



2022 Roe Egg Counter

User Manual

Version γ

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1. Introduction

This User Manual provides the information necessary for device operators to effectively use the 2022 Roe Egg Counter. Throughout this document the device as a whole will be referred to simply as the Counter as a shorthand title. The Counter consists of a variety of components that are grouped by the overall function for categorizations based on their overall purpose: Stand, Power System, Water System, User Interface (UI), Circuitry System. Expect components within a category to directly affect others within the same category.

1.1 Overview

The main purpose of the 2022 Roe Egg Counter is to speedily and accurately count the fish eggs deposited into its hopper and then expunge the counted eggs. In addition to this, the Counter records photos of the fish eggs during operation which can be extracted and reviewed. The Counter is composed of larger series of components such as:

- The Stand which consists of ABS components that hold all other components.
- The Power System that safely connects and converts battery power to the Circuitry System.
- The Water System that guides the eggs out of The Counter.
- The User Interface which allows the user to control The Counter
- The Circuitry System consisting of the processor, motor, and sensors that allow autonomous function once activated through the UI

The 2022 Roe Egg Counter is ready to be used in wet and dry environments as long as an active hosed water source is available. Extreme heat or cold has not been tested for this model.

2. Getting Started

2.1 Cautions & Warnings

Improper use of the 2022 Roe Egg Counter may result in electrocution, physical harm, and/or potential water damage. To prevent such outcomes, please follow the following instructions.

2.2 Set-up Considerations

To ensure safe usage of the 2022 Roe Egg Counter inspect the device for any cracks in its support or along the body. Physical damage to the device's stand may create instances of improper expulsion of roe causing damage to the product. Next, inspect that all wires are fully sealed and free of damage to prevent risk of degeneration from corrosion which can cause a risk of malfunction or worse, electrocution. Also inspect that the battery is properly inserted into its slot on The Counter and is dry upon doing so or else risk electrocution. Next, ensure the water hose is firmly attached to the connector on The Counter to prevent leakage, poor volume, poor pressure, as well as workplace hazards as results of loose water. Finally, ensure The Counter's rotating disk is unimpeded to avoid malfunction upon activation.

2.3 User Access Considerations

The 2022 Roe Egg Counter is equipment meant for use by employees to count fish eggs with their size being dependent on the equipped disk/wheel. Use of the 2022 Roe Egg Counter outside of this field is discouraged and prohibited.

2.4 Accessing the System

To activate the system, a user must have a 18V battery to power The Counter and an active water hose to allow for egg ejection. No account is needed to access the machine's most basic functions, but details on batching may be enforced by your management. If a user desires to record photos through use, then a USB flash drive must be installed prior to use.

2.5 System Organization & Navigation

The 2022 Roe Egg Counter is operated through a user interface located at the top left of The Counter. It consists of buttons and switches which interact with a LCD screen display. Physical components that you will navigate include the water hose insert and its valve that control the water pressure for expelling counted eggs. The other physical components are the inserted battery, which powers The Counter's electrical components, and the container placed under the slide located behind the rotating disk to collect counted eggs. The switches located towards the top of The Counter control the activation and mode of The Counter. The top switch controls the mode with up toggle setting it to batching mode and down toggle setting it to the continuous count mode. The lower switch determines if The Counter is active or not as the upper toggle causes The Counter to activate and the lower toggle pauses The Counter so the User can set up their preferred settings. The buttons are used when in batching mode as the green button increases the selected digit of the batch size while the red button changes what the selected digit is by rotating from right to left. The LCD display relays information on The Counter such as counter mode, batch size and total count of fish eggs. The final interactable component is the USB-A port which can be used to extract pictures of the counted eggs.

2.6 Exiting the System

There is no special procedure to exit the 2022 Roe Egg Counter. Simply switch the lower switch down to halt the machine, then disconnect the battery to ensure the device is safely deactivated.

3. Using the System

The following subsections provide detailed, step-by-step instructions on how to use the various functions or features of the 2022 Roe Egg Counter.

