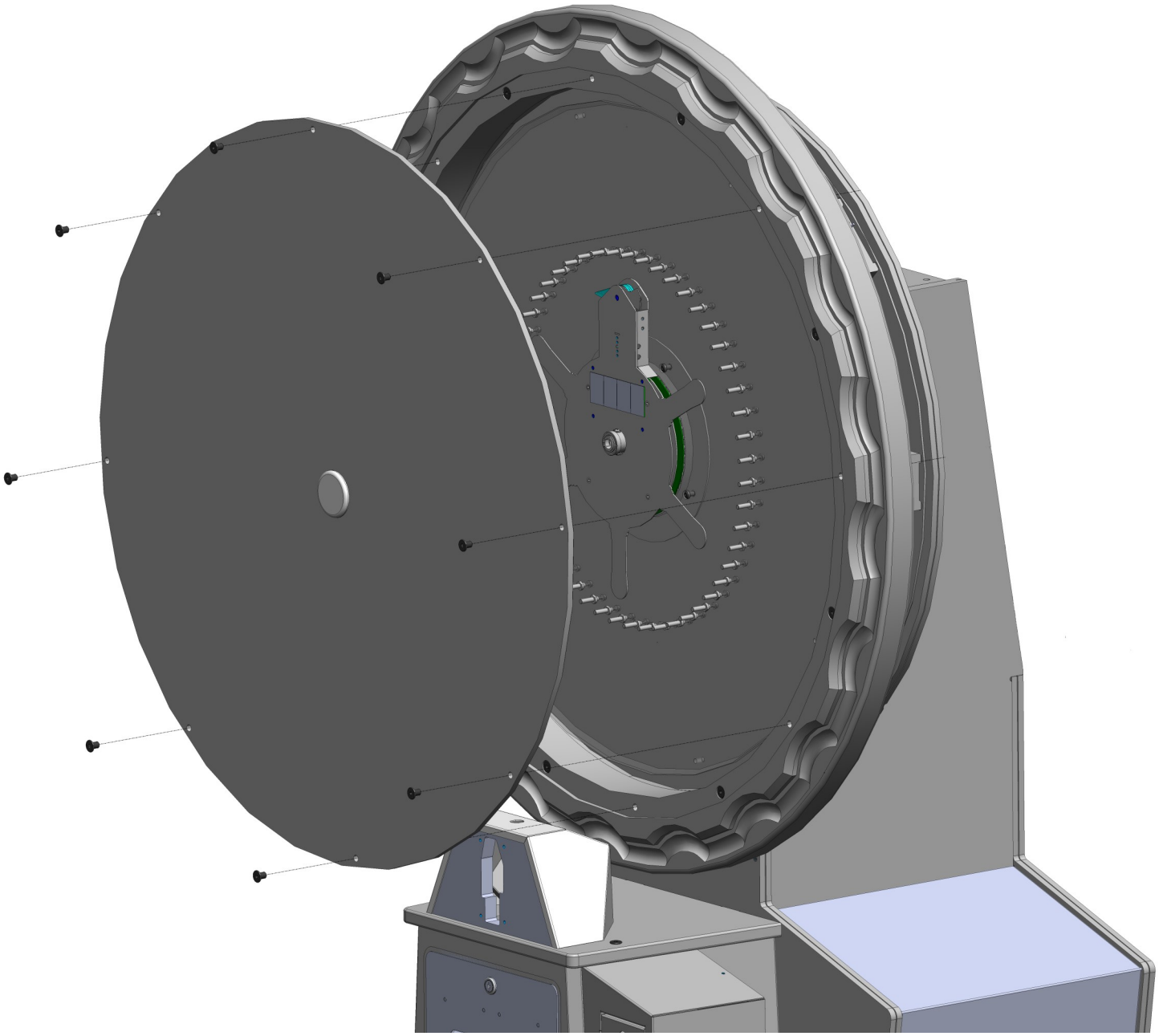
