



Thread Mastery Institute™



Your time is valuable!

Whether you quilt by hand or machine, embroider, or sew, there are a few things you can do to improve the quality of your work and increase the ease and enjoyment of your projects. In our Thread Mastery Booklet, we'll emphasize five topics to help 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 significant difference in your projects.

3. Matching the Needle to the Thread

The type and size of the needle 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 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. To keep it running at its best, you need to maintain it.

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

- **Lint Build-Up:** Often causes skipped stitches and tension issues. Clean your machine regularly.
- **Adhesive or Coated Threads:** Residue can clog the machine; avoid glazed or coated threads in your machine (OK for hand quilting).
- **Timing Issues:** Misalignment of the hook and needle leads to skipped stitches. Fixing this 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 is the most common but lowest-quality cotton fiber. Short staples measure up to 1 1/8" long. Short staple cotton threads tend to be weaker, lintier, and more prone to breakage. If the description or label only states "cotton" as the material, it is probably a short staple cotton thread.
- Long Staple Cotton fibers measure between 1 1/8" to 1 1/4" long and are a step up from short staple cotton.
- Extra-long Staple Cotton fibers measure up to 2" long and are the highest quality cotton available. It produces threads that are exceptionally strong, smooth, and nearly lint-free.

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

Cotton Processing

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

Mercerizing improves cotton thread by strengthening the fibers, increasing sheen, and improving dye absorption for richer colors and enhanced durability. Most cotton threads, including Y.L.I.'s cotton threads, undergo this process.

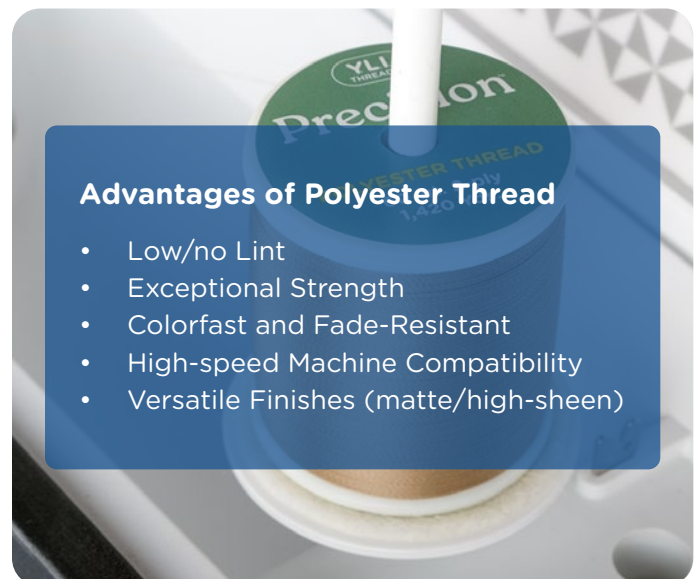
Gassing burns off excess fuzz and long fibers, resulting in a smoother, lower-lint thread with improved stitch quality. Gassed threads, such as [Dream Seam](#) and [Majestic](#), have noticeably less lint than other cotton threads that skip this beneficial process.

Glazing coats the thread with a thin layer of starch or wax, which is polished under heat and pressure to achieve rigidity and extra strength. [Hand Quilting Thread](#) is glazed to withstand the stress and tension placed on threads when hand quilted. Glazed threads should only be used for hand quilting, as the coating can build up in machines.



Polyester Threads are made from synthetic raw materials and are commonly used for sewing, quilting, and embroidery due to their strength, durability, and versatility. There are five primary types of polyester threads, each with distinct characteristics tailored to various applications and techniques.

