



## Prusa XL Silicone Nozzle Wiper / Brush



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### Summary

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### Prusa XL Silicone Nozzle Wiper.

I didn't want to use a metal brush wiper on my brass nozzles, so I made a silicone wiper. I have had this working well on my 5TH XL for a few weeks now. It gives a nice squeegee wipe clean.

#### Parts you will need.

For the Silicone bristles I used the bristles from a silicone baking / cooking brush. These have some heat resistance as they can be used for basting when cooking etc.

you will need at least one brush for each toolhead wiper you want to make. As these may vary in thickness and number of bristles you may need a couple extra.

I got mine for less than \$2 each at Kmart, but I have also seen them cheap in \$2 stores etc.

You will also need 2x M3 bolts 11-12mm long for each wiper, so with a 5TH you will need 10 Bolts. you will also need 2x M3 Hex Nuts for each wiper as well. These are for fixing the wiper to the back frame of the XL. You will also need 2x M3 T-Nuts for each wiper for inserting in the 3030 frame slots so you can screw in the bolts. I made some slightly thinner ones as I found them easier to fit in the frame, they are very easy and quick to print.

You can get them here....

<https://www.printables.com/model/134515-3030-m3-t-nut-drop-in-less-height-and-solid-sides->

### **Printable Parts.**

These will print without supports. I have also printed them with both the 0.4mm & 0.6mm Nozzles. I used PETG for mine with a 0.2mm Layer Height.

You will need **1x Wiper Base** and **1x Wiper Cap** for each wiper you want to make.

You will also need **1x Cutter Jig**, this is for cutting the silicone bristles once assembled. The cutter jig gives you an accurate bristle height as well as making them square and level.

There are 3 Cutter Jigs.

You want the bristles to be quiet firm so they give a good wipe, but don't strain the movement of the tool head. This is where using silicone bristles helps as the nozzle passes through the bristles.

**Wiper Cutter Jig Default 6mm** - This is the bristle height I found worked well with the brushes I used.

Wiper Cutter Jig Default 7mm - This will give a slightly longer bristle and thus slightly softer wipe.

Wiper Cutter Jig Default 5mm - This will give a slightly shorter bristle and thus slightly stiffer wipe.

### **Assembly.**

See attached pictures to help with the assembly,

**MAKE SURE YOU ALSO DO STEPS 9 and 10.**

Step 1 - Carefully cut the bristles off the brush close to the head.

Step 2 - The bristles can be slightly tapered, so keep them all the same way around.

Step 3 - Start placing the bristles in to the Wiper Base, do them a few at a time so that they are packed tight and as neatly as possible you don't want any gaps.

Step 4 - Fill the Wiper Base all the way to the top.

Step 5 - Once full, pull them all forward a few millimetres. This will help when sliding on the Cap as it will push them back a little as it slides on.

Step 6 - This is the fiddly part :) Press down on the silicone bristles as hard as you can, so that you can start to slide the Wiper Cap on to the Base. One side of the Wiper Cap is rounded on the inside this goes on first, this helps to get it started and press down on the bristles. You will need to keep pressing down on the bristles as you work your way down sliding the Cap on. It is meant to be tight as you want the bristles to be packed tight together.

Step 7 - For the last few millimetres you will most likely get some bristles trying to squish out the bottom. As long as these have not gone to short on the wiper end you can just trim these off at the base so you can finish sliding the Cap on.

**Step 8 - Now assembled make sure you do the next two steps 9 and 10.**

**Step 9 - Now place the assembled wiper in the the Cutter Jig as shown in the Step 9 picture. I use the 6mm Jig.**

**Step 10 - Using a sharp blade, cleanly cut down through the cutting slot in the Jig. You may need to press down on the Assembled Wiper to keep it in place.**

Assembly Done - You should now have an Assembled Wiper with the bristles cut neatly, flat and square.

### **Installation.**

Insert two T-Nuts in to the frame and twist them around. you can then attach the Wiper using the bolts to the Frame, Use the Installation picture as a guide. I actually put the bolts through the holes on the base and slightly screwed on the T-Nuts, then I pushed them in the frame slots from there. Then using the Hex key I nudged the T-Nuts to spin them around, then I could tighten the bolts to secure the base to the frame.

You can position them by eye and by moving the head back and forth to get it right. Firstly get it centred for where the head comes in and out of the parking. Then for the height I have mine just below where the silicone sock sits on the print head. I find this give a good wipe as the nozzle comes back over it.

You can also get a great alignment Jig designed by Surfalex2000, You can get that from his items on Printables on the link below. It is the White Jig in the Installation photo and it works very well.

<https://www.printables.com/model/462473-prusa-xl-series-nozzle-scrubber-brush-update-inclu/files>

## Test Pictures.

As a test I printed two parts you can see in pictures Test 1 and Test2 without a wipe tower. I wanted to see if I still got any small blobs in the different colours that you could sometimes get. You can see in Test 1 a small Black and White part that printed cleanly with no Wipe Tower. In Test 2 the Clown Fish, again no wipe tower. This did print cleanly, but with no wipe tower the very tops of the fins where there was little filament used between each change, you could see had suffered from the nozzle pressure not being stabilized. There were small gaps along the top of the fins, but still an acceptable print. But for this type of print I would still use a wipe tower to help with the nozzle pressure being right before starting the print.

## Summary.

I hope you find this useful, I have found it beneficial on my XL. You sometimes have to clean the silicone brushes as you can get the odd small piece of filament in the bristles, but that is the idea, better on the brush than the print.

I have also found my nozzles to be cleaner generally all round.

Post a make if you find this useful.

## Model files



**wiper-base.stl**



**wiper-cap.stl**



**wiper-cutter-jig-softer-7mm.stl**

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wiper-cutter-jig-default-6mm.stl



wiper-cutter-jig-harder-5mm.stl

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