



ARMITAGE LEATHER Thread Length Calculator



Calculating the amount of thread you need to stitch a specific item can be problematic, and if you get it wrong, disastrous.

Advice that is often given ranges from x4 to x10 often with little consideration of what SPI is being used and the thickness of the item being stitched.

I have created a simple formula to help you avoid that most horrendous of games... 'Thread Chicken'

This is a very simple way of calculating how much thread you need for any given item.

Below is an accurate way to ensure you get the right length of thread to match what you are about to stitch, every time.

There are a few things we need to know before we start.

1. Total length of stitching.
2. Stitch Size (SPI)
3. Thickness of item to be stitched.
4. Hole Count.

Let's look at each of these in more detail.

1. Total length of stitching.

If you are stitching in a straight line, it is as simple as putting a rule next to the holes to be stitched and measuring the length, for this example, let's call that length 477mm.

This is the stitching we can see, but remember, there are two sides, so it would be 477 front and 477 back.

If you are stitching on a curve and can't measure the length, but know the hole count, see point 4.

2. Stitch Size (SPI)

This is simple enough to work out by looking at your irons, if you are stitching at 7 stitches per inch (SPI), the stitch length will be 3.85mm, this is the distance from centre of hole to centre of hole.

If you are stitching at 10 SPI your Stitch Size will be 2.7mm.

Here is a small guide to assist:

SPI	mm
5	5.2
6	4.3
7	3.85
8	3.38
9	3
10	2.7
11	2.45
12	2.3

The measurements above are a guide as each make of iron differs very slightly.

The numbers above are certainly close enough however for this task.



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3. Thickness of item to be stitched.

This is all of the leather being stitched together for the seam you are working on.

If you are using 1.5mm thick leather and you are stitching 4 pieces together, the thickness of the item being stitched would be 6mm.

If you were stitching a lined belt and the bridle leather was 4.5mm and the lining of the belt was 1mm, the overall thickness would be 5.5mm.

A knife sheath made from of 3mm shoulder which has 4 layers, 12mm and so it goes. For our example, we are going to have 5.5mm as our leather thickness.

4. Hole Count.

If we have our hole count, it is quite simple to get the length of stitching.

We have 124 holes, it is just then a case of multiplying our hole count by our stitch length, we are using 3.85mm, so: $124 \times 3.85 = 477.4$

Item Being Made: _____

What you need to know before the Maths:

Total Length of Stitch Line

See Point 1

Stitch Size (SPI)

See Point 2

Thickness of item to be Stitched

See Point 3

Hole Count

See Point 4

The Maths:

Length of Stitch Line : Visible.

Either measure this with a rule or multiply the hole count by the SPI

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Length of Internal Stitching: Hidden.

This is calculated by multiplying the hole count by the thickness of the leather.

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Finishing Thread.

To ensure you have enough thread left to complete your stitching. 200mm is enough.

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Sub Total

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There are two Threads, so the above figure needs to be doubled.

Total Length
Needed

Thread Length Required

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It is always better to round up, rather a long thread than short.

The leather you are stitching will have an impact, softer leather will tension better so you will have more thread left over, firm or hard leather will tension less but the above calculator will still work.

Do not be stingy with your thread... you will regret it.

'Thread Chicken' is a gateway error!

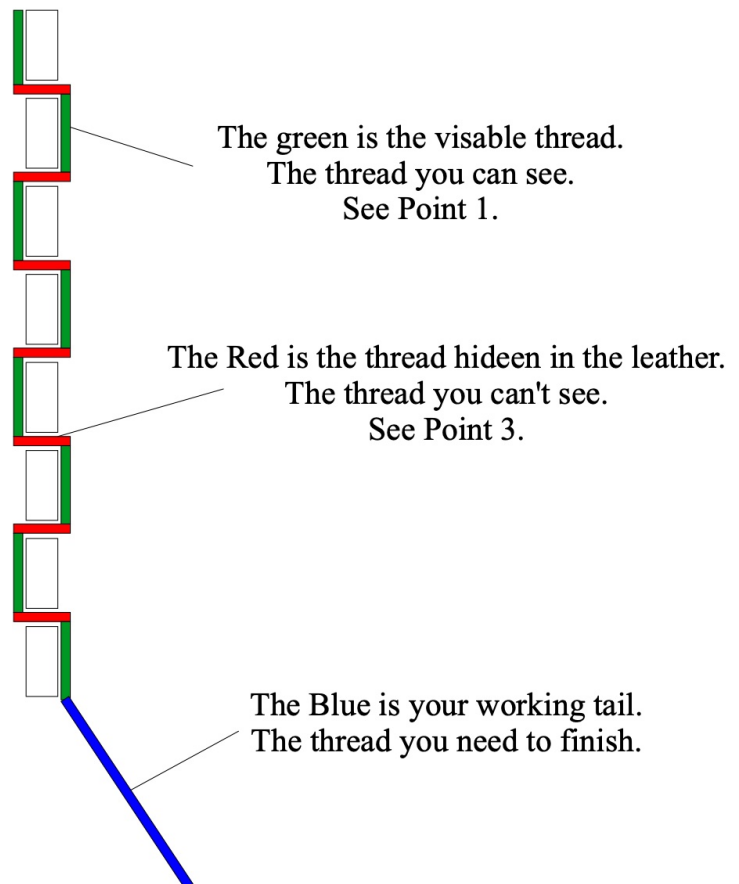
Breaking this process down into a visual aid, the diagram to the right follows a single threads path when stitching.

The green line represents the thread that would be seen on both sides of the leather.

The red is the thread that passes through the holes in the leather. This is the one that can catch people out. As items get thicker or multiple layers are used, this hidden thread length increases.

The blue is the amount of thread you would hope to have left at the end of your stitching to enable ease of finishing with back stitches etc. It also gives leeway for things like tension and thread thickness.

*Don't forget the golden rule! This path is taken twice! Each calculation must be done twice!



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