



## Locking ball and socket arm

A Alex R

[VIEW IN BROWSER](#)

updated 12. 4. 2022 | published 31. 10. 2019

### Summary

Want to support me? Interested in the PCB holder shown in the picture and want to support me?

[Hobby & Makers](#) > [Tools](#)

Tags: [tool](#) [cable](#) [mount](#) [ball](#) [arm](#) [socket](#) [joint](#)  
[soldering](#) [helpinghands](#) [tools](#) [pcb](#) [wire](#) [cableholder](#)  
[ballandsocket](#) [alligatorclip](#) [coolantarm](#) [gooseneck](#)  
[helpinghand](#) [pcbholder](#) [wireholder](#)

### Want to support me?

Interested in the PCB holder shown in the picture and want to support me? Check out Stickvise, my low profile soldering vise:

- Information: <http://www.stickvise.com>
- Buy it on Amazon: <http://amzn.to/2dgmQCE>

### Summary

Ball and socket system, upgraded with a quarter turn twist lock on each ball joint to greatly increase pullout strength. My idea is to create a ball and socket system that is not only 3d printable but

extremely strong and will not pop apart easily. This would be suitable for things like an LED lamp arm or heavy duty alligator clip where you don't want the neck popping apart. My original project was posted on hackaday:

<https://hackaday.io/project/5739-locking-ball-and-socket-gooseneck-system>

### **Update 5/17/15**

New STL files posted on 5/17/15 - should work much better on printers with larger layer height / lower resolution

## **Print instructions Category: Hand Tools Instructions PRINTING**

1. I printed the parts with socket up, this minimizes supports that are placed inside the socket, easier to remove from the ball.
2. I printed with a layer resolution of .01" or .25mm. For larger layers you should be fine, if you have any issues post them in the comments.
3. Use a fairly dense infill if you want these to be nice and strong. The intent is for this to make a fairly heavy duty gooseneck arm.

### **ASSEMBLY**

4. Place nut over ball joint first before snapping socket onto ball.
5. Snap socket onto ball, requires moderate amount of force.
6. Slide nut onto socket, take care to align the locking features.
7. Twist quarter turn to lock in place. Small hex flats are 10mm, large hex flats on the twist-lock nut are 19mm.
8. Repeat for additional joints.

## **Model files**



**ball\_and\_socket\_v5\_-\_main\_body.stl**



**ball\_stud\_125mm\_dia.stl**



**ball\_and\_socket\_v5\_-\_alligator\_clip\_holder.stl**

---



**ball\_and\_socket\_joint.step**

---



**ball\_and\_socket\_v5\_-\_twist\_lock.stl**

---



**stickvise\_ballandsocketv5\_jaw.stl**

[Find source .stl files on Thingiverse.com](https://www.thingiverse.com)

## License

This work is licensed under a  
**Creative Commons (4.0 International License)**



**Attribution-ShareAlike**

---

- ✗ | Sharing without ATTRIBUTION
- ✓ | Remix Culture allowed
- ✓ | Commercial Use
- ✓ | Free Cultural Works
- ✓ | Meets Open Definition