

# Encoder replacement

Step 1: Collect the following items:

- Screwdriver Phillips #1



- Screwdriver flat head 1.4 mm
- Soft cloth
- Hex key 2.5 mm for M4 bolts
- Towel

Step 2: Find a flat surface, place for example a towel to protect the machine from scratches



Step 3: Place machine on towel



Step 4: Use hex key 2,5 to remove M4 bolts on the upper plate (don't remove the 4 bolts next to USB and power outlet)



Step 5: Remove upper plate and place edge of the upper plate on the soft surface

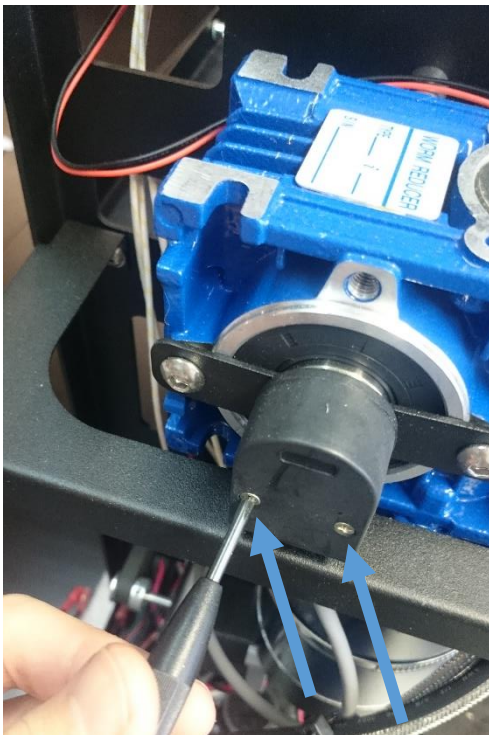




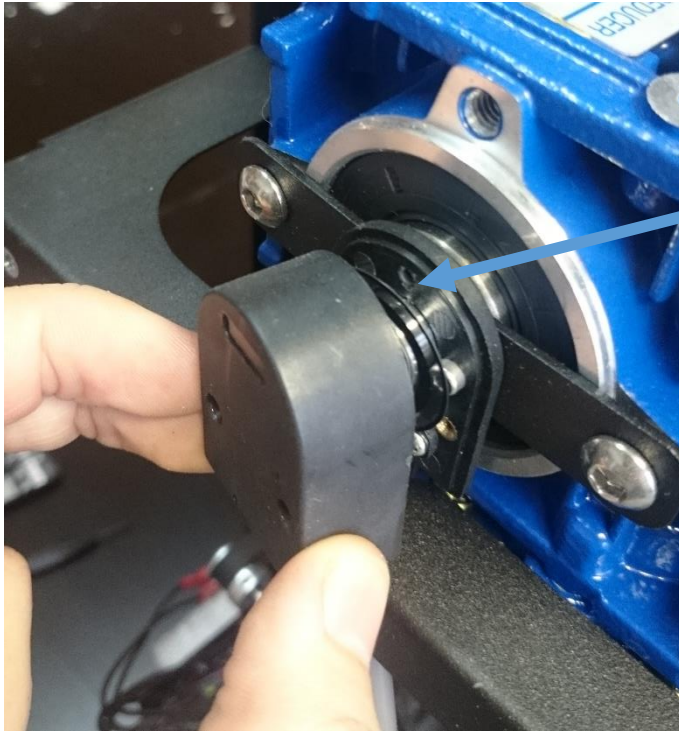
Step 6: When the upper plate is removed you will find the encoder on the back of the gearbox. (See picture below)



