

FISHGUN D1 USER GUIDE



Congratulations, you have just acquired a FISHGUN D1, which we hope will bring you entire satisfaction. This user manual will help you get the most out of your FISHGUN.

The FISHGUN D1 is a semi-automatic dry feed dispenser specially developed for aquatic facilities and aquaculture nurseries.

PLANKTOVIE

Marseille

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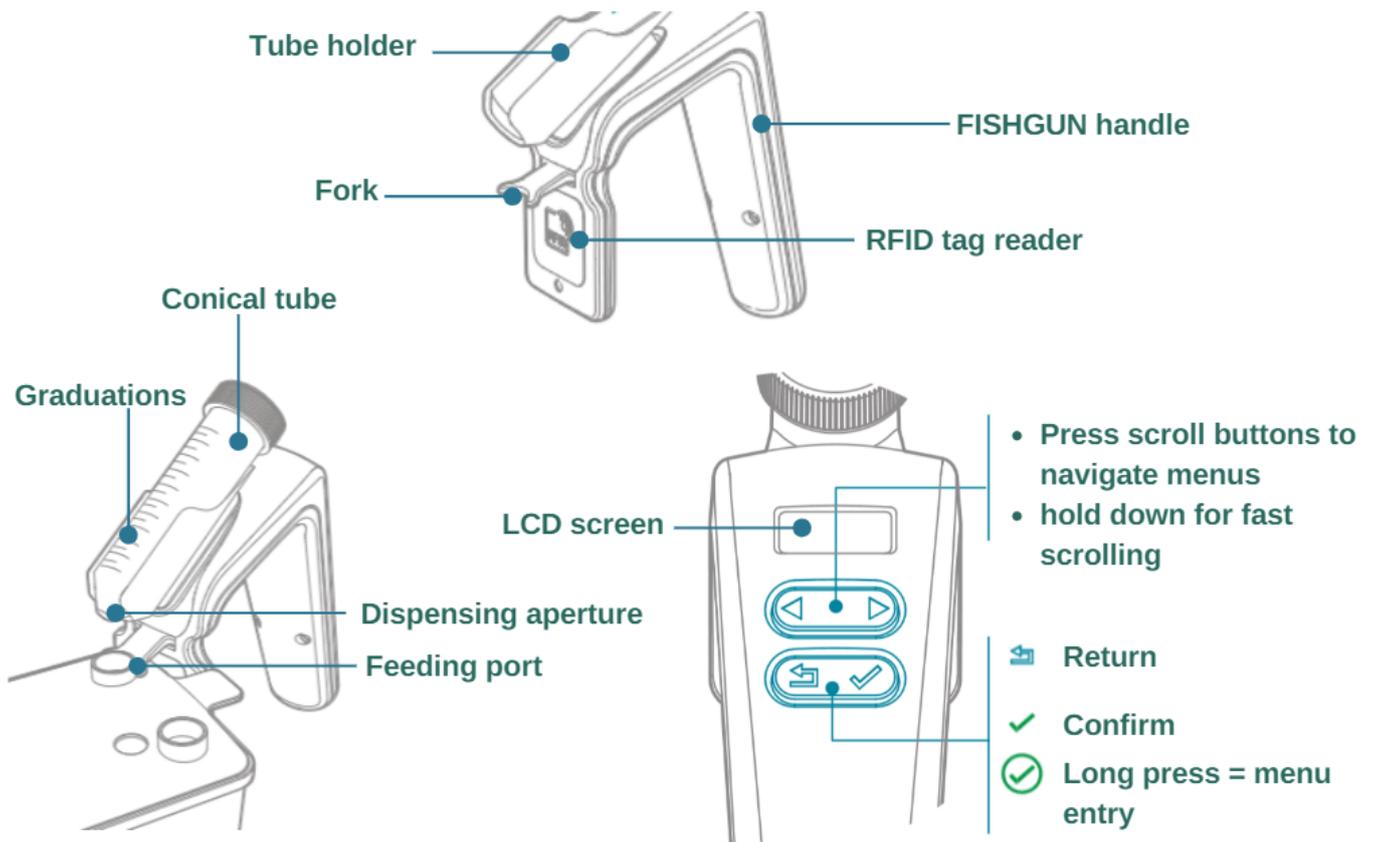
I. Description

1.1. Components

- An ergonomic handle for easy and effortless use
- A digital screen for better control of operations,
- A technological system to deliver dry feed (powders, grains, etc.) by means of vibrations,
- Interchangeable 50 ml conical tubes for different types and sizes of dry food ranging from 150 µm to 600 µm,
- An induction charger for better security and robustness,
- An RFID scanner to identify aquariums and deliver the right amount of feed to zebrafish.

Weight: 0.5kg
Brand: Planktovie

1.2. Descriptive schemes:



II. Navigation and programming

Before using your FISHGUN, the battery must be charged to a voltage of at least 3000 mV.

