The Spool Thread Co Yo Yo String Recipe

Introduction

Too many times I would see people say that they wish XXX company didn't go away as you cant get a similar product. This was always a pain point with non-bulk string. As I will no longer be making any Spool Thread, I figured I should release the knowledge out to the community. I still technically own Spool Thread Co., as a company, therefore all property is still legally under my control. At this point though, I am releasing this formula under the **Creative Commons Attribution License.**

What does this mean?

This license lets others distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation. In other words, if you make it, or any part of this for your creations, Spool Thread Co. must be given credit as the basis of the modification, creation, tweak, whatever. I am being cool by giving the community this, please be cool back – be it for fun, but ESPECIALLY if you take something commercial. This could be something as small as a section on an about page on your website, or something included with the packaging that says "Dyed with the Spool Thread Co. process" — "modified with pretwist Spool Thread Co. technology" — you know, credit. This is the only way the Spool Thread Co. can live on — so please let it live on — hash tag it, all that good shit.

If you appreciate any of the work I have put into this, or plan to make this part of your project, or modify your current commercial project for profit, maybe you could toss a donation my way. In the end of all of this I was still ~$400 in the red, and was still researching and studying the art for 2 solid years. Anything would be appreciated.

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Supplies

String Supplies

- Maxi-lock Stretch TEX 30 Textured Nylon https://www.wawak.com/thread/thread-by-use/elastic-stretch/maxi-lock-stretch-serger-nylon-thread-tex-30-2000-yds/#sku=spt1032109

- Maxi-lock TEX 27 All Purpose Spun Polyester
  https://www.wawak.com/thread/thread-by-use/serging/maxi-lock-serger-spun-polyester-thread-tex-27/#sku=spt432109

Dying Supplies

- Dharma Acid Dye
  https://www.dharmatrading.com/dyes/dharma-acid-dyes.html?lnav=dyes.html
- Jacquard Synthrapol
  https://www.amazon.com/dp/B0009IJZPY/ref=cm_sw_r_cp_ep_dp_ZWSdBb6CWP27Z
- Citric Acid
  https://www.amazon.com/dp/B00EYFKNL8/ref=cm_sw_r_cp_ep_dp_v2SdBbGPF4VJP

Tools

- 3 Hooks (minimum for basic string)
- (x2) Dremel 7300-N/8 4.8 volt cordless two speed rotary
  https://www.amazon.com/dp/B003TU0XFU/ref=cm_sw_r_cp_ep_dp_RXSdBbDTSP87C
  https://www.amazon.com/Dremel-7300-PT-4-8V-Nail-Grooming/dp/B003TU0XG4/ref=pd_lpo_1?pd_rd_i=B003TU0XG4&psc=1
  Open one of the dremels, flip the DC motor 180 degrees, close it. Congrats, you now have a dremel that spins in the opposite (counterclockwise) direction. As it is battery powered, thus DC power, the motor will not fry out like an AC motor, nor care about the polarity reversal. DO NOT do this on an AC powered machine (unless, of course, it has DC conversion prior).
- 5 Spool Thread Stand
  https://www.amazon.com/dp/B01HYSUO06/ref=cm_sw_r_cp_ep_dp_i1SdBbT9KP8TQ
  https://www.wawak.com/sewing/sewing-machine-accessories/machine-accessories/?Product+Type=Thread+Stands
- Home Twister (aka Yarn Twister — actually kinda hard to find for cheap — try ebay)
  NOTE — DO NOT get a yarn spinner, it MUST be a TWISTER — very big difference
  http://www.knittingparadise.com/t-86142-1.html#1606868
  https://www.kriskrafter.com/product-page/kriskrafter-yarn-twister
- Strainer (for dying)
- Stainless steel or enamel pot (for dying)

How to Make The String

PreTwist

1. Place 4 nylon spools and 1 poly spool on the spool stand — I put the poly in the middle — and thread into the Home Twister.

2. Spin the Home Twister *counterclockwise* to make a spool of pre-twisted thread. This will give a loose “yarn” of 4 nylon threads and 1 poly thread spun in the clockwise direction. Make a nice bit — at least 26 ft per string. I usually did it until the created spool couldn’t handle anymore — that would make roughly 50 strings.

Rig Setup

1. Place two hooks 12 ft apart
2. Place a third hook in between the first two, 64 inches from one of the hooks. This will give you a long side and a short side.

String Making

1. Starting with the hook furthest on the short side, tie off your pretwist
2. Run a pretwist the entire 12 ft, and then back and tie off where you started.
3. Starting at the “looped” side on the long end, use a dremel to spin the loop *clockwise* until the string has reduced in length 16 inches. This is roughly 11.4% of the length. For those of you that want a shorter string, you can push down to 11 or 10.5 ft – and do the math.
4. Bend the string around the hook and attach the loop to the hook you originally tied off on. A good way to do this is to pinch the string an inch from the end and untwist it — it will open the loop and the string can slide right on to the hook.
5. Now go back to the bend, and spin the string *counterclockwise* for about 8 inches — this is past the neutral point — but I will explain this later.
6. At this point you can pull the string off the hook, let the torsion neutral out, and then tie off the end.