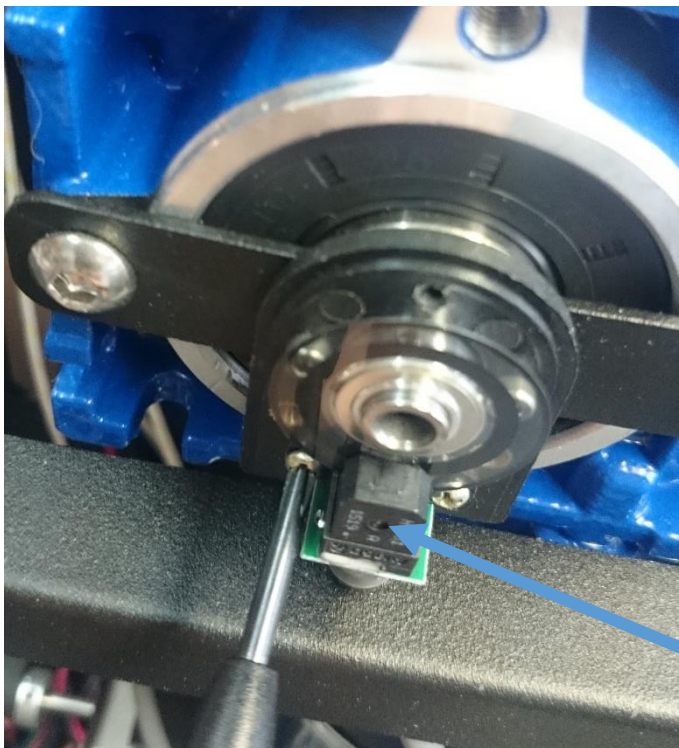
Step 7: Use the #1 Phillips screwdriver to unscrew the two bolts on front of the encoder



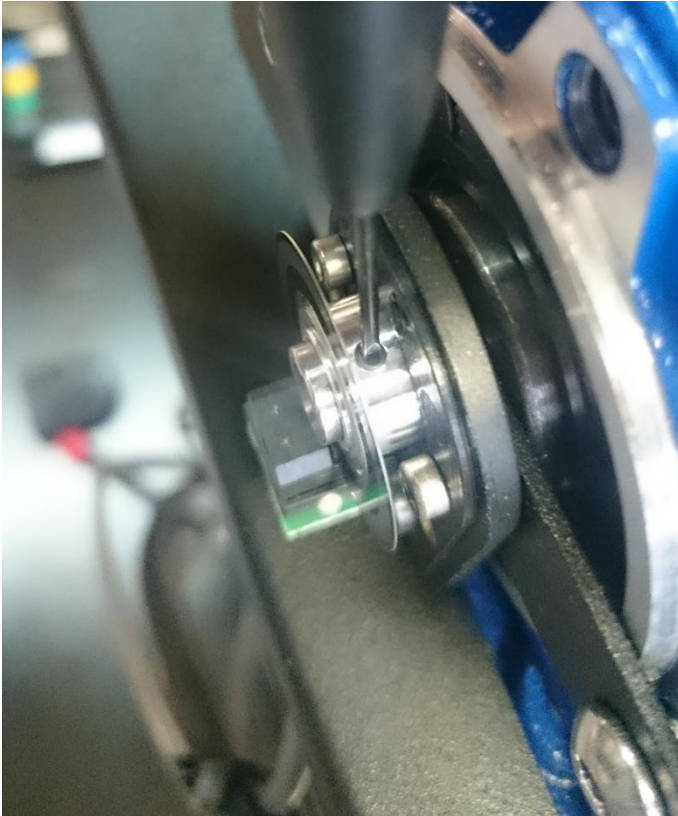
Step 8: Carefully remove the cap off the encoder. It is important that the cap doesn't scrape against the encoder wheel, this part is very fragile.



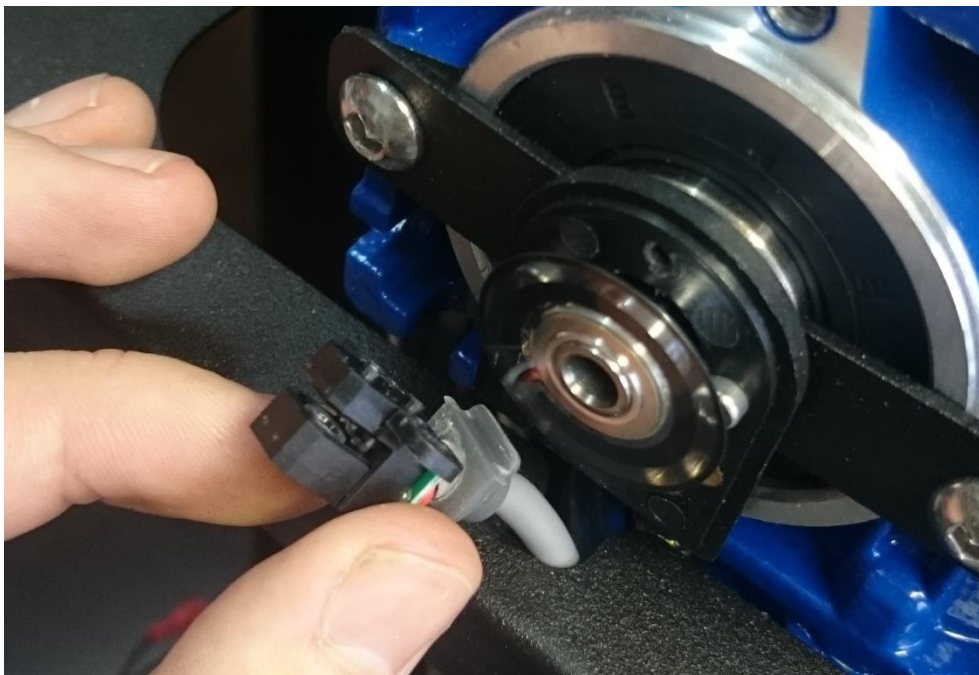
Step 9: Unscrew the two bolts on encoder sensor.



