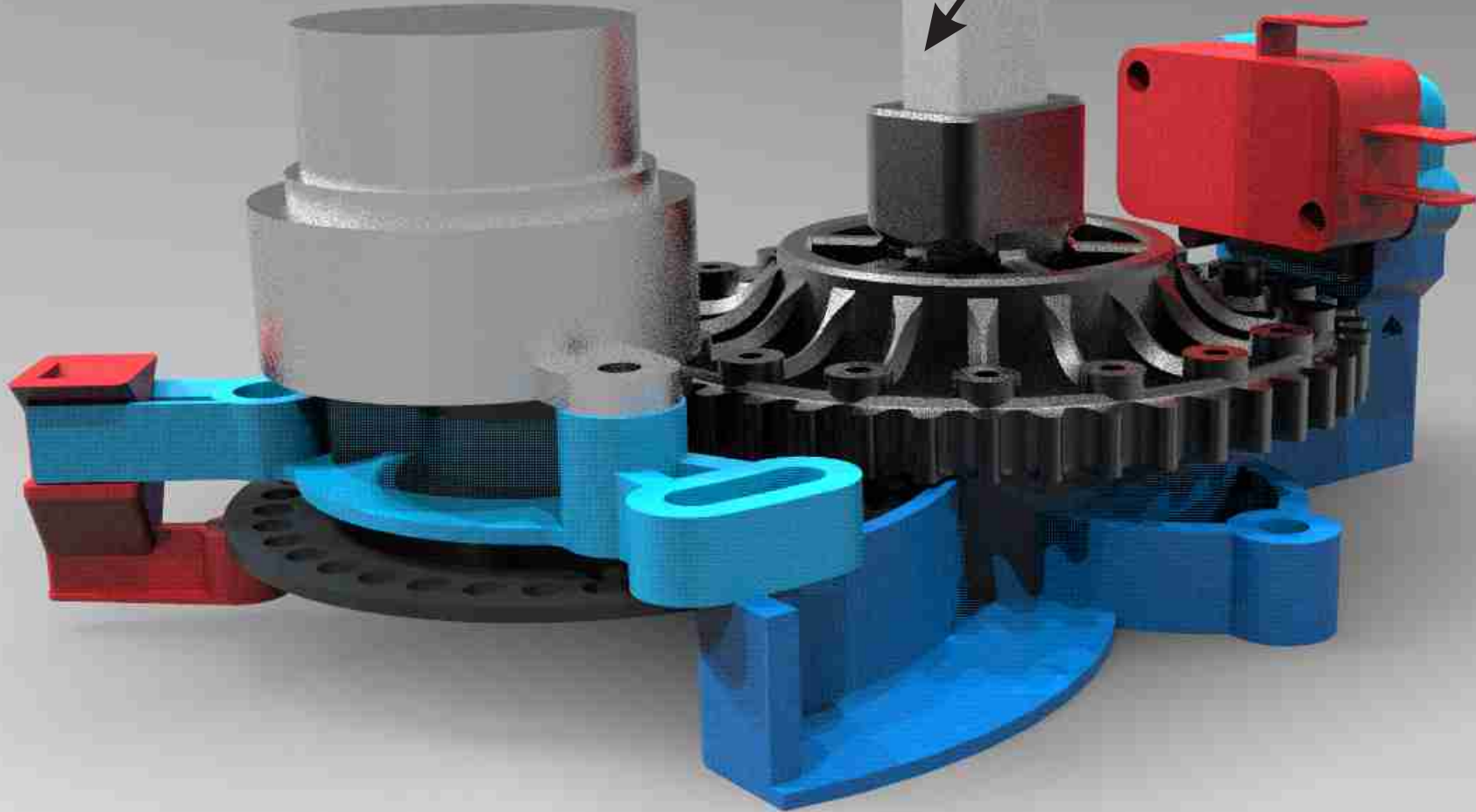
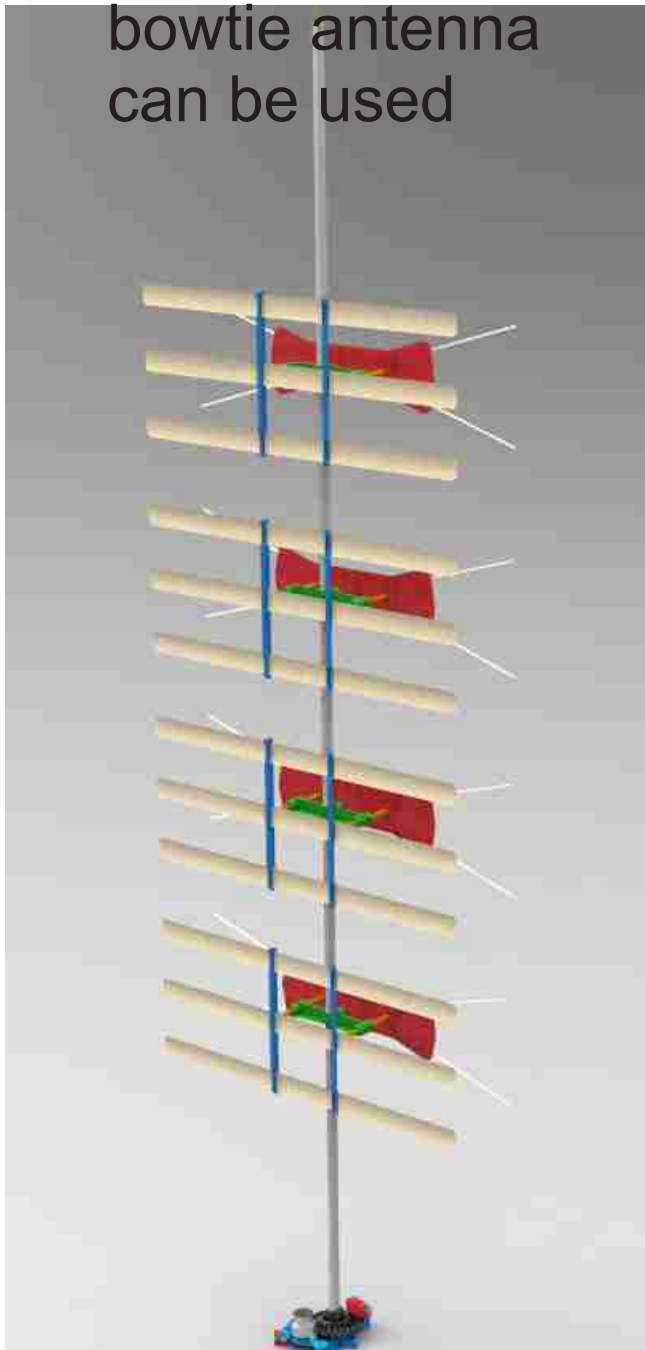


