



Roller Squeegee/ Roller Towel for Court Drying



LoboCNC

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Summary

With little to do this winter besides play outside, being able to quickly dry off a tennis, pickleball, or basketball...

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With little to do this winter besides play outside, being able to quickly dry off a tennis, pickleball, or basketball court takes on new importance. This roller squeegee design will quickly push off all the standing water on a court, and then it can be used with loops of microfiber towels (see video) to dry the surface to the point of playability.

Watch it go at: <https://youtu.be/Db9vcBc5jrA>

PRINTING

This should work with PLA, ABS or PETG. Just make sure you get very good layer adhesion because all parts are load bearing. Parts are designed for 0.2mm layer, 0.4mm line width.

PART LIST

In addition to the 3D printed parts (2 caps, 2 plugs, 1 socket, 1 knob, 1 anchor), you will need:

3 - 1/4"-20 nuts

- 2 - 1/4-20 x 1" long socket cap screws
- 1 - 1/4"-20 x 3" long hex head bolt
- 2 - 1/4" washers
- 2 - 8-32 x 3/8" long screws
- 10 - #8 x 1/2" self-drilling sheet metal screws
- 2 - 608 skate bearings (sealed)
- 1 - 36" long, 1x1", 1/16" wall aluminum square tube
- 1 - 35.75" long, sch. 40, 3/4" galvanized steel pipe
- 1 - threaded replacement mop handle
- 1 - 36" long piece of foam pipe insulation (for 3/4" dia. copper pipe.

ASSEMBLY

- (1) Press 1/4-20 nuts into the hex sockets in the 2 plugs and in the anchor.
- (2) In the aluminum square tube, drill a 0.172" dia. hole 2" from one end, centered in the tube. The hole should go through both sides of the tube.
- (3) Insert the anchor piece into the tube, nut first, and secure with the two 8-32 screws.
- (4) Turn down the outer diameter of the two 1/4" socket head screws to 8mm, so that they just fit in the 608 bearings. You can do this by putting the screw in a drill or drill press and using a file or grinder to shave down the head.
- (5) Place a washer on each screw and then screw into the two plug pieces in the ends of the steel pipe.
- (6) Press the 3" long hex head bolt into the knob.
- (7) Press one 608 bearing into each of the caps.
- (8) Slide one of the cap pieces onto the end of the square tube with the anchor. Secure in place with the knob/bolt.
- (9) Slide the other cap on the other end of the square tube and secure in place with two of the self-drilling screws.
- (10) Center the socket piece on the square tube and secure with eight of the self-drilling screws.

(11) Slide the piece of insulation over the pipe. It should be a snug fit. (If it loosens up over time, you can add rubber bands at the ends as shown in the photos.)

(12) Loosen the knob so you can slide the cap off by about 1/2". Insert one end of the roller into the bearing on the far cap, and then slide the cap with the knob down onto the other end of the roller. Tighten the knob back down.

(13) Insert the mop handle into the socket and you are ready to roll!

FOR THE TOWEL LOOPS

I used Relentless Drive's "Neighbor's Envy" XL Microfiber Towels, which are 24" x 60". Simply sewing the towel into a 24" wide loop doesn't track very well on the roller. Instead, I cut the towel in half and sewed two seams along the 30" side to form a 30" wide x 48" circumference loop. (I used a wide zigzag stitch to form a butt-seam between the two towel edges to minimize the seam lump.)

To use the towels, free one end of the roller and slide the towel over. The video shows how this works. A single dry towel loop will dry about 300 sq.ft. (after all the standing water has been thoroughly squeegeed off). You can hand-wring out the microfiber towels, but a damp towel will only dry about 1/2 the area of a completely dry towel. You'll want to have a bunch on hand.

Print Settings

Printer:

UDIO

Rafts:

No

Supports:

No

Resolution:

0.2

Infill:

20%

Filament: Inland PLA

PLA

Category: Outdoor & Garden

Model files



rollerplug.stl



rolleranchor.stl



rollersocket.stl



rollercap.stl



rollerknob.stl

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