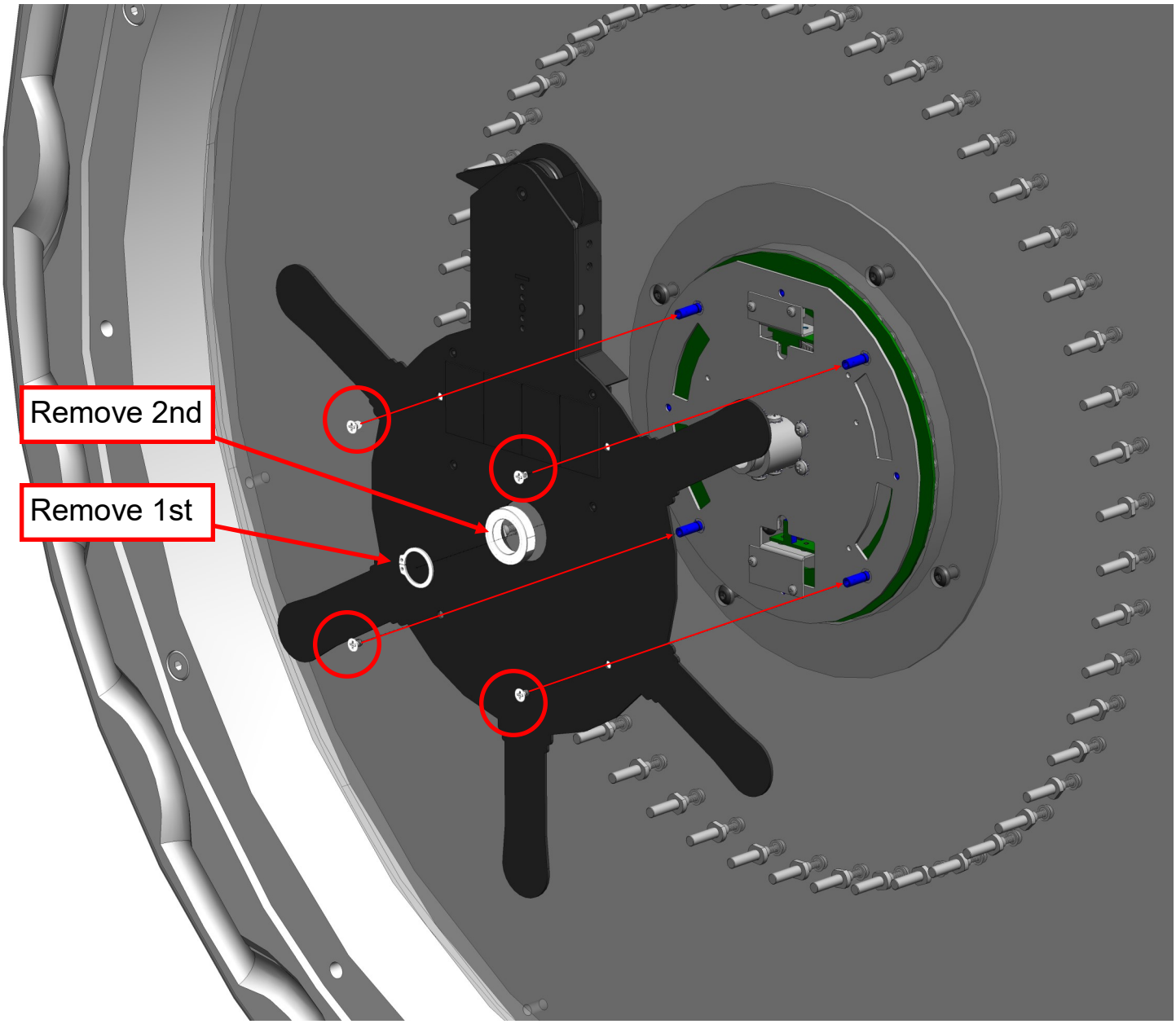
Step 1: Front Plastic Removal

