



YOUIMAGINE

BoltNut-Tensegrity

By: (seabirdHH)

License: Commercial use is not allowed, you must attribute the creator, you may remix this work and the remixed work should be made available under this license.

Published on: Nov 16, 2020

Located at: <http://www.youmagine.com/designs/boltnut-tensegrity>

Short description:

A fascinating tensegrity demonstration!

Description:

Bolt and nut - held by wrenches - connected by a thin thread, keep a fixed distance to each other and give the whole object a stable structure even if they are not screwed. It is a fascinating experience when, after the 3D printing and the assembly of the individual parts, this tension is suddenly created when setting up the object: TENSEGRITY! To get a better impression of the object and also about different color combinations, look here: https://youtu.be/pZx732S_ShU After printing all parts, start by connecting the screw and nut with a thread (I used a Ø 0.35 mm nylon string. Thread or dental floss might also do the job). The distance between screw and nut should be about 25mm. Then insert the wrench parts into the existing recess of the top and bottom part. NOTE: To ensure a good fit, the fitting accuracy is very tight. It may be necessary to correct the fit with a cutter knife or sandpaper. Then apply superglue. For a correct alignment you should use a stop angle! Now comes the more difficult part of the assembly. Cut three approx. 35cm long nylon threads, make a multiple knot at one end of each thread and insert them into the holes of the top part (as the holes are very narrow with Ø 1mm, it can happen that they are partially closed by filament parts during printing. In such a case you should try to push them free with a needle). Then feed the threads through the holes in the socket. The distance between top and bottom hexagon should be about 130 mm. If the notches are not clean, try to open them carefully with a cutter knife. To press down the threads into the slots, you should use a small screwdriver (!). Do the same with the other 2 strings. Now insert the connected bolt-nut construction and turn the object upside down. Start with the adjustment. At first just clamp the strings. Then when the strings are slightly tightened, socket and top are aligned horizontally and the force of attraction is sufficient to ensure a stable stand, then you can secure the strings. Hurray! You did it! ... the BoltNut structure is floating! Please note that if the tension is too high this can soon lead to the printed parts bending! Printing parts: BoltNutTensegrity_bottom.stl BoltNutTensegrity_top.stl BoltNutTensegrity_wrench.stl (2x) BoltNutTensegrity_bolt.stl BoltNutTensegrity_nut.stl Additionally you need the following things: Nylon string Ø 0.35 mm Cutter knife Scissors Small screwdriver Sandpaper Super glue Patience! I hope that I did not forget anything in my description. If you have any questions ple

If you can, please use the online documentation found at <http://www.youmagine.com/designs/boltnut-tensegrity> because those may have been been updated. Also, there you can interact and provide praise and/or feedback.