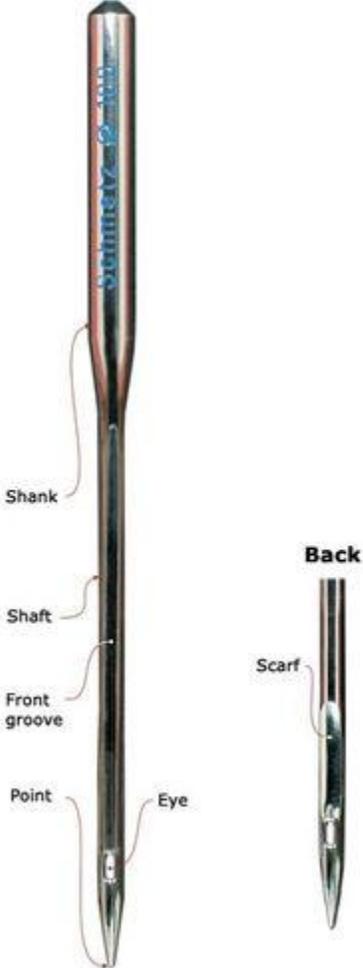
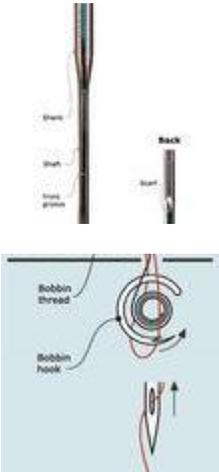


Machine-Needle Know-How



Key features of a standard needle

by Lydia Morgan
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Lay out an assortment of sewing-machine needles in various types and sizes on a table, and most of us can't tell the difference among them. But put the wrong needle in your machine, or use the wrong needle for your fabric and/or thread, and all heck breaks loose. You can damage your bobbin hook, throw off the machine's timing, get puckered seams, break or shred thread, punch holes in your fabric, and, at the very least, produce an inferior stitch. Whatever your machine, even the latest computerized model, needle selection can make or break your stitch.

At one time, only one type of machine needle was available to home sewers, and the sole choice involved was size. But today, home sewers can choose from a wide variety of needle types in their quest for trouble-free sewing.

Several things can determine the type of needle to pick: the fabric you're using; the thread you've chosen (for example, metallic or embroidery); or the type of stitch you plan (for instance, topstitching or hemstitching). When you're doing regular, not decorative, sewing, the type of fabric determines the shape of the needle's point, and the fabric's weight determines the needles' size.

But before deciding on a needle, you first need to know the needle system your machine uses. Unlike commercial machines, which use a variety of needle systems, almost all home-sewing machines use a 130/705H needle system -- designated on the needle case between the needle's name and size (other letters indicate needle type, such as M for Microtex or Q for quilting). Your machine's needle system never changes, regardless of the size or type of needle you use.

Tension control, stitch length, foot pressure, and other invisible settings on automatic machines are set for medium-weight fabrics, threads, and needles. If you're a middle-of-the-road sewer, using midweight, woven fabrics, you could be happy using a size 12 universal needle for the rest of your life. But when you want improved stitch quality, learn which specific needles to use for various jobs. See the box below to understand the build of this tiny, but important tool.

Anatomy of a needle

The key features of a standard machine needle are called out below. Their configuration varies from needle type to type.

Shank

Top of needle that inserts into machine; most often has round front and flat back, which seats needle in right position.

Shaft

Body of needle below shank. Shaft thickness determines needle size.

Front groove

Slit above needle eye, should be large enough to "cradle" thread for smooth stitches.

Point

Needle tip that penetrates fabric to pass thread to bobbin-hook and form stitch. Shape of point varies among needle types.

Scarf

Indentation at back of needle. A long scarf helps eliminate skipped stitches by allowing bobbin hook to loop thread more easily. A shorter scarf requires a more perfectly timed machine.

Eye

Hole in end of needle through which thread passes. Needle size and type determine size and shape of eye.

Read more: <http://www.threadsmagazine.com/item/3751/machine-needle-know-how#ixzz46lijqgXM>

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Size codes

More than twelve conventions exist for numbering the sizes of sewing machine needles, though only two remain in common use: the American (established and propagated by [Singer](#)) and the European (also called the "number metric" or "NM"). The European designation, established in 1942, is considered the uniform fixed size and corresponds to the diameter of the needle in hundredths of a millimeter at a non-reinforced point above the scarf. The following chart gives a comparison of the two systems. In both cases, a larger number corresponds to a larger, heavier needle.

American	European
8	60
9	65
10	70
11	75
12	80
14	90
16	100
18	110
19	120
20	125

21	130
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The size of a given needle is often indicated with a pair of these numbers, e.g., "14/90" or "90/14" (the order of the numbers has no significance).