Remove the inserts that hold the plastic cover onto the wheel. Always work from the top until there is only one holding the plastic front onto the wheel. Keep rotating the wheel to the next insert. When the last insert is removed be careful when removing the plastic as it can become scratched if dropped. Put inserts and plastic aside.



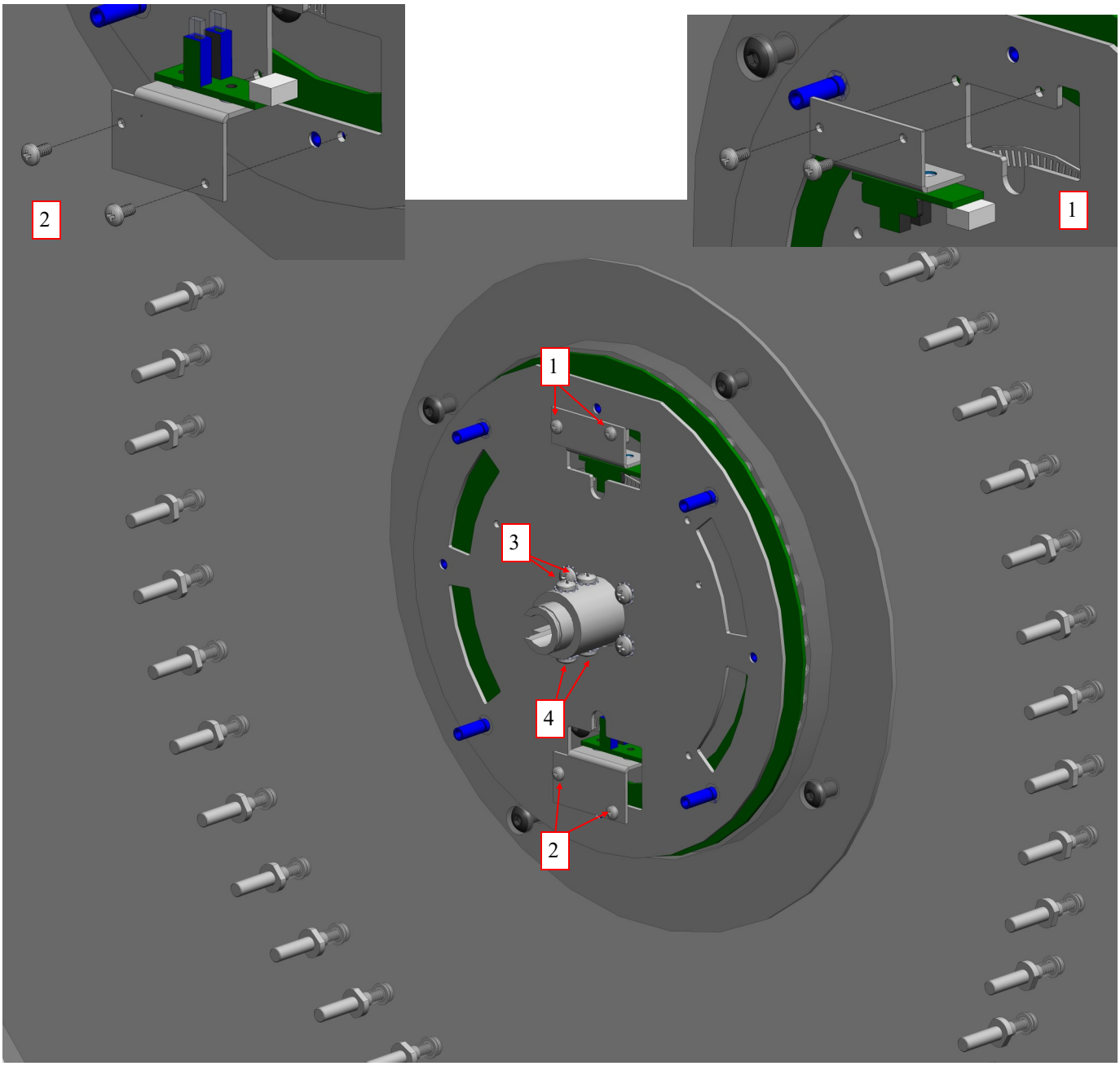
Step 2: Helm Removal

Remove the snap ring using the provided snap ring tool. See box marked remove 1st. Be carful not to loose the snap ring when removing. Now remove the bearing, it just slides out. See box marked remove 2nd. Next remove the four Phillips screws (they are circled below) and then slide the assembly slightly back just enough to disconnect the two wire harnesses connecting under the helm. BECAREFUL WHEN PULLING THEM OUT AS THEY ARE VERY FRAGILE. Now you can slide the helm out and put aside.

