

Great Scott!

By Scott Goodman



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Anatomy of a Sewing Needle

Pointy...very, very pointy on one end. The other end? Not so much.
With me so far?

This is the business end of your sewing machine.

The least expensive component of your \$10,000 investment.

Number 2 on our troubleshooting list (one, being thread issues), the slightest burr or bend can put a tizzy in your tapestry.

Needle nomenclature is a little like reading your butcher's beef map: Butt, shoulder, blade, shank, tip, eye. The "top" of the needle is the butt. The upper part is the shank. On home machines the "shank" has a flat side. This assures that the "groove" faces forward and the "scarf" toward the rear.

Still with me?

...So, once upon a time, Mister Needle, with his tummy full of thread starts his journey downward. He pierces the fabric and goes as lowwww as he can. As he starts his way up, up, up to the sky (this is where it gets exciting) his friend Ms. Fabric/stabilizer-sandwich, slightly pinches thread against the shaft. Your machine's take-up mechanism pulls some of the excess thread through the "groove" in front, leaving a characteristic teardrop shaped loop of thread above the "eye" at the rear by the "scarf". The tip of your machine's hook snags the thread like a golden ring at the carousel and forms a stitch. This miracle of nature and technology repeats itself 10,000 or so times during your creative masterpiece. Anything that interferes with this process will greatly affect your happiness.

On a microscopic level, the slightest imperfection will wreak havoc with your project.

Chrome or nickel plating can wear and flake away, abrading thread, causing breakage. Bent needles can cause a skip or missed stitch.

Not your needle's fault?

Embroidery designs with overly-tight density can squeeze and pull the needle out of its clamp causing an instant end to your tranquility.

Some basic rules:

- Make sure your needle is in all-the-way to the stop.
- Flat side to the rear on all embroidery machines.
- Change needles after major projects.
- Do not attempt to sharpen your needle. Abrasives can abrade the chrome, nickel or titanium coating.
- Follow your manufacturer's recommendation on needle system type and size.



Some interesting facts...

During the blink-of-an-eye, friction from thread movement can raise temperatures at the eye to several hundred degrees. Hot enough to melt metallic thread (Mylar).

Over time, high temperature from friction softens the metal. The weakened needle bends and impacts other parts.

It takes 11 basic steps and several intermediate to make a needle.

A size 100 (#16) is 1mm thick, a 90 (#14) is .9mm, 80 (#12) is .8mm and so on.

Titanium needles are not made from that precious metal, it is just a coating that minimizes stickiness from adhesives.