



Thread Mastery Institute™



Your time is valuable!

Your time is valuable! Whether you quilt, embroider, craft, or do any other type of sewing on a machine, there are things you can do increase the quality of your work, and increase the ease and enjoyment of your projects. In this Thread Mastery™ summary, we'll emphasize the following five topics that will make your quilting and sewing experiences successful.

1. Maintaining Your Machine

Lint buildup or worn parts can cause your machine's performance to deteriorate. Regular maintenance of your machine is essential for optimum performance.

2. Choosing the Right Thread

All threads are not created equal! Low-quality threads can break easily, produce excessive lint, and hinder your machine's performance. Using high-quality threads will make a world of difference in your projects.

3. Matching the Needle to the Thread

Needle type and size are critical for smooth stitching. Always select a needle suited for your thread type and fabric.

4. Spools vs. Cones

Most spools are straight wound (sometimes referred to as stack wound) and most cones are cross wound. Each winding type requires a different setup to reduce tangles and breakage.

5. Adjusting Tension Appropriately

Factory preset tension settings are not ideal for all threads. Adjust your machine's tension based on the thread size and type. Learning to change your machine's tension will transform your sewing.

1. Maintaining Your Machine

Your sewing machine is like a beloved garden. If you don't tend to it—watering the flowers, pulling the weeds, and refreshing the soil—it won't thrive. The same rule applies to your sewing machine. If you want your machine to perform at its best, you must maintain it.

Some things that could affect the performance of your machine are:

- **Lint Build-Up** Causes skipped stitches and tension issues; clean regularly.
- **Adhesive or Coated Threads** Residue can clog the machine; avoid glazed or coated threads.
- **Timing Issues** Misalignment of the hook and needle leads to skipped stitches; may require professional adjustment.



2. Choosing the Right Thread

Selecting the right thread for your project is essential to achieving the best results. In this section, we'll explore different thread types, explain thread measurements, and discuss how the type and size of thread can impact your sewing, quilting, or embroidery.

Thread Types

Cotton thread is a natural fiber thread that varies widely in quality depending on the type of cotton used, where it is grown, and how it is processed. Cotton fibers are classified by their staple length, which refers to the length of the individual fibers. The longer the staple, the smoother, stronger, and less lint-prone the thread will be.

- Short Staple Cotton - The most common but lowest quality cotton fiber. Short staple cotton threads tend to be weaker, lintier, and more prone to breakage. If the label of a cone or spool only states "cotton" as the material, it is probably a short staple cotton thread.
- Long Staple Cotton - A better-quality fiber compared to short staple cotton.
- Extra-long Staple Cotton - The highest quality cotton available. It produces threads that are exceptionally strong, smooth, and nearly lint-free.

True Egyptian-grown cotton is considered the finest in the world due to its extra-long staple fibers, which result in excellent strength, durability, and a silky smooth finish. Y.L.I.'s [Dream Seam](#), [Majestic](#), and [Hand Quilting Thread](#) are made from 100% Egyptian-grown, extra-long staple cotton.

Cotton Processing

The manner in which cotton thread is processed plays a significant role in its final texture, strength, and appearance. Here are some of the key finishing techniques used to enhance cotton thread quality:

Mercerization enhances cotton thread by strengthening fibers, increasing sheen, and improving dye absorption for richer color and durability. Most cotton threads, including Y.L.I.'s, undergo this process.

Gassing burns off excess fuzz and long fibers, creating a smoother, low-lint thread with better stitch quality. This premium finish is found in Y.L.I.'s [Dream Seam](#) and [Majestic](#) threads.

Glazing coats the thread with a thin layer of starch or wax, then polishes it under heat and pressure for rigidity and extra strength. Y.L.I.'s [Hand Quilting thread](#) is glazed for durability. Glazed threads should only be used for hand quilting, as the coating can build up in machines.

Advantages of Cotton Thread

- Soft and Natural
- Strong and Durable
- Safe for High Heat
- Matte Finish Blends into Fabric



Polyester Threads are made from synthetic raw materials and are widely used in sewing, quilting, and embroidery due to their strength, durability, and versatility. There are five main types of polyester threads, each with unique characteristics suited to different applications.

