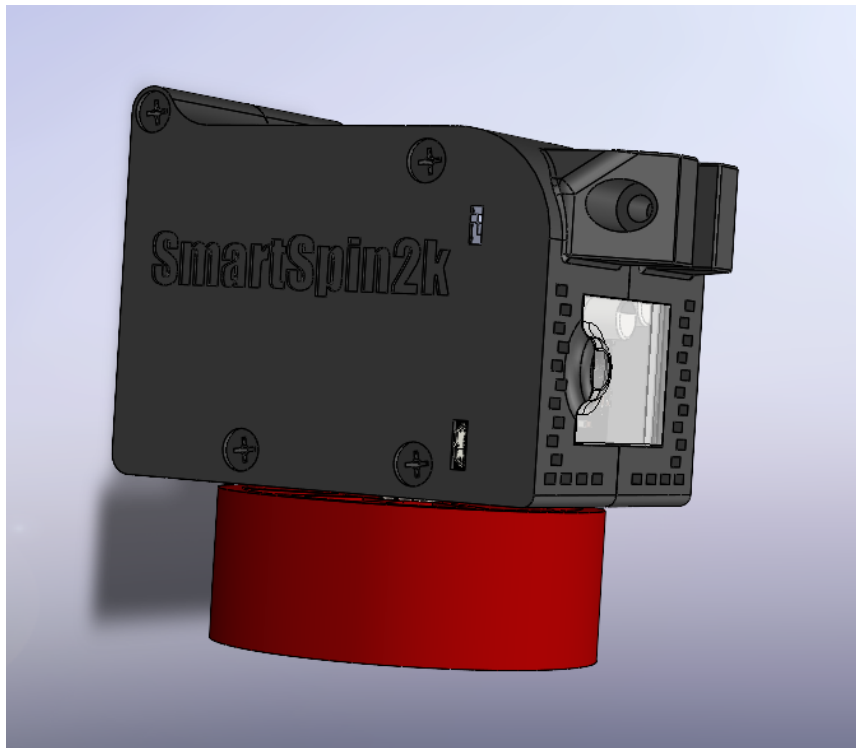
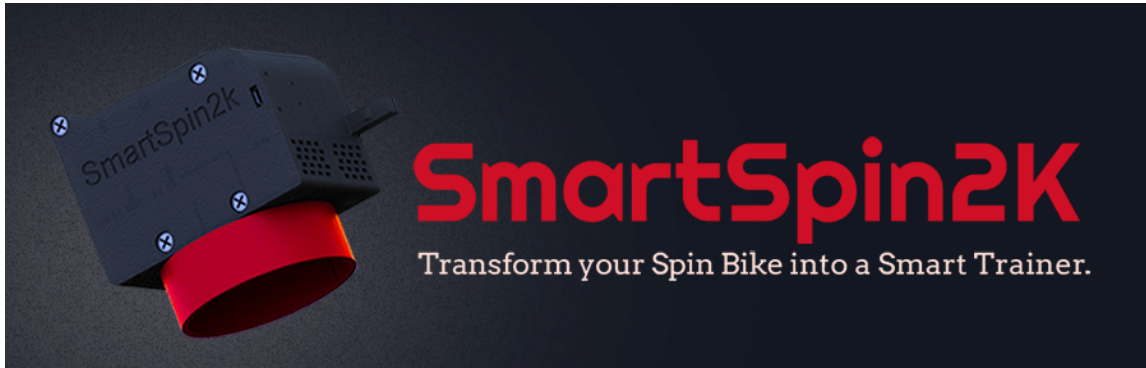


Smart Spin Rev 3 Building Instructions



<http://SmartSpin2k.org>

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PRINTING GUIDELINES

We've tested a lot of different materials and techniques,
but here are our recommended guidelines.

3D PRINTING PROCESS

FDM

MATERIAL

ABS, ASA, PETG or PA

LAYER HEIGHT

Design optimized for .3mm

EXTRUSION WIDTH

Design Optimized for .6mm
But prints well with .4mm as well.

INFILL TYPE

Grid, Gyroid, Honeycomb, Triangle or Cubic

INFILL PERCENTAGE

Recommended: 40%

WALL COUNT

Recommended: 4

SOLID TOP/BOTTOM LAYERS

Recommended: 5

We suggest printing the knob cup in an accent color. Our preferred accent color is **RED**.
The window should be printed in a **TRANSLUCENT** PETG to let the LEDs show through.
The rest of the design can be printed in **BLACK**.

