** (shrink or grow the stencil slightly before punching) and whether the punching object itself remains after the punch or is consumed by it; it also works across a multi-object selection or a whole group at once.

What does Border do?

Adds an outline around the selected shape, with a choice of offset position: **On edge**, **Outside**, or **Inside** — useful for giving a fill a clean satin edge, or for Fit under border to have something to snap to.

It works on a **group** as well as a single shape, and that is where it earns its name: filled lettering with a satin outline is one tap on the whole word — every letter and every hole (the inside of an a, both holes of a B) gets its ring, in the thread you choose, sewn after the letters so it lands on top of them.

Around **live text** the outline stays live with it. Retype the word, change the face or the size, bend the baseline, and the outline is made again from the letters that are there now — the word and its edge cannot drift apart. Editing the outline objects by hand is possible, but the next change to the text replaces them, so make the word right first and dress it afterwards. An outline in the letters' own colour needs no separate objects at all: use **Satin edge** in the group's Tatami section instead.

What does Contour do?

Draws a line at a distance you set **around** the selection — an echo line, a margin, an outline around lettering. It offsets *areas*, so it works on a Fill, on a Satin column (the band between its rails is an area, so an open stroke is fine), and on a Run whose stroke closes into a ring. An open line has no inside and cannot have a contour; the panel says so instead of quietly leaving it out.

The panel gives you the **distance** (2.0 mm by default, drag the slider or tap the number and type it), **Outside / Inside / Both**, how many lines (up to five, evenly spaced), and the **Stitch** to sew them with — Run or Satin first, then that kind's presets. A dashed preview on the canvas follows the slider, so you see where the line lands before it exists.

Shapes that **touch** are always contoured together — two overlapping letters never get a line through their own seam. What **separate** shapes mean is a question geometry cannot answer, so the panel asks it whenever the selection covers more than one area:

- **Per shape** — a line around each one. The edge of every part: echo lines, a border on each letter.
- **Around all** — one line around the lot. Gaps are bridged with a soft fillet that follows the shapes rather than cutting the bay between them off, and what lies between the parts stays inside. This is the outline of a patch, the placement line of an appliqué.

Around all is preselected for a multi-selection, because that is usually what selecting several things and asking for *a* contour means. In **Per shape**, the panel says how the merging worked out — "7 shapes make 4 areas here" — so three lines out of four selected shapes reads as arithmetic rather than caprice. Parts that lie far apart get a fuller belly between them — the dashed preview shows it before anything is created.

The distance is measured from the edge of the shape, and every line steps off the original, so three lines at 2 mm sit at 2, 4 and 6 mm. In **Per shape**, holes come along at the same distance from the material — the hole of an "o" gets its own line; in **Around all** they do not, since the point of that mode is the outside.

Corners decides what happens where the line turns a sharp corner. Going outward, only the *inward* corners are sharp — the V between two petals, the waist a bridge leaves between two parts; the outward ones come back as arcs of the distance itself, so the line already rounds a leaf tip on its own. *As drawn* leaves the sharp ones sharp, the way it always has. *Rounded* fills them with an arc, and a **Corner radius** slider (1–10 mm, starting at 3) sets how wide. A notch narrower than twice the radius closes over completely — and if that swallows a line, say the one inside a small hole, the panel says so rather than quietly handing you one line fewer. In **Per shape** the rounding works on each shape by itself, so a wide radius can never weld two contours into one. Going **inside** it is the mirror image, the outward corners being the sharp ones there. Either way the rounding only ever moves the line *away* from the material, so the distance you set stays a minimum and never becomes an average. The dashed preview follows both, so you see the answer before you commit.

The result is ordinary objects, inserted right behind their source in the same color. They do not follow the shape if you edit it later — reshape the source, then contour again.

Contour and Border overlap: Border is the fill-only classic (on the edge, or half the border's width outside/inside, holes included), Contour is the general tool with a free distance, several lines and any closed object.

What does Join do?

Makes several objects **sew in one go** — while every one of them stays its own object, editable and reversible (ungroup and everything is as before). It is the same action wherever you find it: on a loose multi-selection (which groups the objects first) and on a group you already made, and it works for every stitch kind — satin columns, lines, fills.

Join does two things. First it puts the members into the one sew order a branched figure wants: touching satin columns (a T, a Y, a star — most lettering) sort so that each cover lands over what came before; lines sort into a single pass; fills keep your drawn order. Second, it treats the stretches *between* the members as connectors under one rule: where the thread has to come back, it runs **hidden** under a piece stitched later or doubled along a line it retraces — never across bare fabric — and where nothing will ever cover it, it is **cut** instead. The layer row reports what actually came out, measured from the stitch plan: *Joined · 3 × Satin · 2 hidden travels*.

Two things stay in your hands afterwards:

- **Entry and exit** of each member remain the draggable green handles they always were. Left alone, each piece starts at whichever of its ends is nearest to where the previous piece finished, so the thread has the shortest possible way to go. Dragging a handle overrides that.
- **Hide travels**, the switch on the joined group, off: *Cut instead*. Turned off, the group ties off and cuts the thread after every member — some prefer the extra stops to any doubled thread. The default for new joins sits in Project settings next to the trim rule, and changing it there re-applies to the joined groups already in the project; each group can still decide for itself afterwards.

A joined group is marked with a green link icon in the Layers panel so it's visually obvious later which objects are actually one unit. And this needs no re-doing: groups joined in earlier versions get the improved connectors automatically the next time the project generates its stitches.

What does Merge do?

Join's destructive sibling: out of the members it makes **one object**, and the parts are gone — no ungroup brings them back (undo does). What it produces depends on the stitch kind:

- **Fill** — a genuine union of the shapes. Holes are preserved; parts that do not overlap stay grouped.
- **Running stitch** — one continuous path. Touching or crossing lines become a single pass with minimal doubling.
- **Satin columns that form a chain** — one column. Their rungs are carried over exactly as drawn, so a cut end keeps its angle and a pressure-drawn width profile survives. Satin that *branches* refuses to merge — a T or a star has no single centreline, and welding one through it would lay a bold satin band across the motif. That case is exactly what Join is for, and the message says so.

For the chain case, ends that sit slightly apart are pulled together — the tolerance grows with the column, from 1.5 mm on a narrow one up to 3 mm on a wide one, and both sides share the correction so neither column is dragged on its own. Ends further apart than that are left exactly where you drew them and the message says so; that is not a hand-drawing inaccuracy any more, and closing it silently would move stitches you placed on purpose.

Where two ends meet at an **angle**, Merge builds a real corner: both edges run on to where they cross, so the point lands where you drew it. The rung spanning that turn is the mitre line — and the two columns are sawn on it, the way a picture frame is made, each arm keeping its own stitch direction right up to the cut. Left as one long rung it becomes a funnel: every stitch near the turn aims into that single line and the thread piles up, on an 8 mm column at a right angle about three times as much thread in the corner as anywhere else. Sawn, the corner carries what the rest of the column carries, the outer point does not move, and no cover is lost. Where the rungs cannot reach the mitre line — a hand-drawn column whose stitches lie at an angle to the turn — the corner keeps its long rung instead, because sawing there would leave the wedge behind it bare.

What does Convert do?

Changes an object's underlying stitch kind — Run ↔ Satin ↔ Fill — via a matrix of what's allowed to convert into what (not every combination is meaningful, so some paths are gated with an explanation rather than silently failing). Converting **text** to a path uses the letter as the geometric unit, and converting a shape with an interior cut-out preserves it as a proper hole ring rather than flattening it away.

