

## **Better Water Maker Device Testing Procedure**

### **Before Testing Begins:**

Briefly explain the purpose of the device and how it functions to the volunteer. Explain that a total of 4 consecutive tests will be performed and they will be asked to complete a questionnaire after each test.

Weigh and measure the height of the volunteer. Calculate their body fat percentage. Make a note of their age.

### **Before the Start of Testing for Ease of Assembly:**

First ensure that another tester is prepared to discreetly time the volunteer during assembly. Next, provide the volunteer with the unassembled device and user manual.

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### **Test #1 (Ease of Assembly):**

1. Indicate to the user that they may begin assembly and ask them to secure the gearbox at a place where they know they may *not* be able to use the device comfortably.
2. The tester timing the assembly should record the following:
  - a. time required to secure bucket to track
  - b. time required to secure gearbox to track
  - c. time required to assemble bucket support insert
  - d. time required to attach pedals to gearbox
  - e. time required to attach seat back to bucket
3. Inspect assembly to ensure it was assembled correctly. Make note of the areas where the user assembled the device incorrectly.
4. Make any necessary changes to the device so that the volunteer may use it safely in any following tests.
5. Have volunteer fill out test #1 questionnaire.

**Test #2 (Gearbox Repositioning):**

1. Ask the volunteer to reposition the gearbox to position that will be comfortable for their use.
2. Make note of any issues experienced by the volunteer.
3. The tester timing the assembly should record the following:
  - a. time required to reposition gearbox
4. Have volunteer fill out test #2 questionnaire.

**Test #3 (Ease of Power Generation):**

1. Program heart rate monitor to the volunteer, and assist them in strapping both parts on if necessary.
2. Have volunteers begin to pedaling (begin timing at this point) and ask that they continue to pedal until they have reached a point of exhaustion and no longer feel comfortable pedaling.
3. Make note of each time the LED light cuts off and the user needs to restart the system.
4. Measure the amount of water sanitized after five minutes of pedaling. Also notify the volunteer that they have been pedaling for five minutes if they reach this point.
5. Once the volunteer stops pedaling measure the total amount of water sanitized and record their heart rate.
6. Have volunteer fill out test #3 questionnaire.

**Test #4 (Comfort):**

1. Have volunteer fill out questionnaire about the comfort of the seat of the device.

**Instruction for Programming Heart Rate monitor:**

Data required from participant:

Average Exercise Level: Athletic, Hobby, or Little

Gender:

Age:

Height:

Weight:

- Record the fitness index
- Calculate Lower and Upper HR limit for user data
- Set the HR to "Jog" and input "Lower" and "Upper" HR limit.