Step 10: Loosen the setscrew on the encoder wheel with a flat head 1,4 mm screwdriver.

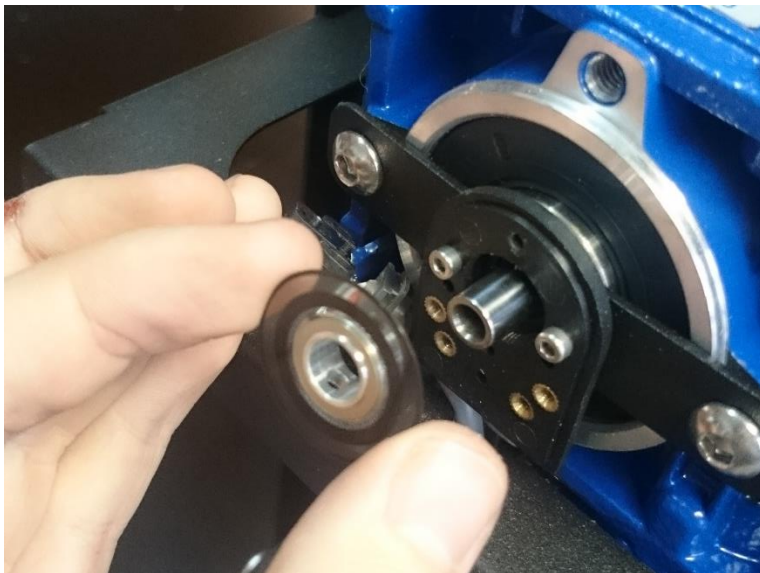
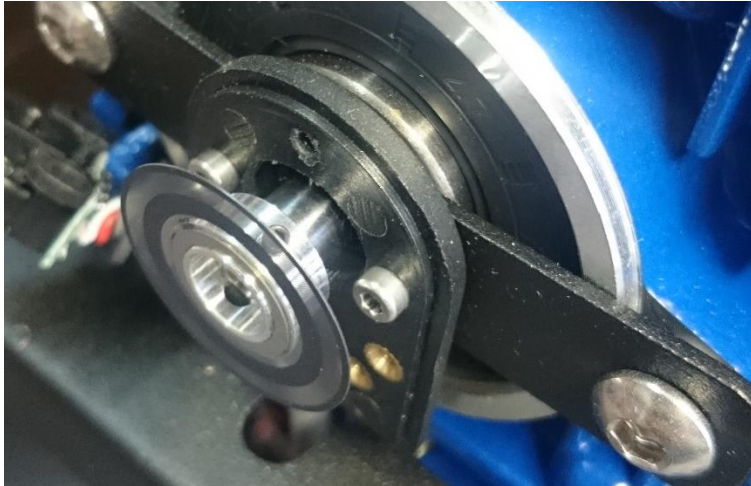


Step 11: Carefully remove the encoder sensor.





Step 12: Remove the encoder wheel. Try to not touch the flat surface of the encoder wheel.

