

MADEIRA USA

NEEDLE GUIDE

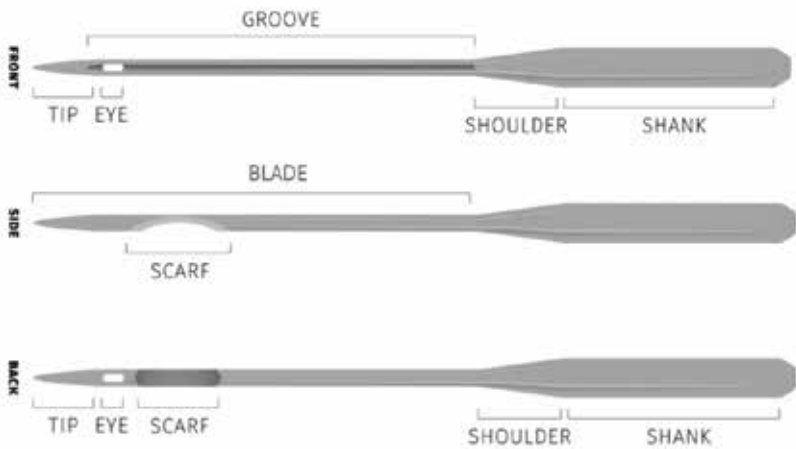
Madeira USA provides a wide range of top quality machine embroidery needles. Madeira Large Eye stainless steel needles are precision manufactured in Germany, specifically for high speed commercial embroidery machines.



A complete guide to choosing the correct needles for machine embroidery

Anatomy of a Needle

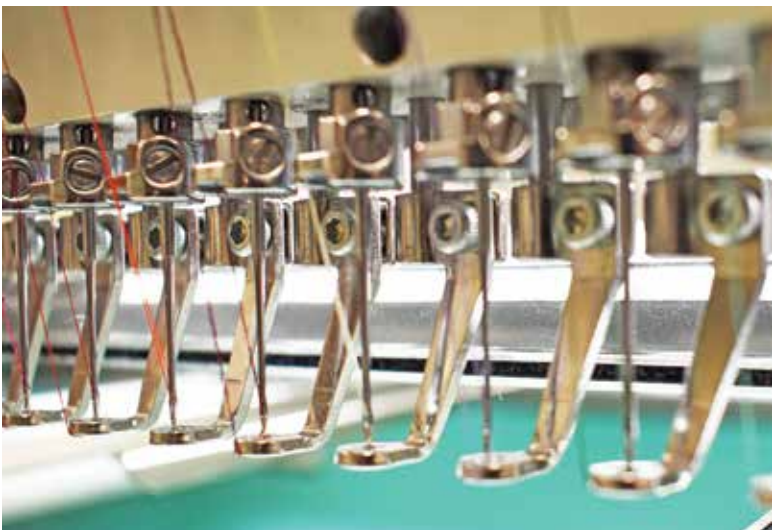
Identifying the Parts of the Needle



Needle Shank – Embroidery needles are available in Round shanks and Flat-Sided shanks:

- **Round shank needles** are for commercial embroidery machines.
- **Flat-Sided shank needles** are for use in most home and Brother PR embroidery machines.

Needle Shoulder – The shoulder is the section between the shank and the shaft. The tapered angle of the shoulder allows the needle to glide freely through the fabric during the stitch cycle.



The Needle Ease tool takes the guesswork out of properly installing fresh needles in your machine.



Needle Blade –

The blade is the area between the shoulder and the tip.

Needle Groove –

The groove runs down along the needle blade on the front of the needle. Its purpose is to guide the embroidery thread smoothly from the machine thread path into the needle eye.

Needle Scarf – The scarf is an indentation on the back of the needle. It is located just above the needle eye. Its purpose is to provide a space for the hook to grab the upper thread and loop it together with the bottom thread.

Needle Eye – The needle eye type identifies whether a needle is manufactured for machine embroidery or construction sewing:

- **Large Eye Needles** (DBxK5) have an enlarged eye. The enlarged eye ensures smooth and carefree machine embroidery and is easy to thread. Most embroiderers use this type of needle for machine embroidery.
- **Standard Eye Needles** (DBx1) have a smaller eye than large eye needles. They are typically used for sewing and construction. Embroiderers may choose to use this type of needle as they have a bit more strength on the sides of the needle eye. Typically used with tougher fabrics such as when breaking needles is an issue.
- **Universal Eye** are noted with “UNIVERSAL” on the needle packages. Universal eye needles are typically flat-sided shank needles. The eye of the needle is slightly enlarged and is used with single needle home embroidery machines.

Needle Tip – (also called the point) Available as a Sharp or Ballpoint.

The 2 Key Elements to Help You Choose the Correct Needle

#1

Choosing a Needle Size

The **SIZE** of the needle is determined by the **THREAD TYPE** and **THREAD THICKNESS** being used:

Needle Size – needle sizes range from size #60/8 to #100/16. Using the correct size needle allows the thread to pass effortlessly through the eye and creates the appropriate size penetration hole in the fabric so that your designs are smooth and crisp with no thread breaks.

