



THE PATH TO

Perfect Embroidery

A guide to achieving the best results with your embroidery

 **ricoma**
THINK BEYOND

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Perfect embroidery isn't magic. It's the result of getting seven fundamentals right, every single time. Whether you're just starting out or running a busy production floor, these are the building blocks that separate professional results from frustrating do-overs. Master these seven steps and your machine will reward you with consistent, beautiful stitches.

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Thread

Choose the right thread for the job



Thread is where every great embroidery starts. The wrong thread will fight you at every stitch. The right thread almost runs itself.

Industrial embroidery machines are built around the threads made specifically for them. As machines get faster, thread manufacturers keep adapting their products to match.

Thread weights

Thread weight is shown as a number, such as 30wt or 40wt. The higher the number, the finer the thread.

Common thread weights:

- **40** - The most versatile and widely used thread for machine embroidery. Suitable for logos, lettering, and general decorative designs on most fabrics, including apparel, towels, and hats.
- **30** - Thick and bold. Ideal for decorative stitching, applique, and heavy fabrics like canvas, denim, or leather. Creates prominent stitches and is best for bold lettering or designs that need maximum visibility.
- **50** - Slightly finer than 40wt. Used for general embroidery work and medium-detail designs on lighter apparel fabrics.

- **60** - Very fine. Perfect for small lettering, intricate details, and delicate fabrics. Reduces bulk and allows for precise stitching on lightweight materials.
- **Specialty threads** - Polyester (Polyneon), rayon, matte (Frosted Matt), metallic, and wool-look (Burmilana).

QUICK TIP

Start with 40wt polyester as your everyday workhorse. It covers most jobs. Use 30wt for bold designs and heavy fabrics, 50wt for lighter apparel, and 60wt for fine lettering and intricate detail work.

Thread types

Two main types dominate the industry:

Rayon has a high sheen and rich colours, but breaks easily. It needs precise tension settings to run well.

Polyester matches rayon's sheen but is much stronger. It's more forgiving on tension, making it the modern workhorse for most jobs.

Both come twisted to the left, which prevents the strands from unravelling as the needle forms each stitch.

Other threads include cotton-look (no sheen, used for natural-looking work) and metallic or lurex (used for fashion and badges).

Bobbin thread

Use pre-wound disposable bobbins in white or black. Choose a poly-cotton blend.

Tension

Balance bobbin and needle tensions



Tension makes or breaks your embroidery. Get it right and stitches sit cleanly. Get it wrong and you'll see loops, puckering, or bobbin thread showing on top.

Always set the bobbin tension first. Once that's right, you can adjust the upper needle tension to match.

The drop test

Pre-wound bobbins are easier than manually wound metal ones. They hold more thread and keep tension stable once set.

Here's how to check bobbin tension:

1. Load a full bobbin into the case
2. Before placing the thread into the final pigtail guide, hold the thread end
3. Let the bobbin case jerk downward

Watch what happens to the thread:

- ✓ Thread drops 3 to 5cm and stops = correct tension
- ✗ Thread keeps unwinding = too loose, tighten it
- ✗ Thread barely moves = too tight, loosen it

Check the satin stitch

To balance upper tension, stitch out a satin stitch column and flip it over. On the underside you should see:

- The middle third = bobbin thread
- The outer two thirds = needle thread

If the bobbin thread isn't visible, your top tension is too tight. If it covers more than a third, it's too loose.

QUICK TIP

Practise feeling the threads between your fingers. With time, you'll know correct tension by feel alone, no gauge needed.

Threading matters too

Even perfect tension settings won't help if the machine is threaded incorrectly. Learn the correct threading path for both the bobbin case and upper needle. Get familiar with it before troubleshooting tension problems.

Needles

Right style, size, and fitting



A small part with a big impact. The right needle, fitted correctly, prevents thread breaks, fabric damage, and wasted production time.

Buy quality, not cheap

Cheap needles cost more in the long run. They bend, break, and damage fabric. A higher quality needle pays for itself by lasting longer and protecting your work.

If a needle bends without breaking, the steel is poor quality or wasn't hardened correctly. Don't use it.

Sharp or ballpoint?

The general rule:

- **Woven fabrics** (denim, twill, canvas) = sharp point
- **Knitted fabrics** (t-shirts, polos, jersey) = ballpoint

That said, a standard sharp point handles most jobs well. Only switch to ballpoint when you see fabric damage on knits.