Congrats, you have made Spool Thread. A little bit of theory before we move on to the dying portion.

Theory

Some say some of these steps can be reduced or shortened in some way, so here is some theory into the method showing you why you do specific things.

Why the “pretwist” – why do extra work when you could get through with one less twist? This adds to the strength. Rope itself is folded, twisted, folded, twisted, folded, over and over again, it adds to the strength. What you are doing with the pretwist is making a loose twist – the further twisting will also tighten those inner twists. So even though 11% doesn’t sound like a lot of torsion, you are actually doing 2x tightening – the smaller twists, and the overall twist – this creates friction holding itself tighter. Also, as the thread is wrapped within a wrap, this lessens the rough feeling making it more “solid”. It also adds to the rigidness to keep loops more open when whipping.

Why the over neutral twist at the end?
Kind of related to the above. What this does is loosen some of the pre-twisting we did above.

Why tighten just to untighten?
Again, friction. This is pushing the threads against each other – again this adds to the rigidness, the structure, the shape, the feel.

In the past, to save time, I attempted to skip some of these steps to make things quicker, but it always resulted in some negative attributes. Fluffier, frayed faster, not as dense, fatter, etc. In order to get the string everyone loved, everything above had to happen.

How to Dye the String

PLEASE NOTE THAT ANYTHING YOU USE TO DYE SHOULD NEVER BE USED TO COOK FOOD FROM HERE FORWARD. SOME OF THIS STUFF CAN BE NASTY IF YOU EAT IT. A POT, A SPOON, A STRAINER, NO MATTER WHAT — DO NOT USE THIS STUFF TO COOK/EAT FOOD FURTHER.

THIS DYE WILL NOT DYE COTTON OR POLYESTER — SO IF YOU MIXED THREAD MATERIALS THEY WILL REMAIN THE COLOR THEY WERE. WHITE WILL STAY WHITE, AND SO ON.

Nylon dying instructions that exist for Dharma is based on dying something like clothing where possible shrinking would not occur with sheets of nylon, like in a tracksuit or backpack. As we are using textured nylon, it is a bit different, and the heat will impact the thread so I have modified the process. I would still read over the Dharma instructions just to get a general idea of how to dye nylon, but I found that this was always the best:

1. Pre wash string with synthrapol in hot water. This will strip away all oils and dirts. This is crucial for bonding. Squeeze extra water out of the string, but do not ring them out. Synthrapol actually aids in the dying the process, so a little bit left over in the string is a good thing
2. Using a pot that you will NEVER use to cook in again, add a dab of the pigment. It’s hard to say how much to use as a teaspoon can dye 1 lb. On that note though, I always used 1.5-2x the amount of dye I would need for that amount of thread.
3. Turn on your faucet hot water. Let it run until it's as absolutely hot as your faucet will deliver. Put enough water in the pot to have the string free float. Not barely covered, not filled, just enough to have it free float. For instance, if I was only dying 5 strings, I'd have about 0.75 inches of water in a typical pot. This should have dissolved most of the pigment into the water.

4. Turn your stove onto the lowest setting it has and place the pot on it. I don't know the exact temps, but I would wait until I saw steam rising from the surface. *If you have bubbles of any kind, you are way too hot.* Literally, I would just wait until steam was noticeable.
5. At this point I would place the string into the mixture. I would stir it up and make sure the string was fully soaked.
6. After 60 seconds, place a generous pinch of the citric acid into the mixture and stir. If you can, place it away from any string. I was always generous with the pinch as the acid is what kicks off the bonding - and it won't be in the mixture long compared to the 20 minutes it says.
7. After 4 minutes, take the pot off the stove and drain everything through a strainer.
8. Rinse the strings in warm water until you see the water run as clear as it will.
9. Now rinse them off in the synthrapol mixture you used before. This will strip all dye that has not bonded to the string.
10. Rinse them in cold water.
11. BONUS POINTS — I found it was best to do the final rinse in a bathtub. The pressure and amount of water was way way better at rinsing out the dye than a sink was.
12. Hand squeeze out the water and hang to dry — or — place in laundry bag and dry at the lowest setting for 30-45 minutes (time will vary depending on the amount of string made)
13. You will notice your string is about 2-3 inches shorter than when you started — this is normal. A quick 10 minutes throwing and it will stretch right back out.

And there you have it: Spool Thread.

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Credits

Original instructions by Edward Rubio (the "I" in the instructions), owner of Spool Thread Co. Edits, formatting changes, and updated links were contributed by Malachi Brown. It is distributed under the Creative Commons Attribution License.