#75/11 needles are the standard size for use with 40 weight machine embroidery thread

Smaller needles are used for thinner threads

Larger needles are used for thicker threads

[See chart on page 7](#)



#2

Choosing a Needle Point

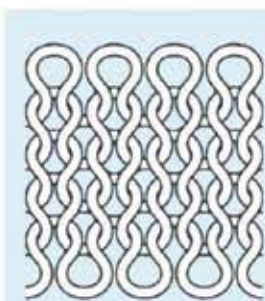
The **POINT** of the needle is determined by the type of **FABRIC** being embroidered:

Needle Points – needle points come in Ballpoint and Sharp

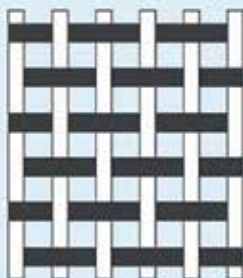
- **Ballpoint needles** are for use with knit fabric and lightly woven fabric. (code on packaging SES or SUK). They push the fibers of the fabric aside without cutting the chain link of knits and lightweight woven fabrics.
- **Sharp Point needles** are for use with tightly woven fabric. (code on packaging: RG). Sharp needles pierce the fabric for a crisp, clean design. Especially needed for caps.

Stretchy – Unstable Fabric

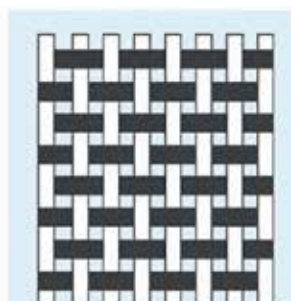
Stable Fabric



Knit Fabric



Light Weight Woven Fabric



Heavy Woven Fabric

Ballpoint

Needle Id: SES

(SUK for size #100/16)

Sharp point

Needle Id: RG

Knit Fabrics

Examples:

- T-shirts
- Sweaters
- Polo Shirts
- Sweatshirts

Lightweight, Loosely Woven Fabrics

Examples:

- Linens
- Dress Shirts
- Fashion Scarves

Heavyweight, Tightly Woven Fabrics

Examples:

- Denim
- Caps (Twill)
- Canvas Bags

The durable Madeira Needle Tracker clings to your work surface to help you keep track of the types of needles at each machine head and when you last changed them.



Tip

Did you know that the average life span of a machine embroidery needle is 8 hours of running time? At high speeds the needle eye wears out over time creating a thinner side wall around the eye. Once this happens the needle is more likely to break. The best way to avoid this is to change out the needle before this happens.

Using worn out needles causes looping, missed stitches and thread breaks. Keep track of how old your needles are and change them before they snap.

Helpful Hints

Do **NOT** use sharp point needles on knits as they can cut the fiber links resulting in runs and large holes.

Do **NOT** use ballpoint needles on caps and other heavy woven fabric as needle deflection may result in bent needles and breakage.

Quick Reference Needle Chart

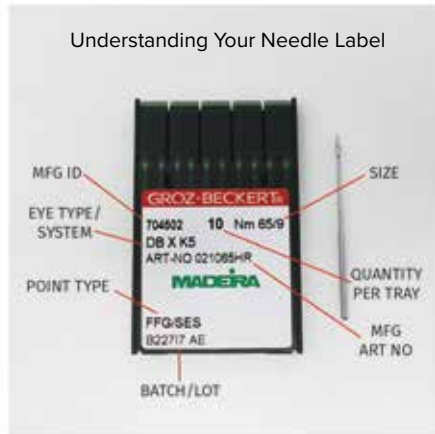
When more than one needle size is recommended, choose the smaller size for delicate designs and fabric. Otherwise use the larger needle size for optimal performance.

	Madeira Thread Name	Thread Weight	Needle Size	Item # for Ballpoint	Item # for Sharp Point
Thin Threads	Classic Rayon	#60	#60/8	102-60-B	102-60-S
			#65/9	102-65-B	102-65-S
	Polyneon	#60	#60/8	102-60-B	102-60-S
			#65/9	102-65-B	102-65-S
	Polyneon	#75	#60/8	102-60-B	102-60-S
	FS Metallic	#50	#65/9	102-65-B	102-65-S
			#75/11	102-75-B	102-75-S
	Standard Threads	Classic Rayon	#40	#65/9	102-65-B
#75/11				102-75-B	102-75-S
Sensa® Green		#40	#65/9	102-65-B	102-65-S
			#75/11	102-75-B	102-75-S
Polyneon		#40	#65/9	102-65-B	102-65-S
			#75/11	102-75-B	102-75-S
Polyneon Green		#40	#65/9	102-65-B	102-65-S
			#75/11	102-75-B	102-75-S
Frosted Matt		#40	#65/9	102-65-B	102-65-S
			#75/11	102-75-B	102-75-S
CR Metallic		#40	#65/9	102-65-B	102-65-S
			#75/11	102-75-B	102-75-S
FS Metallic		#40	#65/9	102-65-B	102-65-S
			#75/11	102-75-B	102-75-S
Thick Threads	Classic Rayon	#30	#75/11	102-75-B	102-75-S
			#80/12	102-80-B	102-80-S
	Classic Rayon	#12	#100/16	102-100-B	102-100-S
	FS Metallic	#30	#90/14	102-90-B	102-90-S
	FS Metallic	#20	#100/16	102-100-B	102-100-S
	Supertwist	#30	#90/14	102-90-B	102-90-S
	Burmilana	#12	#100/16	102-100-B	102-100-S
BurmilanaCo	#12	#100/16	102-100-B	102-100-S	
Specialty Threads	Fire Fighter	#40	#80/12	102-80-B	102-80-S
	Luna	#40	#75/11	102-75-B	102-75-S
			#80/12	102-80-B	102-80-S
	Reflect	#40	#75/11	102-75-B	102-75-S

Still have questions?

We'd love to hear from you!

Call and speak to one of our experienced Customer Sales & Support representatives for further assistance!



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