What does "Overlaps" (Remove Overlaps) do?

Hides stitches that end up completely hidden underneath objects stitched later, so the machine doesn't waste time and thread stitching a layer nobody will ever see. It reports how much it took — a trim that ate most of an object usually means the layer order is wrong, not that you saved a lot of thread.

It works on a **fill** and, since the appliqué work, on a **satin column** as well: a border running under a later piece is the same question. The two are cut differently, though. A fill simply loses the covered area. A column can't have a notch bitten out of its side, so the covered stretch is cut out end to end and what remains comes back as separate columns, numbered after the original; a column that is covered along its whole length is deleted outright. Columns in the same group never trim each other, so the pieces of one appliqué letter stay intact.

An **appliqué** cover is a special case in the other direction: what covers the layer beneath it is not just the 2 mm satin band but the piece of cloth inside it, so everything under that letter is hidden, not only what runs under its edge.

Select exactly one object — there is no group or multi-selection version. If nothing later covers it, you get told so rather than a silent no-op.

It does **not** trim flush to the covering object's edge: it leaves a margin tucked underneath, because the two edges pull apart slightly on fabric and a gap would open along the seam. How wide that margin is comes from **Overlap under covers** in Project settings — soft, stretchy cloth wants more of it.

This one edits the object's shape, so it is not a display setting you can flip back and forth: changing the margin afterwards does not re-cut what was already cut. Undo and run it again.

What does "Fit under border" do?

Snaps a fill's edge to sit just inside a matching closed satin border drawn over it, so the fill doesn't peek out past the border or leave a visible gap — this is the manual trigger for the same behavior the app-wide ass-

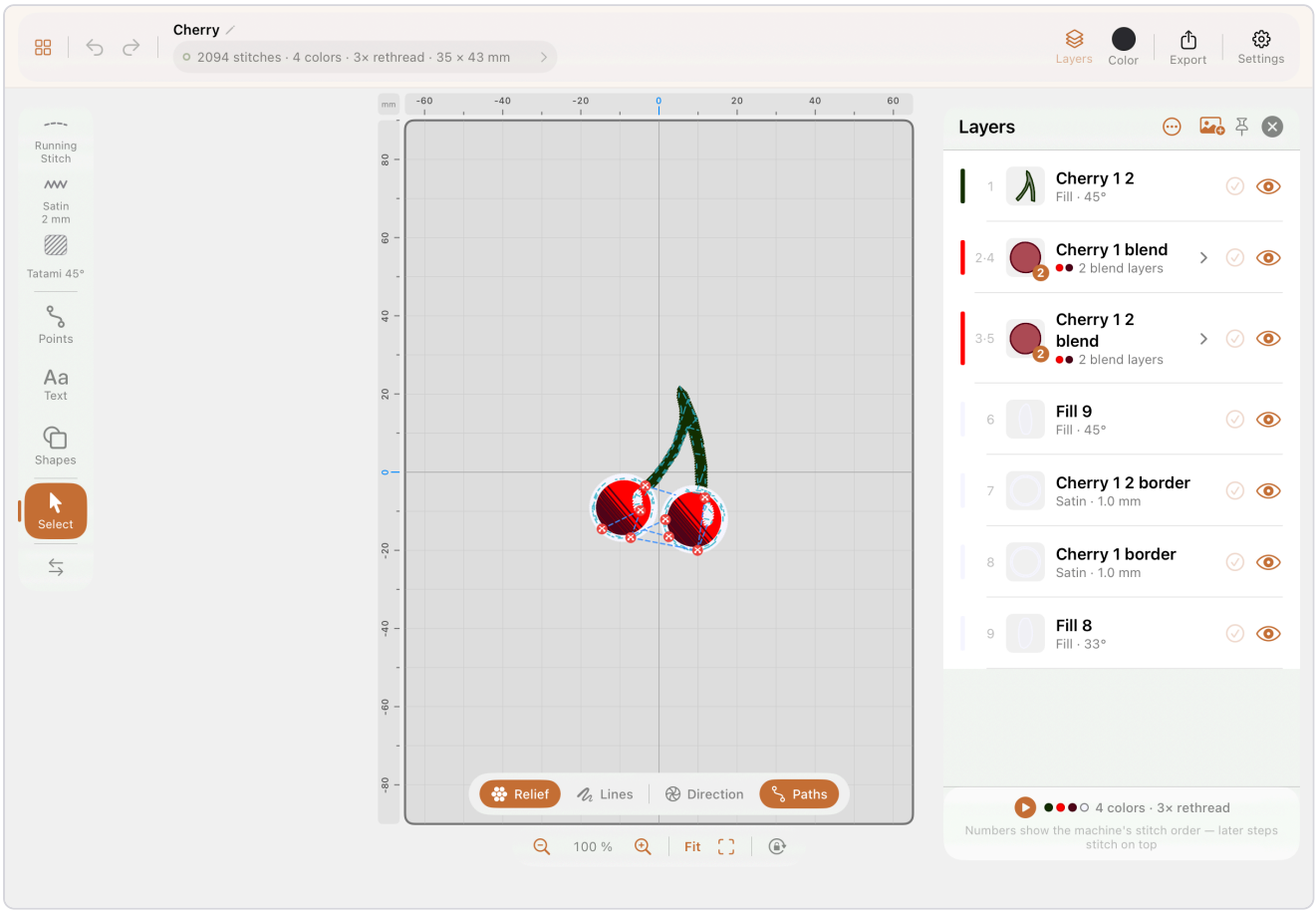
istant can also do automatically.

LAYERS & COLOR · CHAPTER 23

Layers & sequence — Stitch-out order and organization

How do I open the Layers panel?

Tap **Layers** in the top bar. It's a full-height panel, not a sheet — it stays open alongside the canvas while you keep working.



Layers panel showing a Fill object and a grouped 5-object Fill group

What do the numbers next to each row mean?

The **actual machine stitch order**, not just the row's position in the list. A batched group of objects that share a color can show something like "2·4" — meaning this row's contents are stitched at positions 2 and 4 in the machine sequence, with something else in between. This matters because drawing order and stitch-out order aren't always identical once color batching has reordered things for fewer thread changes.

When a row's number sends the machine **back** to an earlier step, that number is highlighted and a short note appears under the list. You see it wherever colour batching lifts a whole colour block out of list order — the list keeps showing where an object sits in the design, the number tells you when the machine actually sews it. Drawing an object in a colour the design doesn't use yet is the usual way to produce one: the new colour becomes its own block, and that block is sewn as a unit.

How do I reorder layers?

Long-press and drag a row — there's no separate "edit mode" to switch into first. Swipe a row left for quick **delete** or **duplicate**.

Several rows at once: check them with the circles on the right, then drag *one of the checked rows* — all of them travel together and land next to each other where you drop, keeping their order among themselves. Dragging an unchecked row still moves that row alone, so the checkmarks never hijack a small fix. A machine stop travels with the object it belongs to.

Dragging rows one at a time is fine for "move this one up". When you want several objects sewn in a particular order, use **Sequence by tapping** instead (below).

How do I protect a layer I'm finished with?

The padlock in the row, between the checkmark and the eye. Locked, the layer still shows on the canvas and still sews — the canvas simply can't get hold of it any more: it won't answer a tap, a marquee sweeps past it, it grows no move/scale/rotate handles, and its points can't be edited. The row itself stays fully usable: drag it to a different place in the sequence, rename it, change its colour, or open it in the inspector.

