

User manual for G-Mill robot

This document serves as a user manual for the G-Mill robot after the work done in the context of this semester project.

1 Power

To use the robot, it must be powered.

1. Plug the power source into an outlet.
2. Plug the red cable from the robot to the red input and the black cable to the blue input.
3. Turn on the switch that is on the back of the power source.
4. Check that the voltage is set to 24V, the current to 2mA (this is correct, the picture shows a different value when turned on), and that the *CV* red light is on.
5. Press the small button "output" on the front of the power source.



Figure 1: Power source

2 On/Off

Once the button "output" is pressed, the robot should turn on. The following interface will appear on the screen of the robot:

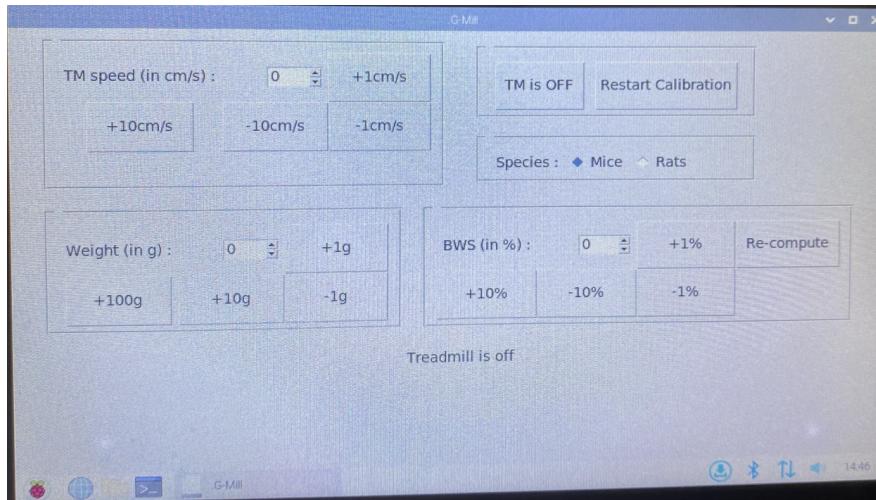
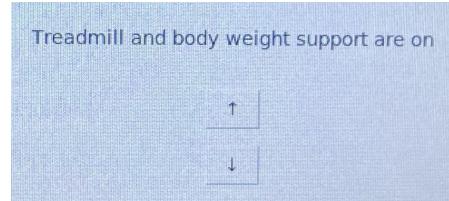
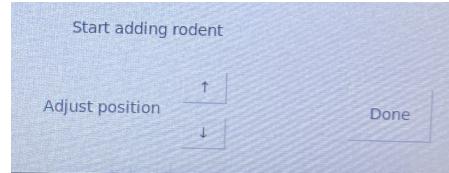
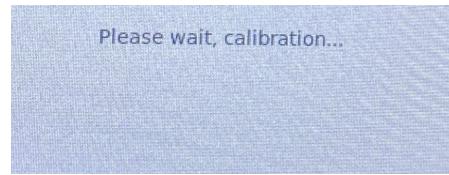


Figure 2: User interface at startup

The interface can be used as a touchscreen or with the mouse and keyboard.

1. Select the type of **species** used (mice or rats)
2. To start using the robot, press the **button "TM is OFF"** → it will switch to "TM is ON". The robot will start calibrating, meaning that the rodent support will move all of the way down and back up. Please wait for it to finish.
3. Once finished, the message "please add rodent" will show. The rodent should be secured on the support. If needed, the arrows can be used to move the support up or down and adjust its position such that it is in a better place for the rodents.
4. Please insert the **weight** of the rodent and the desired body weight support (**BWS**) compensation. These can be modified at any time during the session.
5. Please press the button **Done**.
6. The robot will move to the ideal position to compensate for the rodent's weight and show this message. The arrows can be used to manually move the support up or down.



3 Other features

Further features can be used :

- To **actuate** the treadmill, add speed in the "TM speed" section in figure 2 or turn the round button on the front of the robot.



Figure 3: Round button

- If needed, the **calibration** can be restarted with the button "restart calibration" of figure 2.
- If needed, the optimal position for the rodent support can be re-computed with the button "**re-compute**". This can be useful if the rodent moved during the calibration or if the BWS was set to 100%. When it is set at 100% the robot will particularly make the rodents fly, which means that when going back down (from 100% to 80% for example), it could be good to press the re-compute button.

- When performing a body weight compensation (i.e. adding BWS %), it can be useful to sometimes make the rodent support move up and let it come back down to make sure the spring didn't stick.
- An **emergency button** was created in case of emergency or simply to turn off the treadmill in a faster and more convenient way. By pressing the round button shown in figure 3, the robot turns off meaning: the treadmill stops running the BWS system stops moving.

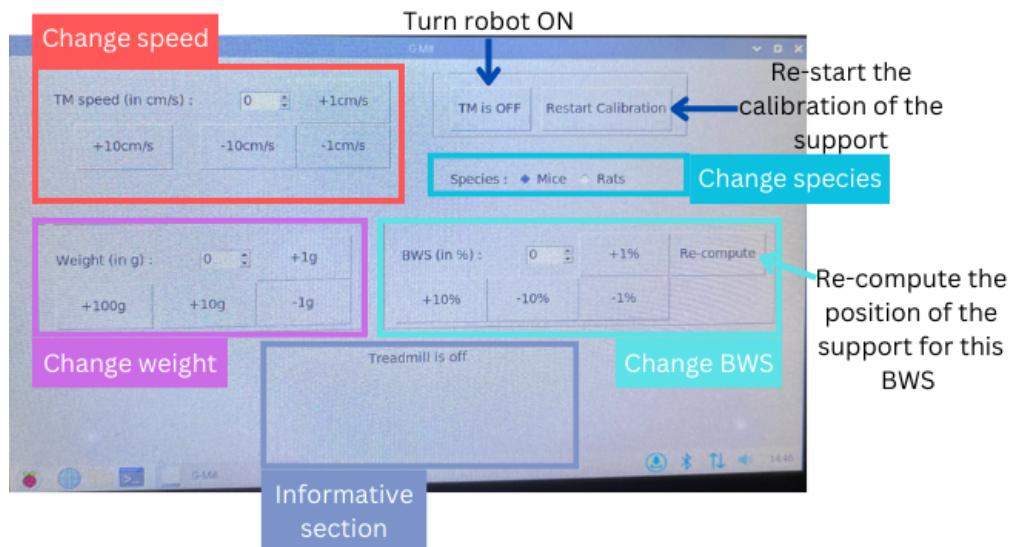


Figure 4: User interface commented