

FISHGUN D1 USER GUIDE



PLANKTIVORE SAS
Innovation for Aquatic Animal Research

Congratulations, you have just acquired a FISH GUN D1, which we hope will bring you entire satisfaction. This user manual will help you get the most out of your FISH GUN. The FISHGUN D1 is a semi-automatic dry feed dispenser specially developed for aquatic facilities and aquaculture nurseries.



PRODUCT PRESENTATION

I - Description

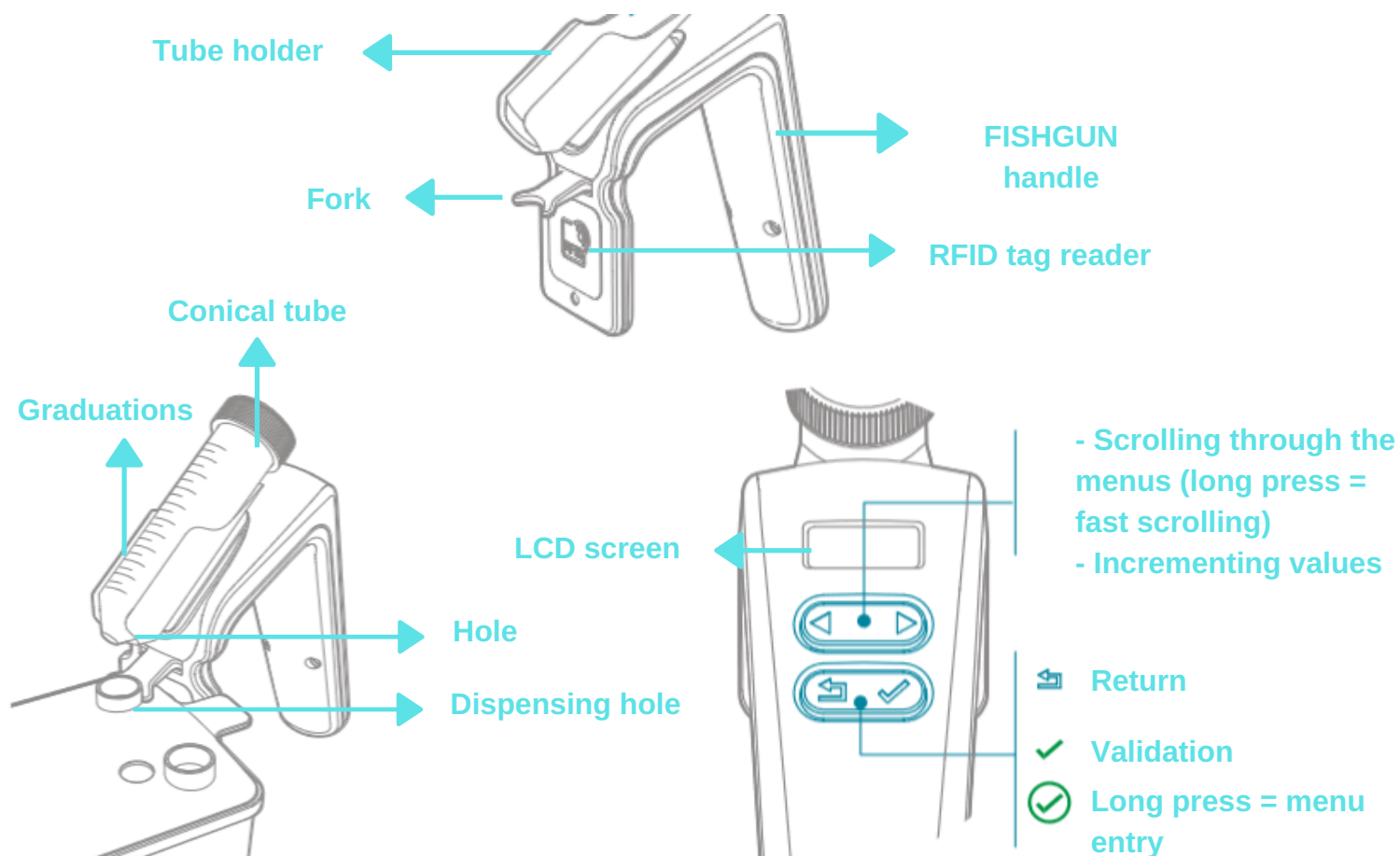
Components:

- 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, ...) by means of vibrations,
- Interchangeable 50 ml conical tubes for different types and sizes of dry food ranging from 75 μm to 600 μm ,
- An induction charger for better security and robustness,
- An RFID scanner to identify aquariums and deliver the right amount of food.

Weight: 0.5kg

Brand: Planktovie

Descriptive schemes:



II - Navigation and programming

When handling your FISH GUN press any button to activate it. Before using it, make sure that it is sufficiently charge to work efficiently. If necessary, reposition the FISH GUN on its charger. Refer to the charging section for more details.

2.1. Mode of use choice

When the FISH GUN is activated, you can use the scroll buttons to select the operating mode, manual, fixed, or automatic (RFID).

2.2. Entering the menus

To enter the menu, press (> 2 sec) a long time on "validation" button. Different possibilities are available : "general", "time per unit", "battery", "sleep", "light". To view them all, select the scroll buttons.

2.2.1. General

Once the general menu is validated, select the mode to modify with the scroll keys, then confirm your choice.

RQ: In the FISH GUN version D1, only the "fixed" submenu can be set.

2.2.1.1. Fixed

When fixed mode is selected, enter the number of individuals to feed. By choosing this mode, the FISH GUN D1 will always deliver the same amount of feed for the specified number of individuals.

2.2.2. Time per unit

This mode allows you to enter the vibration time of the FISH GUN D1, in order to deliver feed for each individual. The time must be entered at milliseconds (ms), so the FISH GUN D1 will deliver the amount of feed needed (Indication in the table below). It then becomes possible to know how long the FISH GUN 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/2017/10/04/national-solutions/>). It is then sufficient to divide the total quantity of feed to be distributed per individual, per day, by the value of Table 1 below, to enter the data in the FISH GUN D1.

TABLE 1: Quantity of feed delivered each ms.

GEMMA Micro ZF™ (µm)	300	500
Diameter of the hole (mm)	2,5	2,8
Quantity of feed delivered (mg)/ms	0,04	0,11

RQ1: For more precision, it is better to quantify, for each drilled tube, the quantity of feed that will be delivered each ms of vibration.

RQ2: For foods with particle size less than 300 µm, FISH GUN D1 can be used with tubes drilled with a 2 mm diameter hole, but we do not guarantee accuracy or optimal operation (frequent clogging).

RQ3: Each drilled conical tube can be used about fifty times before being replaced, thus guaranteeing the values presented in the table

Example 1: Feeding adult fish. Considering that only one adult zebrafish (Danio rerio) should receive 30 mg of GEMMA Micro 500 each day, the FISH GUN D1, to dispense this amount, will have to vibrate for 30: 0.11 = 272 ms. It is then necessary to enter this data in the "Time per unit" of FISH GUN D1.

Example 2: Feeding post-larvae (30 days post-fertilization). If a zebrafish post-larvae (Danio rerio) is to receive 7 mg of GEMMA Micro 300 each day, the FISH GUN D1 should vibrate for 7: 0.04 = 175 ms to dispense this amount. It is then necessary to enter this data in the "Time per unit" of FISH GUN D1.

2.2.3. Battery

This part of the menu allows you to know the residual voltage by selecting "voltage". By selecting "volt th: voltage threshold", you can enter a value (mv) below which the low battery indicator (symbol) will be displayed on the LCD screen. By default, this value is set to 3000 mv, which corresponds to the minimum value ensuring optimum accuracy of the FISH GUN D1.

2.2.4. Sleep

This part of the menu allows you to enter the time (min) beyond which, the non use of the FISH GUN D1 will put it to sleep. You can also directly turn off the FISH GUN D1 by selecting "Enter". In this case, a confirmation ("confirm") will be required.