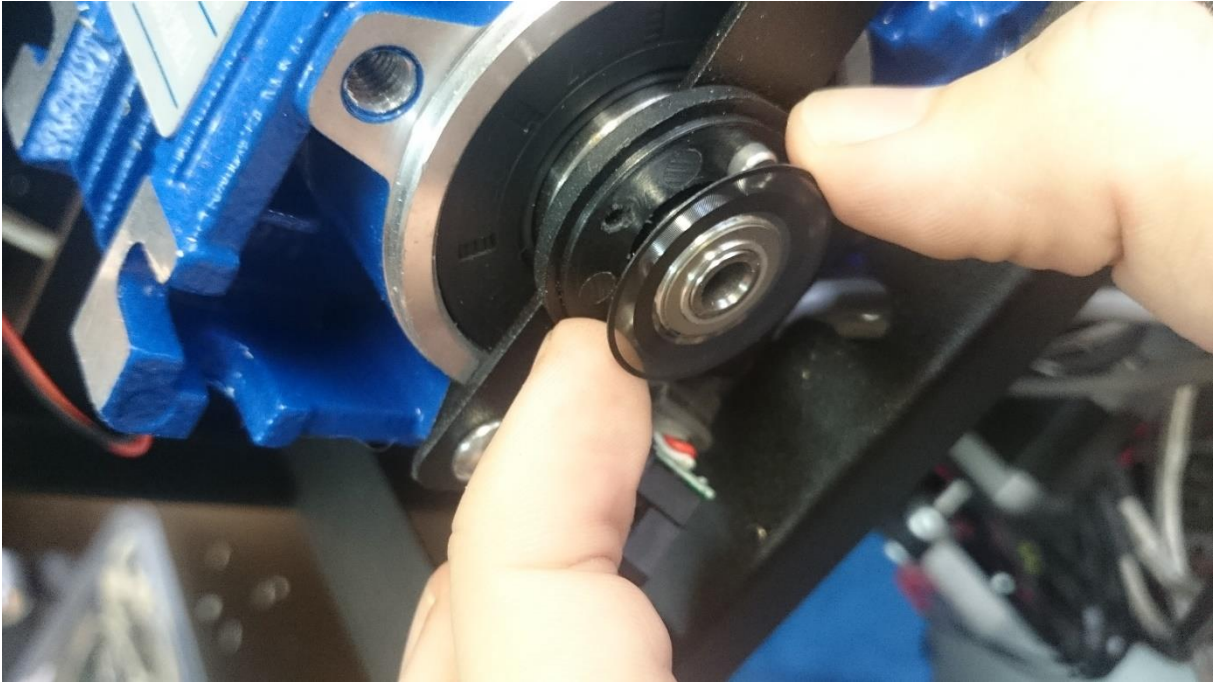


Step 13: Clean the encoder wheel with a soft cloth.