Lock what is already right, then keep drawing over it without nudging it out of place. Tap the padlock again to let it go. A sashiko lattice locks together with the outline it lives in — the two are one piece, so they cannot be locked apart.

How do I set the sewing order for several objects at once?

"…" → Sequence by tapping. Then tap the objects **on the canvas**, in the order you want them sewn. A number appears on each one as you go. Tap a numbered object again to drop it out; the rest renumber. **Apply order** commits it, **Cancel** leaves everything as it was.

You work on the design itself rather than on a list of names — which is the point, because on the canvas you can see what you're ordering.

Two things worth knowing:

- **Objects you don't tap don't move.** The ones you numbered are re-dealt into the positions they already occupied among themselves; everything else keeps its exact place in the sequence. So the answer to "what did that change?" is always "the objects I touched".
- **If the new order would change how the design looks, StitchPencil says so first.** Stitch order is layering: two objects that overlap look different depending on which one sews second. When your order would swap such a pair, a dialog names them and asks. Reordering objects that don't overlap changes only the machine's route, never the picture, and applies without a prompt.

If you're not sure what order is best, try **Optimize sequence** first — it works out an efficient order for you. Sequence by tapping is for when you already know.

How do I group or join objects?

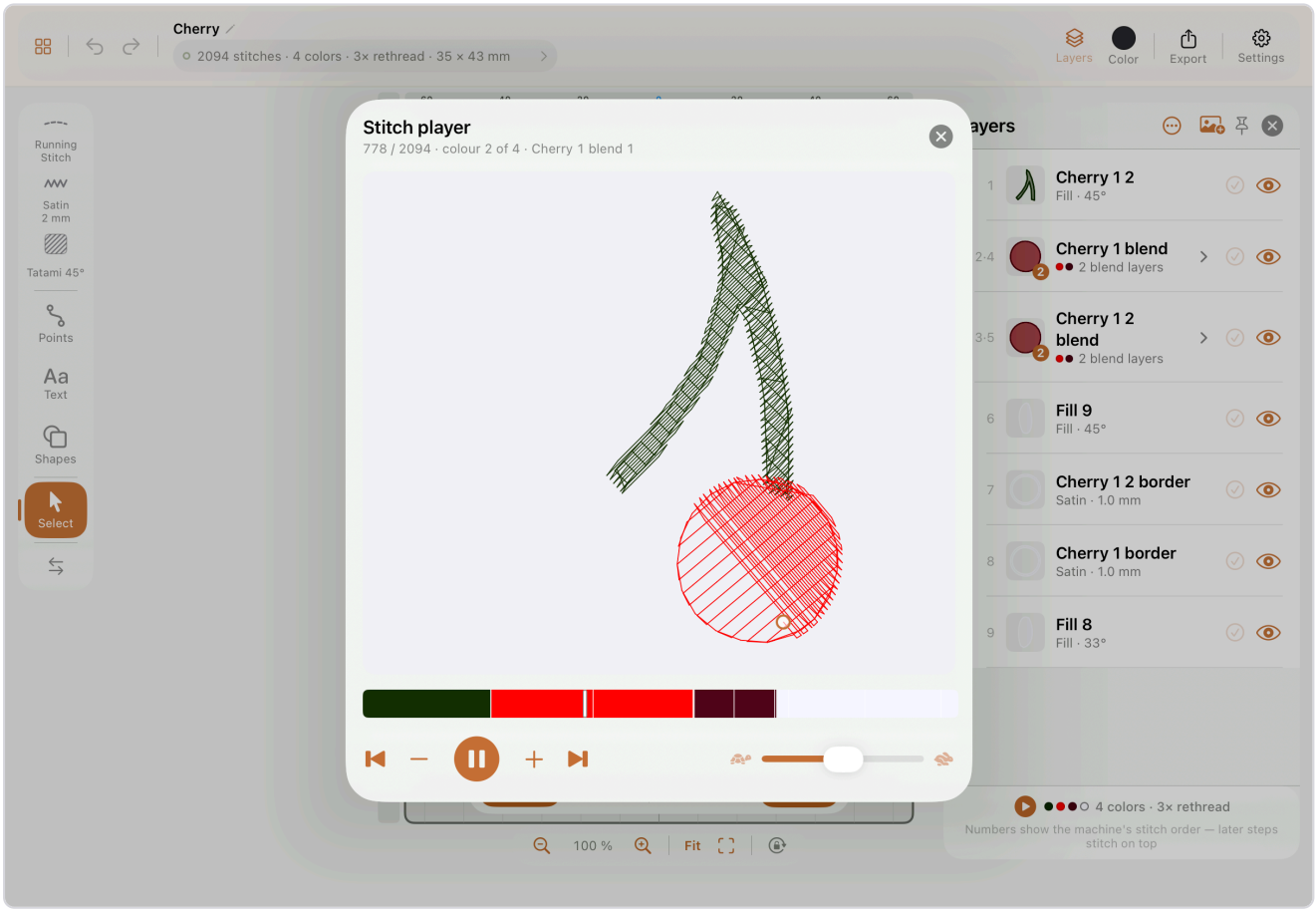
Checkmark-select two or more rows to reveal a bottom bar with **Group**, **Join** and **Merge** (both only offered when every selected object shares the same stitch kind — see Cut, combine & convert for the difference), **Paste style**, and **Delete**.

What's in the "…" overflow menu?

- **Optimize sequence** — reorders stitching for fewer thread trims and color changes; if the reordering would be aggressive enough to visibly change how the design looks stitched (not just its efficiency), it shows a confirmation dialog first rather than silently changing your design's appearance.
- **Sequence by tapping** — set the order yourself by tapping objects on the canvas (see above).
- **Add machine stop** — inserts a draggable command row into the sequence, e.g. to pause for a manual step.
- **Reset opacities** — clears any canvas-only opacity overrides back to fully solid.

Can I watch the design stitch out before sending it to the machine?

Yes — the **Player** button at the bottom of the Layers panel, on the same line as the colour summary, opens the **Stitch player**. It stays there whatever you have selected, so you never have to deselect to get to it.



The Stitch player, part-way through a design, with the needle marker and the colour scrubber

It answers the questions a still picture can't: where the needle travels for nothing, how often you have to walk to the machine, and whether anything ends up sewn over in the wrong order. Nothing you do in the player changes the design — it only reads the finished stitch plan.

The header tells you where you are: **stitches sewn so far out of the total** (the same number the top bar shows — jumps aren't counted as stitches in either place), which color you're on when there's more than one, and the **name of the object currently under the needle**. That last one is the part a machine file could never tell you; StitchPencil knows it because it generated the plan itself.

How do I read the player's scrubber?

The bar under the preview is not a progress bar. Its **blocks are the color blocks of your design, sized by how many stitches each one takes**. So at a glance you can see that one block eats most of the run while the sliver next to it is a whole rethread for eighty stitches — which is usually the moment you go back and think about color batching or the sequence.

Thin light marks across the bar are **trims** — where the machine cuts the thread. Drag anywhere on the bar to scrub; the preview redraws to that point, and the small ring shows where the needle is.

Can I zoom into the player?

Yes — pinch to zoom up to 8× and drag to pan; a chip in the corner shows the factor and puts you back to 1× when you tap it. The preview is redrawn *at* that zoom rather than blown up, so detail actually appears: individual penetrations, the tips of a satin corner, and the tinted dots of a carved groove.