HARDWARE

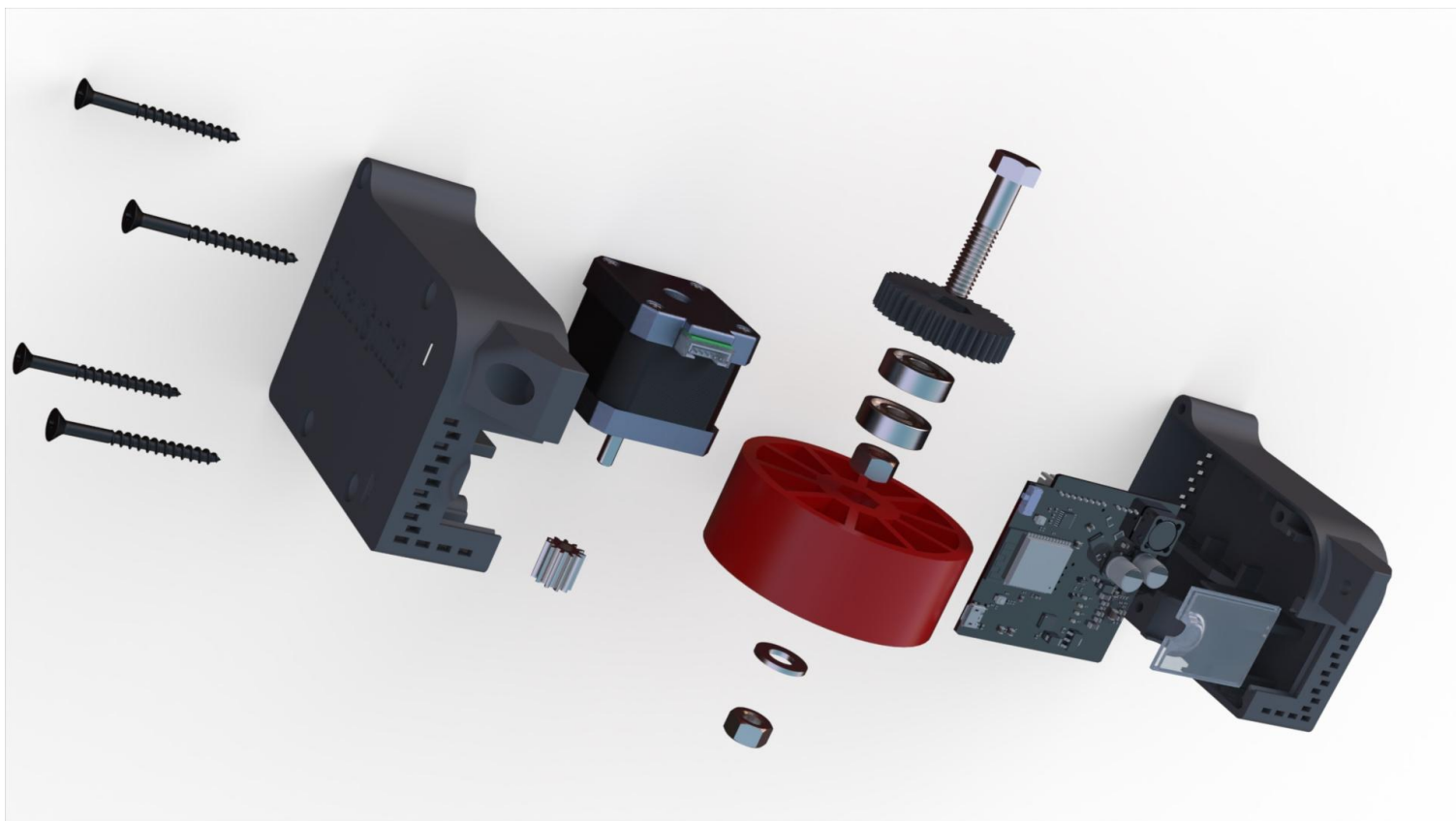
SmartSpin2K has been designed to minimize the amount of hardware you'll need. Rev 3 takes this approach even further.