- **Multifilament 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 renowned for its exceptional strength and durability, making it an ideal choice for high-speed sewing and precise stitching. Our [Perfection](#) and [Precision](#) threads are excellent examples of high-quality multifilament polyester threads, offering both strength and smooth performance.
- **Spun polyester thread** is made by spinning polyester fibers 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. Spun polyester threads are not as strong as multifilament polyester threads.
- **Poly-wrapped poly core thread** is a blend of multifilament and spun polyester. It has a strong, multifilament polyester core wrapped in an outer layer of spun polyester. This design offers the best of both worlds: the high tensile strength of multifilament polyester combined with the soft, cotton-like appearance of spun polyester. It is an excellent choice for crafting, quilting, sewing, and high-speed machine work where strength and a matte finish are desired. [QuiltMaker](#) is a high-quality poly-wrapped poly core thread.
- **Trilobal polyester threads** are a type of multifilament polyester known for their distinctive triangular (trilobal) cross-section, which improves their light-reflecting properties. This feature creates a high-sheen appearance that is perfect for embroidery, decorative stitching, and quilting, where a bright, eye-catching finish is desired. Trilobal polyester threads are also colorfast, durable, and lint-free. Our [Elite](#) thread line is designed to add vibrant color and bold personality to your stitches.
- **Monofilament thread** consists of a single, continuous strand rather than multiple twisted fibers. This ultra-fine, matte-finish thread is designed to be nearly invisible when stitched, making it an excellent choice for applications and techniques where the thread should stay unseen, such as stitch-in-the-ditch quilting and fine appliqué work. Monofilament threads are available in both nylon and polyester fibers. [Wonder Invisible](#) (nylon monofilament), with its finer diameter, is softer and more flexible, making it ideal for delicate stitching projects. [Invisible Poly](#) (polyester monofilament) is slightly heavier, providing added strength and durability, which makes it perfect for longarm quilting or projects that require frequent pressing, since polyester has a higher heat tolerance.



Silk Thread, made from the cocoons of silkworms, is highly valued for its exceptional strength, smooth texture, and luxurious natural sheen. The fine, thin nature of silk thread allows it to blend beautifully into fabric, making it ideal for appliqué, detailed quilting, English Paper Piecing (EPP), and quilt binding. [Silk #100](#) is an ultra-fine, 100 wt., silk thread specifically designed for intricate work. Offering a perfect balance of flexibility, strength, and beauty, silk thread provides both durability and elegance.

Thread Weight and Measurements

Understanding thread weight and composition is crucial for choosing the appropriate thread for your project. Here's a breakdown of several key terms:

Tex: This is a precise scientific measurement based on the weight of the thread. For example, if 1,000 meters of thread weighs 30 grams, it is classified as Tex 30. The higher the Tex number, the heavier (or thicker) the thread.

Weight (wt.): This is a general classification system rather than a precise scientific measurement. In this system, lower numbers represent thicker thread, while higher numbers indicate finer thread. Weight is the most commonly used system for quilting and sewing threads. For example:

100 wt.	60 wt.	50 wt.	40 wt.	30 wt.
Ultra fine	Very fine	Fine	Medium	Heavy

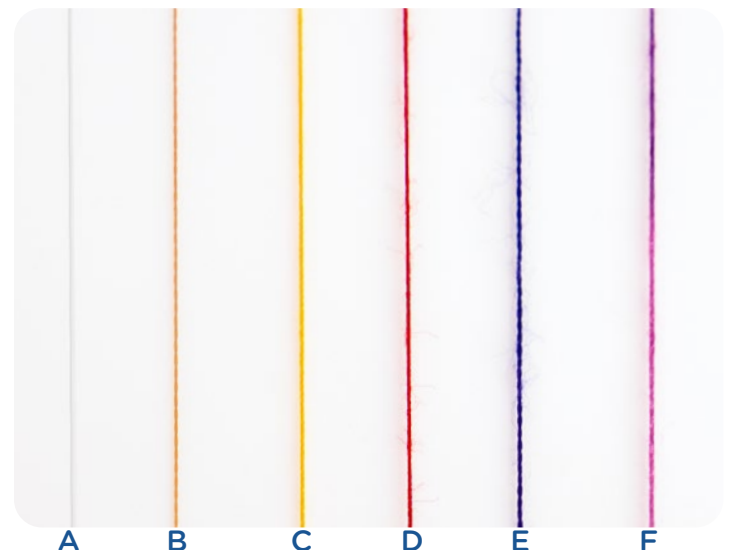
Thread Number (# or no.): This is another way to indicate thread thickness. Like weight, higher numbers generally mean finer thread. For example, #50 thread is finer than #30 thread.

Composition (Ply Count): This describes how thread manufacturers characterize thread construction, indicated by two numbers, such as 50/3 or 50 wt. 3-ply. The first number represents the thread weight, while the second indicates the number of individual plies, or strands, twisted together. Generally, more plies increase the thread's strength and diameter. For instance, a thread labeled 50/3 is stronger than one labeled 50/2 because the extra ply increases its overall diameter by 50%.

Putting it all together: Very fine threads, such as 100 wt. or 60 wt., are ideal for detailed quilting, appliqué, English Paper Piecing (EPP), binding, and when you want your stitches to blend into the fabric.

Fine threads like 50 wt. are excellent for piecing quilt blocks together and for general sewing.