What do the player's controls do?

From left to right: **back to the start**, **one stitch back**, **play/pause**, **one stitch forward**, and **jump to the next color change**. The last one is the one you'll actually use — nobody hunts for stitch 12,273, they look for the next stop.

The slider on the right is **speed**, tortoise to hare, in five steps with no number. The second step is roughly a real machine (about 800 stitches a minute) — slow enough to watch a single seam form. Above that, the exact figure stops meaning anything, which is why none is shown; you're just getting through the design.

Does the player remember where I was?

Roughly, yes. Close it, change something, reopen it, and you land near the same place. It's stored as a *position through the design*, not a stitch number, on purpose — after an edit, stitch 4,000 would point somewhere else entirely, while "about 70 % of the way in" still means what you meant.

What do reference images look like in the Layers list?

Pinned at the top of the panel. The eye icon next to a reference row is the **only** way to select and unlock it for on-canvas move/scale/rotate — while locked (the default), it stays out of the way so you don't accidentally drag your traced photo instead of your stitch object.

A reference lies **under** the stitches, which is right for tracing an outline and wrong the moment a finished fill covers the part you want to draw details onto. Rather than dimming the fill, open the reference and

switch on **Show above the stitches**: the image now lies on top at its own opacity, the stitches show through, and the row says so ("Reference · 50 % · above the stitches"). Switch it off to put it back underneath. Either way it is a guide — never stitched, never exported.

What is the image-with-a-plus icon in the header for?

It brings artwork in — any artwork: SVG files and photos alike. It only asks where from, **Photo Library** or **Files**. A vector file opens the import assistant, a pixel image becomes a tracing template. See Import for the rest.

How does converted text appear in Layers?

Each letter collapses into its own row after Convert to Outlines, with a small chevron to disclose the individual node-editable path underneath — easy to miss if you don't know it's there.

What does layer opacity actually affect?

It's a **canvas display setting only** — a caption in the inspector says so directly: it never changes what's actually sewn. The exported stitch file always sews at full, solid thread regardless of what opacity you've set for previewing.

What's "Thread to next object"?

A per-object setting — Auto / Trim / Jump / Run — controlling how the machine gets from the end of this object to the start of the next: cut the thread, jump without cutting, or lay a connecting run stitch. "Auto" lets StitchPencil decide based on distance and color.

LAYERS & COLOR · CHAPTER 24

Color & thread — Palettes, catalogs and ColorDrop

Where do I open the color inspector?

Tap the color swatch in the top bar (it shows your current drawing color) — this opens the **Color** inspector, which also becomes the destination for any color you assign to a selection.

What is the source picker at the top of the Color inspector?

A menu with four sources:

- **My palettes** — your own saved, themed sets (see Managing palettes below)
- **All brands — search** — a cross-catalog search across every thread brand StitchPencil knows about
- **Catalogs** — the official color charts of eight thread makers: Madeira Polyneon, Madeira Polyneon 60, Sulky Rayon 40, Brother PE-Design, Isacord Polyester 40, Gunold Poly 40, Robison-Anton Rayon 40, Floriani Poly 40 and Smart-Thread Multitalent 40. The picker reopens with whichever one you had open last
- **Custom (RGB / Hex)** — pick any color directly, not tied to a real thread brand

What's the "Project Colors" strip?

A quick-access row of colors already used or pinned in the current project, shown just below the source picker. Tap one to switch your drawing color to it instantly. **Long-press** a catalog swatch to **Pin to Project Colors**; long-press an already-pinned chip to **Remove from Project Colors** — both are easy to miss since they're long-press-only, not buttons.

How do I create my own thread palettes?

Open **Manage…** to create, rename or delete themed palettes. To populate one, use its **"Add colors"** mode — it repurposes the catalog grid into a tap-to-add picker, so you're browsing the same familiar swatches, just adding instead of just selecting.

How does the custom palette work?

Alongside 32 built-in classic colors, tap + to open the system color picker and add your own swatch. Any custom swatch you've added is removable with a long-press.

What is ColorDrop?

Drag any swatch — from a catalog, your palette, or Project Colors — directly onto a canvas object with the Pencil to recolor it on the spot, without first selecting the object and then opening its color field.

When I have a selection, does picking a color always recolor it?

There's a small **Applies-to** switch that decides this: with a selection active, you can choose whether picking a new color recolors that selection, or just sets the color that new strokes will use going forward witho-

ut touching what’s already selected.

GALLERY & PROJECTS · CHAPTER 25

Gallery — Your projects, search and trash

What does each project card in the Gallery show?

A live thumbnail, the hoop size badge (e.g. *130 × 180*), the project title, a row of the colors used, the total stitch count, and when it was last edited.

How do I create a new project?

Tap + **New** in the top bar — see First launch for the full New Project sheet (name, hoop presets, custom size).

Can I bring in a project someone sent me?

Yes — tap **Import** in the top bar for a `.hoop`, or for a `.vemb` written by Boldbobbin. Opening files from other apps covers what carries across and what the warnings mean.

How do I rename a project?

Open it and tap the title in the top bar of the editor — the same rename control described in Interface overview.

Is there search?

Yes, a search field in the Gallery's top bar filters your projects by name as you type.

What happens when I delete a project?

It moves to a trash area rather than disappearing immediately — recoverable until it's cleared. Whether that happens automatically after 30 days, or only when you empty it by hand, is controlled by **Empty trash after 30 days** in App settings.

GALLERY & PROJECTS · CHAPTER 26

Opening files from other apps

Which files can the Gallery open?

Tap **Import** in the Gallery's top bar. The menu has two entries:

- **Project…** — StitchPencil's own `.hoop` projects and `.vemb` projects written by Boldbobbin. These come back as themselves: shapes, settings, the lot.
- **Stitch File (Beta)…** — a machine file: Brother `.pes`, Tajima `.dst` or Melco `.exp`. These come back as *stitches*, which is a different thing — see below.

Other machine formats (JEF, VP3) cannot be opened yet. Artwork comes in through SVG import instead.

What does the stitch-file import actually give me?

The design, as stitches you can edit — cut into sections at every trim, jump and colour change, with the file's own thread colours.

You can move a section, recolour it, hide it, change its place in the sewing order, delete it, and export the result to any format StitchPencil writes. What you get back is faithful: the needle positions in the file are the needle positions in your project.

What you do **not** get back is the way the design was built. Outlines, column widths, row spacing, underlay settings, object names — none of that is in a stitch file. It never was. A `.pes` holds needle positions, a jump flag and a colour index, and nothing else, in every version from the oldest to the newest. A `.dst` and an `.exp` hold even less — they do not name the threads at all.

So this is the tool for "I only have the export any more". It is not a way to recover the project you digitised.

Can I resize an imported stitch file?

Only a little. Scaling stitches does not re-space them, so making a design much bigger opens gaps between the rows and making it much smaller packs them into a hard, thread-breaking mass. A few percent is safe; doubling the size is not.

This is a property of stitch files, not of StitchPencil — the same limit applies in every program.

Why did my DST or EXP arrive in colours it never had?

Neither format stores thread colours — only the points where the colour changes. So the import gives each block its own placeholder, muted on purpose, just so you can tell the blocks apart in the Layers panel. Set the real threads in the Colour inspector.

A `.pes` does carry its threads, and those come across as they are.

