



# Ender 3 Squashball Feet



FDEngineering

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## Summary

Squashball feet for Ender 3 and similar Printers. Side mountable for factory buildheight.

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[ball](#) [feet](#)

## Summary:

### Facts:

- Dampening feet through the combination with squashballs
- Perfect fitting for Ender3 Printers, could also fit Ender3 like Printers
- Side mounted at the 4040 Aluminium Extrusions
- Low build height ensured through side mounting
- Same height as the normal Ender 3 rubber blocks
- Ground clearance  $\Delta x = 10\text{mm}$
- Pretty unique design (slightly stanced)

### Required:

- 4 x Squashballs (double yellow dot)
  - 1 ball per foot

- 16 x Hexagon Socket Head Cap Screws ISO 4762 - M5 x 8 - 8.8
  - ger: Zylinderkopfschraube, alternativ DIN 912
  - 4 bolts per foot
  - 2 bolts placed crosswise per foot would also be sufficient
- 16 x Aluminium Extrusion T-Nuts M5
  - matching the screws
- approx. 112g Filament (PLA works fine)
  - 3 Perimeters
  - 20% Infill
  - 4 Solid Bottom and Top Layers

## **Motivation:**

I wanted to make my Printer less noisy, because we share the same four walls in my little Student Apartment.

I was looking for practical solutions to my noise problem. One of the simplest solutions was to decouple the direct contact between the printer and the shelf where the printer is stationed on to reduce the resonance of the system. In my search I found some nice ideas, such as using squashballs as dampening feet for the printer. The next day I directly bought 4 squashballs at our local Intersport.

The next step was to find and print a nice set of squash ball fitting feet for my printer, but that's when I started struggling because not all available solutions met my requirements.

I wanted them to be a low profile version and they also should look quite nice and fitting.

As an Engineering Student, the designing fever struck me and I started sketching.

## **Solution & Design:**

These Squashball Feet are designed to be side mounted on my Ender 3 V2. The targeted goal was to keep the same build height as with the original rubber blocks and to use some of the bolts and T-Nuts i already had laying around.

The distance between the shelf and the printers underside is 10mm.

One Squashball Foot is mounted with 4 Hexagon Socket Head Cap Screws ISO 4762 - M5 x 8 and 4 T-Nuts. The use of only 2 bolts and nuts would also be sufficient for a secure installation.

The Squashballs i am using are the Wilson Staff "Double Yellow Dot".

## Information regarding the Print:

I have printed the feet with 3DJake's Matt Black PLA.

Because I didn't want to let anything burn on, i have printed them with 20% Infill, 4 Bottom and Top Layer as well as 3 Perimeters around.

I recommend printing the feet with the ball opening downwards, under this circumstance there is no support necessary.

For one foot, the printer needed 120 minutes and 28 g of filament.

They came out pretty smooth and feel pretty sturdy.

## Feedback:

This is my first time sharing a modell I have designed, please let me know, if you need more information or if I can improve something.

I appreciate your interest and your time.

## Model files



squashball\_foot\_v1.stl

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