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Tondl, Rose Marie, "NF96-250 What You Ought To Know About Sewing Machine Needles" (1996). *Historical Materials from University of Nebraska-Lincoln Extension.* Paper 1143.
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Nebraska Cooperative Extension NF96-250

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Published by Cooperative Extension, Institute of Agriculture and Natural Resources, University of Nebraska-Lincoln

What You Ought To Know About Sewing Machine Needles

By Rose Marie Tondl, Extension Clothing Specialist

What is a sewing machine needle? It is a slender strand of wire, shaped to precision that delivers thread to the machine to create a stitch. Sewing machine needles have become more sophisticated because of new sewing threads and novel fabrics available in the marketplace. Needles are found in various sizes, with different shapes and with more than one needle on a single crossbar.

Needle Sizes

Needles range is size from very fine 60\8 to a heavy duty needle 120/19. Most needles use the two number measuring system. The higher number relates to the metric system used in foreign counties. It defines the needle shaft diameter in fractions of a millimeter. The lower number relates to the system in the U.S and is used to indicate needle shaft diameter.

Type of Needles

Ballpoint Needle

The rounded tip slips between yarns rather than piercing them to eliminate damage in knit fabrics. Use this needle when working on coarse knits, mesh fabrics, interlock knits and other fabrics that tend to run if snagged. You may find a universal point needle is better for finer knits.

Denim Needle

It has an acute point, slender eye and a stronger shaft. Use when sewing tough, heavyweight fabrics such as denim, duck and canvas. A regular sharp-point needle can cause crooked stitches in dense fabric.

Embroidery Needle

This needle has a larger eye and a special scarf (groove above the eye) to protect decorative threads (lustrous rayons and acrylics) from shredding or breaking.

Leather Needle

It has the shape like a wedge at the point which gives it superior piercing power for unyielding fabric such as real leather, suede or heavy vinyl. This needle makes a clean, large hole as it enters the fabric. It is better to tie or seal thread ends rather than backstitching to secure. Sew accurately

since removing stitches and restitching will leave hole markings. Synthetic leathers and suedes can and should be sewn with standard needles. A leather needle leaves unnecessarily large holes and weakens seams.

Metallic Thread Needle

The larger eye accommodates heavier threads, pampers delicate metallics that tend to shred and split and makes needle threading easier.

Quilting Needle

A tapered point for stitching through multiple fabric layers and across intersecting seams makes this needle unique. It prevents damage to sensitive, expensive materials used in quilting.

Self-threading Needle

This needle has a slotted eye so sewers with limited vision or dexterity can easily set up the machine. Sew slowly to keep the thread where it belongs.

Sharp Point Needle

It is sharper than the universal point and more slender through the shaft. Some companies use the term microtex on the label. Use it when sewing on finely woven fabrics, edgestitching on woven fabrics, heirloom stitching on very fine fabrics and sewing on synthetic suede. It is a good choice for smooth stitches on chintz.

Skip-free Needle

This needle has a deeper groove and flatter shank than a universal point. It brings the bobbin thread closer to the needle for stitch formation. While it isn't as strong as a standard needle, this needle may solve stitching problems on synthetic knits and faux suede.

Stretch Needle

A rounded tip and a specially shaped shank creates good stitch formation on highly elasticized fabrics such as spandex activewear knits, and two way stretch swimwear knits or when sewing through elastic for direct application to a garment.

Topstitching Needle

It has an extra-large eye and deeper groove for use with heavier topstitching thread such as buttonhole twist, 30-weight rayon and cordonnet, or when using a double thread through the needle for more pronounced stitching.

Universal Point Needles

This needle type has a very slightly rounded point that is quite sharp and used for general sewing of most knit and woven fabrics. The 14/90 size is the top-selling needle on the market. The next best seller is size 11/75.

Special-purpose Needles

Spring needle

This needle has a wire spring above the point to prevent fabrics from riding up onto the needle when the presser foot is removed and the feed dogs are dropped for free-motion stitching. Spring needles can be purchased in universal, stretch, denim, embroidery and quilting types.

Twin and Triple Needles

Two or three needles are put on a single crossbar. They can be found in denim, stretch or embroidery type needles. Their purpose is to create perfectly parallel, multiple rows of stitching in one pass using a single bobbin thread. Spacing between the needles varies from 1.6mm to 8mm wide. They are numbered first by the distance in millimeters between the needles and second by the size of the needle. Generally the finer the fabric the more closely spaced the needles should be. Use these needles with an oblong throat-plate opening such as those found on every zig-zag machine.

Wing Needles

Fins on the sides of the shank create large holes in tightly woven fabrics such as linen and batiste. Another name used is Hemstitch needle. It is used for hemstitching, heirloom embroidery and

other decorative techniques. Wing needles are available as singles or as twins that have a wing needle and a standard needle on a single crossbar.

Serger Needles

Conventional sewing machine needles are standardized by manufacturers, but not so with serger needles. There are about 13 needle systems available for sergers. Always consult your serger machine manual when replenishing your needle supply.

A serger may take a special needle such as an industrial needle with a flat or round shank. Other sergers may use the standard machine needle sizes 11/75 or 12/80 as well as special needles such as ballpoint, metallic or embroidery. Test the stitch formation by manually turning the wheel to be sure the loopers and needles interact properly.

When two needles are used with the serger, the needles are set at slightly different heights. This is the correct configuration. Check your manual to be sure the right needle is supposed to be lower than the left needle on a 2-thread serger. This height difference is due to the rising arc of the upper looper as it comes up and over the fabric.

Changing Needles for Conventional and Sergers Machines

A guide to follow for conventional sewing machines is to insert a fresh needle after every 10 to 12 hours of sewing or after every two garments. Select the needle size according to the fabric you are using. Another sign that it may be best to try a new needle is when you encounter stitching problems with a new type of sewing thread or a new sewing technique.

For serger machines, consider changing the needle after eight or ten garments. Since serger thread doesn't slide back and forth through the eye of the needle, changing the needle may not occur as often. If the serger does begins to skip, try changing the needle.

Source: *Sew News*, January 1996

File NF250 under: TEXTILES, CLOTHING, AND DESIGN
C-5, Construction
Issued February 1996

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Elbert C. Dickey, Director of Cooperative Extension, University of Nebraska, Institute of Agriculture and Natural Resources.

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