Can I get the shapes back — a satin column instead of stitches?

For a satin column, often yes. Select an imported section, then **Convert → Read as Satin Column**.

What it does: it finds the zigzag, takes its two sides as the column's rails, measures the width and the spacing from the stitches themselves, and hands you a real satin object with a width slider and editable nodes. Any stitches the zigzag does not claim — the underlay, in most files — stay as their own object in front of it. Nothing is thrown away.

Before you get it, the column is sewn back out and held against the stitches it came from. If it does not land on the original thread, it is refused and your stitches are left alone. On the lettering it was built against, the sewn line stayed within 0.15 mm of the original.

It will decline more often than you expect, and that is the point. A filled shape is not offered at all yet — a tatami's rows run back and forth exactly like a zigzag, so nothing but the shape of the rungs tells them apart, and a fill with a decorative satin edge really does contain a perfect column that is not the object. Reading that would leave you an outline where a filled shape was.

Does reading a column change my design?

Yes, and only then. The import itself is faithful — the needle positions in the file are the needle positions in your project. A column that has been read is **re-generated** afterwards, so its penetrations move a little and their count changes.

That is a fair trade when you want to edit the column. It is a needless one when you only wanted to recolour it, which is why it happens on request and never on its own.

Why does it say "47 stitches shorter than 0.4 mm were removed"?

Many digitising programs leave needle movements so short that the machine puts two penetrations in the same hole. StitchPencil removes them on import, for the same reason it never creates them: at speed they are what breaks thread.

They are under 0.4 mm — smaller than what you can find on the cloth afterwards.

Why is my import one colour when the file has several?

Some writers list several threads in the file's colour table but never mark a colour change in the stitches. There is then nothing to cut on, and everything arrives in the first thread. Recolour the sections by hand in the Colour inspector.

What happens to the original file?

Nothing. An import always creates a **new project** in your library, stored as `.hoop`. Reading `.vemb` is one-way — StitchPencil never writes that format, so there is nothing to sync back and no way to damage the original.

What carries across from a .vemb?

Shapes, colours, groups, the hoop, and each object's stitch settings:

- **Fills** — row spacing, angle, stitch length, underlay on/off
- **Satin columns** — spacing, and their centre/contour underlay

- **Running stitches** — stitch length; a bean run arrives as a 3-pass run

Objects you named keep their name; deleted objects stay deleted; anything undone in the other app stays undone.

Why is the stitch count different from the original app?

Because the stitches are re-generated, not copied. StitchPencil keeps only the editable design and derives every stitch from it — that is what lets you change a shape and have it re-sew itself.

One consequence is worth knowing: the imported spacing values arrive as your **designed** values, so the project's target fabric applies on top of them. A fill sews tighter on Knit/Jersey than on Woven. If the import looks denser than you expected, that is where it comes from — and switching the fabric back restores the designed numbers exactly.

What does "3 edits this app does not know were skipped" mean?

Some edits in a `.vemb` have no equivalent in StitchPencil. Skipping one quietly could hand you a design that looks perfectly plausible and is wrong — the missing edit might be the one that moved, deleted or reshaped something. So they are counted and named instead.

If you see this message, compare the import against the original before you sew it; the names tell you what kind of edit went missing. No message means everything came across.

What does "12 curve points arrived without control handles" mean?

Some curve points arrive without the information that gives them their curve. They come in as plain corners, so a rounded outline can look slightly straightened.

You can round it back by hand in Nodes.

What does "The hoop size could not be read from the file" mean?

Not every `.vemb` carries a hoop size that can be read back. When it cannot, the project falls back to a default frame and says so. Set the real size in Project settings.

The import was refused — why?

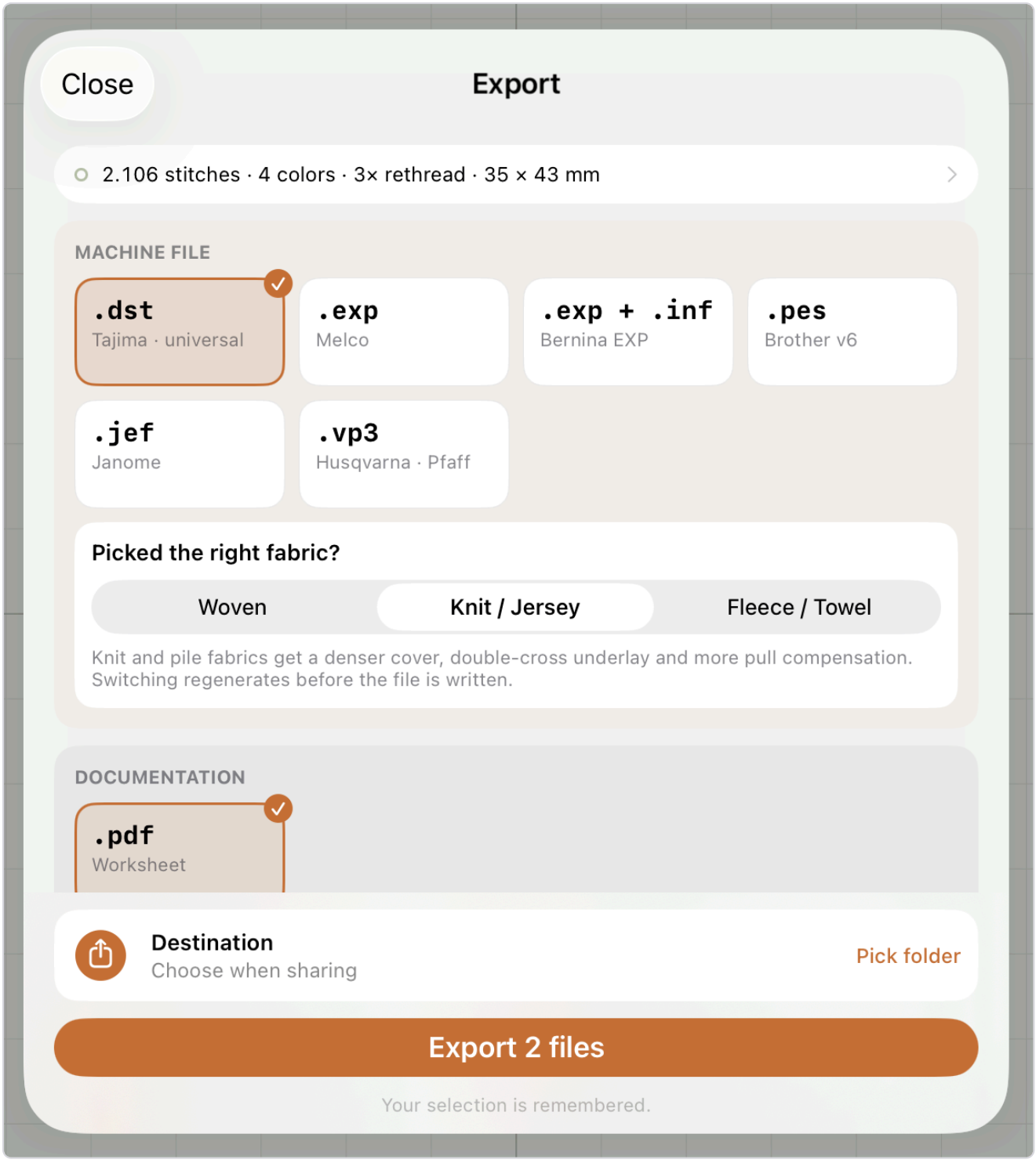
- **"This .vemb was written by a newer version"** — a file from a newer version can mean things StitchPencil cannot read reliably, and guessing is exactly how a design comes out subtly wrong. It refuses rather than guessing.
- **"That .vemb has no shapes to import"** — the file was read correctly but contained nothing stitchable.
- **"Not a readable project file"** — the file isn't a `.hoop` or a `.vemb` at all, or it is damaged.