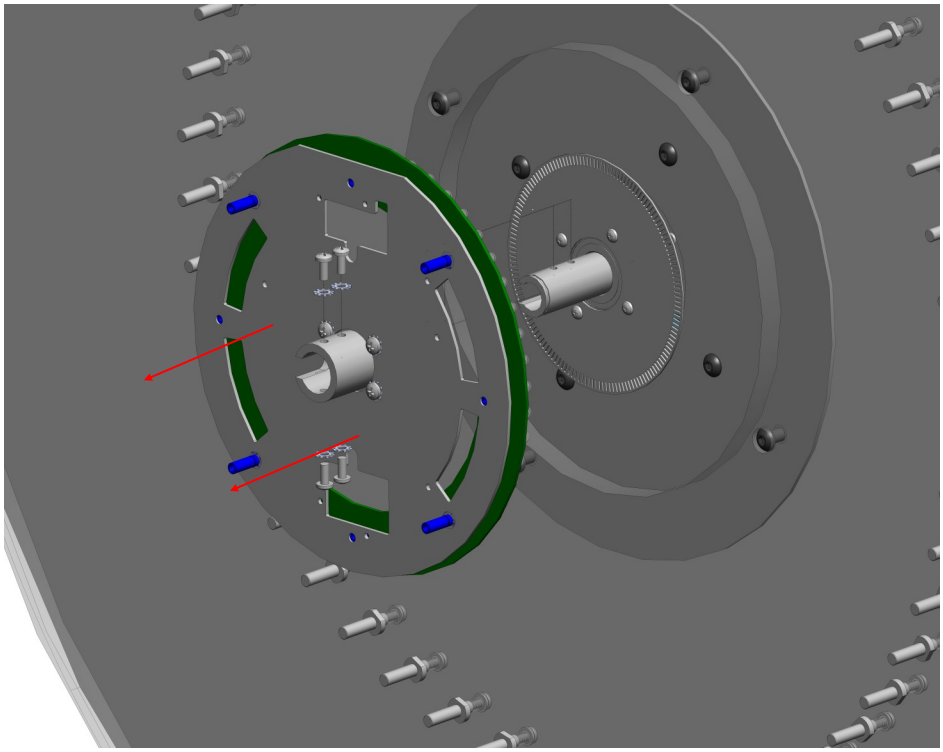


Wheel encoder removal

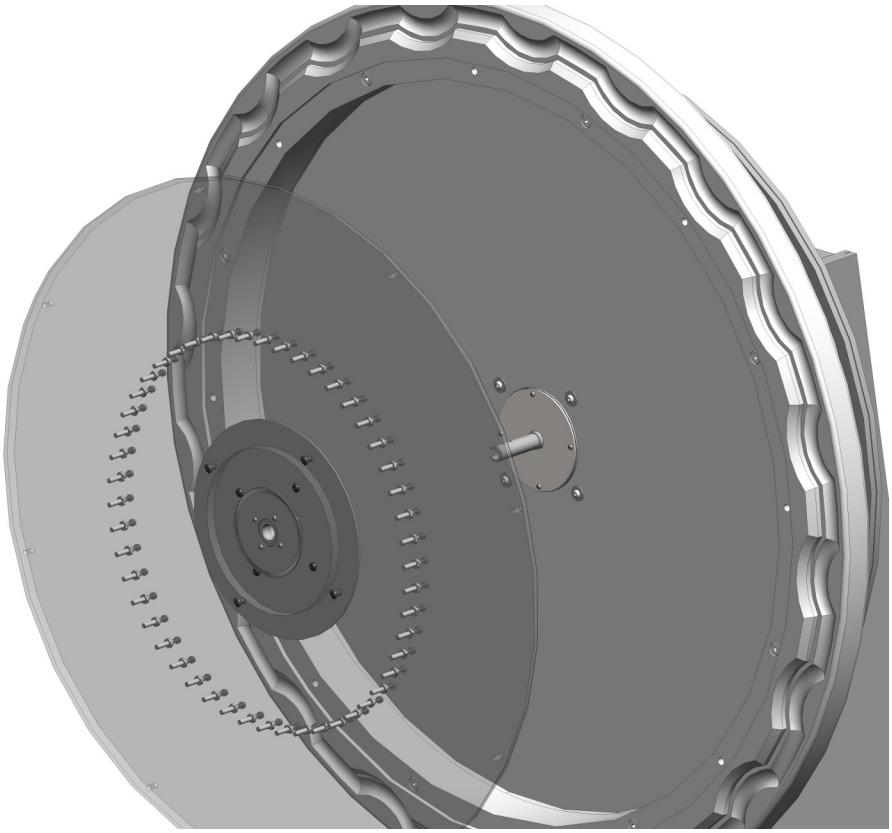
Start by removing the two mounting screws that hold the sensor assembly labeled 1 below. Put screws aside and carefully lift out the sensor assembly but do not remove it. Remove the other two screws that hold the bottom sensor assembly labeled 2 and put the screws aside. Carefully lift out the sensor assembly but do not fully remove. Now remove the four screws holding the sensor ring board on labeled 3 and 4. Discard these screws because new ones are provided.



