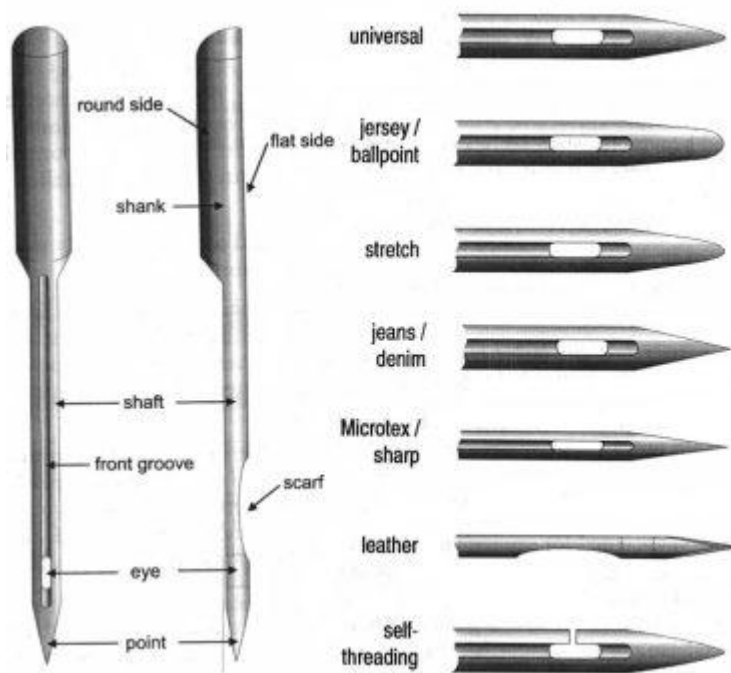




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## Sewing Machine Needle Guide



### 1. Understanding the Anatomy of a Sewing Machine Needle

- **Shank:** The shank is the top part of the needle that fits into the sewing machine's needle clamp. It comes in different shapes and sizes, depending on the machine's make and model.

- **Shaft:** The shaft is the long, slender part of the needle that tapers to a point. It determines the needle's size and is critical for fabric penetration.

- **Groove:** The groove is a small indentation on the front side of the needle, designed to protect the thread as it passes through the fabric.

- **Scarf:** The scarf is a groove on the back side of the needle, which allows the bobbin hook to catch the thread and form a stitch.

- **Eye:** The eye is the tiny hole near the tip of the needle through which the thread passes.

### 2. Types of Sewing Machine Needles

Sewing machine needles are available in various types, each designed for specific fabrics and sewing techniques. These are some of the most common types of sewing machine needles:

- **Universal Needles:** These are the most commonly used needles and are suitable for a wide range of woven and knit fabrics. Before starting to sew knit fabrics with a universal, check the below needle types for knit fabrics. They have a slightly rounded point that helps prevent fabric damage. Polyester / cotton or silk threads should be used with a universal needle.
- **Ballpoint Needles:** Ideal for knit fabrics, ballpoint needles have a rounded tip that allows them to slip between the fabric's fibres instead of piercing them, reducing the risk of snags and runs. Ideal for working with rib knits, interlock, cotton knits, fleece, double knit and generally most knit fabrics because it prevents them from running or laddering as a result of stitching.



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- **Sharp Needles:** Aka Universal Sharp needles, excellent for precise stitching on tightly woven fabrics like silk and microfibre. Good for quilting/working with several layers of cotton and wadding or working with densely woven fabrics thanks to a stronger shaft which helps to avoid bent or broken needles and a sharp point which enables it to penetrate through the fabric and produce smooth buttonholes. A short round threading eye also gives extra strength during sewing.
- **Jeans/Denim Needles:** Designed for dense and heavyweight fabrics like denim and canvas, also best for other densely woven fabrics such as heavy twill, canvas and heavy linens often used for workwear. They have a very sharp point and a stronger shank to prevent needle bending or breakage and push through the heavy fabric. Threads such as synthetic or blends, 100% polyester, heavier top stitching threads and cotton wrapped polyester should be used with these needles and fabrics.
- **Quilting Needles:** Quilting needles have a tapered point and work well with multiple layers of fabric and wadding typical of quilting projects. They are shorter in length than the sharps needle to allow quilters to achieve quick, even stitching. Beginners will most likely find a smaller needle such as a size 7 or 8 easier to use whilst more experienced quilters often choose a larger option.
- **Embroidery Needles:** These needles have a larger eye to accommodate decorative threads (ie: rayon, polyester or cotton machine embroidery threads) used in embroidery and decorative stitching. Missed stitches can often occur when machine embroidering thanks to the fabric flexing up and down rapidly as a result of the fast moving embroidery stitch. Embroidery needles have a pontoon scarf with an oversize bump which reduces the chance of this happening by reducing the amount of movement in the fabric.
- **Leather (aka Chisel Point) Needles:** Leather needles have a chisel point and are specifically designed for leather and suede but should not be used with PU imitation leather, ultra suede or synthetic suede since the characteristics of these fabrics are quite different to their real counterparts.
- **Metallic Needles:** Suitable for metallic and specialty threads, these needles have a larger eye to reduce thread shredding. If you ever struggle to thread your needle a metallic needle would be a good buy because it is also appropriate for general sewing and is much easier to thread due to the larger eye.
- **Stretch Needles:** A stretch needle has a 'scarf' allowing extra room for the hook to pass close by and prevents skipped stitches. Ideal for use with Lycra, power net, two way stretch knits, silk jersey, spandex and highly elasticated synthetic fabrics or elastic itself. Polyester or cotton wrapped polyester threads should be used. Stretch fabrics are renowned for being more difficult to work with and choosing the right needle is crucial to achieving a good end result.
- **Top Stitch Needles:** Top stitch needles have an extra sharp point which will pierce all types of fabric easily and the large eye allows thick top stitching thread to be used.