Finer fabrics need finer needles. Thicker materials need thicker needles. Match your needle to your fabric weight.

Fitting the needle

Industrial needles have a round upper shank, unlike domestic needles which have a flat side. This means you have to fit them carefully.

Two rules:

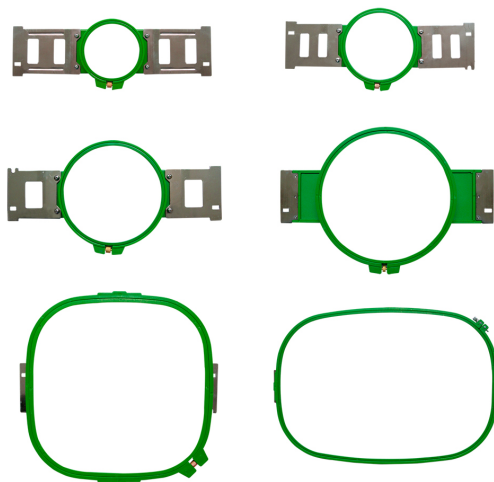
1. The eye must face directly to the front
2. The scarf (the scooped section behind the eye) must face directly to the rear

CRITICAL

Push the new needle all the way up into the needle bar until it stops. If it's not fully seated, you'll get skipped stitches and possible damage.

Frames

Hooping for stable embroidery



The frame holds your work in place while the machine stitches. Get framing wrong and even perfect digitising won't save the result.

How frames work

The frame moves your fabric in time with each stitch, controlled by the machine's pantograph. It pauses just long enough for the needle to penetrate, then moves to the next position. This dance happens hundreds of times per minute.

Choose the right size

Use a frame only slightly larger than your design. This gives the fabric the firm support it needs.

Two things to check:

1. The needle and presser foot must clear the frame edge. The back of the presser foot needs more space than the front.
2. Allow at least 12mm between your design and the frame's inner surface.

QUICK TIP

Always run the design in tracing mode first. This shows you exactly where stitches will land relative to the frame.

The tape trick

Some items, like jeans pockets, are awkward to hoop. Here's a faster method:

Frame a heavy backing in a larger border frame. Stick double-sided tape on the backing where your design needs to go. Press the pocket onto the tape and stitch.

The same backing with tape can be reused many times.

CRITICAL

You can have everything else perfect, but bad framing means bad embroidery. There's no fix for it after the fact.

Stabiliser

Backing and topping



If you embroidered cardboard, every stitch would land perfectly because cardboard doesn't move. Fabric does. Stabiliser is how you make fabric behave more like cardboard while it's being stitched.

Why you need backing

After every stitch the fabric gets pushed and pulled at high speed. Without something to anchor it, you'll get distortion, puckering, and shifting designs.

A non-stretch material under your fabric solves this. Most stabilisers are made from non-woven polyester. They come in different thicknesses and textures.

You can attach backing in three ways:

1. Frame it together with the fabric
2. Fuse it onto the fabric before framing
3. Stick it on with spray adhesive

QUICK TIP

If you use spray adhesive, choose one made for embroidery. Regular sprays leave residue on the needle.

For best results, frame the backing together with the fabric, not loose underneath.

Cut-away or tear-away?

Pick the right type or your stabiliser won't do its job:

Fabric Type	Use This Backing
Knits and stretch fabrics	Cut-away
Heavy wovens (denim, canvas)	Tear-away
Light wovens	Either works

The names tell you what to do after stitching. Tear-away pulls off cleanly. Cut-away has to be trimmed with scissors. Plain woven fabric can also work as a stabiliser when needed.

Topping

Topping goes on top of the fabric, not underneath. It stops the fabric pile from poking through the stitches and prevents stitches from sinking into thick materials.

When to use topping:

- Towels (the most common use)
- Thick knits like fleece
- Velvet or corduroy

Topping is usually clear water-soluble film, but thin clear plastic also works.

Speed

Adjust for fabric and design



Faster isn't always better. The right speed protects thread, fabric, and design quality. The wrong speed creates problems faster than you can fix them.

There's no single 'right' speed

Every machine, fabric, and design combination has its own sweet spot. Experience and observation help you find it.