SmartSpin2K PCB	2 x 5/16" Hex Nuts
SmartSpin2K Cables	5/16" Flat Washer
12 or 24v Wall Power Supply	4 x 2" Black Oxide Sheet Rock Screws
38mm NEMA 17 Stepper	M5 X 30mm Cap Screw (or #10x1.25")
2 x 608 Skate Bearings	M5 Hex Nut (or #10)
1 x 5/16" x 1-1/2" Hex Head Bolt	2x Tactile Switches
Stereo RCA-->3.5mm headphone "Y" Cable	Zip Ties or Velcro Strap

NOTE: Only one of each item is required unless an x is indicated to imply multiples. Refer to the wiki for questions about where to obtain parts.

OVERVIEW

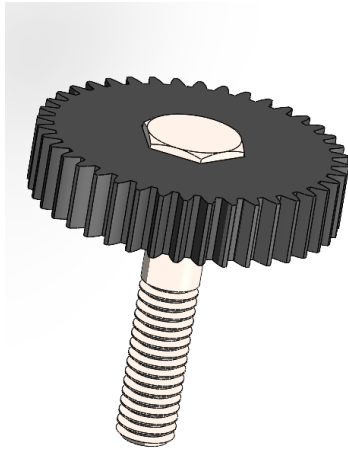
This is an exploded view of the main SmartSpin2k Body. Feel free to come back to it if you have any general questions on where parts fit.



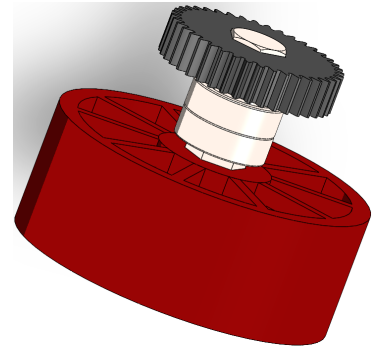
AXLE ASSEMBLY

For this step, you'll need the 5/16" bolt, both 608 bearings, the washer and both nuts. Blue threadlocker is also recommended on the nuts.

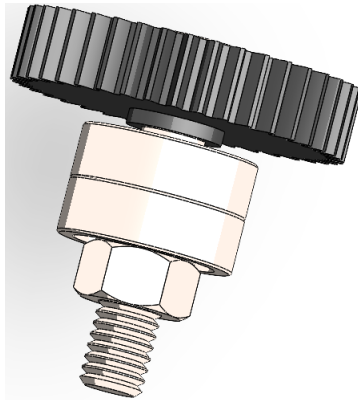
Insert the bolt
into the 40t gear.



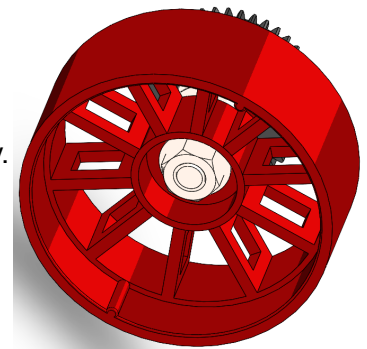
Slide the knob cup
Onto the axle
assembly.



Install both
bearings
and one nut onto
the bolt.



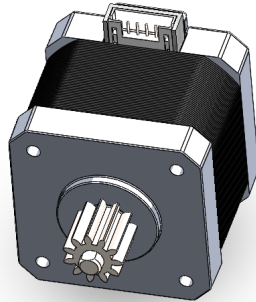
Install the washer
And the final nut
Onto the assembly.
Tighten by holding
the gear in your
hand with a cloth
and a ratchet on
the nut.



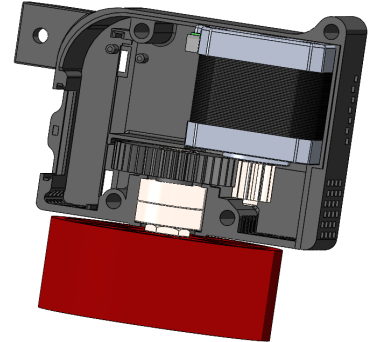
STEPPER INSTALLATION

It's time to put the motor
into the case!

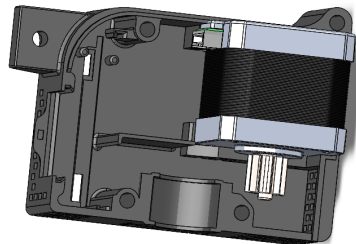
Line up the flat side
and press the gear
onto the D shaft.
Depending on printer
tolerances, you may
need to heat the gear
to prevent damaging it.



Insert the axle
assembly into the
left case half.