1/4X1/2 shaft fiberglass  
home depot electric  
fence about \$4 for 5 Feet

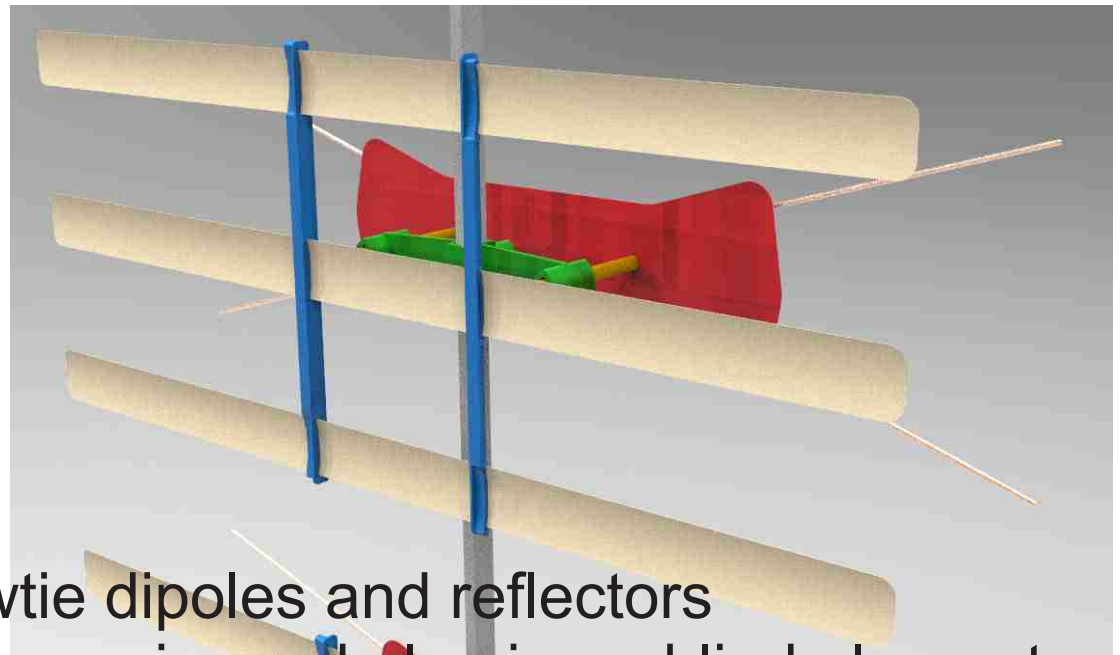


Base assembly of rotating antenna

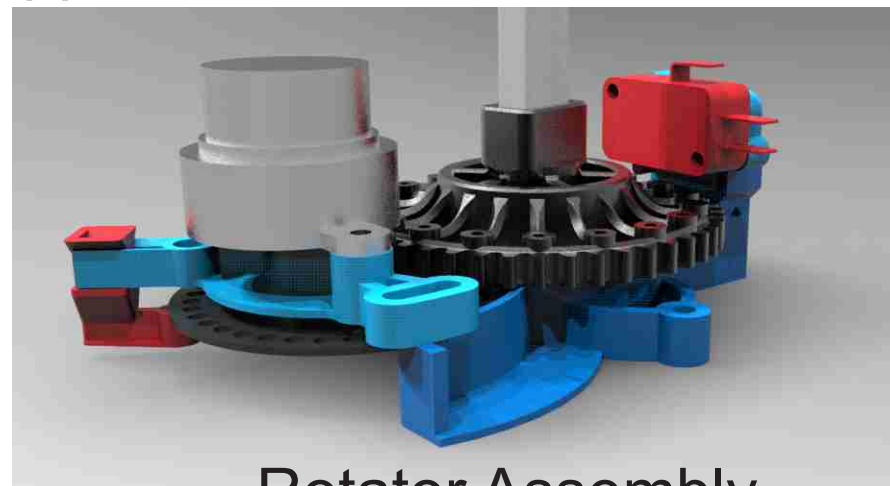
Any lightweight  
bowtie antenna  
can be used