IMPORT & EXPORT · CHAPTER 27

Export — Machine files, previews, artwork and worksheets

Where do I export from?

The **Export** icon (square with an arrow) in the top bar opens the **Export Center** — one sheet for everything that leaves the app. Tap every format you need (a machine file *and* the worksheet *and* a video, for example), then **Export** once: everything renders as one batch.



The Export Center with machine formats, the fabric question and the worksheet tile

Your selection is remembered, so the next export starts where the last one left off.

What machine file formats are available?

- **DST (Tajima)** — the universal one. If you don't know what your machine wants, this is the safe answer; it carries stitches and commands but no color information.
- **EXP (Melco)**, or **EXP + INF (Bernina)** — the pair Bernina machines expect side by side on the stick, so the machine display shows your real thread colors instead of a default palette. The two are eit-

her-or: the Bernina pair already contains the Melco file, so selecting one deselects the other.

- **PES (Brother)** — colors and the design name for the machine display, plus segment blocks that let desktop software re-open the design as objects rather than as a stitch soup.
- **JEF (Janome)** — see below.
- **VP3 (Husqvarna Viking / Pfaff)** — true RGB thread colors with catalog metadata, one color block per thread segment, so the machine display shows the colors the design was made with.

Exporting a machine file only works once the design passes validation — the design check names anything that's blocking it.

Should I run the design check before exporting?

It's there for exactly that moment: the **status pill** from the top bar — the lamp, stitch count, colors, rethreads and size — sits at the top of the Export Center, because that's where you look before a file leaves the app. Tap it to open the check; closing the check brings you straight back to the Export Center with your selection intact.

What it looks at, and what the three colours mean, is described under Design check. The short version for export: red rows marked **"blocks export"** are machine limits and genuinely stop the file. Everything else is advice — you decide.

What should I know about JEF (Janome)?

Two things, both consequences of how the format itself works:

Colors are palette slots, not RGB. A JEF file doesn't store your thread colors — it stores index numbers into Janome's own 79-color palette. On export, every color in your design is matched to the closest slot Janome has. So the swatch your machine displays is a near neighbour of what you picked, not the exact color. What actually gets sewn is whatever thread you put on the machine, so this only affects the display — but it's worth knowing before you go looking for a color mismatch that isn't one.

The file names a hoop. JEF records which hoop the design belongs in. StitchPencil measures the design itself and writes the smallest standard Janome hoop it fits (50 × 50, 110 × 110, 140 × 200, 200 × 280 mm) — not your project hoop setting, which can be any size you like. A design too big for even the largest standard hoop still exports, tagged with that largest hoop; the machine will be the one to object.

What is the fabric question under the machine formats?

The moment a machine file is selected, **"Picked the right fabric?"** unfolds right below the tiles — the project's **Target fabric**, preset to what the project uses, visible instead of asked. Knit and pile fabrics get a denser cover, double-cross underlay and more pull compensation; switching regenerates the design before any file is written. It exists because of a real sew-out: a jersey project silently left on Woven.

What are the Image & Video exports?

A transparent-background **image (PNG)** or a stitch-out **video (MOV)** of the design. Selecting either unfolds their options right in the sheet: **Background** (transparent, or a color of your choice), **Duration** (5–

15 seconds, video only) and **Format** (1:1 square, 4:3 classic, 16:9 landscape, 9:16 portrait). Handy for sharing a preview without handing over the actual stitch file.

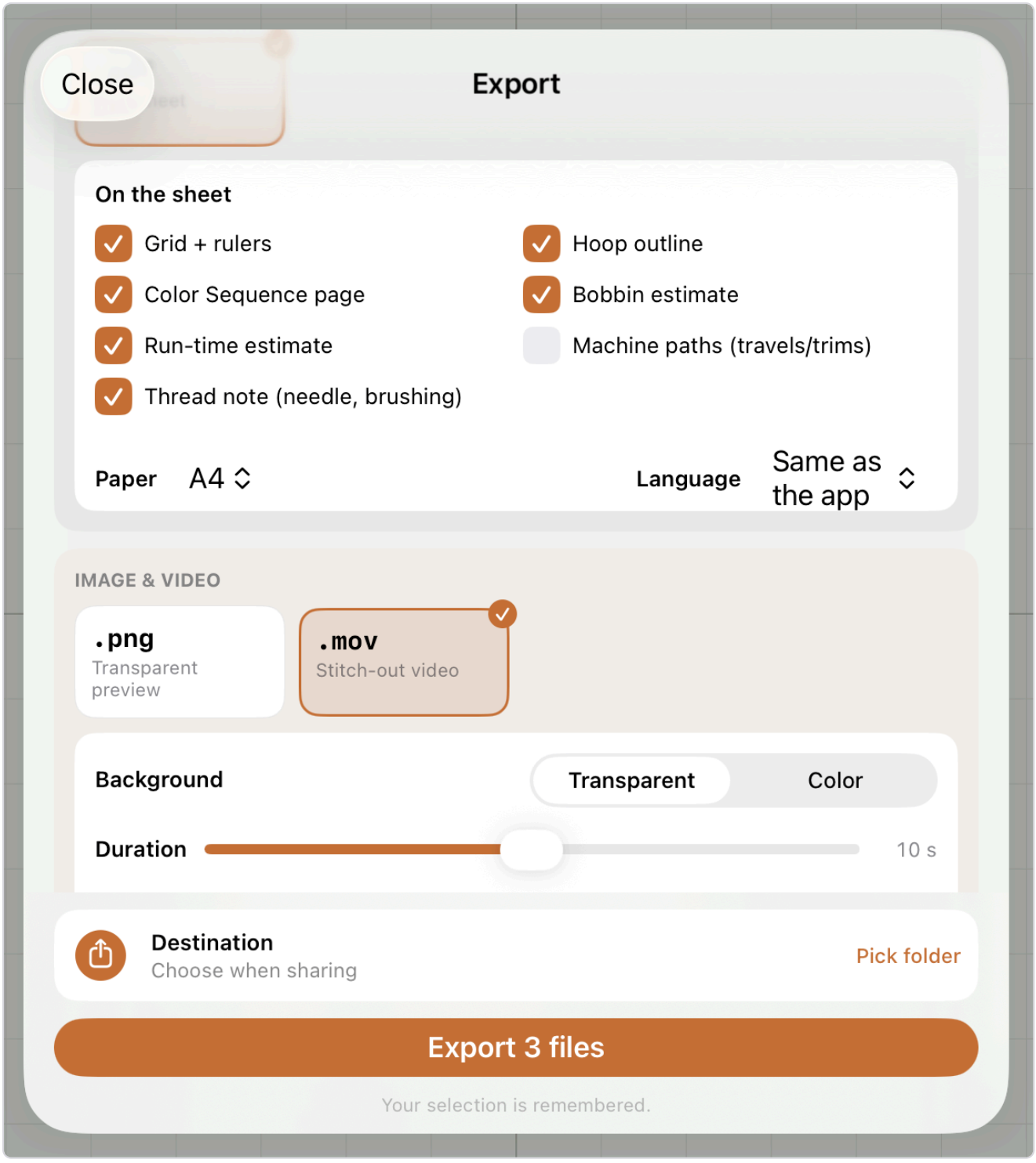
What's the Artwork export?