2.1. Choosing a mode of use

Press any button to activate the FISHGUN, then use the scroll buttons (< >) to view the 3 operating modes:

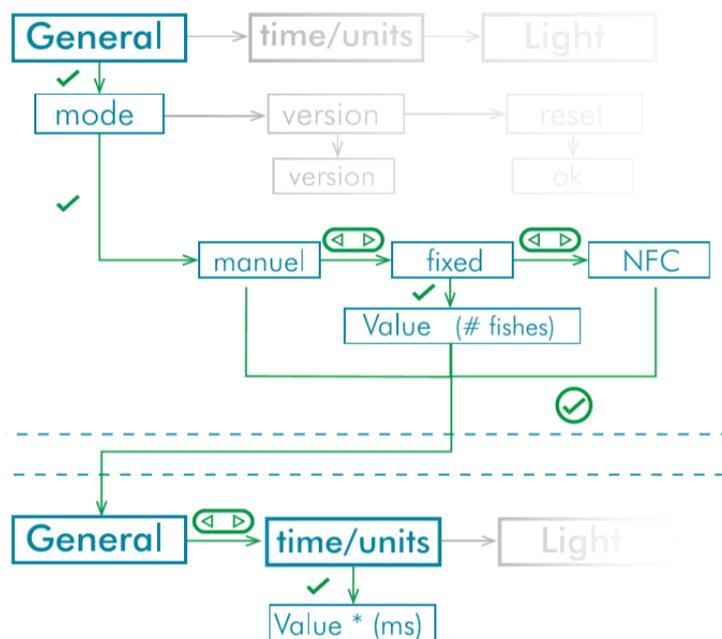
- Manual
- Fixed, this mode
- RFID (automatic)

2.2. Selecting a menu

To select the menu, press the ✓ button > 2 seconds. Press either scroll arrow to view the menus "general", "time per dose", "battery", "sleep", "light".

Press the ✓ button to confirm your choice.

2.2.1. General menu



Once the general menu is selected, use the buttons to navigate to the mode you wish to modify, then press the ✓ button to confirm your choice.

2.2.1.1. Fixed mode

When fixed mode is selected, enter the number of individuals to feed. While operating in Fixed mode, the FISHGUN D1 will always deliver the same amount of feed for the specified number of individuals.

2.2.1.2. Time per dose

This mode allows you to enter the vibration (dosing) time of the FISHGUN D1, in order to deliver feed for each individual tank. The time is entered in milliseconds (ms), so the FISHGUN D1 will deliver the amount of feed needed (shown in the table below). It then becomes possible to know how long the FISHGUN D1 should vibrate for each individual to feed. For the total amount of feed to be distributed, refer to the summary table on our website: <https://planktovie.biz/en/protocols/nutritional-solutions/> Then divide the total quantity of feed to be distributed per individual, per feeding, by the value from Table 1 below, and enter this value as the vibration time.

TABLE 1: Quantity of feed delivered each ms

Gemma Micro ZF (µm)	300	500
Diameter of the aperture (mm)	2,8	2,8
Quantity of feed delivered (mg/ms)	0,04	0,11

NOTE 1: For better dosing precision, for each drilled tube verify the weight of feed that is delivered for each ms of vibration.

NOTE 2: For foods with particle size less than 300 µm, FISHGUN D1 can be used with tubes drilled with a 2 mm diameter aperture, with reduced dosing accuracy. Certain feeds may be susceptible to clogging.

NOTE 3: Typically, each drilled conical tube can be used for about 1 million doses before being replaced, to guarantee the dosing values presented in the table

Example 1: Feeding adult fish.

Typically, one adult zebrafish (Danio rerio) should receive 30 mg of GEMMA Micro 500 each day. To dispense this, amount the FISHGUN D1 should vibrate for $30 \div 0.11 = 272$ ms. Enter this value in the "Time per unit" of FISHGUN D1.

Example 2: Feeding post-larvae (30 days post-fertilization).

If a zebrafish (Danio rerio) post-larva is to receive 7 mg of GEMMA Micro 300 each day, the FISHGUN D1 should vibrate for $7 \div 0.04 = 175$ ms to dispense this amount. Enter this value in the "Time per unit" of FISHGUN D1.

2.2.3. Battery

This submenu allows you to view the remaining battery voltage by selecting "Voltage". Select "Low th." (voltage threshold) to enter a value (in mv) below which the low battery symbol will be displayed on the LCD screen. By default, this value is set to 3000 mv, which corresponds to the minimum voltage ensuring optimal accuracy of the FISHGUN D1.

2.2.4. Sleep

Scroll to "Delay" to enter the idle time (min) after which the FISHGUN D1 will enter sleep mode.

Turn off the FISHGUN D1 by scrolling to "Enter" and pressing ✓ to confirm.

2.2.5. Light

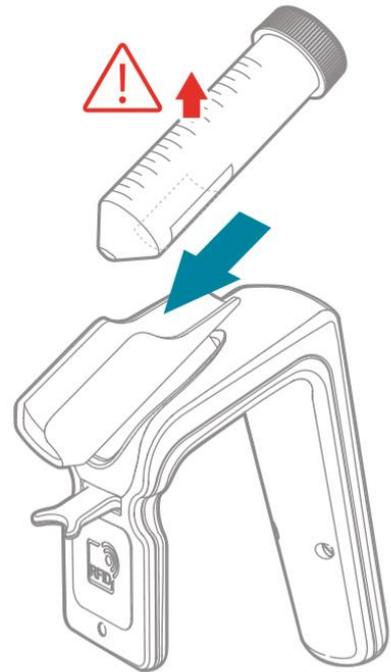
This submenu allows you to set the color ("Color") and intensity ("Delivery") of the indicator light at the front of the FISHGUN D1, that confirms each delivery of feed. When the "Color" submenu is selected, these choices are available: Red, Magenta, Yellow, White, Blue, Green, Cyan, or None.