- **Filament polyester thread** is composed of multiple continuous micro-filament polyester fibers tightly twisted together. Because it is made from synthetic raw materials, this type of thread has a slight sheen, making it smooth and completely lint-free. It is known for its exceptional strength and durability, making it a great choice for high-speed sewing and precision stitching. Y.L.I.'s [Perfection](#) and [Precision](#) threads are excellent examples of high-quality filament polyester threads, offering both strength and smooth performance.
- **Spun polyester thread** is made by spinning polyester fibers into yarn and then twisting them into thread. This type of thread maintains a soft, cotton-like feel while being stronger and more durable than natural fibers. While spun polyester threads are versatile and widely used, they do produce lint due to the nature of their construction. They are often an economical choice, making them popular for serging, garment construction, and general-purpose sewing.
- **Poly-wrapped poly core thread** is a hybrid of filament and spun polyester. It features a strong, multifilament polyester core wrapped in an outer layer of spun polyester. This construction provides the best of both worlds: the high tensile strength of filament polyester combined with the soft, cotton-like appearance of spun polyester. This makes it an excellent choice for quilting, sewing, and high-speed machine work where strength and a natural look are desired. Y.L.I.'s [QuiltMaker](#) is a high-quality poly-wrapped poly core thread designed for durability and a beautiful matte finish.
- **Trilobal polyester threads** are a type of filament polyester that has been engineered to have a unique triangular (trilobal) cross-section, which enhances its light-reflecting properties. This results in a high-sheen, lustrous appearance that is perfect for embroidery, decorative stitching, and quilting where a brilliant, eye-catching finish is desired. Trilobal polyester threads are strong and colorfast, ensuring long-lasting vibrancy. Y.L.I.'s [Elite](#) (solid colors) and [Variations](#) (variegated colors) are stunning trilobal polyester threads designed to add beauty and dimension to any project.
- **Monofilament thread** consists of a single, continuous strand rather than multiple fibers twisted together. This ultra-fine thread is designed to be nearly invisible when sewn, making it an excellent choice for applications where you don't want the thread to be seen, such as stitch-in-the-ditch quilting and fine appliqué work. Y.L.I.'s [Wonder Invisible](#) (nylon) and [Invisible Thread](#) (polyester) are both monofilament threads.

Advantages of Polyester Thread

- Exceptional Strength
- Colorfast and Fade-Resistant
- High-speed Machine Compatibility
- Versatile Finishes (matte/high-sheen)



Silk Threads, derived from silkworm cocoons, is valued for its strength, smoothness, and luxurious sheen. Its fine texture allows it to blend seamlessly into fabric, making it ideal for appliqué, detailed quilting, and binding, where precision and a nearly-invisible finish are desired. Y.L.I. Silk #100 is an ultra-fine #100 silk thread perfect for intricate work.

The advantages of silk thread include a beautiful natural sheen, exceptional blending, flexibility, and strength, making it perfect for appliqué, quilting, and delicate stitching that requires both durability and elegance.

Thread Weight and Measurements

Understanding thread weight and composition is essential for selecting the right thread for your project. Here's a breakdown of the key terms:

Tex A precise scientific measurement based on weight. If 1,000 meters of thread weighs 30 grams, it is Tex 30. The higher the Tex number, the heavier (thicker) the thread.

Weight (wt.) A general category system rather than a scientific measurement. Lower numbers mean thicker thread, while higher numbers indicate finer thread. For example:

- 60 wt. – Very fine
- 50 wt. – Fine
- 40 wt. – Medium
- 30 wt. – Heavy

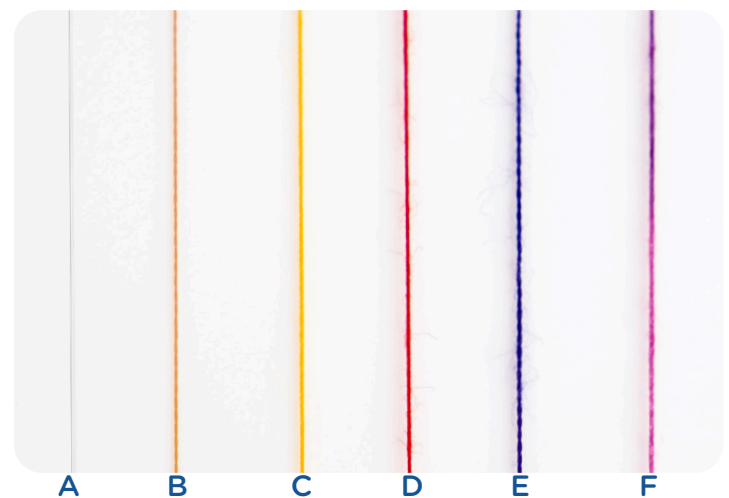
Thread Number (# or no.) Another way to indicate weight or thickness. Like weight, higher numbers mean thinner thread (e.g., #50 thread is finer than #30 thread).