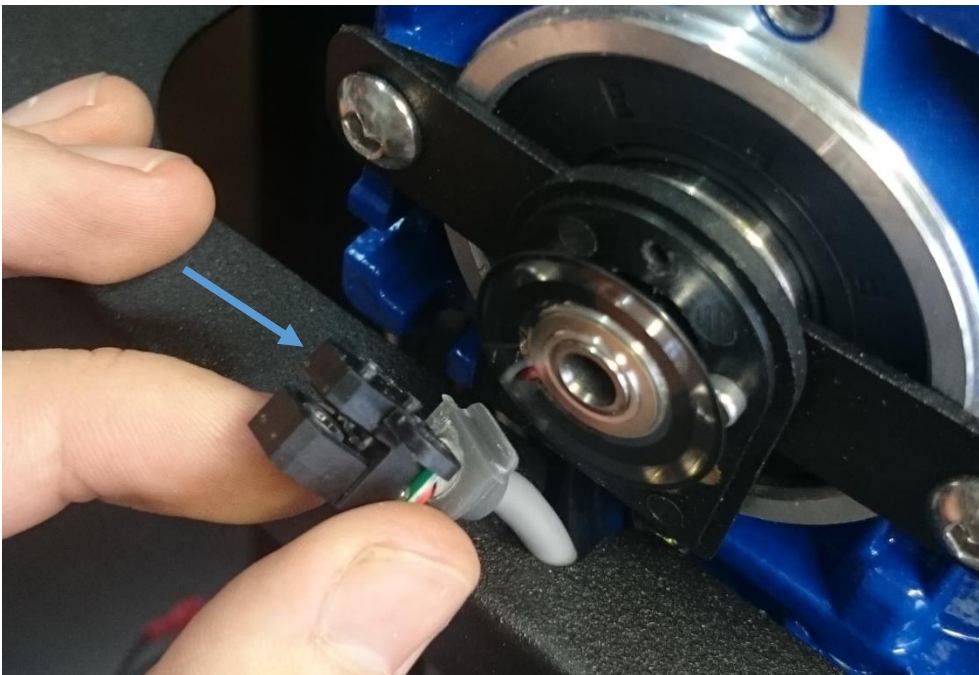




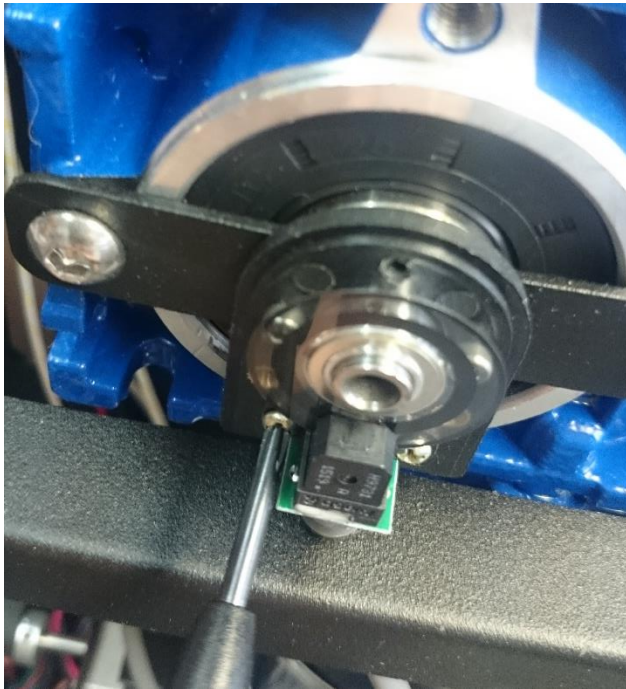
Step 14: Place new or cleaned encoder wheel (back) on shaft. Don't fasten the setscrew yet.



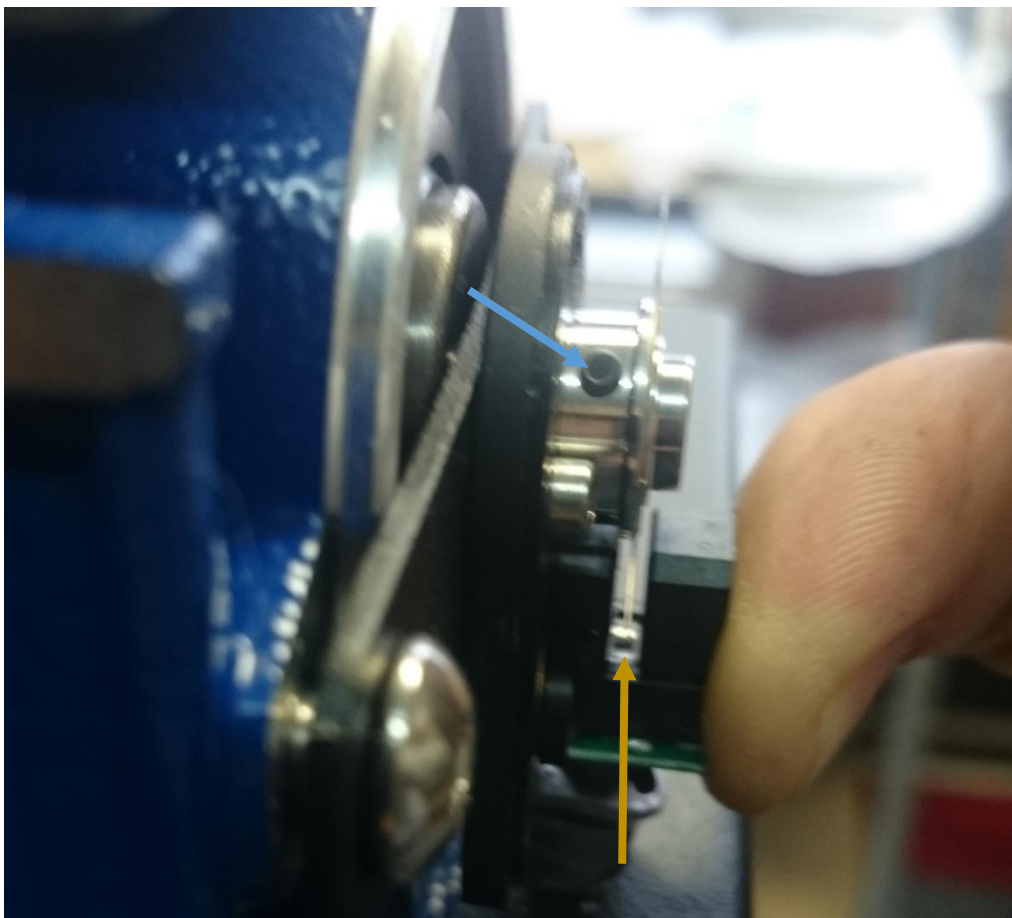
Step 15: The encoder sensor can now be placed back on its place. You can either place the encoder sensor simultaneous with the encoder wheel or afterwards.



