



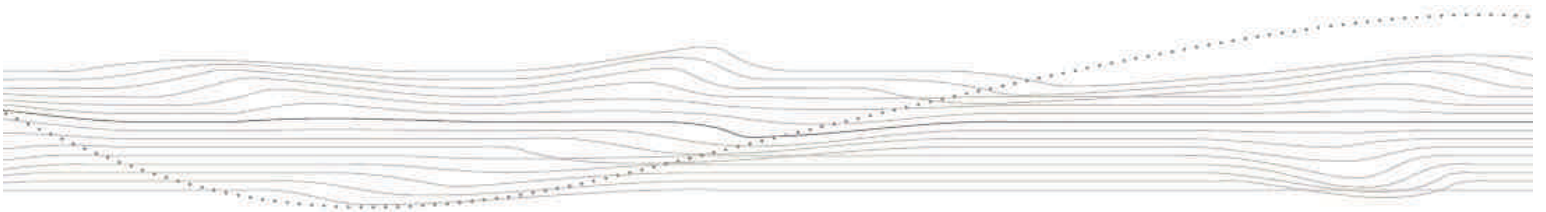
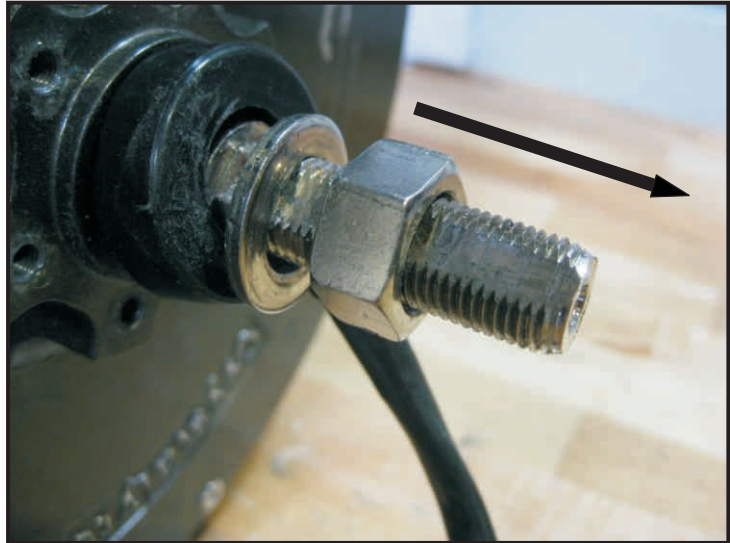
# How to take apart a hub motor

## Tools Needed:

1. Impact driver with requisite screw head (commonly an Allen style or a Phillips) or a normal screw driver/Allen wrench
2. Hub Motor
3. Gear Puller
4. Crescent Wrench



First step is to remove the nuts/washers from the motor axle.

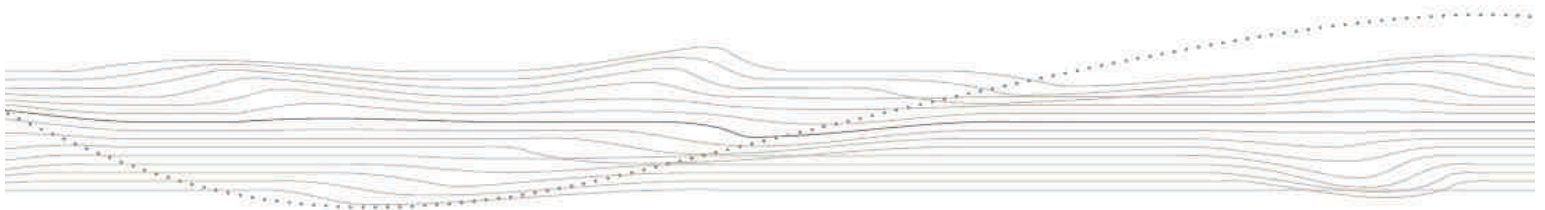
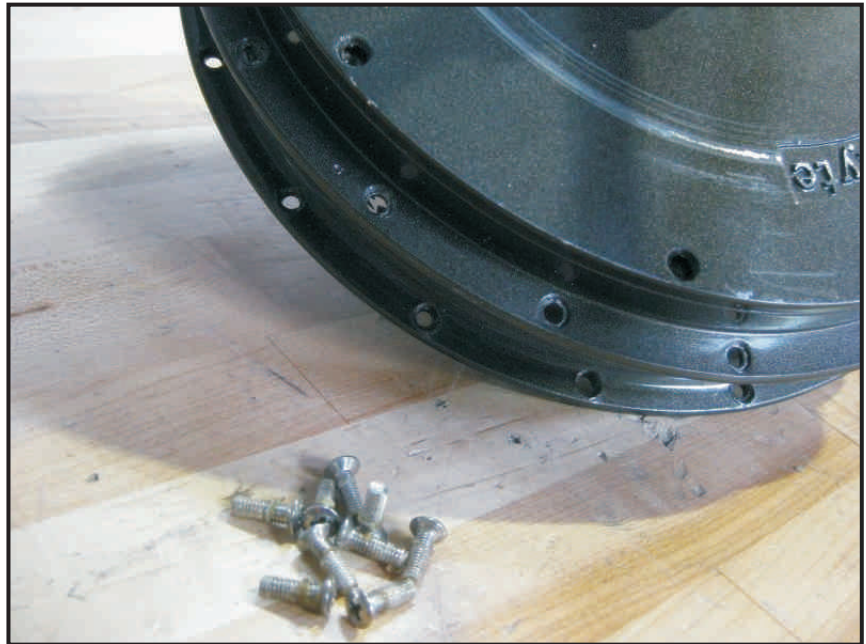