weight suspended on  
a string

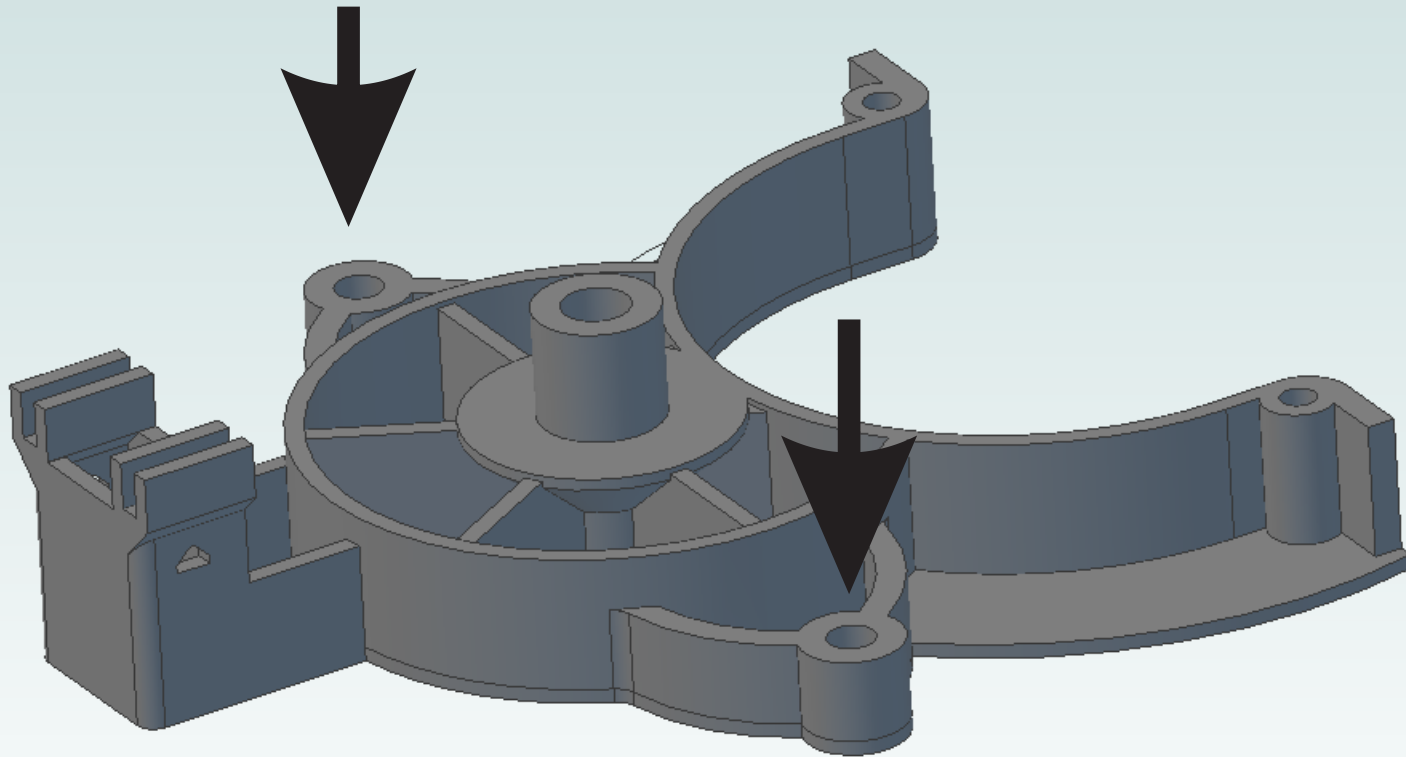


Bowtie dipoles and reflectors  
copper wire and aluminum blind elements



Rotator Assembly