2.2.5. Light

This part of the menu allows you to set the color ("color") and intensity ("delivery") of the light emitted at the front of the FISH GUN D1, at each delivery of feed. When the "color" submenu is selected, there are several choices 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

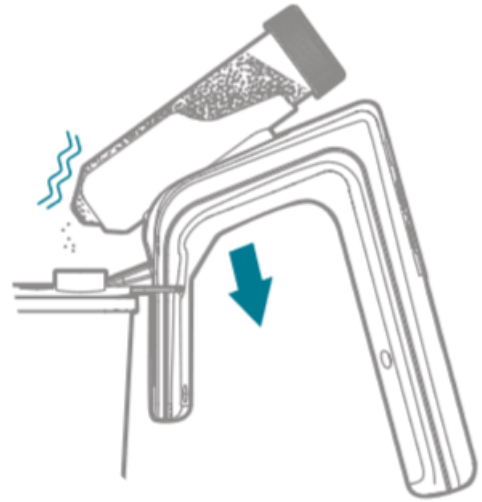
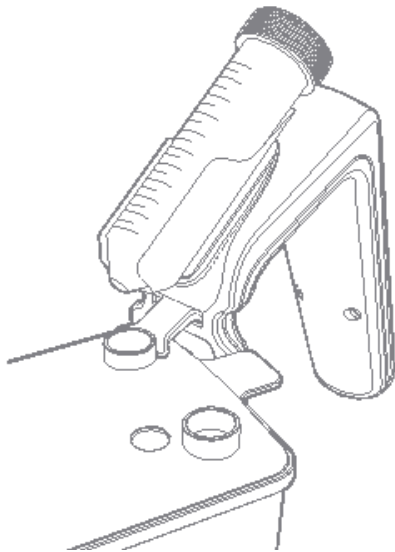
Remove the plug obstructing the hole and position the filled tube on the tube holder taking care to place the graduations upwards, and consequently, the hole pointing downwards. Finally, select the distribution mode.

IV - Docking to the aquarium

When you are ready to feed your aquatic organisms, position the FISH GUN D1, making sure to place the fork on the aquarium orifice (TECNIPLAST). If you wish to adapt the FISH GUN D1 to a different orifice from those presented on the TECNIPLAST aquariums, we have the possibility to change the positioning fork to make your FISH GUN D1 compatible whatever the aquarium brand. For optimal reading in RFID mode, it is important to position the RFID antenna present on the front of the FISH GUN D1, just in front of the RFID chip.

Product manipulation

Docking at the aquarium

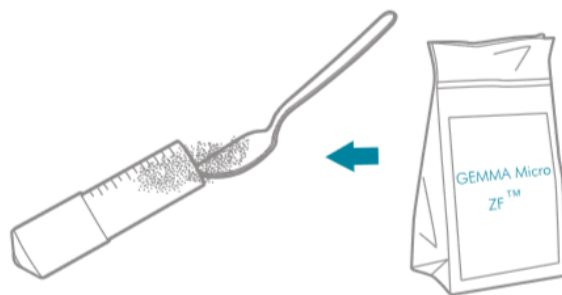


Place the fork against the feed hole of the aquarium and press down to trigger the dispensing.

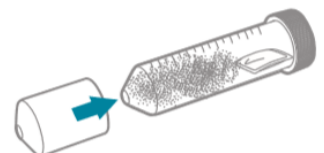
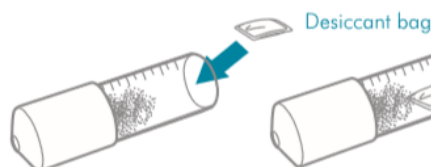
V- Filling the tube

To know which tube to use according to the granulometry of the feed, refer to Table 1 above. When it is clearly identified, fill it with a spatula or other clean and dry tool. We advise you to install a small desiccant bag above the feed to guarantee a minimum hygrometry of the feed, and thus prevent it from clogging.