Medium (40 wt.) and heavy (30 wt.) threads create more pronounced and visible stitches, making them perfect for decorative quilting and topstitching. Having a basic understanding of thread weight and composition will empower you to confidently choose the best thread for your project.



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

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 choice for those who enjoy stitching with a fine, polyester thread that lies flat and won't add bulk to seams. Whether you choose cotton or polyester, selecting a high-quality, tightly-wound thread will help ensure smooth, precise piecing and a quilt that lasts for years. Contrary to common myths, polyester thread will not tear the fabric. When pressing your seams stitched with polyester thread, turn your iron down to medium heat.



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](#), [Super Strong](#), [VariQuilt](#), and [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 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) to take center stage while providing durable quilting stitches.

For Stitch-in-the-Ditch and Stippling When precise stitching is essential, such as with 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](#) guarantees clean, even stitches. If you want your quilting to be nearly invisible, Y.L.I.'s [Invisible Thread](#) is an excellent choice, as its ultra-fine monofilament construction vanishes into the fabric, giving your quilt a beautifully finished appearance without distracting from the design.

When selecting a thread, consider its fiber type, weight, and finish. These traits significantly influence your quilt's appearance. Depending on your thread choice, it can add texture, highlight your stitching, or keep the focus solely on the fabric and quilt design.

3. The importance of choosing the right needle

Choosing the right needle type and size is just as crucial as selecting the correct thread. A dull or improperly sized needle can lead to skipped stitches or thread shredding. For most quilting and sewing projects, we suggest using a Topstitch needle, except when using knit fabrics, where a ballpoint needle works better.

Topstitch needles feature a larger, elongated eye and a deeper groove along the shaft, offering better protection for the thread as it passes through the fabric. These characteristics help reduce skipped stitches and decrease thread shredding.

Our Titanium-coated Topstitch Needles have 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. It's like getting eight needles for the price of one!

Needle Size Guide for Home Machines

- **#70/10** for very fine threads (100 wt. or 60 wt.) such as Invisible Thread, Precision or Silk
- **#80/12** for fine threads (50 wt.) such as Dream Seam or Perfection
- **#90/14** for medium threads (40 wt.) such as Majestic, QuiltMaker, Super Strong, Variations, or VariQuilt
- **#100/16** for heavy threads (30 wt. or heavier)



4. Spools vs. Cones

Thread is wound onto spools or cones in two main styles: straight wound (also known as stack wound) and cross wound. Proper unwinding is essential to 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 each other, it is designed to unwind from the side of the spool, not over the end. The spool should rotate as the thread unwinds. Using a vertical spool pin 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, creating an X-shaped appearance on the spool or cone. Unlike straight wound threads, cross wound threads are designed to unwind smoothly and continuously from over the top (or end). For optimal results, use a thread stand, cone holder, or a horizontal spool pin to ensure the thread unwinds evenly over the top (or end) without twisting or tangling. Using the appropriate unwinding method for each type of wind will help reduce drag and keep your thread performing properly.

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



Straight wound thread
Notice the parallel lines.



Cross wound thread
Notice the X-like appearance.

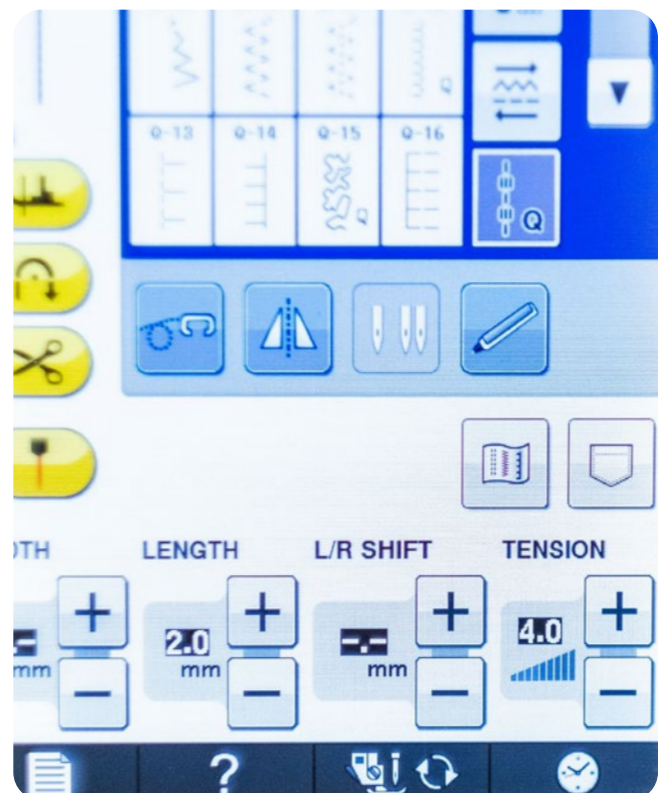
5. Learn to Adjust Your Machine's Tension

Sewing machine tension is all about balancing the top and bobbin threads to create smooth, even stitches. Fortunately, finding the right tension is simpler than you might expect!