Composition (Ply Count) Thread labels often include two numbers, such as 50/3 or 50 wt. 3-ply.

- The first number (50) represents the thread weight.
 - The second number (3) refers to the number of plies—individual strands twisted together.
 - More plies generally mean a stronger, smoother, and more durable thread.
- For example, 60/3 is stronger than 60/2 because it has an extra ply.

Putting it all together

So why does this matter? Choosing the right thread affects your sewing results. For example, when quilting, a finer 50 wt. or 60 wt. thread will blend into the fabric for detailed work, while a thicker 40 wt. or 30 wt. thread will create more visible stitches for decorative quilting and topstitching. Understanding these measurements helps you pick the best thread for your project!



A = Invisible Thread (monofilament), B = Precision (60 wt. 2-ply), C = Perfection (50 wt. 3-ply), D = Dream Seam (50 wt. 3-ply), E = QuiltMaker (40 wt.), F = Majestic (40 wt. 3-ply)

Piecing: Choosing the Right Thread

When piecing a quilt, the goal is to use a thread that is fine enough to prevent bulky seams while still being strong enough to hold everything together. A 50 wt. 3-ply extra-long staple cotton thread, such as Y.L.I.'s [Dream Seam](#), is an excellent choice because it strikes the perfect balance between strength and fineness. Since it's made from premium-quality cotton, it can also withstand the high iron temperatures needed for pressing seams, ensuring crisp, flat quilt blocks.

While many quilters prefer cotton for piecing, some like to use polyester thread. Y.L.I.'s [Perfection](#) is a great option for those who like stitching with a fine, polyester thread that won't add bulk to seams. Whether you choose cotton or polyester, selecting a high-quality, well-balanced thread will help ensure smooth, precise piecing and a quilt that lasts for years to come.



Quilting: Choosing the Right Thread

The thread you choose for quilting plays a major role in how your finished quilt will look. Whether you want bold, decorative quilting or stitches that subtly blend into your fabric, selecting the right thread weight and type is essential.

For Bold, Visible Quilting If you want your quilting stitches to stand out and add dimension to your overall quilt, a 40 wt. thread such as Y.L.I.'s [Elite](#), [Variations](#), [QuiltMaker](#) or [Majestic](#) are excellent choices. These strong, vibrant threads create eye-catching stitched designs that highlight your stitching patterns beautifully.

For Blended, Subtle Quilting If you prefer your quilting stitches to blend smoothly into the fabric rather than stand out, a finer thread like Y.L.I.'s 50 wt. [Perfection](#) is an excellent choice. This fine, smooth thread allows the quilt design (the fabrics) and piecing to take center stage while still providing durable quilting stitches.

For Stitch-in-the-Ditch and Stippling When precision is key, such as in stitch-in-the-ditch quilting, English Paper Piecing, or fine stippling, using a high-quality, smooth thread like Y.L.I.'s 60 wt. [Precision](#) ensures clean, even stitches. If you want your quilting to be nearly invisible, Y.L.I.'s [Invisible Thread](#) is an ideal choice, as its ultra-fine monofilament construction disappears into the fabric, giving your quilt a beautifully finished look without distracting from the design.

By choosing the right thread weight and type, you can achieve the perfect quilting effect—whether you want to showcase your stitches or let the fabric and quilt pattern shine.

3. The importance of choosing the right needle

Selecting the correct needle type and size is just as important as choosing the right thread. A dull or improperly sized needle can cause issues like skipped stitches or thread shredding. For most sewing projects, we recommend using a Topstitch needle (except when sewing knits, where a ballpoint needle is preferred).

Topstitch needles have a larger, elongated eye and a deeper groove along the shaft, providing better protection for the thread as it moves through the fabric. This reduces skipped stitches and minimizes thread shredding.

Our Titanium-Coated Topstitch Needles feature a micro-thin layer of titanium nitride, a gold-colored coating known for its exceptional hardness and durability. These needles last up to eight times longer than regular needles—almost like getting eight needles for the price of one!