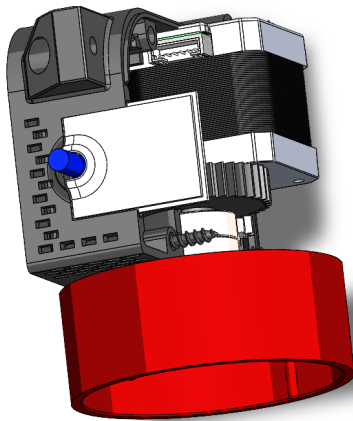
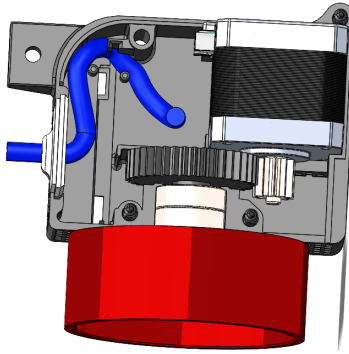


Place the stepper into
the slot in grooves in the
left case half.

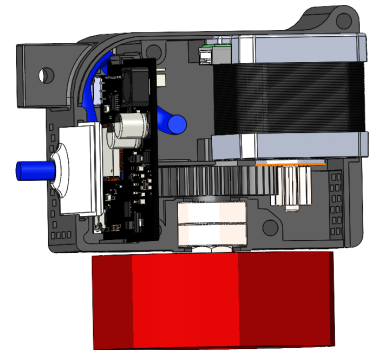


PCB INSTALLATION

Prior to PCB install, lay the main cable (blue) on the side of the case and out of the hole in the window using the two pegs on the case to hold the wire in place. Slide the window into place. Leave the connector disconnected until the board is in place.



Carefully slide the PCB into the grooves on the case half being careful not to pinch the cable. There is a cutout in the PCB to let the cable pass through.

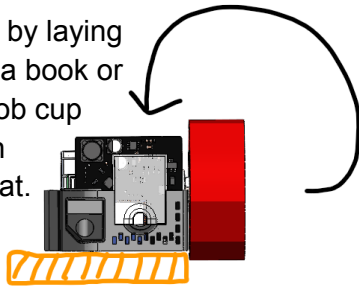


Once the board is in place, both the stepper motor cable and the main cable can be connected. If Solidworks Gave me cable routing, I'd show that To you. :)

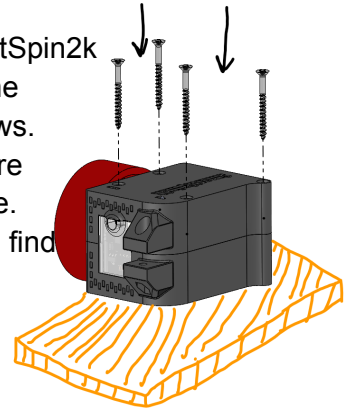
JOINING CASE HALVES

Follow along with the pictures in the instructions below.
Use your imagination and pretend there's a cable sticking
out from the appropriate hole in the window.

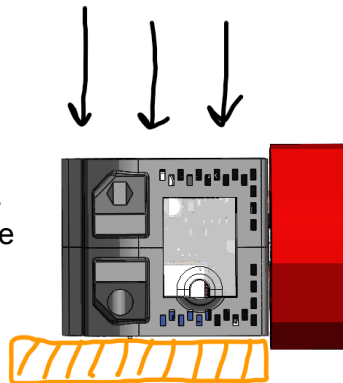
Prepare for this step by laying
the SmartSpin2k on a book or
board so that the knob cup
doesn't interfere with
the assembly lying flat.



Now flip the SmartSpin2k
Over and Insert the
4 sheet rock screws.
Tighten until they're
flush with the case.
Hopefully you can find
a straighter board
than this one.



Evenly slide the opposite
Case half onto the other side.
There is a locking tab near the
rear vents that should click
into place.



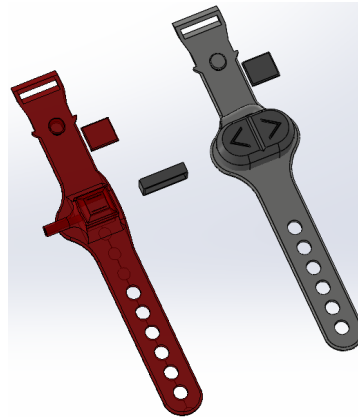
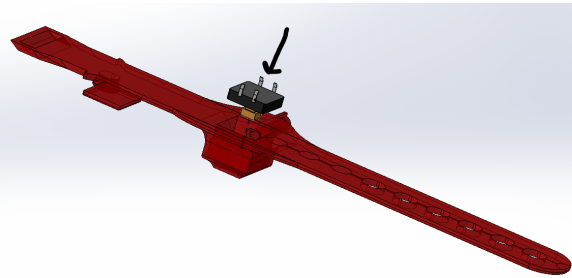
BUILDING SHIFTERS

There are currently two similar shifter designs. One places both buttons on one TPU strap. The other is if you'd like shift up on one hand, shift down on the other. They are both built similarly, so we will only show the single button shifter.