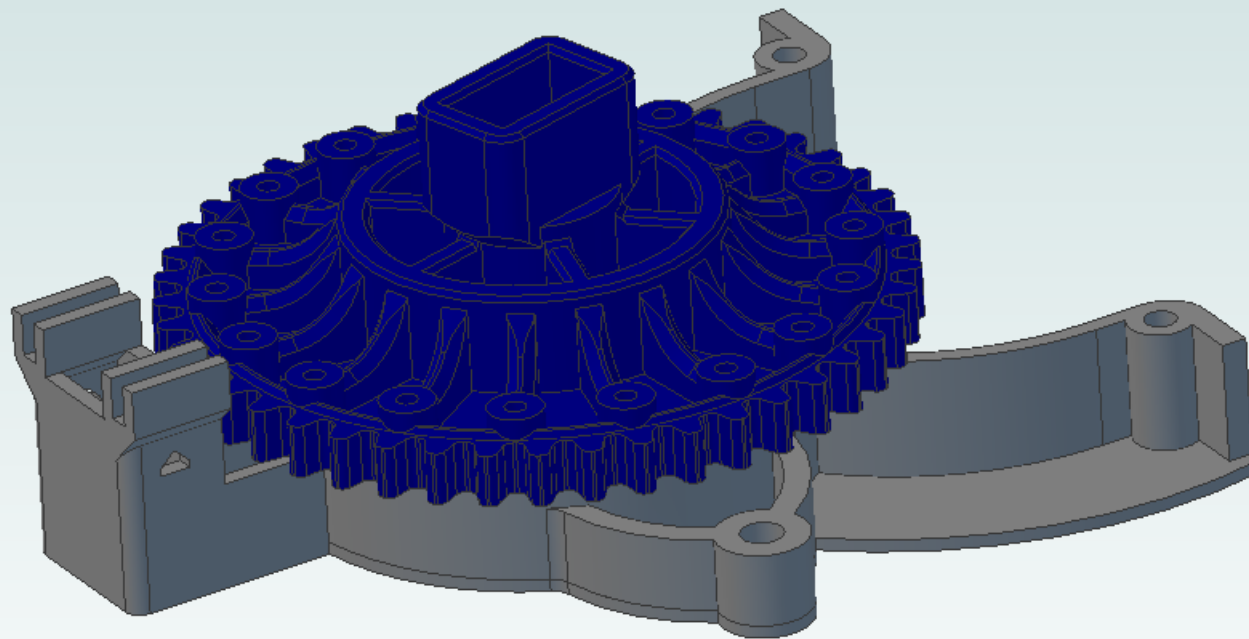
Mounting Base

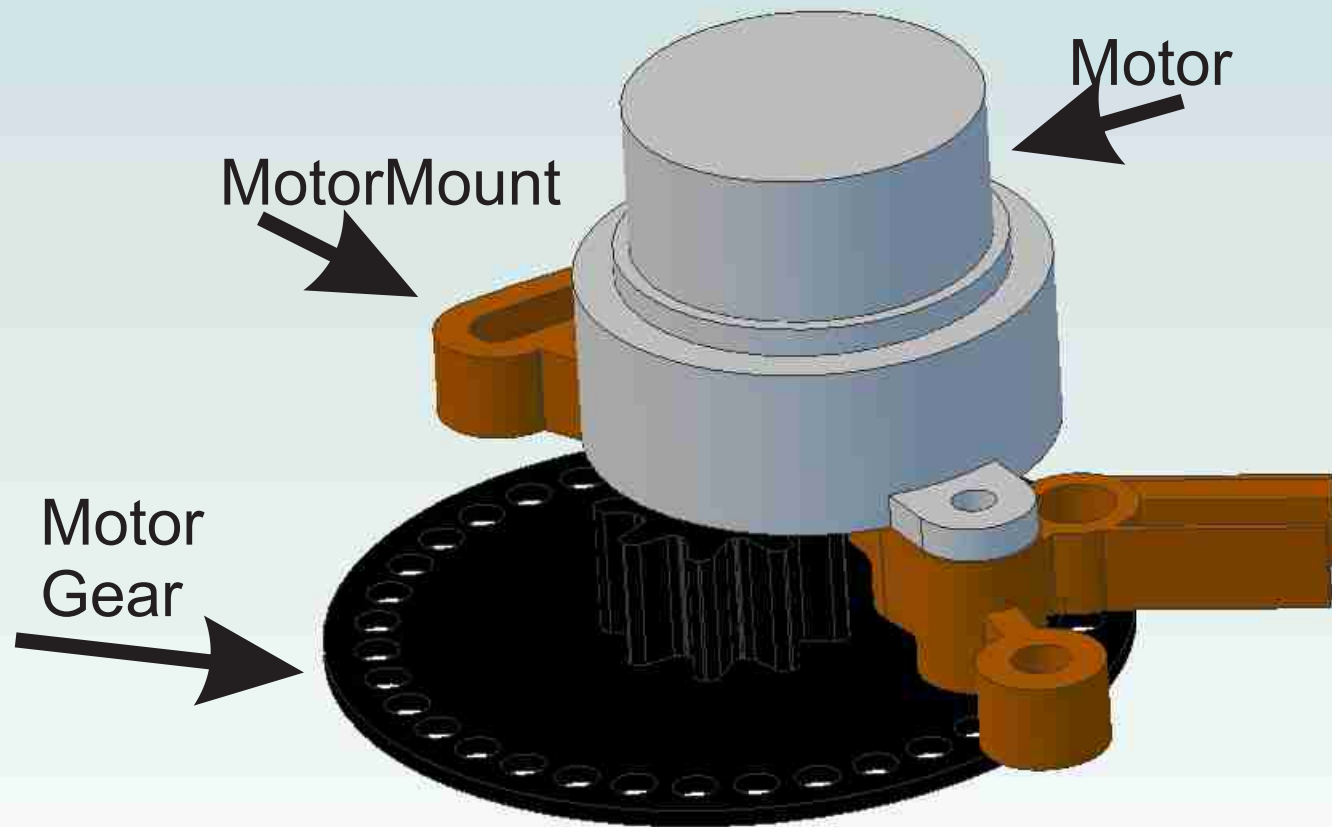


Mount a horizontal 2X4  
Off a vertical portion of  
the rafters

Secure to 2X4  