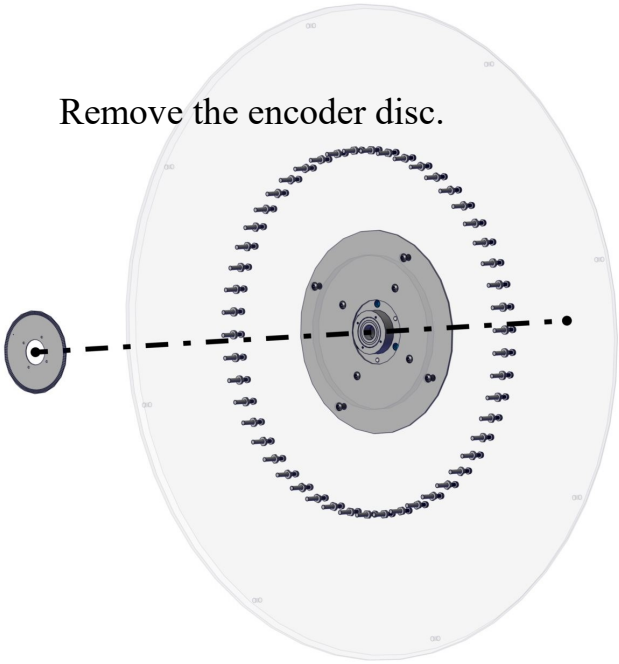
Slide the LED board out slightly and disconnect the two wire harnesses. Be sure to position the center wires so that they are straight out the shaft. Now fully slide out the ring board and put aside.

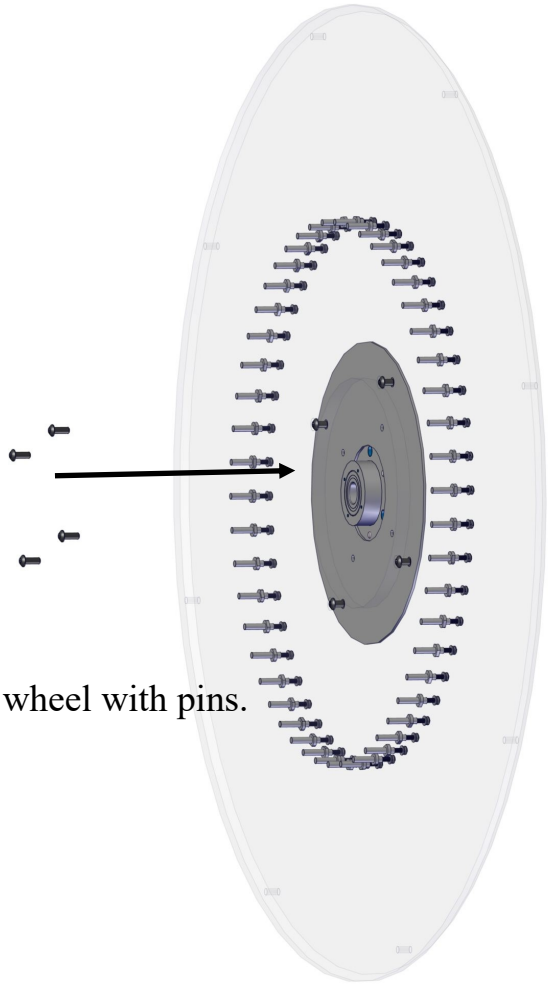


Slide the entire wheel off and put aside. When you remove the wheel assembly, be carful of any shims installed from the back as they tend to stick to the wheel assembly.