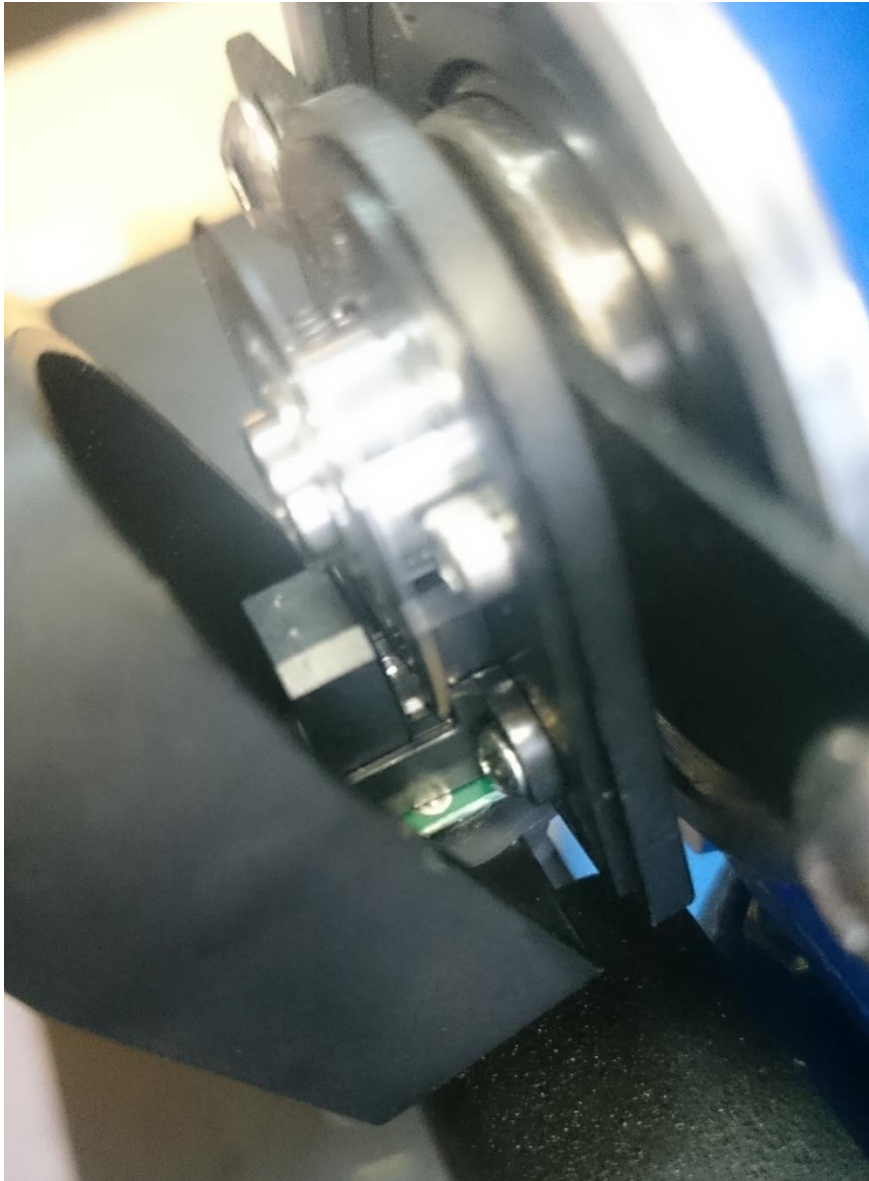
Step 16: Fasten the screws of the encoder sensor.



Step 17: Make sure that the encoder wheel is as much in the middle of the gap in the encoder sensor as possible before you fasten the setscrew.



Step 18: Place the rubber part of the encoder sensor cable in the bottom of the cap.  
Finally, it is time to place to cap on the encoder base plate. Also here, make sure you don't scrape the encoder wheel whilst placing the cap.





Step 19: Fasten the two remaining bolts in the cap and that is how the encoder is replaced.



Step 20: Place the upper plate back on the machine (step 5 reversed)