2 Places with  
Screws

Place main gear onto mount

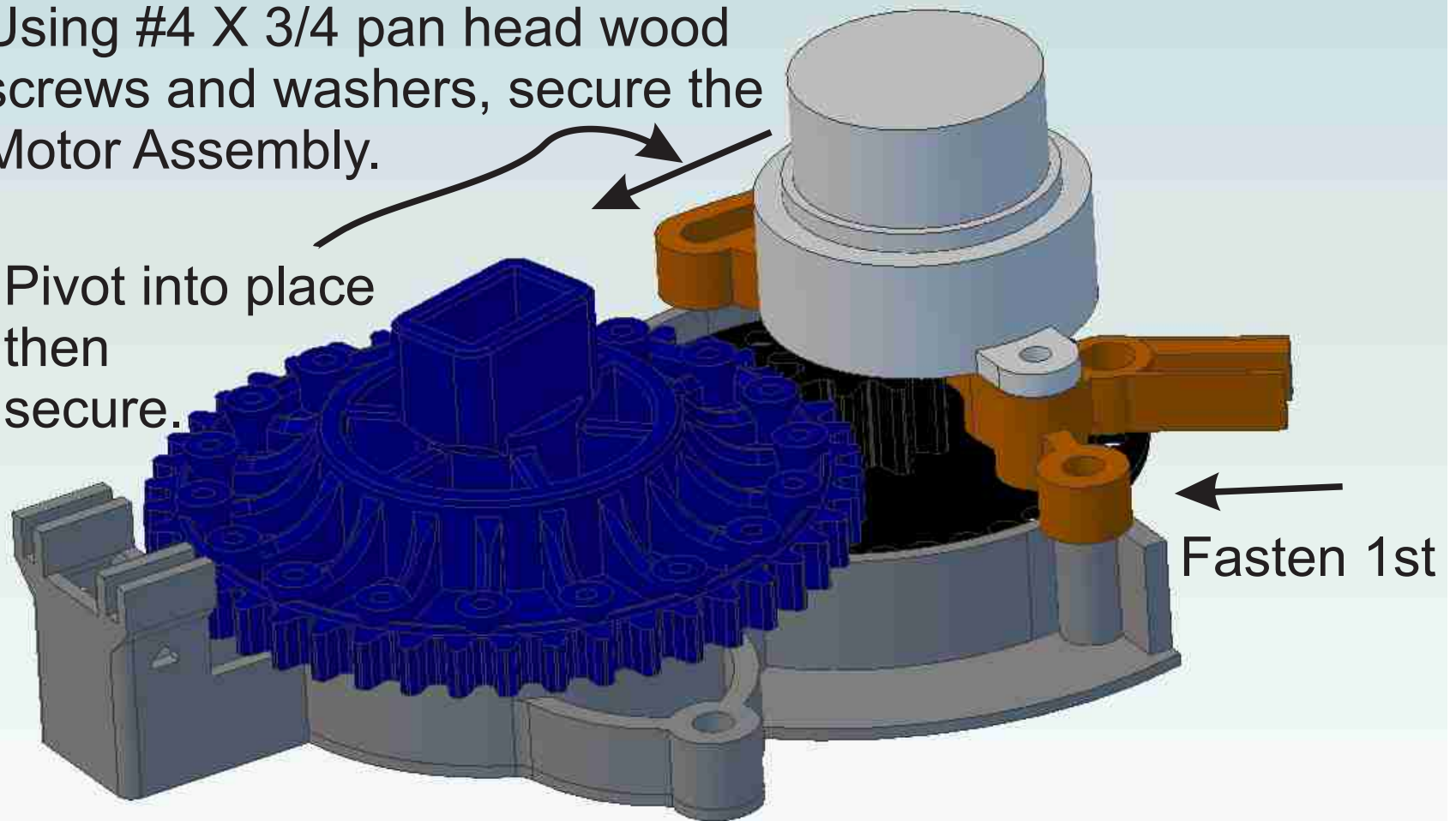




Screw the motor onto the motor mount. 1/2 inch  