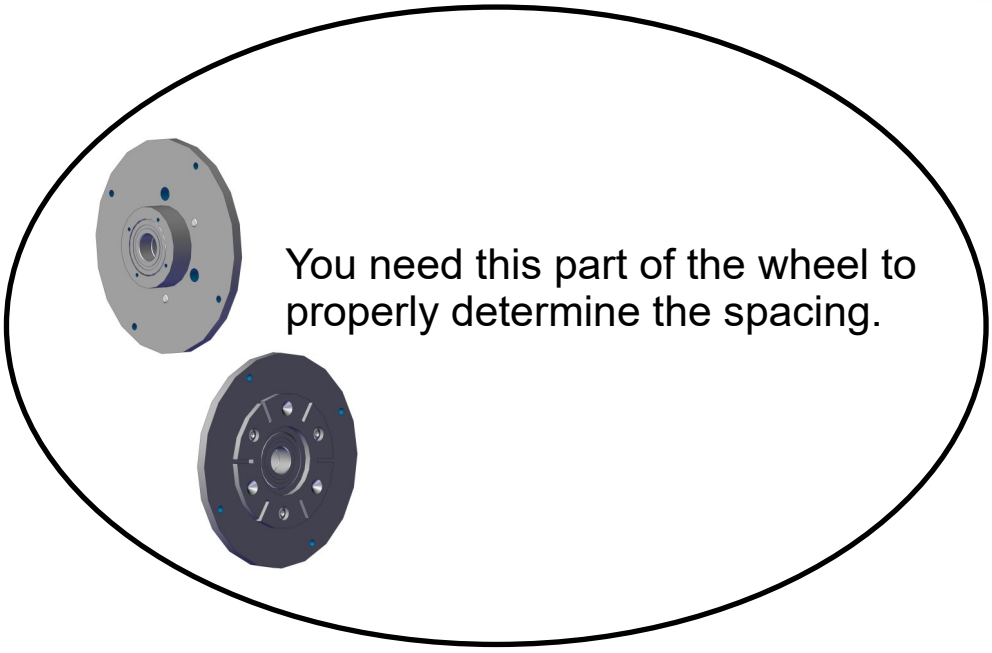


Remove the encoder disc.

