Thread Sizing Guide

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Thread Size Measurement — Two primary methods, length and weight.

Weight — In weight measurements, higher numbers reflect finer or lighter threads. The "weight" of a particular type of thread refers to the length of a given weight of thread. Dividing the length of thread by a set weight derives the exact measurement of a thread weight. A thread is labeled 40 wt. because one gram is 40 meters long. A thread is labeled 30 wt. because one gram is 30 meters long. A 30-wt. thread is a "heavier" thread, meaning a thicker cross section, because a much shorter thread weighs the same as the 40 wt.

Length — in length measurements, higher numbers reflect thicker or heavier threads. "Denier" refers to the weight in grams of 9000 meters of thread. If 9000 meters weighs 1120 grams, it is a 120 d thread. Most embroidery threads are 120/2, which equals 2 strands of 120-denier thread for a 240 denier total.

"Tex" refers to the weight in grams of 1000 meters of thread. If 1000 meters weighs 25 grams, it is Tex 25.

Rule of Thumb — 40 Wt. = 240 denier = Tex 25. All work in a size 75/11 needle. Schmetz advises that the diameter of the eye of the needle should be 40% larger than the diameter of the thread. Using the rule of thumb, consider a larger needle when using threads heavier than 40wt/240denier/tex25. Consider using a smaller needle when using finer threads.

Conversion Factors

Weight to Denier	9000/weight
Weight to Tex	1000/weight
Denier to Weight	9000/weight
Denier to Tex	Denier x 0.111
Tex to Denier	Tex x 9
Tex to Weight	1000/Tex

40 Weight = 240 Denier = Tex 25
30 Weight = 300 Denier = Tex 33

The Physical Dimension of a Thread Affects:

- Both top and bobbin tensions — Changing the thread physically changes the tension. When thread size is changed, the upper and lower tensions should be checked.
- Thread displacement — Too many thread fibers in a set space make the fabric pucker. Reduce field density, scale pattern or increase stitch length.
- Needle selection — Eye of the needle should be 40% larger than the diameter of the thread. When going to a larger size thread, a larger needle should be used.