SVG or **EPS** — a vector re-digitizing handoff, for taking your design's shapes into a desktop vector tool rather than an embroidery machine.

What lands in the file is the shape as it stitches, smoothing included — an object you rounded arrives on the desktop round, not back in the angular version you couldn't fix by hand. A blend group is smoothed as a whole or not at all: its members are congruent copies of one region, and rounding one but not its siblings would part their outlines by up to a millimetre and tear the gradient along the seam.

What's the Documentation export?

A **Production Worksheet PDF** — and its options fold into the sheet the moment the tile is selected: checkboxes for what to include (grid and rulers, the hoop outline, a color-sequence page, a bobbin-thread estimate, a run-time estimate, machine paths, and the thread note), plus **Paper** (A4 / US Letter) and **Sheet language** menus.



Worksheet checkboxes and the video options folded into the Export Center

The machine-format line printed on the sheet follows the machine file you actually selected in the same batch — export JEF + PDF and the sheet says Janome JEF, not a default.

Does the worksheet cover trapunto and 3D puff?

Yes, and this is the part to read before you start. A design with a trapunto or 3D puff section stops the machine for hand work, and the sheet prints a **Hand work** panel on page 1: what to have ready (wadding or puff foam), then each stop in order — numbered, with what to do and the detail that decides whether it

works, like removing the wadding outside the outline. How you fix the material in the hoop is your choice — the sheet asks that it *is* fixed, not for a particular method.

The Sequence page then shows **one frame per thing that happens**, in the order it happens: what gets sewn, then the stop as its own orange panel with the whole instruction inside it, then the next stretch. The stop numbers are the ones from page 1. A stop you set on an object yourself is listed too, as a plain machine stop — the sheet says that it pauses without inventing a reason for it.

Can the worksheet be in a different language than the app?

Yes. **Sheet language** offers *Same as the app*, *Deutsch* and *English*, and it travels with the design rather than with you: digitize in German and hand an English sheet to a shop that reads English. It switches the whole sheet — headings, labels, the color list, the date — and the number formatting with it, so a German sheet reads 1.234,5 mm where an English one reads 1,234.5 mm.

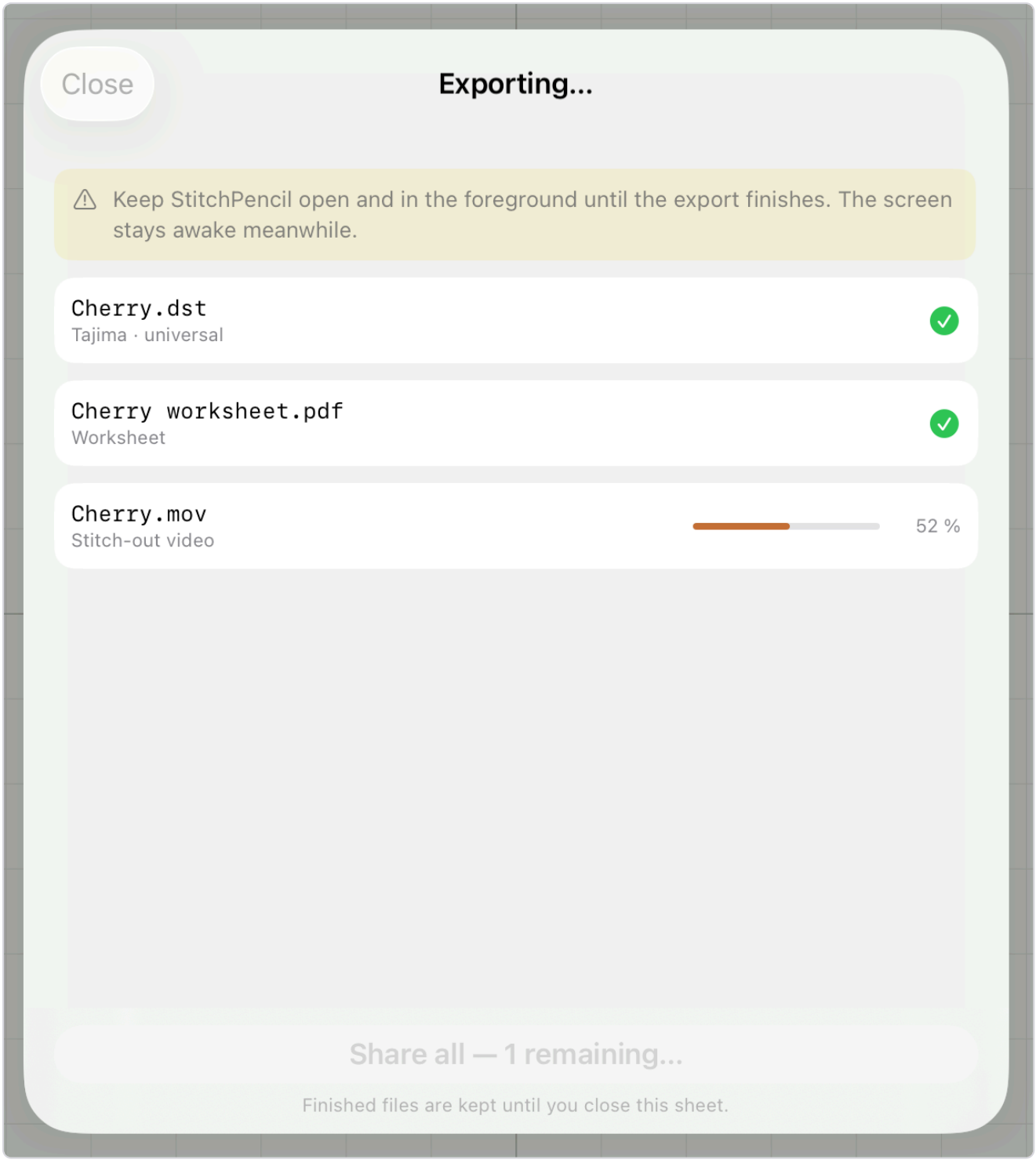
The choice is remembered along with the sheet's other settings, so the next worksheet comes out the same way without setting it up again.

What's the Project export?

Saves or shares the raw **.hoop** project file itself — this one is never blocked by validation, since it's just your working file, not a finished stitch-out.

What happens after I tap Export?

The sheet turns into a **render queue**: every file gets a row, quick files collect their green checkmarks first, and the video shows its progress in percent. A batch always exports the design as it was when you tapped Export — whatever happens on the canvas meanwhile.



The render queue with two finished files and the video at 52 %

While something is rendering, a banner asks you to keep StitchPencil open and in the foreground — the screen stays awake meanwhile. Once the queue falls silent, the banner fades: no guessing whether it's finished. A failed row offers a retry.

Where do the files go? Two ways, chosen at the bottom of the sheet: **Pick folder** writes every finished file straight into a folder of your choice (remembered across exports), or leave it on *Choose when sharing* and hand the whole batch to the system share sheet at the end with **Share all**.

Are exports free right now?

Yes — during the beta, every export format is unlocked and free to use. Nothing you export now will stop working retroactively, and this page will be updated once that changes.