In the "delivery" sub-menu, you can choose the intensity of a value of 1-100%.

III. Installation of the tube

Remove the cap on the conical bottom of the tube and position the filled tube on the tube holder, taking care to place the graduations upward so that the dispensing aperture points downward. Next, select the distribution mode.

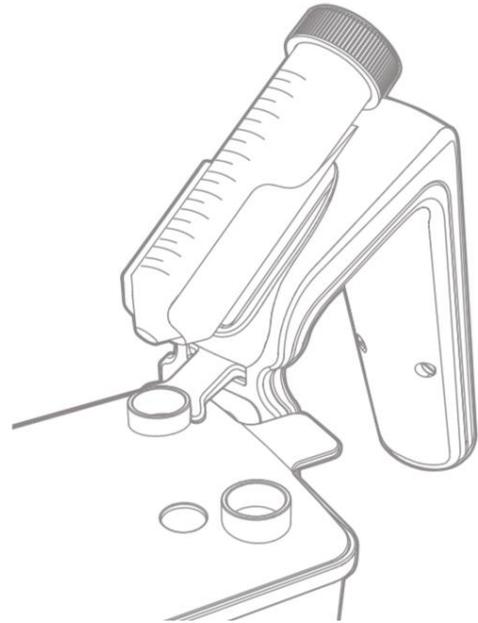
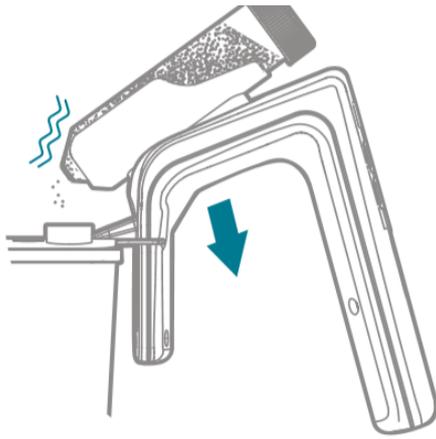
Respect the orientation of the tube so that the graduation is pointing upwards and the marking label facing downwards.



IV. Docking to the fish tank

Position the FISHGUN D1 dispensing aperture over the aquarium's feeding port, making sure to place the triggering fork on the feeding port (TECNIPLAST).

For optimal reading of the RFID code, it is important to position the RFID antenna on the front of the FISHGUN D1 close to the NFC tag.



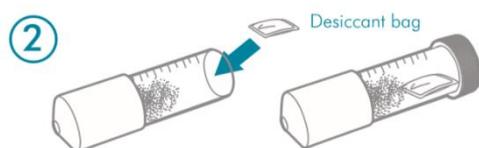
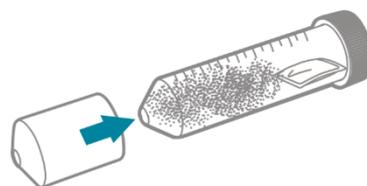
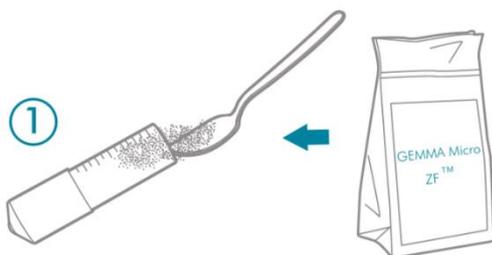
Place the fork against the feed hole of the aquarium and press down to trigger the dispensing.

V. Filling the tube

Refer to Table 1 above to determine which tube to use according to the size of the feed micro pellets.

Fill the tube using a spatula or other clean and dry tool. We recommend adding a small desiccant pouch above the feed to keep it dry, in order to prevent clogging, microbial growth, and to retard oxidation.

After use, replace the cap on the conical bottom of the tube, and store it at +4°C.



VI. Programming the NFC tag

For programming NFC tags, two solutions are possible for you:

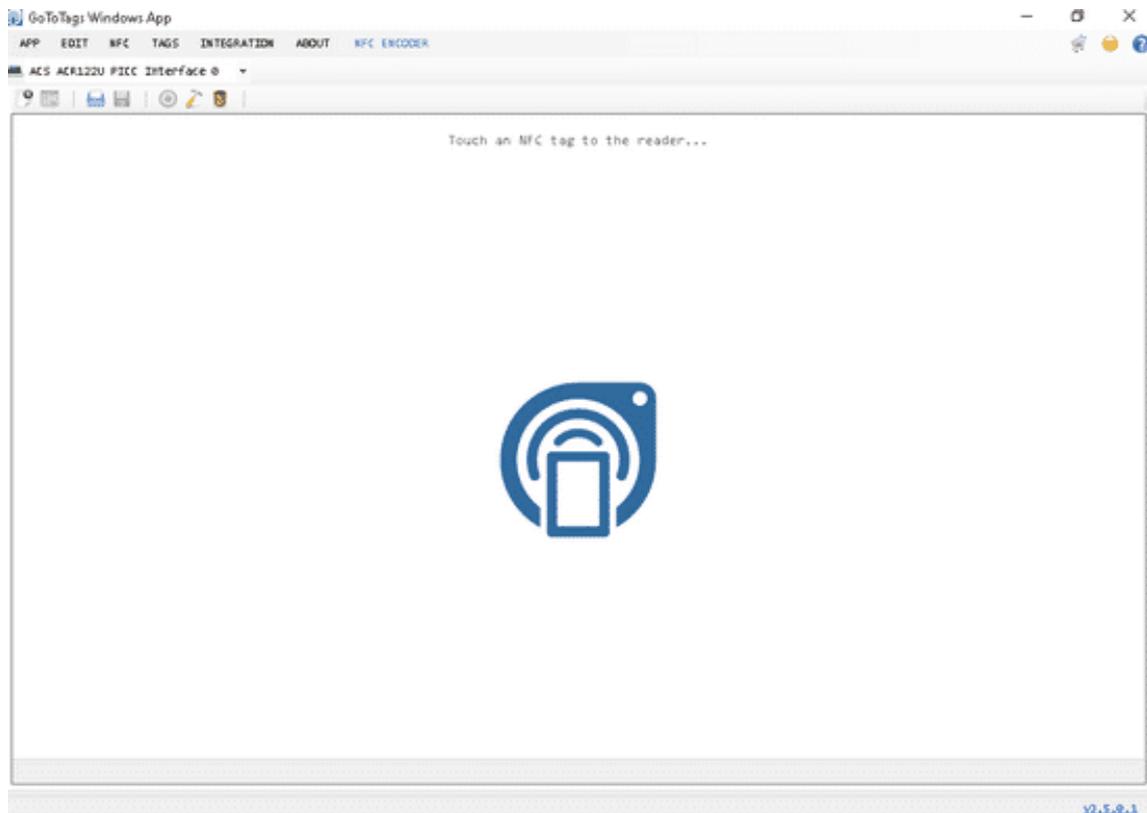
- 1/ Planktovie solution: Using an NFC reader/writer available on Planktovie's website
- 2/ Using a cell phone or tablet and downloading the NFC Tools app

6.1. NFC Reader/writer

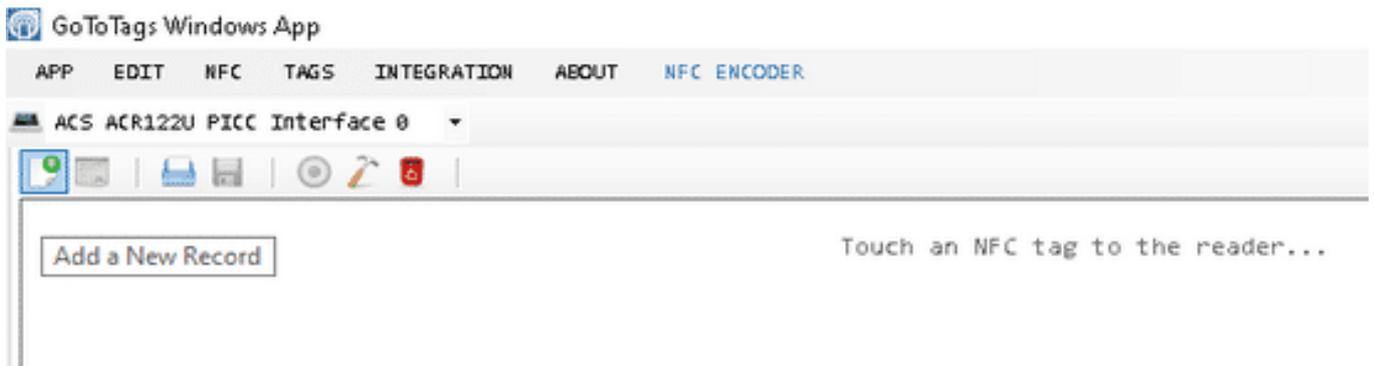
Planktovie offers the possibility to use an NFC reader/writer available on its website:
<https://planktovie.biz/en/product/nfc-reader-encoder/>