Type

Most currently manufactured needles are designated according to "type", and fall into the following categories:

Type	Description
Universal	Intended as an all-purpose needle, preferred for woven fabrics where a sharper needle could ruin the fabric. Similar to a ballpoint needle but tapered to allow the needle to slip through without producing a run.
Embroidery	These needles come with an extra large eye and a specially shaped scarf to prevent embroidery thread from shredding.
Ballpoint	Similar to a universal needle but has rounded edges and is not tapered the same way. Intended for closely knit fabrics where the rounded tip will push the weave out of the way rather than cut through it.
Jeans/ Denim	Intended for tightly woven cottons such as canvas. Has a strong, sharp point and very slender eye.
Wing	Needle has distinct "wings" on either side of the eye which hold the fabric open. Often used on hems and borders, and for decorative finishing. A larger size needle will leave a larger hole in the final piece of sewn fabric.
Leather	These have a distinct triangular point to help the needle make a large, clean hole in non-woven materials like vinyl.
Metallic	Similar to an embroidery needle with a large eye and extra long scarf, but also includes a Teflon coating to the eye so that metallic threads will not shred when used.

Quilting	Designed with an extra strong shaft and with a tapered point to penetrate multiple layers of woven fabrics without breaking and without shredding either the thread or the fabric being sewn.
Serger/ Industrial	These needles can only be used in serger and overlocking machines.
Microtex/ Sharps	More slender and sharper than the universal needle. Suitable for fine woven fabrics, but also compatible for quilting and appliqué .
Stretch	These needles are intended for use on fabrics with a significant amount of Spandex or similar fabric content. Rounded tip and specialized scarf and eye to prevent skipping.
Topstitching	These have exceptionally sharp points and a very large eye to accommodate thick decorative topstitching threads. Very similar to the leather needle.
Twin/ Triple	Needles set in pairs or in groups of three on a single shaft designed to sew multiple, usually decorative, threads at once. These require specialized machinery to accommodate the extra needles, as well as multiple thread feeds. The twin or triple designation is usually accompanied by another needle type specification such as "stretch" or "denim", etc.

Singer colors and numbers its needles with the following system of codes to indicate the needle point type and shaft size:

code and shank color	Point type
2000 - uncolored	chromium-coated regular point, for high-speed embroidery stitching
2020 - red	regular point, for woven fabrics (most common Singer needle type)
2022, 2053, 2054 - uncolored	overlock needles, only for overlocking machines
2044 - uncolored	embroidery needle
2045 - yellow	ball point, for knits
2026 - blue	heavy-duty point, for denims
2032 - brown	chisel or wedge point, for leathers
2025 - uncolored	twin needles
2040 - uncolored	hemstitch or wing-needle, for "heirloom" or decorative sewing, best on woven cottons and linens

Shoulder color	Shaft size
green	9
orange	11
blue	14
purple	16
gray	18

Schmetz Color Codes

The colored band on some types of Schmetz needles indicates the needle type. [\[2\]](#)

Shank color	Type
yellow	Stretch
blue	Jeans
green	Quilting
red	Embroidery
purple	Microtex (sharp)

Sewing-Machine Needles: An Overview



Standard needles

Learn to recognize the many types of standard, decorative, and special-purpose machine needles. Discover what each is best for, and how to troubleshoot problems.

Standard needles

The configuration of these needles is based on the particular fabric to be sewn.

Universal needle

Uses: Safest needle choice for most fabrics.

Configuration: Has slightly rounded point and elongated scarf to enable almost foolproof meeting of needle and bobbin hook.

Troubleshooting: When fabric is not medium-weight woven, consider needle specifically suited to fabric. For example, size 18 universal needle works on heavy denim, but size 18 jeans needle works better.

Ballpoint and stretch needles

Uses: Ballpoint needle for heavier, looser sweater knits; stretch needle for highly elastic fabrics, like Spandex, or Lycra.

Configuration: Both have rounded points that penetrate between fabric threads rather than pierce them. (Stretch-needle point is slightly less rounded than ballpoint.)

Troubleshooting: Test-stitch knits with ballpoint, stretch, and universal needles to see which doesn't cut yarn and yields best results. If ballpoint skips stitches, try stretch needle.

Microtex and sharp needles

Uses: Sewing microfiber, silk, synthetic leather; precisely stitching edges; and heirloom sewing.

Configuration: Has an acute point.

Troubleshooting: Essentially trouble-free, but fabric may require a Teflon, roller, or even/dual-feed presser foot.

Leather needle

Uses: Excellent for sewing natural leather.

Configuration: Has slight cutting point (almost like an arrowhead).

Troubleshooting: On synthetic leather, unless it's very heavy synthetic, cuts rather than pierces stitch hole and can tear leather. Most synthetic leathers require Microtex or sharp needle.

Denim (jeans) needle

Uses: For heavyweight denim, duck, canvas, upholstery fabrics, artificial leather, and vinyl.

Configuration: Has deeper scarf, acute point, and modified shaft to sew without pushing fabric down into needle-plate hole. Goes through fabric and meets bobbin hook better on dense woven fabrics.

Troubleshooting: If stitches skip when sewing very heavy fabrics, try larger needle and sew more slowly or walk needle through fabric (by turning hand crank).

Handicap/self-threading needle

Uses: Enables easier threading for sewers with vision problems.

Configuration: Universal needle with slip-in threading slot at the eye.

Troubleshooting: Always pull sewn piece back away from needle before cutting thread so needle doesn't unthread. Needle works well on woven fabrics, but may occasionally snag knits, so test-sew to check for fabric and needle compatibility.

Read more: <http://www.threadsmagazine.com/item/3752/sewing-machine-needles-an-overview#ixzz46lkJpByK>