3.1 Fish Egg Counting

To perform the main feature of the 2022 Roe Egg Counter, follow the following steps:

1. Double check that The Counter is ready to be used
 - a. Ensure that a working water hose is attached to the valve located at the base of The Counter.
 - b. Examine The Counter for any damage before use.
 - c. Switch the bottom switch into the down position to prevent unwanted movement upon start up.
 - d. Ensure that the 18V battery pack is inserted into it's port located at the base of The Counter and wait 26 seconds for boot up.
2. Set up the additional equipment for best performance
 - a. Place a receiving receptacle behind The Counter, below the slide, and preferably in the rounded groove in the base of the Stand.
 - b. Turn the valve to allow the hose water to flow through the Water System's hose and into the receiving receptacle.
3. Add the fish eggs into the hopper that you wish to be counted.



4. Input your desired settings using the buttons and LCD screen located besides each other.
 - a. For continuous use, set the top switch to the lower position and continue to step 5.
 - b. For batching use, set the top switch to the upper position.
 - c. Then select the batching size by using the two buttons to increment until satisfied. (Green increments digit, while Red increments digit position)
5. Once the settings are selected activate The Counter by setting the lower switch into the upper position. The machine will activate and begin counting eggs.
6. Proceed to replenish new fish eggs in the hopper until finished. Also tend to the receiving receptacle to ensure workplace spillage is avoided.
7. Once finished, toggle the lower switch to stop the counter. Correct execution can be observed through the stopping of the wheel.
8. Once finished with operating the 2022 Roe Egg Counter, it is advised to safely remove the hose and battery to prevent damage to these components and The Counter.

3.1.1 Saving Fish Egg Pictures

1. Before starting a count, the option of recording pictures of the counted eggs is available to you.
2. Simply attach a USB-A external hard drive in any form to the female port located on the Circuitry box on the Stand prior to activating The Counter.
 - a. Other names for external hard drives are “flash drive”, “jump drive”, “thumb drive”, “data stick”, or actual hard drives with USB conversion.
 - b. Please note that the data storage device used must have available space in order to record any new photos.
3. Once inserted, The Counter should automatically save photos taken during the counting process to the attached external hard drive.
4. Once done with the count, the data storage device can be safely removed from The Counter and can be viewed at a later time.

4. Troubleshooting & Support

4.1 Error Messages

Common error signs are found on the LCD display screen.

- If the Screen remains unlit after battery insertion, this is a sign the battery is lacking charge, dislocated, or there is a break in the wiring.
- If the Screen is lit, but refuses to display words or produces unintelligible lettering, then wait a minute as the processor may be slower than expected. Other possible reasons could be the wires connecting the display may be compromised due to fissure or exposure leading to corrosion. Another possible cause is with use of a dysfunctional battery.

4.2 Special Considerations

If a crack in any of the Stand or hard plastic materials appears, it is suggested that the model be labeled inoperable and replaced. The inoperable model may then be disassembled for parts for possible use elsewhere, but this action is not recommended nor is the action of mending the inoperable model's cracks with strong water-proof adhesive in order to continue unhindered use.

4.3 Support

Table 1 - Support Points of Contact

Contact	Organization	Phone	Role	Responsibility
Jensorter	Jensorter	541-389-3591	Manufacture	Responsible for creation of quality product.

Appendix A: Record of Changes

Table 2 - Record of Changes

Version Number	Date	Author/Owner	Description of Change
1.0	3/08/2022	Team ROE	First edition released. Mainly Template and small details.
α	4/11/2022	Team ROE	Fleshed out the majority of document.
β	4/18/2022	Team ROE	Added pictures and made small edits to better match the current Prototype.
γ	6/09/2022	Team ROE	Finished fully and severe changes made to match the final Prototype.

Appendix B: Glossary

Table 3 - Glossary

Term	Acronym	Definition
User Manual	UM	This document that you are reading.
Batching		The separation of egg counts by a variable number set by the user.

Appendix C: Approvals

The undersigned acknowledge that they have reviewed the User Manual and agree with the information presented within this document. Changes to this User Manual will be coordinated with, and approved by, the undersigned, or their designated representatives.

Table 5 - Approvals

Document Approved By	Date Approved
----- Name: <Name>, <Job Title> - <Company>	----- Date
----- Name: <Name>, <Job Title> - <Company>	----- Date
----- Name: <Name>, <Job Title> - <Company>	----- Date
----- Name: <Name>, <Job Title> - <Company>	----- Date