Proper tension helps your stitches stay securely within the fabric, preventing loops, puckering, and broken threads.

While your machine's auto-tension setting may seem convenient, it doesn't always work well with every thread and fabric combination, and it's often set too tight for quilting threads.

The good news is that with most home sewing machines, you only need to adjust the top tension, leaving the bobbin tension alone. Usually, adjusting the top tension means loosening it. A bit of experimenting can make a big difference in your quilting, so feel free to 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 Dream Seam because it withstands high heat when pressing seams perfectly flat. Some quilters choose a 50 wt. polyester thread, such as Perfection. If you select polyester, make sure to set your iron to medium heat to protect the thread during 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, Majestic, our 40 wt. extra-long staple cotton, is a beautiful choice for quilting, as its medium weight makes stitches stand out on the quilt top. In the bobbin, we recommend Precision, a fine 60 wt. polyester, or Dream Seam, a 50 wt. premium-quality cotton, both of which blend seamlessly into the fabric. Together, they create a perfect balance for secure stitches.

4. What is the best bobbin thread?

For optimal results, we recommend Precision, a high-quality 60 wt. polyester thread, and Dream Seam, a 50 wt. extra-long staple cotton thread. Their fine weight helps them blend beautifully into your fabric while providing smooth, even stitches. Both L-style and Class 15 prewound bobbins are available in Precision and Dream Seam for added convenience. For longarm machines, our M-style Prewound Bobbins are made from our 60 wt. lint-free polyester thread and are ideal for longarm quilting.

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 hesitate to set it to 2.0 or 3.0 and gradually increase until you get 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 the thread to break.
- **Check Your Thread Path** Ensure your machine is threaded correctly, as even a slight 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?

A worn-out needle or incorrect threading can cause skipped stitches. Begin by double-checking that your machine is threaded properly and replacing your needle with a new one. If you're stitching through multiple layers, dense fabric, or stabilizer, your needle might wear out faster than usual. If you're already using the right needle size for your thread, try increasing the needle size and slowing down your stitching speed to improve stitch quality. These simple changes can make a significant difference.

This Thread Mastery™ Guide is designed to help you select the right thread for your project. Each thread collection includes thread weight, description, put-up, recommended techniques, and the appropriate needle size for both home and longarm machines. For an interactive version of our thread guide, visit our website and select [Thread Matchmaker](#) from the main navigation.

Product	Weight	Description	Put-up (yds.)	Application	Recommended Needles
Dream Seam	50 wt.	Giza-class Egyptian-grown extra-long staple cotton thread	600-yard spools 2,000-yard cones Prewound bobbins	piecing, sewing, bobbin, quilting	Home: #80/12 Longarm #16 (3.5)
Elite	40 wt.	high-sheen trilobal polyester thread	1,094-yard spools 5,500-yard cones	quilting, embroidery	Home: #80/12 Longarm #18 (4.0)
Hand Quilting Thread	40 wt.	glazed Egyptian-grown extra-long staple cotton thread	500-yard spools	hand quilting (not for machine use)	Between #10-12
Invisible Thread	0.005" <i>extra-fine</i>	polyester monofilament thread	1,500-yard spools 7,500-yard cones	appliqué, quilting	Home: #70/10 Longarm #14 (3.0)
Machine Quilting Thread	40 wt.	Giza-class Egyptian-grown extra-long staple cotton thread	500-yard spools 3,000-yard cones	quilting	Home: #90/14 Longarm #18 (4.0)
M-style Prewound Bobbins	60 wt.	lint-free multifilament polyester thread	187-yard m-style bobbins	longarm quilting	-
Majestic	40 wt.	Giza-class Egyptian-grown extra-long staple cotton thread	500-yard spools 2,000-yard 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	quilting, piecing, appliqué, & sewing	-
Perfection	50 wt.	matte-finish multifilament polyester thread	3,000-yard cones	quilting, piecing, bobbin, general sewing	Home: #80/12 Longarm #16 (3.5)
Precision	60 wt.	multifilament polyester thread	1,420-yard spools 3,000-yard cones Prewound bobbins	appliqué, bobbin, quilting, paper piecing, EPP, FPP	Home: #70/10 Longarm #14 (3.0)
QuiltMaker	40 wt.	poly-wrapped poly core thread	6,000-yard cones	quilting, general sewing, serger	Home: #90/14 Longarm #18 (4.0)
Silk	#100	fine, multifilament silk thread	200-yard spools	appliqué, detail quilting	Home: #70/10 Longarm #14 (3.0)
Super Strong	40 wt.	high-sheen, high-strength multifilament polyester thread	4,000-yard cones	quilting, decorative stitching	Home: #90/14 Longarm #19 (4.5)
Variations	40 wt.	high-sheen, high-strength multifilament polyester thread	2,200-yard cones	quilting, decorative stitching	Home: #90/14 Longarm #19 (4.5)
VariQuilt	40 wt.	variegated poly-wrapped poly core thread	2,200-yard cones	quilting, decorative stitching	Home: #90/14 Longarm #18 (4.0)
Wonder Invisible	0.004" <i>ultra-fine</i>	nylon monofilament thread	2,000-yard spools	appliqué, quilting	Home: #70/10 Longarm #14 (3.0)
Woolly Nylon	-	textured nylon thread for sergers (loopers only)	1,094-yard cones 8,500-yard cones	serger, coverstitch (loopers only)	-