Please follow these few steps for using properly your NFC reader/writer

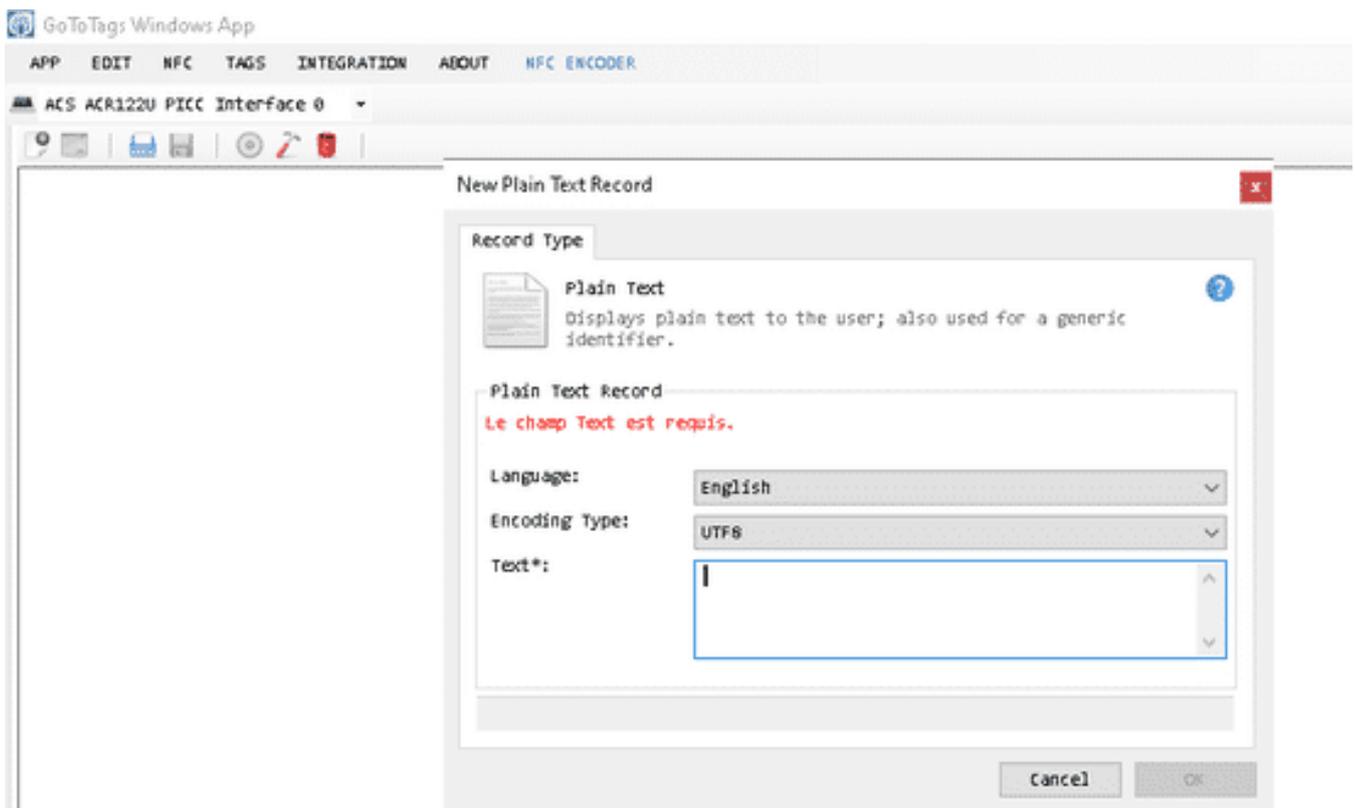
1. Download and install the free software "Gototags" available at the following link:
<https://gototags.com/windows-app/download/>
2. Connect your NFC reader/writer via USB to your computer and launch the Gototags software.
3. The following software window opens:



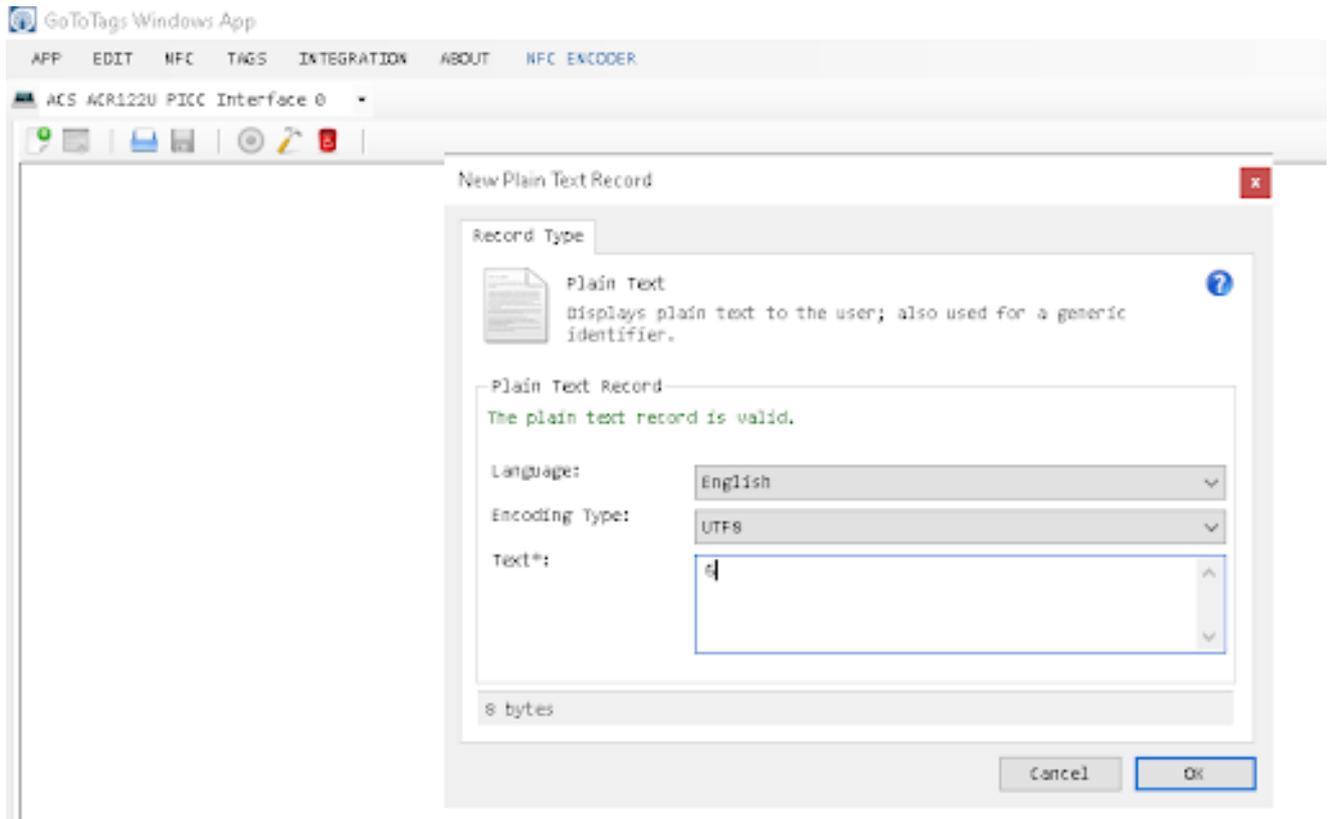
4. Program a tag by entering the "Add a New Record" icon: Then enter the "Plain text" submenu.