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- **Twin Needles & Triple Needles:** These needles are used for pin tucking and decorative stitches and need to be used at a reduced speed. They are not compatible with all machines so always check your manual before using.
- **Wing Needles:** Used in conjunction with the special stitch options on your machine, wing needles will produce holes in the fabric to replicate drawn thread work. Fabrics made from natural fibres such as cotton should be used with these needles.

### 3. Sewing Machine Needle Sizes

Needles are identified by two numbers such as 80/12 or 110/18.

The number on the left is the European size and on the right is the American size. From thinnest to thickest, the European sizes range from 60 to 120, whereas the American sizes range from 8 to 18.

The selection of needle size depends on the weight of the fabric you're using.

Generally, a 80/12 needle is used for dressmaking (and probably the size of needle you received with your sewing machine). Please refer to the quick reference table below for information on which needle sizes to use with particular threads, fabric types and fabric weights.

As a general rule, use smaller needle sizes for lighter fabrics and larger sizes for heavier fabrics. For instance:

- 60/8, 70/10: Lightweight fabrics like silk, chiffon, and organza.
- 80/12, 90/14: Medium-weight fabrics like cotton, linen, and satin.
- 100/16, 110/18, 120/20: Heavyweight fabrics like denim, canvas, and upholstery materials.

#### Quick Reference Chart

Needle Type	Size	Fabric Type
Universal needles	70 (10)	Voile, sheers, delicate silk
	80 (12)	Shirtings, poplin, rayo, light wool
	90 (14)	Medium - heavy, calico, linen
	100 (16)	Heavy fabric, upholstery, bag making
	110 (18)	Extra heavy fabric, upholstery
Sharps needles	70 (10)	Voile, microfibre
	80 (12)	Shirtings, microfibre, patchwork
	90 (14)	All Sharps produced perfect top stitching



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Ball point needles	70 (10)	Light knits, tricot
	80 (12)	Interlock, Lacoste
	90 (14)	Medium heavy knits, double knit
Stretch needles	75 (11)	Light lycra, elasticised fabrics
	90 (14)	Elastic, heavier lycra, elasticised fabrics
Jeans needles	90 (14)	Denim, tightly woven fabrics
	100 (16)	Heavy denim, vinyl, furnishings
Leather needles	90 (14)	For all leather and suede
	100 (16)	Do not use on synthetic leather
Metafil needles	80 (12)	Decorative sewing on various fabrics
Quilting needles	80 (12)	Quilts made from cotton, wool or polyester with wadding centre
Embroidery needles	75 (11)	Decorative sewing on lightweight fabrics
Embroidery needles	90 (14)	Decorative sewing on heavier fabrics
Twin needles	Various	Decorative sewing on most fabrics

#### 4. How Often Should I Change My Needle?

- Generally, after every project and mid-project if you hit a pin (best avoided by not sewing over pins!) as this can blunt or bend the tip.
- If your machine has jammed. Jamming can result in the needle bending, which can lead to unexpected results such as poor stitch quality.
- If your machine is making an unusual thumping or pop-pop-pop sound as the needle penetrates the fabric, then you definitely need to change the needle.



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## 5. Fitting a New Needle

- First, pop a piece of paper under the foot to avoid the old needle dropping inside the machine. IF you are lucky, it will drop onto the surface or into the bobbin casing. If unlucky, down into the service-technician only are.
- The new needle will only fit in one way, the flat surface to the back.
- Push the new needle up as far as it will go before tightening the needle screw hard. If you don't you may get poor stitch quality, the needle could strike the bobbin case or your needle threader could be damaged (if your machine has one).

## 6. Tips for Needle Selection and Maintenance

- Always start a new project with a new needle. Dull or damaged needles can lead to skipped stitches and fabric damage.
- Use the appropriate needle type and size for your fabric and sewing technique.
- Check your needle regularly for signs of wear, such as bending or burrs, and replace it when necessary.
- Clean your sewing machine regularly to prevent lint and debris buildup that can cause needle-related issues.
- Store your sewing machine needles in a safe and organised container to prevent damage.
- Place your used needles in a sharps container or a plastic pot with a small, round hole in the top to place the needles through.