



Mower Blade Balancer (based on model by marius_ciolacu) V2 - Major Revisions/Improvements



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Summary

This model uses the same concepts as V1, but with significant modifications for strength, accuracy, and durability.

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[mowerbladebalancer](#)

1. Introduction:

After modifying the original design and creating V1, I discovered the base was bending and twisting in my vise when a blade was attached. Also, the pivot shaft was bending with a heavy blade attached. With these deficiencies known, I set out to make a better design, known as V2.

2. Print Instructions:

I chose to print the V2 base, pivot, and knob in PLA using the 0.10mm DETAIL print setting in Prusa Slicer to ensure the best possible dimensional accuracy, especially with regard to the bearing bores and the screw threads. The print settings I chose cause the prints to take many hours, but I feel the result was worth the wait.

The bearing driver was printed in PLA using the 0.30mm DRAFT print setting in Prusa Slicer.

The 12 mm x 1.75 threads print cleanly without any post processing required.

2.A. Deviations From Default Settings:

- Base: 5 perimeters, Aligned Seam Position
- Pivot: 6 perimeters, Random Seam Position
- Knob: Aligned Seam Position
- Bearing Driver: 5 perimeters

The number of perimeters was increased in order to improve the part's strength, especially the shaft of the pivot. The seam position was set to Random for the pivot to help ensure a neutral balance in the printed part.

2.B. G-Code

I did not upload G-Code files as they are specific to my Prusa Mk3S, but I have uploaded the 3mf files, which include the print settings used in PrusaSlicer. Once a 3mf file is opened, you can slice and generate G-Code.

3. Assembly Instructions:

1. The bearings are to be cleaned of any grease to ensure the quickest reaction to an imbalance. If the bearings have seals, first remove the seals and then clean them of grease.
2. Press the 6001 inner bearing into the base using the bearing driver until the bearing is fully seated. The fit is snug. You can push on the bearing driver with your hands or use a vise.
3. Press the 6201 bearing onto the pivot using the bearing driver until the bearing is fully seated. The fit is snug. You can push on the bearing driver with your hands or use a vise.
4. Press the pivot and 6201 bearing assembly into the base until the 6201 bearing is fully seated in the base. You can use your hands or use a vise. When the 6201 bearing is fully seated, there will be a 1-mm gap between the pivot and the base.

4. Operation:

The balancer is now ready to use. It can be mounted to a wall or other surface using #8 wood screws, or it can be used as is in a vise.

Place the hole in the center of the mower blade in front of the threaded hole in the pivot and screw in the knob. The taper at the base of the thread on the knob will center the blade on the balancer. Release the blade and the blade will tip to the side that is heaviest. Remove the blade from the balancer, remove material from the heavy end of the blade, and then retest the balance. Repeat this process until the blade doesn't change position when you release it.

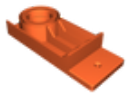
This remix is based on



Mower Blade Balancer Remix (originally by marius_ciolacu) - V1 Revised/Remixed

by t5montecarlo

Model files



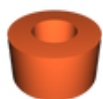
base-v2.3mf



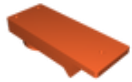
pivot-v2.3mf



knob-v2.3mf



bearing-driver-v2.3mf



base-v2.stl

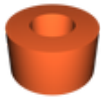
☐ Be sure to flip the base 180 degrees before printing.



pivot-v2.stl



knob-v2.stl



bearing-driver-v2.stl

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