Needle Size Guide for Home Machines

- **Size #70/10** for fine threads (100 wt. or 60 wt.) such as Y.L.I.'s Precision or #100 Silk
- **Size #80/12** for 50 wt. threads such as Y.L.I.'s Dream Seam or Perfection
- **Size #90/14** for medium threads (40 wt.) such as Y.L.I.'s Elite, Majestic, or QuiltMaker
- **Size #100/16** for heavy threads (30 wt. or thicker)



4. Spools vs. Cones

Thread is wound onto spools or cones in two main ways: straight wound (also called stack wound) and cross wound. The way the thread is wound determines the proper method for unwinding it to ensure smooth stitching and prevent tension issues or thread breakage.

Straight (Stack) Wound Thread

Straight wound thread is wound evenly in parallel layers, creating a neat, straight-lined appearance. Since the thread layers sit directly on top of one another, it is designed to unwind from the side of the spool, not over the top. This means the spool should rotate as the thread is pulled off. Using a vertical spool pin or a standalone thread holder that allows the spool to spin freely is ideal. A simple way to remember this is: “Straight wind on, straight wind off.”

Cross Wound Thread

Cross wound thread is wound in a crisscross pattern, forming an X-shaped appearance on the spool or cone. Unlike straight wound thread, it is meant to unwind over the top in a smooth, continuous motion. For best results, use a thread stand, cone holder, or a horizontal spool pin to allow the thread to unwind evenly over the top without twisting or tangling. Using the correct unwinding method for each type of thread will help reduce drag, thread breaks, and helps your machine run smoothly.

If your machine doesn't have both a vertical and horizontal spool pin to accommodate different winding types, using a separate thread stand can help ensure proper unwinding. If you're still experiencing tension issues or thread breakage after adjusting your top and bobbin tension or changing needles, improper thread unwinding could be the cause.



Straight wound thread

Notice the parallel lines and the thread unwinding from the side.



Cross wound thread

Notice the X-like appearance and the thread unwinding from the top.

5. Learn to Adjust Your Machine's Tension

Sewing machine thread tension is all about balancing the upper and lower threads to create smooth, even stitches—and adjusting it is easier than you think! Proper tension ensures your stitches lock neatly within the fabric, preventing loose loops, puckering, or thread breakage. While your machine's auto-tension setting might seem convenient, it isn't smart enough to handle every thread and fabric combination—plus, it's often set too tight. Don't be afraid to tweak it! Making small tension adjustments allows your thread to glide effortlessly, accommodating different weights, textures, and stitch styles for the best possible results. And here's the good news—on most home sewing machines, you only need to adjust the top tension, leaving the bobbin tension untouched. A little experimentation can make a world of difference in your quilting, so go ahead and turn that dial!



Q & A and Troubleshooting

1. What is the best piecing thread?

For flat, precise seams, we recommend using a 50 wt. thread to avoid bulk. Most quilters prefer cotton thread, like Y.L.I.'s Dream Seam, because it withstands high heat when pressing seams perfectly flat. Some quilters opt for a 50 wt. polyester thread, like Y.L.I.'s Perfection. If you choose polyester, be sure to set your iron to medium heat to protect the thread while pressing.

2. What is the best thread for quilting?

The best thread for quilting depends on the look you want to achieve. Cotton, polyester, and silk threads are all excellent choices. Keep in mind that finer threads blend more into the fabric, while high-sheen threads stand out more than matte-finish options. If you want your quilting to be visible, the professionals recommend using a 40 wt. thread. Variegated threads are typically 40 wt. to ensure the colors stand out.

3. Do I have to use the same fiber type and thickness of thread on the top and in the bobbin? No! You can mix different thread fiber types and thicknesses to achieve the best results. For example, Y.L.I.'s Majestic, a 40 wt. extra-long staple cotton, is a beautiful choice for quilting, as its medium weight helps stitches stand out on the quilt top. In the bobbin, we recommend Y.L.I. Precision, a fine 60 wt. polyester, or Dream Seam, a 50 wt. high-quality cotton, both of which blend seamlessly into the backing fabric. Together, they create a perfect balance for strong, stunning stitches!

4. What is the best bobbin thread?

For the best results, we recommend Y.L.I.'s Precision, a fine 60 wt. polyester thread, and Dream Seam, a 50 wt. extra-long staple cotton thread. Their fine weight allows them to blend beautifully into your fabric while ensuring smooth, even stitches. Both L-style and Class 15 prewound bobbins are available in Precision and Dream Seam for added convenience.

