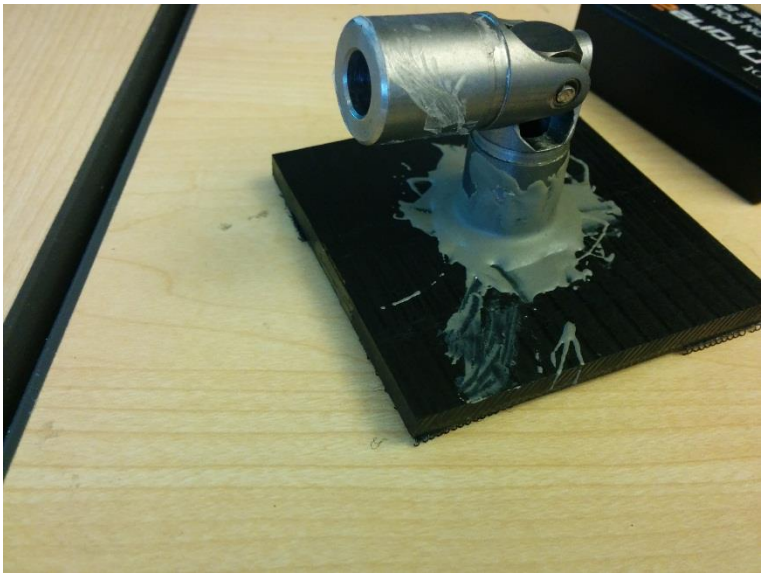
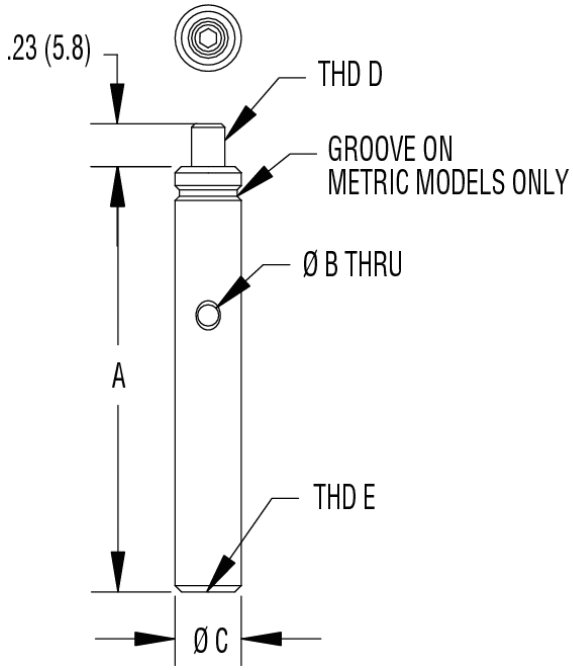
This is what it should look like in the end. For a full list of materials see the end of this document. The very first thing you want to do is start the gluing process of the square platform (Plate 85625K31) and the steel universal joint



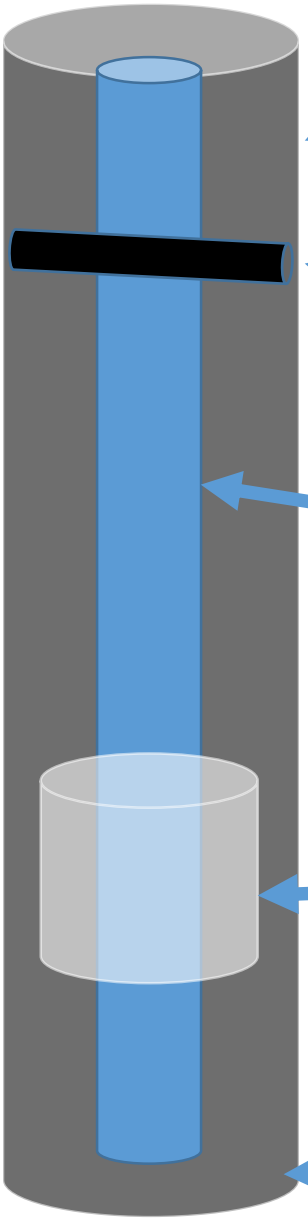
JB Weld resin worked nicely here. You'll need to wait a full 24 hours for this thing to harden. The hard part is ensuring the universal joint doesn't tip over during the gluing processing. This should be avoidable by placing the joint at directly upwards – it has a tendency to stay there, thankfully.