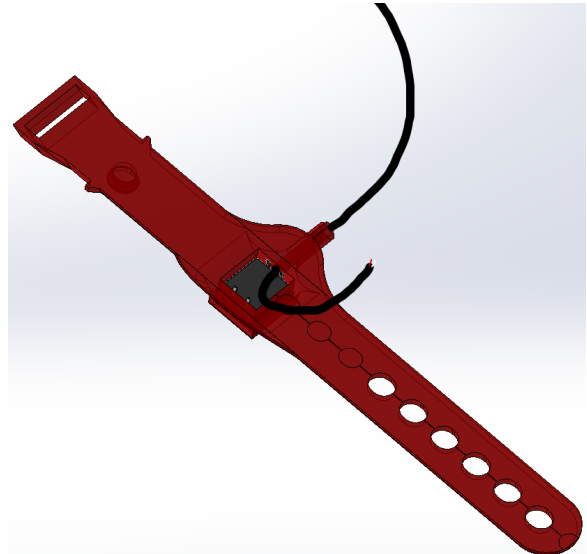
Prepare an RCA cable by cutting off both RCA ends.



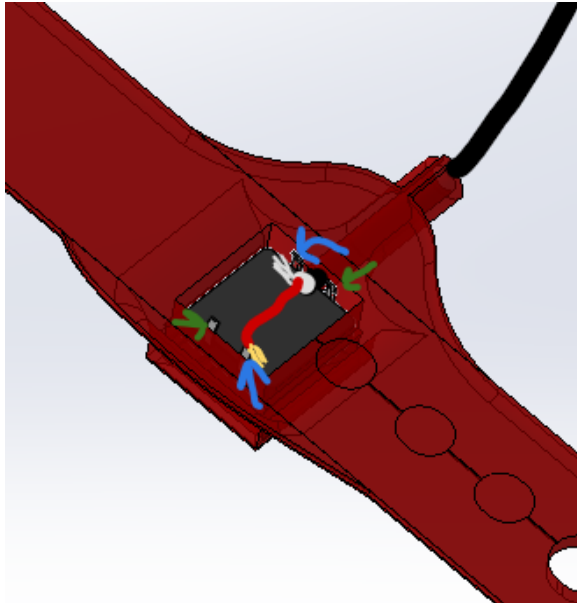
Flip the shifter upside down and insert a tactile switch into the shifter as shown.



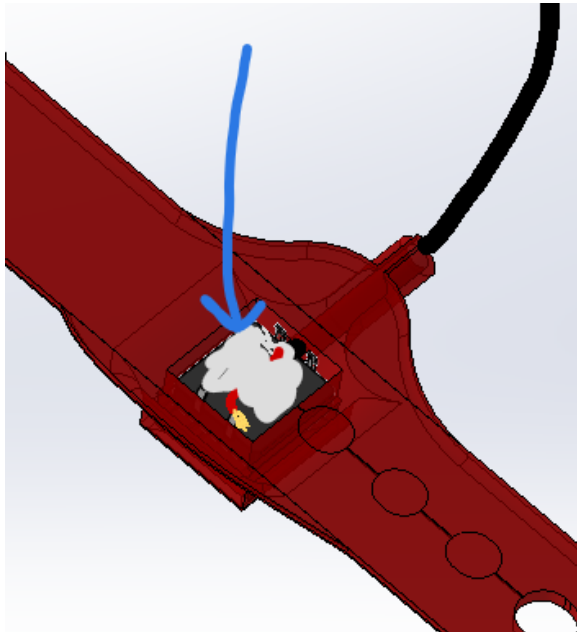
Insert the cut end of the RCA cable into the housing and pull excess through. Then strip about $\frac{3}{8}$ " of cable back to expose the conductor and shield.