Dream Seam™

Dream Seam is our 50 wt. Giza-class Egyptian-grown extra-long staple cotton thread, perfect for piecing, sewing, quilting, and bobbin. It creates smooth, flat seams without bulk. It is mercerized and gassed for low lint, and its soft, natural colors blend effortlessly into your quilt top for a polished finish.



Elite™

Elite is our 40 wt. high-sheen trilobal polyester thread. With 200+ vibrant colors to choose from, it's easy to match, blend, or add contrasting stitches to your project. Whether you are embroidering or quilting, Elite runs smoothly at high speeds and adds a beautiful, high-sheen effect to your quilt or embroidery project.



Majestic™

Majestic is our 40 wt. cotton thread made from Giza-class Egyptian-grown extra-long staple cotton. It is tightly twisted, mercerized, and gassed, resulting in low lint, a smooth feel, and balanced stitches. Available in solid and variegated colors (blended and contrasting shades) that beautifully complement any fabric palette.



Perfection™

Perfection makes quilting and sewing a joy! It is our 50 wt. matte-finish polyester thread that runs smoothly through home and longarm machines, creating strong, secure stitches with a soft, lint-free finish. The colors blend beautifully into fabric, keeping the focus on your quilt, garment, bag or sewn project so you can stitch with confidence and ease.



Precision™

Precision is our 60 wt. polyester thread, designed for detailed quilting, appliqué, bobbin, and English Paper Piecing (EPP). Quilters tell us it is their favorite fine thread. Its smooth, lint-free finish blends beautifully with your fabric, delivering balanced and precise stitches.



QuiltMaker™

QuiltMaker is our 40 wt. poly-wrapped poly core thread, loved for its balance of strength and softness. Made from a strong filament core wrapped in soft spun polyester, it stitches beautifully at high speeds. QuiltMaker's matte finish blends into the quilt, keeping the focus on your design.



Super Strong™

Super Strong is our 40 wt. high-sheen, high-strength polyester thread made from smooth, lint-free multifilament fibers. Say goodbye to thread breaks. It handles high-speed stitching with ease, even with dense stitch patterns. The result is a beautiful, visible thread that highlights vibrant colors that complement your quilt design.

Since 1978, Y.L.I. Threads has provided exceptional threads, expert guidance, and outstanding service. From our home in St. George, Utah, we design and distribute threads, needles, and notions made from the finest materials and finished with advanced techniques to ensure a consistent, rewarding stitching experience.

Bob Purcell has been in the thread and sewing industry for 28 years. He and his wife started and built one of the most successful specialized thread companies in the world. They sold that company in 2016, with the intent of enjoying retirement life with family and grandchildren.

Seven years later, Bob, who has no hobbies other than work and grandchildren, realized that retirement wasn't for him. Bob bought Y.L.I. Threads and is once again doing what he loves -- sharing education and supplying the best sewing products. Many new premium quality threads have been introduced in the past two years. More are in the works.



Bob Purcell, President
Thread Master
Y.L.I. Threads