The rest is fairly simple. Start by mounting the aluminum rod (**M-SP-12)** to the optical breadboard table using an M6 threaded rod to mate the two together. This will act as the stationary base which will remain fixed to a table. C-clamps would be useful here to ensure the drone doesn't cause this to tip over.

Notice how the top part of the aluminum rod has hole that goes right through, orthogonal to rod. I'm referring to the hole labelled 'B THRU'



You'd want to insert a loose threaded rod into here. This is the idea:



Outer-sleeve carbon fiber (Outer Sleeve - 5287T33) tube sits on the outer side of the aluminum rod

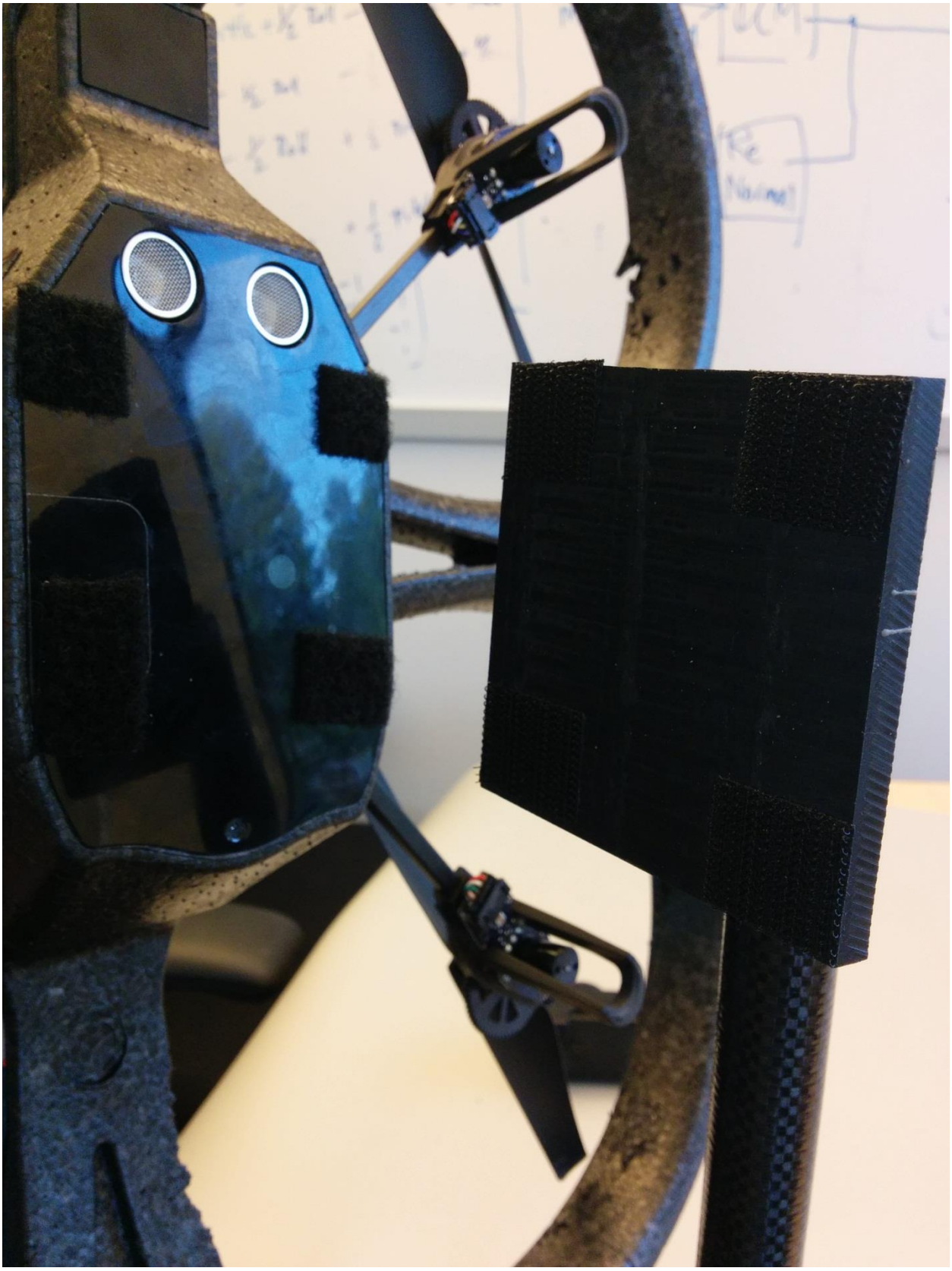
Rod inserted into "B THRU" hole. When the Carbon fiber tube moves up, the threaded Rod prevents further upward motion since the slip Ring will collide with it. This is so the drone doesn't fly off