#4 Screws should do (Verify your print hole sizes)  
Press fit gear onto motor

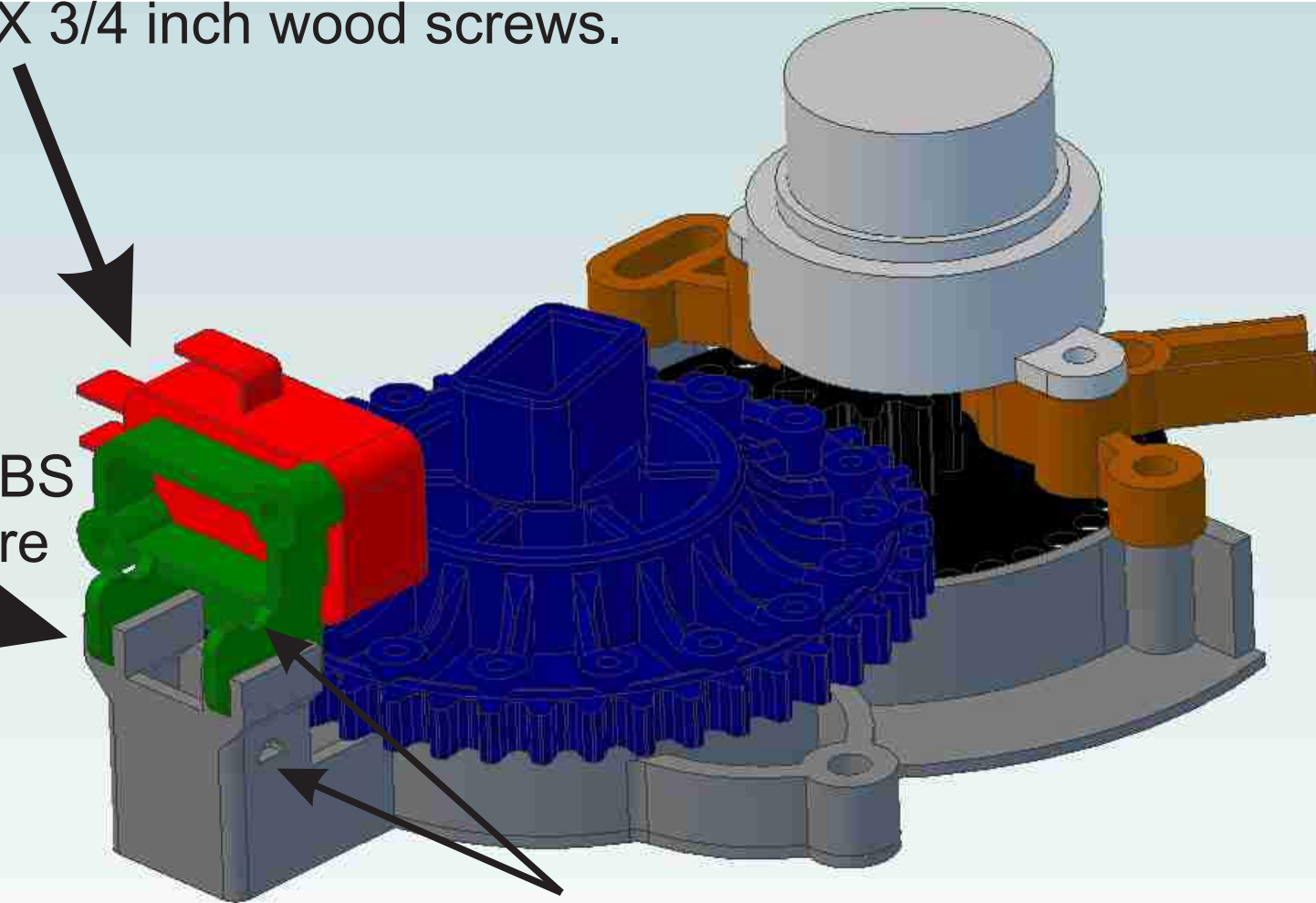
Using #4 X 3/4 pan head wood screws and washers, secure the Motor Assembly.