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The next step is to remove the screws from the **wire** side of the motor. The idea is that you will push the axle from the opposite side from the wires and the stator will pop out. If you push the wire side with the gear puller you risk damaging the wires upon removal.

Depending on the motor you have it can often be very easy to strip the bolts/screws holding the side cover on so ensure you press firmly and directly down on the screws when removing them. Using the correct size screw bit and an impact driver can help prevent stripping.

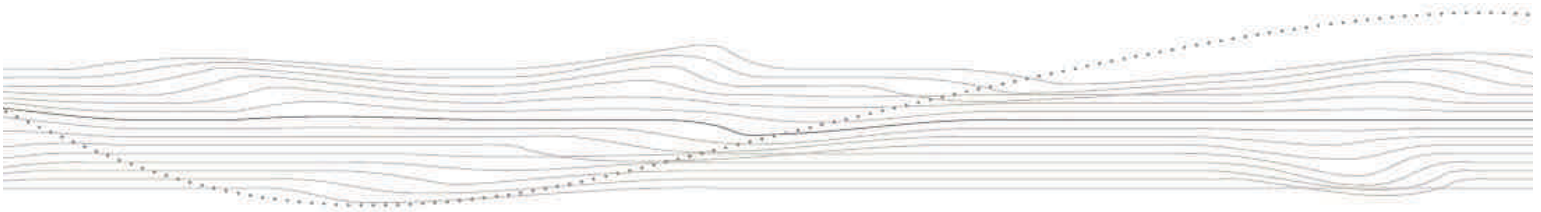
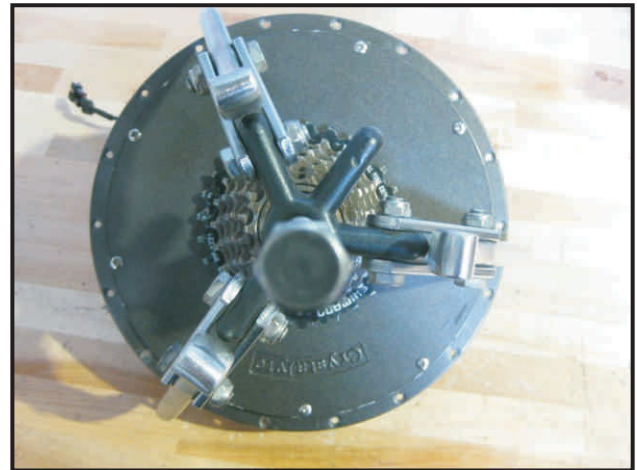
N.B. With older style motors from a few years ago (Crystalyte as an example) it was possible to find that the side cover only went onto the rotor in a particular alignment. It's therefore not a bad idea to mark which side cover hole matches with which rotor hole before you remove the side cover.



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Next step is attach the gear puller to the axle and hub from the **non-wire** side. Put each leg of the gear puller underneath the flange of the hub and then put the center of the gear puller on the axle.





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Attach the crescent wrench to the center of the gear puller and gradually twist clockwise. You may have to apply a fair amount of force to break the seal of the side cover.

If you notice that the motor is rusted or you are having a hard time twisting the wrench then there is a risk of the stator seizing and bending as it is being pressed out. If you find this happening then apply plenty of lubricant and also try tapping the stator with a deadblow hammer while you are removing it to help even it out.



You will see the motor stator come out as you turn the wrench.

**The strength of the magnets inside the motor means there is a danger that they will pull the stator back into the rotor if this process is done incorrectly. Pay careful attention to avoid placing fingers near where the stator is.**

It is normally best to allow the stator to drop out onto a soft surface rather than try to pull it free with your hands.



Once the stator is out the process is complete.

Congratulations you have just taken apart a hub motor!

To reassemble the motor, support the stator on a can or similar surface allowing the axle to protrude straight up. Then carefully lower the rotor onto the stator keeping it aligned so that the axle goes into the bearing. At some point, the stator will snap violently into the rotor with enough momentum to seat pieces together. You should then be able to reseal and re-screw the side plate on.