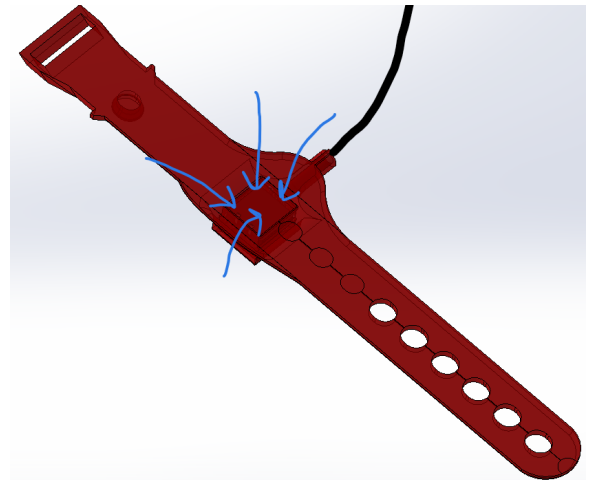
Fold the blue tabs on top of the conductors, apply a dab of flux and then solder. Fold the green tabs down out of the way so the cover will fit properly..



Place A dab of hot glue on top of the switch. More might be better, but I don't know what your definition "more" is.



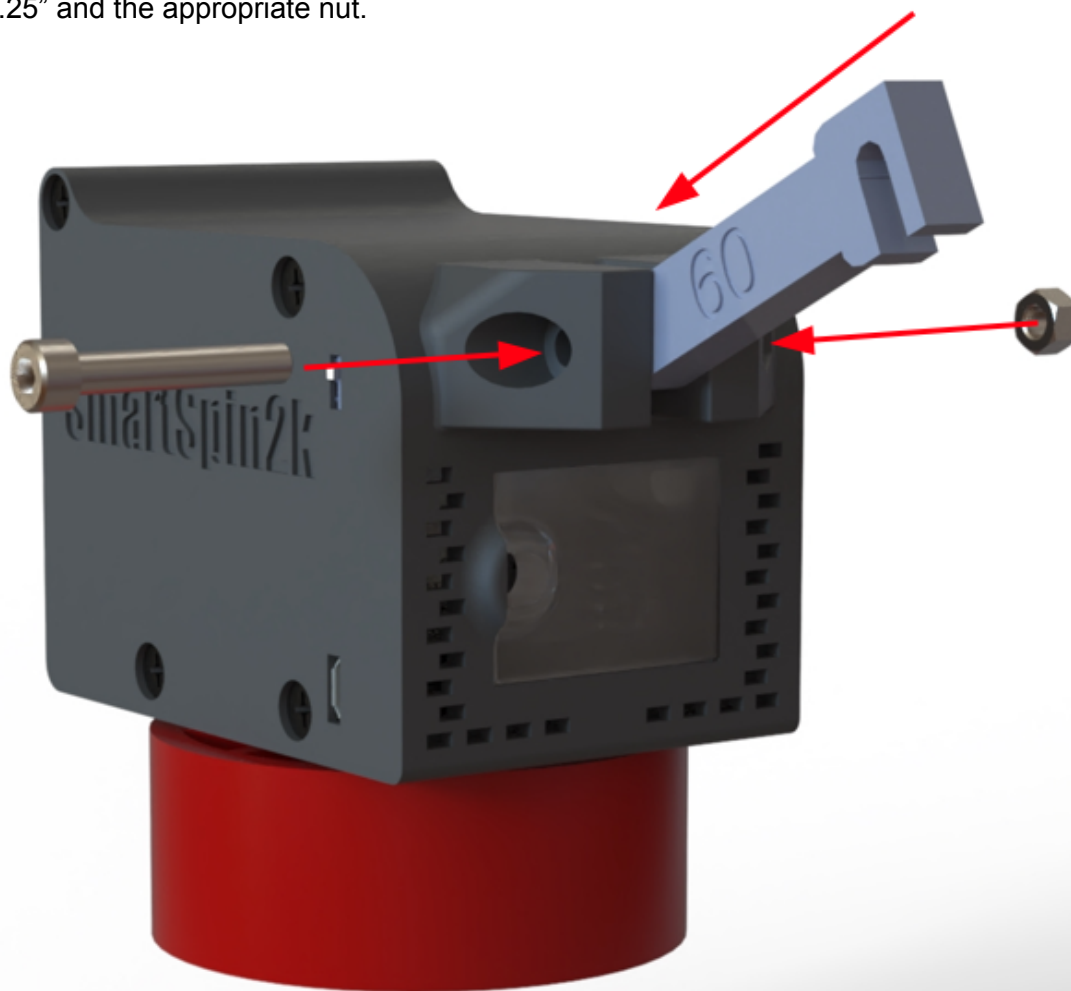
Finally insert the plug into the back while the glue is still hot. Apply even pressure so it is flush.