Pivot into place then secure.



Secure the micro switch to the micro switch mount using #4 X 3/4 inch wood screws.

Suggest ABS solvent here

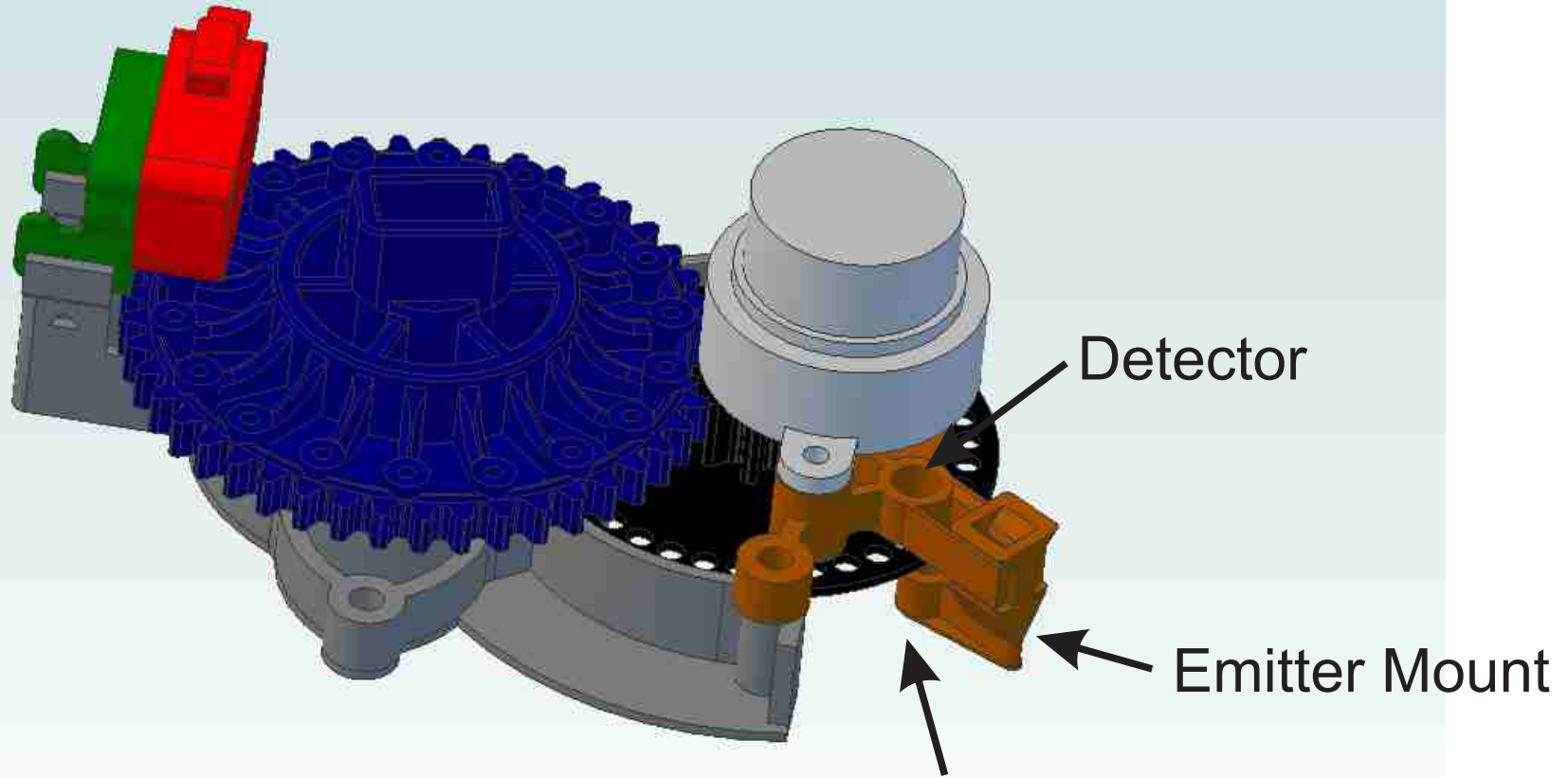


Use a tie wrap to secure the switch assembly



The emitter mount is for a 3mm IR LED.

