Instruction to repair a loose sensor wheel on the G25/27

To glue plastics is a science. Some are easy to glue, some with special treatment only, and others not at all.
As the kind of plastic used by Logitech is unknown, it is a risk to rely on glue only. It may stick but not glue. To be on the safe side it is recommended to use epoxy glue like e.g. UhuPlus which has good adhesive force with metal. This way it is possible to create a form fitting join between the sensor wheel and the motor shaft.

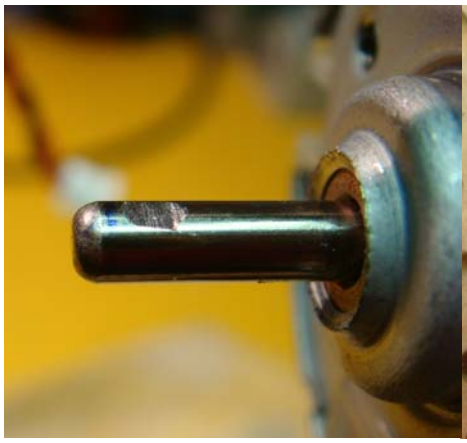
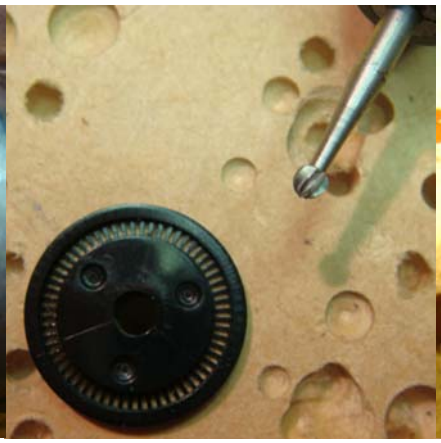
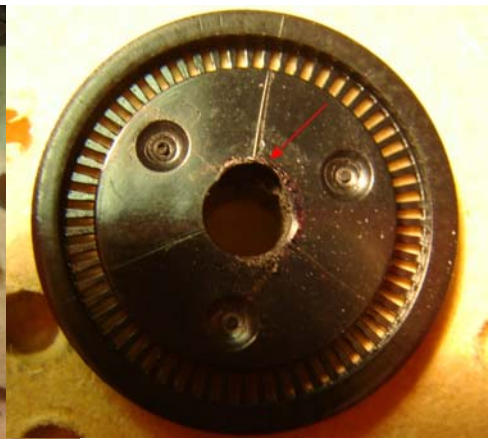
Tools and materials:

- A small piece of wooden board.
- A drilling machine with a drill bit matching the diameter of the hub from the sensor wheel.
- A milling tool with ball-shaped head, or if not available a needle file with triangle shape.
- A Phillips screwdriver.
- A wooden toothpick.
- Epoxy glue like e.g. UhuPlus.
- A good eye sight or better a loupe and a skillful hand.

Stripping of the sensor:

All works are much easier to do when the motor, or at least the gearbox with the motors is completely removed from the wheel.
First remove the sensor cable, but don't pull on the wires. Use your fingernails or a small screwdriver to pull the white plug out of its socket.
The black cover is clipped on the sensors base. On the flat sides of the cover put a small screwdriver into the gap between motor and cover and turn the screwdriver to remove the cover.

Now remove the circuit board from the sensor base.

With a marker pen indicate the position of the sensor wheel on the motor shaft and then pull the wheel from the shaft.

With a needle file make a small flat section on the motor shaft, where the position of the sensor wheel was indicated before.

Drill a hole into a wooden board with the diameter from the sensors hub and insert the sensor wheel with its hub into that hole. The wheel has to sit tight on the board to prevent it from flying away during machining. In case of need use a tape to fix the sensor wheel on the board, but be careful not to pollute or damage the slot section of the wheel.

With the ball-shaped milling tool machine a gap into the hole of the sensor wheel like to be seen on the photo. It is recommended to use a loupe for that job. Now the sensor wheel can be put back on the motor shaft and has to be turned in a way that the gap in the wheels hole is positioned over the flat surface of the motor shaft.
The cavity created this way, now can be filled with epoxy. Apply only small quantities of glue with a

toothpick and watch that no air bubbles will remain in the cavity. It is recommended to use epoxy glue with long cure time and higher viscosity, to have time enough to adjust the sensor wheel to its right position.

Now the circuit board has to be mounted on the sensors base.
The position of the sensor wheel has to be adjusted right in the middle of the slot in the pcb. Also consider the axial clearance of the motor shaft. The clearance travel should be symmetrical to the middle position of the sensor wheel.
This job has to be done with great care! In worst case the Logitech wheel will fail to calibrate when a mistake was made!
It is essential to prevent the slots in the sensor wheel from pollution or damage!

When the sensor wheel has been positioned, the motor should be stored in a vertical position with the sensor wheel on top, until the epoxy is cured.

Disclaimer of warranty:

This instruction is based on my own experience and nothing more than a friendly support. If anyone fails to be successful with the repair, I will not take any kind of responsibility.

Luedenscheid, 05.07.2012
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