IMPORT & EXPORT · CHAPTER 28

Import — SVG artwork and reference images

Can I open a project file from another app?

`.hoop` and Boldbobbin `.vemb` projects open from the Gallery, and a machine file (PES, DST, EXP) opens there too as editable stitches — see Opening files from other apps. This page is about *artwork*: vector files and photos you bring onto the canvas of a project you already have open.

Where is the import button?

In the **Layers panel**. Tap **Layers** in the top bar, then the **image-with-a-plus icon** in the panel's header. It only asks for the source — **Photo Library** or **Files** — and the content of the file decides the rest.

It is the way in for *every* kind of artwork: vector files and photos share the one button.

How do I import an SVG?

Through the button above, or quicker: drag the SVG file straight onto the canvas from another app. Either way opens the **SVG import assistant** with a live preview against your hoop.

What choices does the import assistant give me?

- **Import as** — Stitch objects (each element becomes an editable Run/Satin/Fill object) or a Tracing template (a locked reference image you draw over by hand)
- **Scale** — a percentage field, with Fit-hoop and 100% shortcuts
- **Per-element mapping** — each stroke maps to Auto / Run 1× / Run 2× / Bean 3× / Satin / Skip (with preset pickers alongside), and each fill maps to Tatami or Skip
- **Per-color thread mapping** — assign a real thread color to each color found in the file

What happens if I just drop in a photo instead of an SVG?

It becomes a **reference/tracing image**, not stitch objects — with an opacity slider, on-canvas move/scale/rotate, and a **Straighten** control for a photo that was shot slightly rotated. It's meant to be drawn over with the regular Stitch tools, not converted automatically.

Is there a fully automatic "photo to stitches" feature?

No. StitchPencil's path is tracing over a reference image by hand, or importing structured vector artwork (SVG) with the mapping controls above.

TROUBLESHOOTING · CHAPTER 29

Troubleshooting — Common questions and fixes

What is the coloured dot in the top bar?

That's the **design check** lamp, and the chip it sits in is a button — tap it any time to open the report. See Design check for what the three colours mean and everything it looks at.

If the dot is a **hollow ring** rather than a filled circle, the design has not been checked since your last edit. The check runs on demand, so rather than show you a green lamp it has not earned, it shows you nothing.

Why is my export grayed out or blocked?

The design has to pass validation first — usually an object sitting outside the hoop boundary, or a shape that isn't valid for the format you're exporting to. Open the design check: blocking problems appear at the top, marked **"blocks export"**, each with the specific reason and what to do about it.

I copied or received a .hoop file and it won't open — why?

A `.hoop` file's internal project ID has to match how it's stored — if a file has been renamed or moved in a way that breaks that link, StitchPencil will report it can't find the expected file. Re-importing the original, unrenamed `.hoop` (via the Files app or AirDrop rather than a manual file copy) avoids this.

My units look wrong compared to what I expected

Display units (mm/inch) are set **per project**, not globally — see Project settings. If a project looks like it's in the "wrong" unit, check that project's own setting rather than a single app-wide preference.

I want to wipe my settings back to defaults — is that safe?

Yes, as long as you pick the right option: **Factory reset → Reset, keep projects** restores every app-wide setting without touching your saved designs. The second, further-confirmed option additionally deletes every project — see App settings before using it.

Something on the canvas looks stuck or overlapping oddly

Check whether **Remove Overlaps** (in the object action grid) would help — it hides fill stitches that are completely covered by later objects, which can otherwise look like clutter in outline/Lines view even though they'd never actually show once stitched.

FAQ · CHAPTER 30

FAQ

Is StitchPencil free right now?

Yes — during the beta, every feature and every export format is unlocked. This page will be updated if that changes, and nothing you have already exported stops working.

What machine formats does StitchPencil export to?

DST, **EXP** (with an optional Bernina companion **.INF** color file), **PES**, and **JEF** for machine stitching, plus **SVG/EPS** for a vector desktop handoff and a **PDF** production worksheet for reference. See Export.

How do I get a design onto my embroidery machine?

StitchPencil writes the machine file; getting it to the machine is a file transfer. Three routes work today — pick the one that matches the hardware you already have.

Plug a stick into the iPad. The shortest route, and the one to prefer. A USB-C iPad reads USB-C sticks directly (USB-A sticks work through an adapter). Export the machine file, choose **Save to Files** in the share sheet, and pick the stick under **Locations**. No computer in between.

Share it to another device. Export, then **AirDrop** the file to a Mac or another Apple device and copy it onto a stick or SD card from there. Useful when your machine only takes a card your iPad can't hold.

Go through a cloud folder. Export, choose **Save to Files**, and drop the file into iCloud Drive, Dropbox, or whatever folder your Mac or PC also sees. Copy it onto the stick on the computer. Slower than the other two, but it works from anywhere and leaves you a backup.

Two things to check before you export, whichever route you take: **which format** your machine reads (see Export), and **where on the stick** it expects the file — some machines only look in a specific folder, others only at the top level. Your machine's manual says which.

Is there a wireless way — straight from the iPad to the machine?

Not today — one of the three routes above is how a file reaches the machine.

Is StitchPencil iPad-only?

Yes — it's built specifically for iPad with Apple Pencil in mind, on iPadOS 26 and newer, and there's no iPhone or Mac version.

Where do I import an image or an SVG?

In the **Layers panel**: tap **Layers** in the top bar, then the image-with-a-plus icon in its header. An SVG can also just be dragged onto the canvas. See Import.

Is my thread brand in there?

Eight makers ship with the app: Madeira, Sulky, Brother, Isacord, Gunold, Robison-Anton, Floriani and Smart-Thread. If yours isn't among them, search across all of them for the closest match by color, or define your own RGB/Hex colors — both in the Color inspector.

Why doesn't Sashiko look like real hand-stitched dashes?

Because a machine can't leave thread hanging mid-air between dashes the way hand-sewing can — StitchPencil stitches the whole motif as one continuous running stitch instead, letting the lattice pattern itself carry the look. See Sashiko for the full explanation.

Can I embroider on towelling or plush?

Yes, with a knockdown: a coarse grid sewn before the design that flattens the pile. The **Knockdown** stitch is ready in the fill list — see Fill (Tatami).

Why can't I apply Sashiko to my satin shape?

Only fills, and **closed** satin or run objects, qualify — an open satin path has no natural "inside" for the lattice to fill. Convert it to a fill first, then apply Sashiko. Details on the Sashiko page.

Is there a German version of the app?

Yes. The interface follows your iPad's language: set it to German and StitchPencil speaks German throughout — menus, inspectors, the design check, every toast and error message, and the production worksheet PDF. Numbers follow the locale too, so lengths read 0,4 mm rather than 0.4 mm. Any other system language falls back to English.

Can I use StitchPencil left-handed?

Yes — switch **Tool bar side** in App settings, or use the ⇄ chip at the bottom of the tool rail itself, to mirror the whole layout to the other edge of the screen.

What does "Draw with finger" actually protect against?

With it off (the default), only the Apple Pencil draws, so resting your palm or hand on the screen while sketching can't leave an accidental stroke. Turn it on in App settings if you'd rather draw with a finger too.

I found a bug — what should I include when reporting it?

The app version and build date from **App settings → About**, the project's `.hoop` file if you can share it, and — if it's an export problem — which format you were exporting to and what the design check said, if anything.

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The always-current version of this handbook lives at docs.stitchpencil.app

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