5. Enter in the text box, the number of fish you want to encode on the NFC tag.

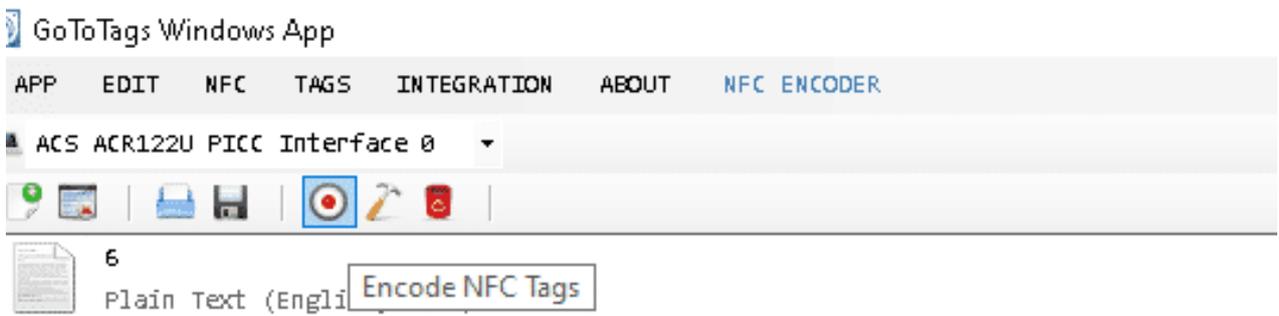


6. Wait until the software validates the new data, then press OK.



7. Then, the text data is saved in the box.

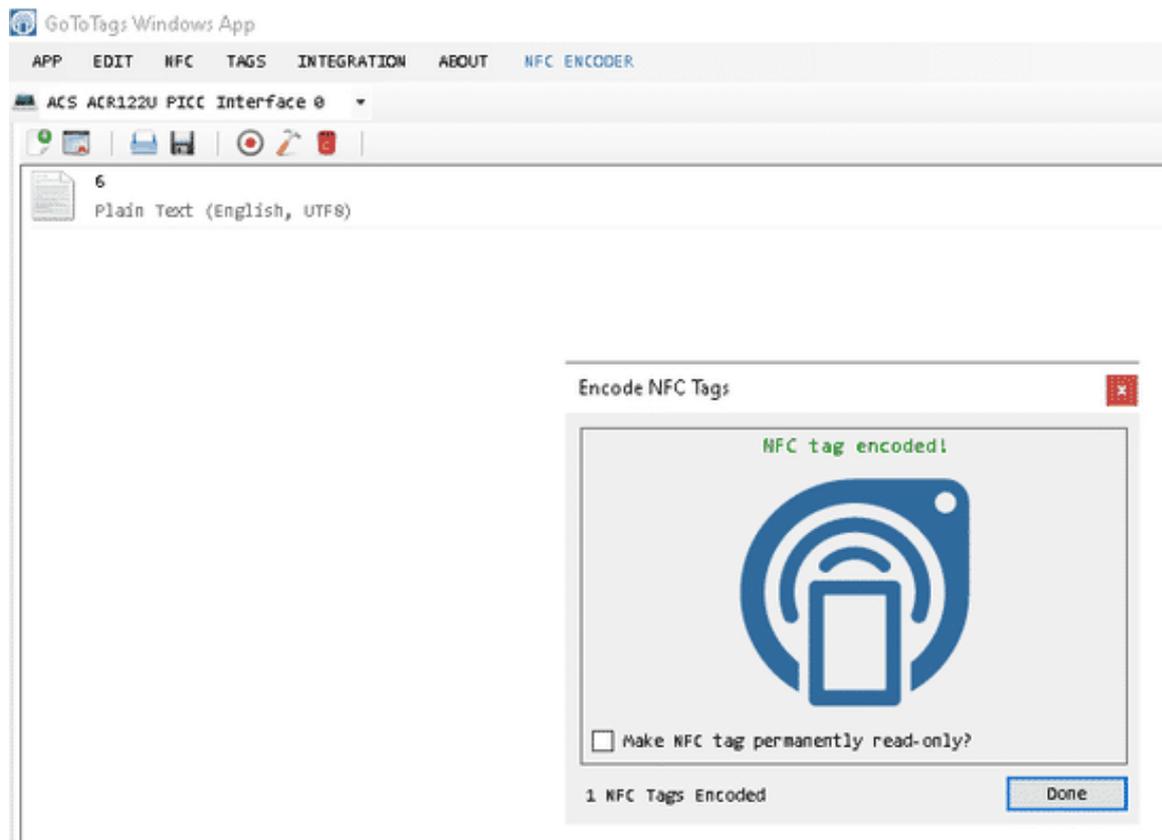
8. Click on the "Encode NFC Tags" icon.