What Ricoma machines can do

Speed varies by machine configuration:

- **6 or 8 head machines** can run up to 1,350 stitches per minute (SPM)
- **Single-head and smaller models** have their own maximum speeds

Stitches per minute (SPM) and revolutions per minute (RPM) mean the same thing here.

Built-in smart speed

Modern machines, including the Ricoma range, look ahead in design. When they spot long stitch lengths, they automatically slow down. Shorter stitches run at the speed you set.

Recommended speeds

Fabric or Application	Recommended Max SPM
Stable wovens (denim, canvas)	900 to 1,000
Knits and stretch fabrics	700 to 800
Caps	700 to 800

QUICK TIP

Polyester thread handles higher speeds better than rayon. If you're getting frequent thread breaks, try slowing down before changing anything else.

Find your sweet spot

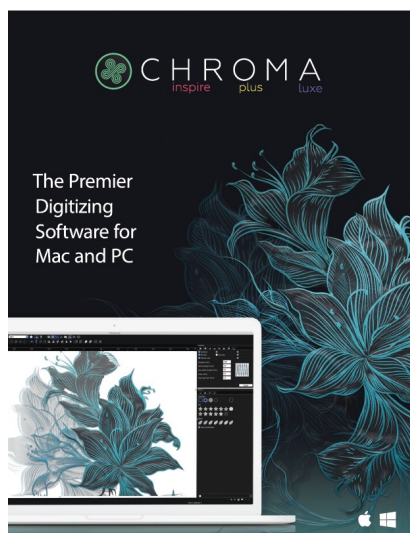
Aim for the highest speed that:

- Doesn't cause thread breaks
- Doesn't distort the design

Sometimes slower means more productive. Fewer thread breaks means less downtime.

Digitising

From artwork to stitches



Digitising is the art of turning a graphic into stitch instructions. Even with today's powerful software, this step still needs human skill.

Software is a tool, not a magic wand

Give the same artwork to ten digitisers, all using the latest software, and you'll get ten different results. Some will be excellent, some will be average.

Why? Because experience and artistic judgement still matter.

Chroma: Ricoma's digitising software

At Ricoma South Africa, we supply Chroma in three tiers. Each one builds on the last:

Chroma Inspire

The starting point. Auto-digitise designs, create lettering, use 43 pre-digitised fonts, and send designs wirelessly to your machine. Everything you need to start producing real results from day one.

Chroma Plus

For growing businesses ready for more complex work. Adds advanced fill options, photo stitch, 71 pre-digitised fonts, a ribbon interface, and a full set of design manipulation tools.

Chroma Luxe

The complete professional suite. Full Chroma toolset including 133 pre-digitised fonts, gradient and colour blending, motifs, wave fill, font editor, and advanced features for high-volume operations.

Which tier is right for you?

- Just starting out, or doing simple text and logos? **Inspire**
- Running a small business with varied client work? **Plus**
- High-volume production or complex creative work? **Luxe**

The digitising process

Good software lets you adjust many design parameters. You start by setting the fabric type, since this changes density and stitch length recommendations.

From there it's about planning:

- The order of stitching
- How segments connect
- Where the underlay goes
- How dense each fill should be

Sequencing and planning decide your final result more than any single setting.

QUICK TIP

The most important investment is training. The best software won't help if you don't know how to use it well. When you choose your software, factor training into your decision.

Bringing It All Together

That's the path to perfect embroidery. Seven steps that work together.

Master one, and you'll see better results. Master all seven, and your machine becomes a reliable partner instead of a daily frustration.

Each step depends on the others. The right thread needs the correct tension. Correct tension needs proper threading. Even the best digitising can't fix bad framing or the incorrect stabiliser.

Start with the basics. Build your skills. And remember: perfect embroidery isn't about luck or talent, it's about getting the fundamentals right, every time.

Your 7-step checklist

01	Thread	Right weight and type for the fabric
02	Tension	Bobbin first, then needle to match
03	Needles	Quality steel, fitted to the stop
04	Frames	Right size, properly hooped
05	Stabiliser	Correct backing, topping when needed
06	Speed	Match to fabric, watch for breaks
07	Digitising	Plan sequence, train your skills



Learn More

Want to know more about Ricoma SA's training services and machine range? We're here to help.

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