5. My thread keeps shredding and breaking. What can I do?

If your thread is breaking, here are some common causes and solutions:

- **Thread Quality** Are you using high-quality thread? Low-quality thread is weak and breaks more easily.
- **Tension Too Tight** Try loosening your top tension—don't be afraid to lower it to 2.0, then gradually increase until you achieve a balanced stitch.
- **Wrong Needle Size or Type** Use a topstitch needle appropriate for your thread weight. For 50 wt. thread, a #80/12 topstitch needle is ideal. If sewing through dense fabric or stabilizer, move up to a #90/14 needle to reduce friction.
- **Speed Matters** If using a very fine thread, slow down! Higher speeds put extra strain on the thread, increasing the chance for your thread to break or shred.
- **Check Your Thread Path** Ensure your machine is threaded correctly, as even a small misstep can cause shredding. Is the top thread in your machine's take-up lever? Is there a burr along the path?

6. Why is my machine skipping stitches?

Skipped stitches are often caused by a worn-out needle or improper threading. Start by double-checking that your machine is threaded correctly and replacing your needle with a new one. If you're stitching through multiple layers, dense fabric, or stabilizer, your needle may not be strong enough to penetrate smoothly. If you're already using the correct needle size for your thread, try moving up one needle size and slowing down your stitching speed to improve stitch formation. These simple adjustments can make a big difference!



This Thread Mastery™ Guide is designed to help you select the right thread for your project. Each thread line includes fiber composition, thread weight, recommended techniques, and the appropriate needle size for both home and longarm machines. Use this guide as a reference when choosing thread for your project to achieve ideal results.

Product	Size	Description	Put-up (yds.)	Recommended Techniques	Recommended Needle
Dream Seam	50 wt. 3-ply	100% Egyptian-grown extra-long staple cotton thread	600 yd. spools 2,000 yd. cones Prewound bobbins	piecing, bobbin, detail quilting	Home: #80/12 Longarm #16 (3.5)
Elite	40 wt.	high-strength trilobal polyester thread	1,094 yd. mini cones 5,470 yd. cones	embroidery, quilting	Home: #90/14 Longarm #18 (4.0)
Hand Quilting Thread	40 wt.	glazed extra-long staple cotton thread	500 yd. spools	hand quilting (not for machine use)	n/a
Invisible Thread	0.005" <i>very fine</i>	polyester monofilament thread	1,500 yd. spools 7,500 yd. cones	applique, quilting	Home: #70/10 Longarm #14 (3.0)
Machine Quilting Thread	40 wt. 3-ply	100% Egyptian-grown extra-long staple cotton thread	500 yd. spools 3,000 yd. cones	quilting	Home: #90/14 Longarm #18 (4.0)
Majestic	40 wt. 3-ply	100% Egyptian-grown extra-long staple cotton thread	500 yd. spools 2,000 yd. cones	quilting	Home: #90/14 Longarm #18 (4.0)
Needles	70/80/90/100	titanium-coated topstitch needles fit all home machines	5 needles per pack	applique, embroidery, quilting, sewing, and more!	We recommend these needles
Perfection	50 wt. 3-ply	gently textured multifilament polyester thread	3,000 yd. cones	quilting, bobbin, sewing	Home: #80/12 Longarm #16 (3.5)
Precision	60 wt. 2-ply	multifilament polyester thread	1,420 yd. spools 3,000 yd. cones Prewound bobbins	bobbin, quilting, paper piecing	Home: #70/10 Longarm #14 (3.0)
QuiltMaker	40 wt.	poly-wrapped poly core thread	6,000 yd. cones	quilting, sewing	Home: #90/14 Longarm #18 (4.0)
Silk	#100	fine, multifilament silk thread	200 yd. spools	applique, detail quilting	Home: #70/10 Longarm #14 (3.0)
Soft Touch	60 wt. 2-ply	100% Egyptian-grown extra-long staple cotton thread	250 yd. spools 1,000 yd. mini cones 6,000 yd. cones	bobbin, piecing, sewing, quilting	Home: #70/10 Longarm #14 (3.0)
Variations	40 wt.	high-strength trilobal polyester thread (variegated)	2,188 yd. cones	embroidery, quilting	Home: #90/14 Longarm #18 (4.0)
Wonder Invisible	0.004" <i>very fine</i>	nylon monofilament thread	2,000 yd. spools	applique, quilting	Home: #70/10 Longarm #14 (3.0)
Woolly Nylon	n/a	textured nylon thread for sergers (loopers only)	1,094 yd. mini cones 8,500 yd. cones	serger, coverstitch (loopers only)	n/a