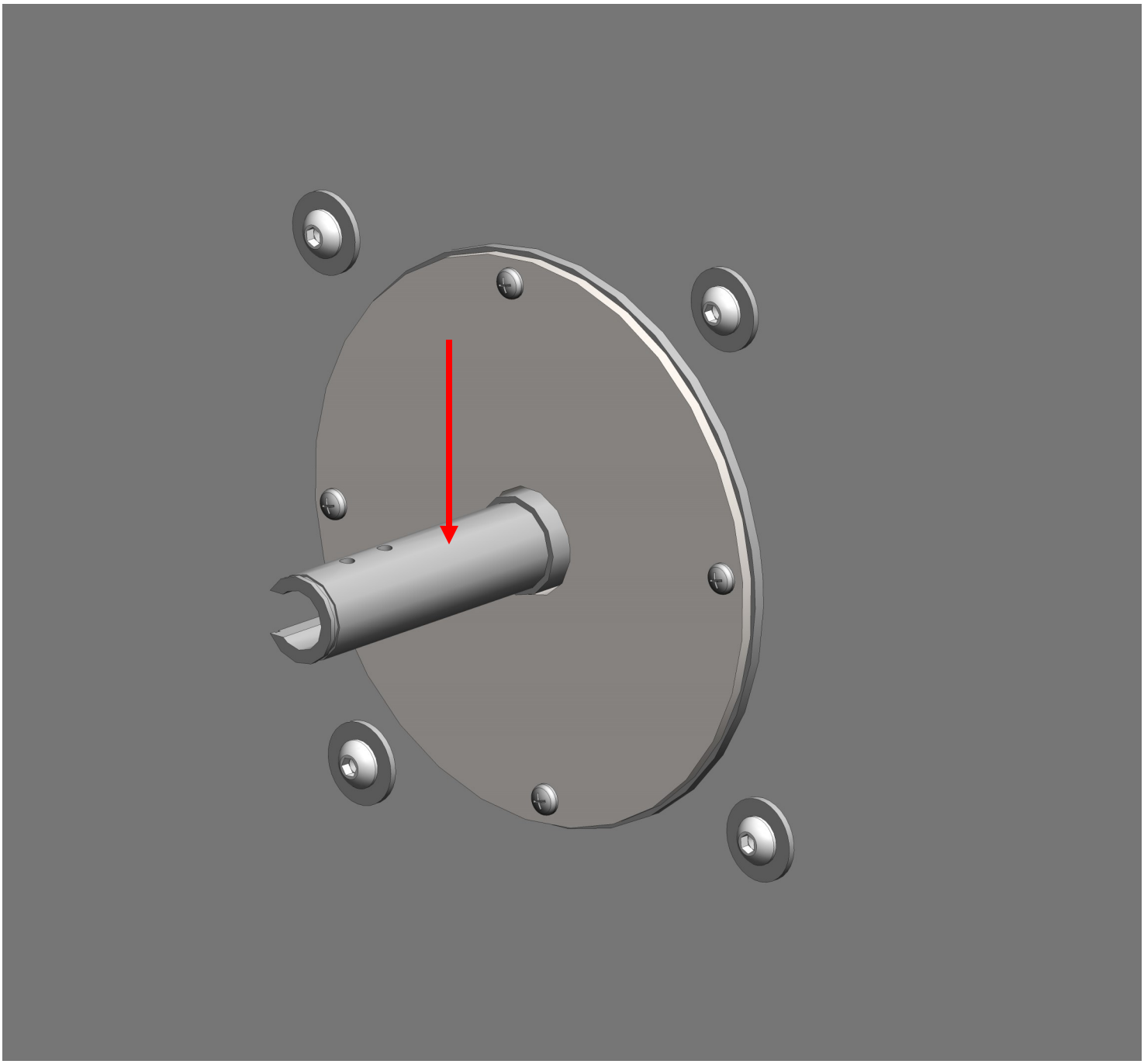




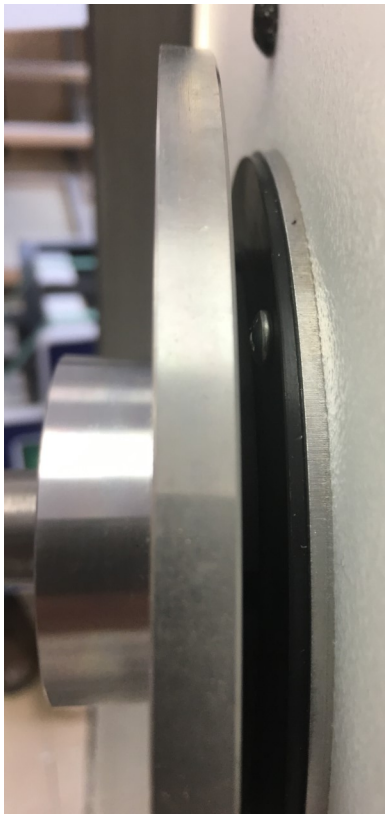
Remove both white metal disc and plastic wheel with pins.



Install the shims shown by the red arrow. Start with all three shims (two brass, one silver).



Slide the metal disc back onto the clutch. Push the assembly all the way and spin. You should hear no grinding. The disc should spin nicely.



Remove one shim. Slide the metal disc back onto the clutch and spin. If you hear any grinding, replace the shim and reassembly the game.

If no grinding is heard, remove another shim and test again. If you hear grinding, replace shim and reassembly game.

If you removal all shims and no grinding is heard, leave the thinnest shim installed and reassembly the game.

When finished, the clutch should engage the wheel but when disengaged, the inner wheel should spin freely and not be altered by the outer wheel.

Be sure to set the Tilt Bobbin inside the back of the game. Failure to do so will allow a player to “BEND” the wheel assembly and grab the inner wheel.