Filling the tube



After use



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



VI- Programming RFID tag

For programming RFID tag, downloading the NFC Tools application is necessary, available on Google Play or the Apple Store with a compatible phone.



Compatible phones for reading RFID tag

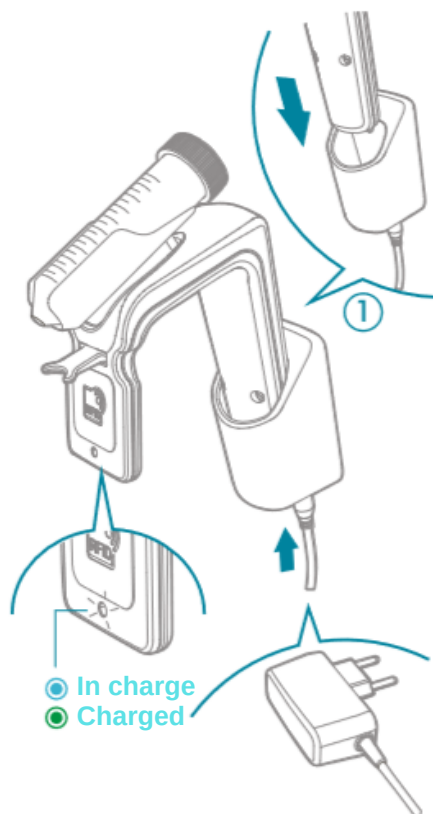
Terminals equipped with NFC are for example the Android, BlackBerry, Windows Phone ... You can find out about all compatible phones on the NFCWorld website. On Android devices, the NFC function is activated in the " Wireless and networks " settings, on the BlackBerry in the " Manage connections " section. On Windows Phone, the function is already activated but may be deactivated in the " Touch + Send " settings.

If your terminals are signed by Apple, they contain a low-power Bluetooth 4.0 contactless technology (BLE - Bluetooth Low Energy) introduced on the iOS7 with the iBeacon system that allows ranges greater than the NFC (up to 50 m) and free hand use. To read RFID tag, a minimum IOS 11 version is required, compatible with iphones 7 or higher)

VII - Charging

In order to optimize the use of the FISHGUN D1, make sure that the battery level is not below the threshold 3000 mV before each use.

If the level is below this threshold, it is necessary to charge the FISHGUN D1 by placing it on the charging station, check that the indicator lights, indicating that the equipment is connected. Wait long enough for the battery level to show the maximum value.





Additional information

VIII - Warranty

We warrant your product against any defect in material and workmanship, under normal use. In the event a product is found to be defective within the warranty period of one year, we will, at our option, repair or replace the defective product. The warranty period starts at the day of purchase. For warranty validation, a proof of purchase must be furnished.

The followings are excluded from the warranty:

1. Improper use of the device causing malfunction;
2. The device is repaired or modified by an unauthorized person;
3. Damage by disaster;
4. Improper maintenance causing damage;
5. Use of reagent or sample causing corrosion;
6. Damage by accident or over load;
7. Consumables, such as tubes, RFID 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 add any acid, alkali, or volatile solvents;
- Temperature change or mechanical wear may increase the 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;
- The product is located in an inappropriate position.

XI - Problems encountered

Symptoms	Possible causes	Solution
Feed does not flow, or not regularly	Feed can clog when its hygrometry reaches a certain threshold, making difficult its - correct flow	Change the feed, plan to put a desiccant bag in the tube so it stays dry
RFID reading is not performed correctly	Incorrect positioning of the FISH GUN D1	Position it as parallel as possible to the aquarium. Be sure to place the RFID tag just under the hole, and in front of of the RFID antenna
The hole of the conical tube is enlarged	About every 2 months, the feed inside the conical tube and damages the orifice	Change the conical tube

XII - Specifications

Model : FISHFUN-D1 ; vibrator : Z7AL2B1692082

Tube life : every million dose (about every 2 months of use for a classic 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 : température 0-70°C

Storage environment :

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

Dimensions (L*I*H) : 12.5*5.5*16 (cm)

Weight: 222 (g)