The detector hole size is for a 5mm IR detector LED configuration.

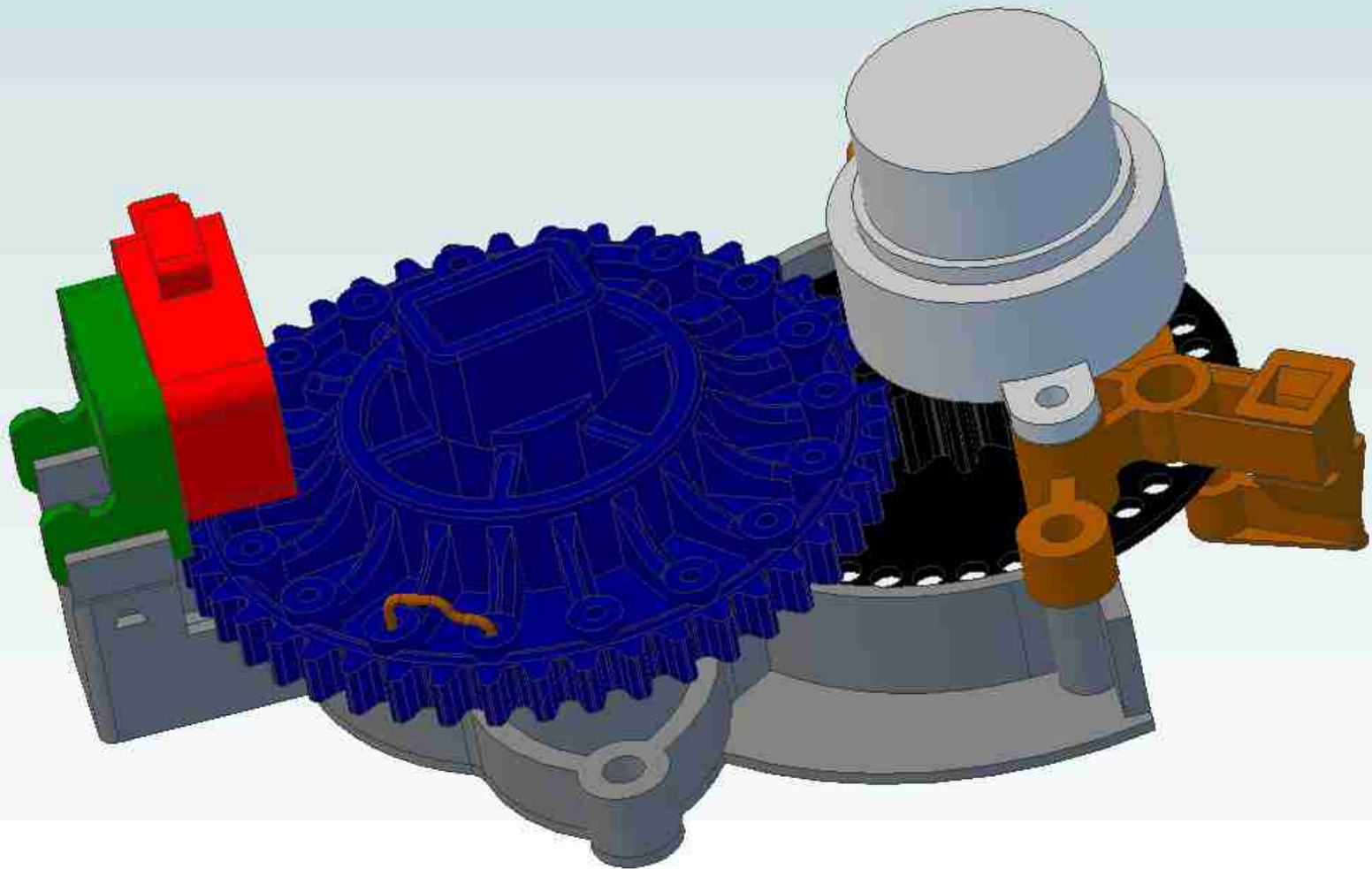


Align the emitter and secure with  
Adhesive (ABS solvent, crazy glue...whatever works 4U)



## Zero Position - North

The antenna will position itself relative to true north - that is for transmitter locations. That's where the paper clip comes in. It was easier for me to just have a slight bow in the clip and then alter the mounting screw positions for more precision. Most bow tie antennas do not require extreme accuracy.



Screw sizes will depend on your 3D print. So make first and get screws later. My setup is high density for strength, this makes part walls slightly larger and hole sizes smaller.

Depending on the nature of your set up some sanding or drilling may be required.

If you're an experienced 3D printer, you know this already.

For gears, I learnt a long time ago that perfect involutes require more development than they are worth so these parts are not that, but they work just fine.