Inner tube (**M-SP-12**)

Slip ring is connected to the carbon fiber tube, Such that the tube can slide freely in the vertical direction Along the inner tube. The slip ring does not need glue To be attached to the tube, it fits fairly well inside Without moving freely

Bottom part, inner rod attached to optical bread board

No need to glue anything, wrap tape around this and squeeze it in with a spring in between



Velcro tape works surprisingly well. This is what's used to attach the drone to the platform

You should be all set! Don’t start the drone in this position as its not recoverable from this without 100% duty cycle

Not all parts are available outside the US. McMaster-Carr does US shipping only unfortunately. You can probably find something very similar to what you need at your respective stores

Part name	Dimensions / Notes	Price	Purpose	URL
~~Universal Joint - 60625k95~~	~~Overall Diameter : 0.79" , Joint Diameter: 0.75"~~	~~31.06~~	~~To be epoxied with the base plate which the drone sits on and the rod which sits underneath it~~	~~http://www.mcmaster.com/#60625k95/=sepd4r~~
Outer Sleeve - 5287T33	0.75" x 1 foot, carbon fiber	26.22	will act as the outer rod which slide on top of the inner rod	http://www.mcmaster.com/#5287t33/=sepec3
Slip Rings - 6389K119 or ~~117~~	Sleeve, for 1/2" Shaft Diameter, 3/4" OD, 1" Length	6.23	To be attached to inner rod, allow outer pipe to slide over	~~http://www.mcmaster.com/#6389k117/=sepips~~
Impact Spring - 1692K55	1.00" Long,.720" Large OD ,.281"	.75	So that the drone outer sleeve doesn't smash into inner rod	http://www.mcmaster.com/#1692k55/=sepjrh

Velcro Strap - 6605K24	13" Length, 1/2" Width, 1 set comes with 10	10.18	Velcro strap to hold drone in place on platform	http://www.mcmaster.com/#6605k24/=sepm1g
Super Glue - 7605A15	J-B Weld Adhesive	5.9	for gluing needs	http://www.mcmaster.com/#7605a15/=sepnvr
		5.9		
Aluminum Breadboard M-SA2-04X06	100 x 150 mm, 25 mm M6 Grid	41	used as a base for the rod to slip on	http://search.newport.com/?q=M-SA2-04X06
~~SP-12~~	~~0.5" outer diameter~~	~~10.84~~	~~will act as the inner rod~~	~~http://search.newport.com/?q=*&x2=sku&q2=SP-12~~
Plate 85625K31	3 x 3 "	9.13	where the AR Drone 2 will sit on top of	http://www.mcmaster.com/#85625k31/=seq65m
M-SP-12	Diameter 0.5 in. (12.7 mm) Height 12.0 in. (304.8 mm) Thread Type M4 and M6	9.13	Will act as the inner rod	http://www.mcmaster.com/#85625k31/=seq65m
Steel Universal Joint	For Shaft Diameter 3/8" Depth 7/8"	49.21	Universal Joint which will be mounted to platform that drone	http://www.mcmaster.com/#6443k27/=sxlpwf

			will sit on.	