9. A window opens, affix a blank NFC tag to the NFC reader/writer.

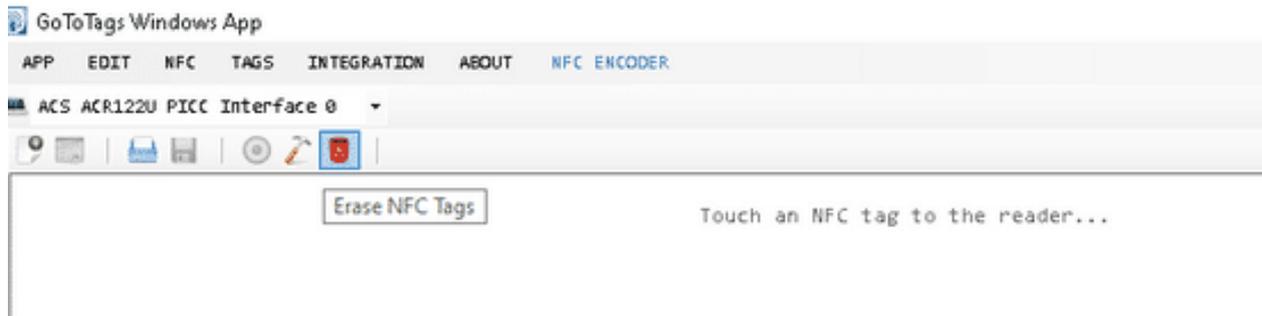


10. Wait until the software confirms that the NFC tag is properly encoded.



Your NFC tag is now ready for reading by the FISHGUN. For encoding a new blank NFC tag with the same number, proceed to step 9. Otherwise, you only need to erase the data entered in the box using the "Clear all records" icon.

To erase the encoded content on an NFC tag, click on the red trash icon "Erase NFC Tags".



Then as for writing, a window will open. Affix the tag to deprogram on the box and wait until the software confirms the deprogramming.

6.2. The NFC Tools app

[Download the NFC Tools](#)

Compatible phones for reading RFID tags

After having downloaded the NFC tools application available on Apple store or Wak Dev website (<https://www.wakdev.com/apps/nfc-tools-pc-mac.html>) you will be able to use your cell phone, or any other compatible device for writing and reading your NFC tags. Devices equipped with NFC are, for example, Android, BlackBerry, Windows Phones, etc. All compatible phones are listed on the NFCWorld website (<https://www.nfcw.com/nfc-phones-list/>).

On Android devices, the NFC function is activated in the "Wireless and networks" settings, on the BlackBerry in the "Manage connections" section. On Windows Phones, the function is already activated but may be deactivated in the "Touch + Send" settings.

Apple devices contain a low-power Bluetooth 4.0 contactless technology (BLE - Bluetooth Low Energy) introduced on iOS7 with the iBeacon system, that allows ranges greater than the NFC (up to 50 m) and hands-free use. To read RFID tags a minimum IOS 11 version is required, compatible with iPhones 7 or higher.