INSTALL BIKE ARM

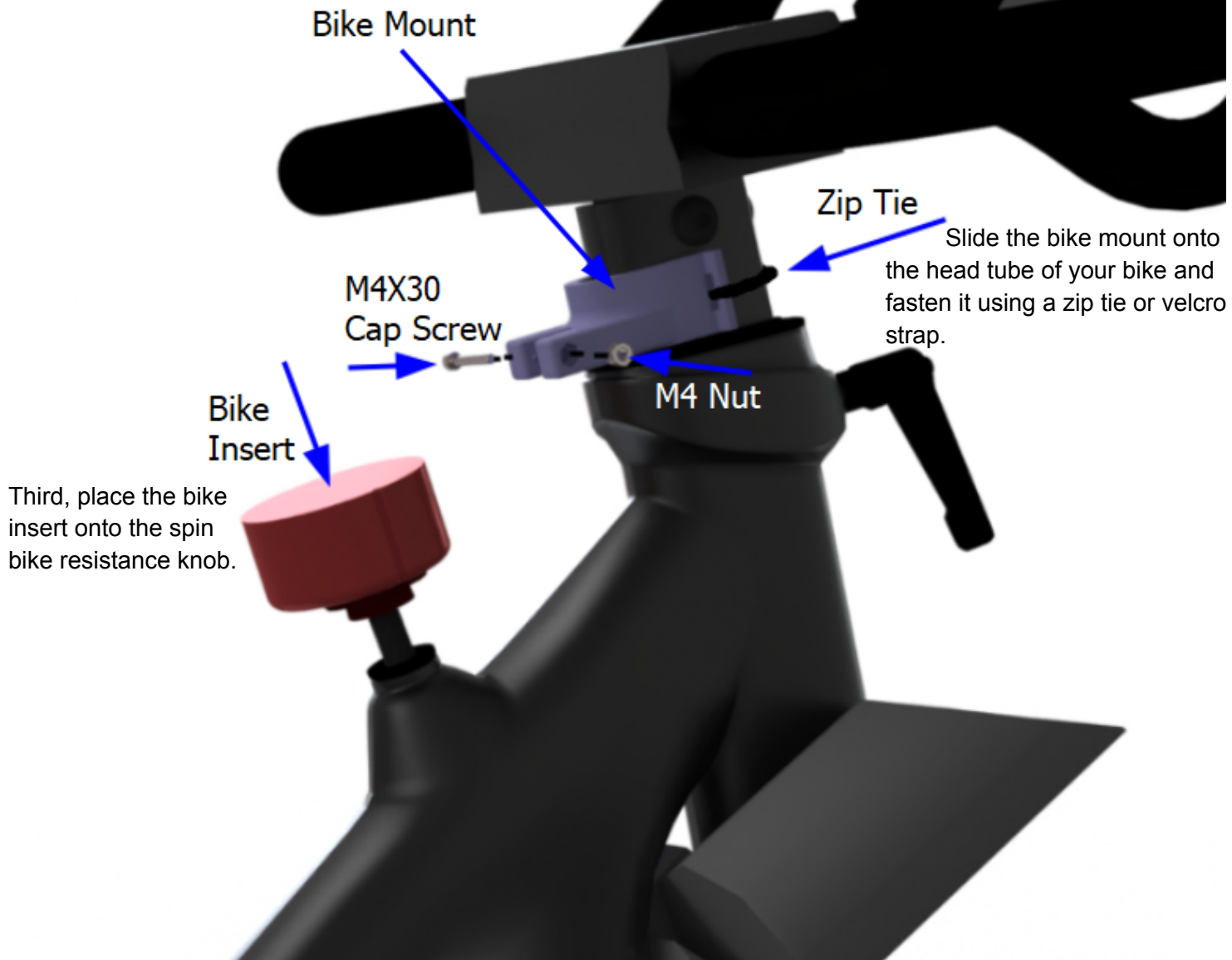
Finally, an easy step.

You'll need 1 M5X30mm or
#10x1.25" and the appropriate nut.