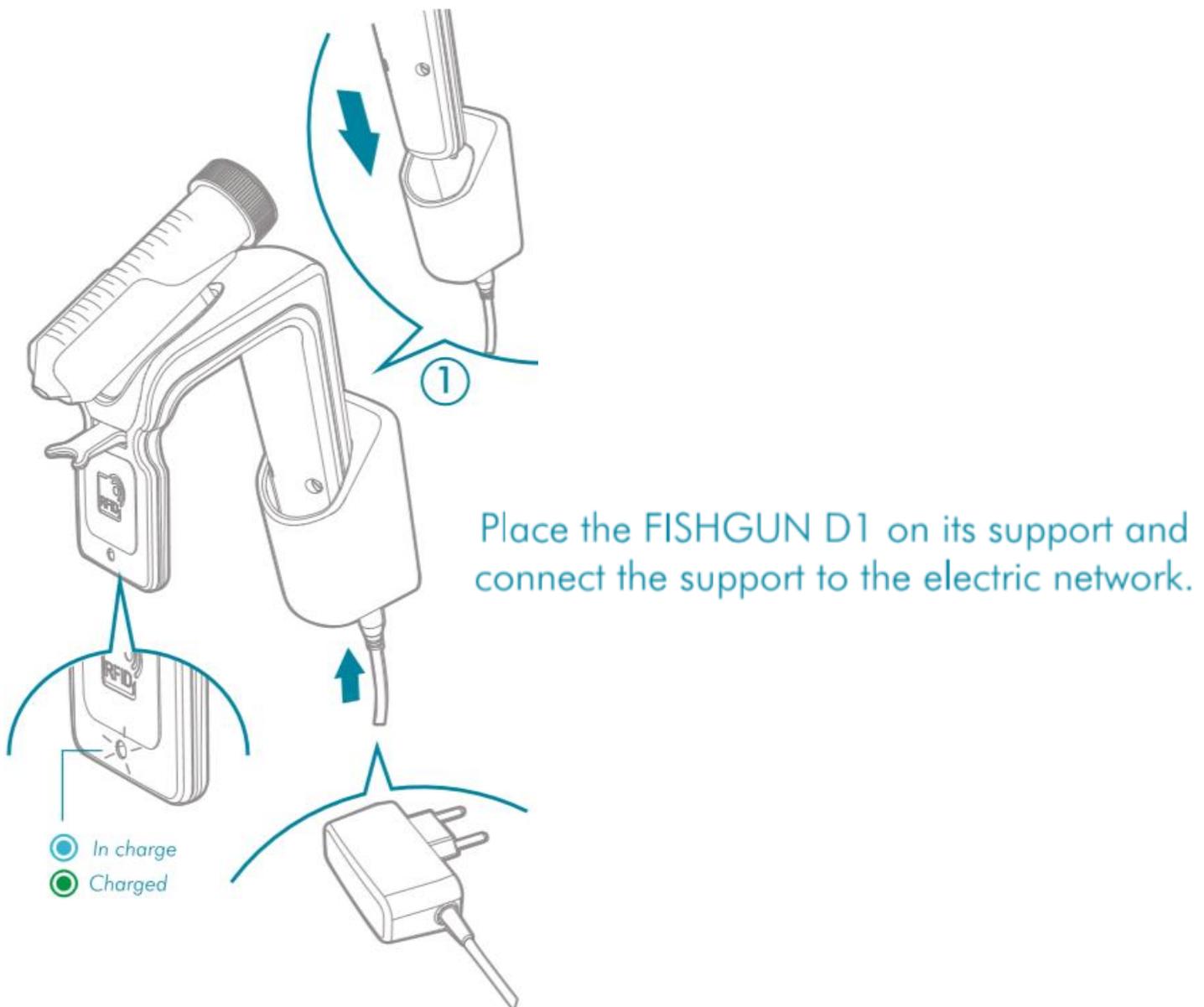
VII. Charging

Ensure that the FISHGUN is correctly positioned on its charger.

In order to optimize the use of the FISHGUN D1, make sure that the battery level is not below 3000 mV before each use. If the level is below this threshold, it is necessary to charge it by placing it on the charging station.

Check that the FISHGUN is correctly installed on the charger and that the charging indicator light is illuminated (blue), indicating that charging is in progress.

The FISHGUN in charge quickly reaches the threshold of 3600 mV, which is sufficient for optimum use. For a full charge, wait 1 to 2 hours, the light will turn green.



VIII. Warranty

We warranty your product against any defects in material and workmanship, under normal conditions of use. In the event a product is found to be defective during the one-year warranty period, we repair or replace the defective product, at our option. The warranty period begins on the day of purchase. For validation of the warranty, proof of purchase must be provided.

The following are excluded from the warranty:

1. Incorrect use of the device causing a malfunction.
2. the device is repaired or modified by an unauthorized person.
3. Damage affected by a disaster.
4. Poor maintenance causing damage.
5. Use of reagent or sample causing corrosion; 6. Accidental damage or overload.
7. Consumables such as NFC tag, etc.

To obtain warranty support, you may contact our local technical support. Our technical support will attempt to diagnose and correct the problem. If the problem cannot be rectified, our technical support will ask you to return the product. You will be asked to furnish proof of purchase to confirm that the product is still under warranty.

IX. Maintenance

Replace conical tubes every million doses (about every 2 months of use for a mid-size zebrafish facility (20,000 fish)).

X. Security

To avoid danger, you should observe the following rules:

- If you find any visible damage, please do not switch on
- Be sure not to expose the FISHGUN to any acid, alkali, or volatile solvents
- Temperature changes or mechanical wear may increase the dosing volume error.

You must stop any operation immediately if the equipment is damaged. The equipment may be damaged when the following situations occur:

- There is visual damage.
- The product suddenly does not work.

XI. Troubleshooting

Symptoms	Possible causes	Solution
Feed does not flow, or not regularly	Feed can clog when its water content reaches a certain threshold, making flow irregular	Change the feed; keep a pouch of dry desiccant in the tube
RFID reading is not performed correctly	Incorrect positioning of the FISHGUN D1	Position the RFID antenna parallel to the aquarium. Be sure to place the NFC tag just under the feeding port, so it can be read by the RFID antenna
The dispensing aperture of the conical tube is enlarged	About every 2 months, the feed inside the conical tube and damages the orifice	Replace the conical tube

XII. Specifications

Model: FISHGUN-D1; vibrator: Z7AL2B1692082

Typical drilled tube life: 1 million doses (about every 2 months of use for a typical facility of 10 000 fish)

Adapter:

- input: AC 100-240V 50-60Hz 1.0A max
- output: DC 12V 1A; DC24V 1.9A

Power supply: 12W

Precision: 5%

Working environment: temperature 0-70°C

Storage environment:

- humidity : 10%-90% (non-condensable)
- temperature : -20°C-85°C

Dimensions (L x W x H) : 12.5 x 5.5 x 16 cm

Weight: 222 g