INSTALL BIKE MOUNT

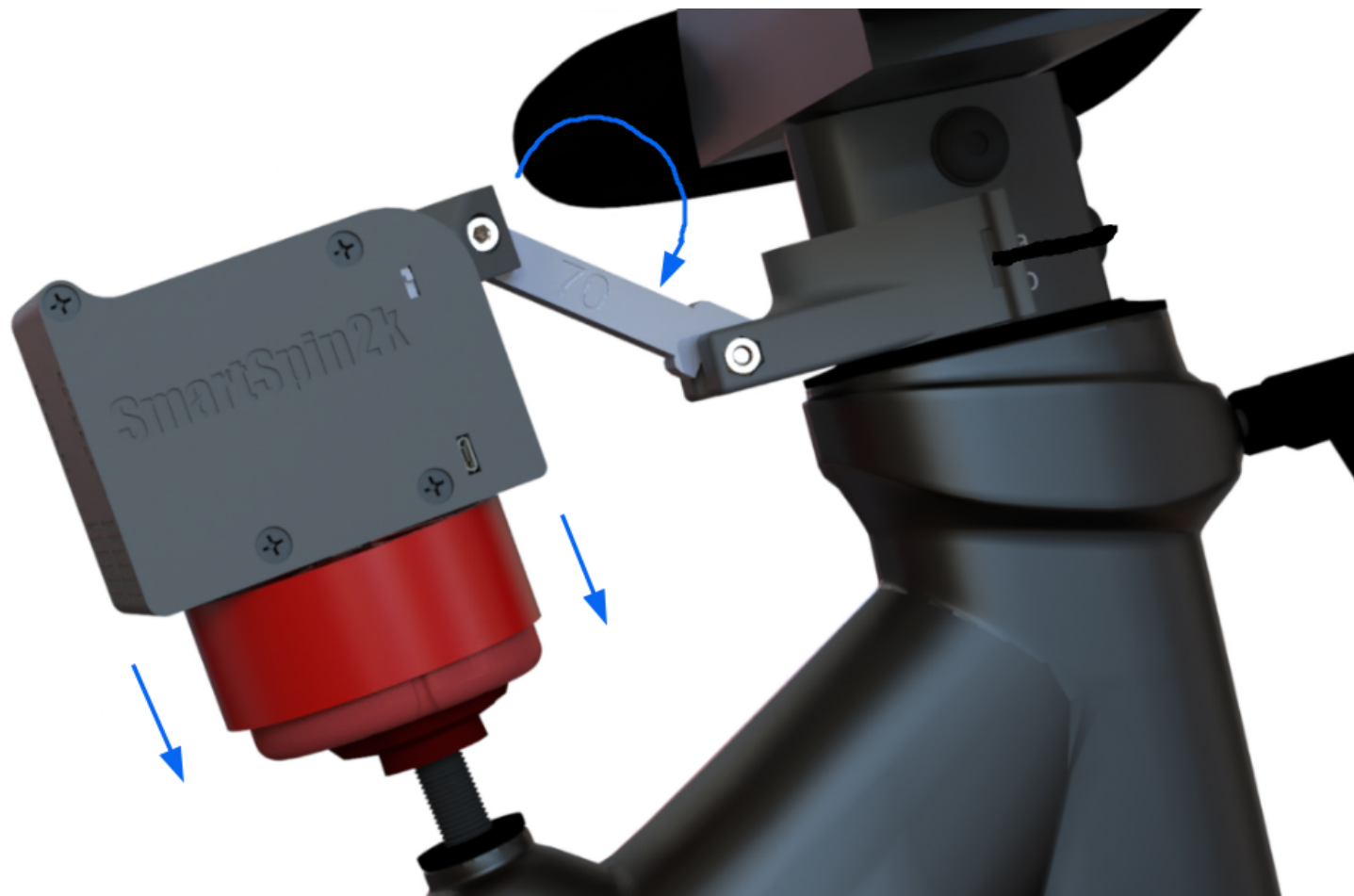
First insert the M4X30cap screw into the bike mount and tighten it into the M4 nut on the opposite side. This only needs to be snug as we're just using the screw as a crossbar.



MOUNT SS2K ON BIKE

Line up the indexing grooves on the knob cup with the ones on the bike insert and lower the SmartSpin2k into place.

Then rotate the bike arm down onto the cap crew in the bike mount.



Transform your spin bike
Into a smart trainer!

WWW.SMARTSPIN2K.ORG

FINISHED ASSEMBLY

Congratulations. You deserve a break!

