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LIQUID HANDLING TECHNOLOGY

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# Mini Fuge Plus

User Manual · Bedienungsanleitung  
Mode d'emploi · Manuale d'Uso



## *EC Declaration of Conformity*

STARLAB certifies that

**N2631-0017 Mini Fuge Plus  
including charging adapter**

has been manufactured and inspected in accordance  
with the following European directives / standards:

Low Voltage Directive	2014/35/EU
EMC Directive	2014/30/EU
WEEE	2012/19/EU
RoHs	2011/65/EU
Packaging	94/62/EC

As an ISO 9001, ISO 13485 and ISO 14001 certified company,  
our working procedures and processes are checked  
and audited regularly and the quality  
of our products is continuously monitored.



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### Product Overview:

The STARLAB Mini Fuge Plus (Cat. No. N2631-0017) provides comprehensive designs for a wide variety of life science research applications. Smart and stable running can deliver accurate and reliable experimental results from one experiment to another.


### About This Manual:

This manual is designed to assist you in the optimal usage of your STARLAB Mini Fuge Plus. The manual is also available on the English, German, French and Italian websites at: [www.starlabgroup.com](http://www.starlabgroup.com)

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**i** References useful information.

## 1 Specifications

<b>Dimensions</b>	5.9 x 5.9 x 4.6 in / 150 x 150 x 116 mm
<b>Weight</b>	2.65 lbs / 1.2 kg
<b>Electrical</b>	AC 100 -- 240 V, 50/60 Hz, 0.35 A
<b>Unit Input</b>	24 VDC 1A 
<b>Maximum Speed/RCF</b>	6000 rpm / 2000 xg

### 1.1 Environmental Conditions

- › Indoor use only
- › Altitude up to 2000m
- › Operating temperature 5°C to 40°C
- › Maximum relative humidity 80 % for temperature up to 30°C, decreasing linearly to 50 % relative humidity at 40°C
- › Pollution degree 2

## 2 General Information

The STARLAB **Mini Fuge Plus** is supplied with two rotors, one for micro tubes and one for 0.2 ml PCR strip tubes. The 8 place rotor is designed to centrifuge up to eight individual 1.5/2.0 ml plastic micro centrifuge tubes. It will also accept 0.5/0.6 ml, 0.4/0.25 ml and 0.2 ml tubes with the adapters supplied with the unit. The strip tube rotor is designed to centrifuge four 8 x 0.2 ml strip tubes. It will also accept up to 32 individual 0.2 ml tubes. Both rotors are designed for applications requiring relatively low g-forces, such as microfiltration, cell separation and quick spin downs from the walls of tubes.

Please read this manual thoroughly before attempting to operate the centrifuge.

### 2.1 Delivery

- › 8 place tube rotor
- › 4 place PCR strip rotor
- › Eight adapters for 0.5 ml tubes
- › Eight adapters for 0.2 ml tubes
- › Eight adapters for 0.25 ml tubes
- › Power Adapter, 24V

### 3 Safety Precautions

**NEVER** use the centrifuge in any manner not specified in these instructions.

**NEVER** operate the centrifuge without a rotor properly attached to the shaft.

**NEVER** fill tubes while they are in the rotor. Liquid spillage may harm unit.

**NEVER** put hands in the rotor area unless the rotor is completely stopped.

**NEVER** move the centrifuge while the rotor is spinning.

**NEVER** use solvents or flammables near this or other electrical equipment.

**NEVER** centrifuge flammable, explosive or corrosive materials

**NEVER** centrifuge hazardous materials outside of a hood or proper containment facility

**NEVER** try to continue operating the centrifuge if the centrifuge stops working prematurely.

Stop the centrifuge immediately by turning off the main power switch on the back of the centrifuge. Wait one minute before turning on the main power switch to operate the centrifuge again.

**ALWAYS** load the rotor symmetrically. Each tube should be counterbalanced by another tube.

Weight of individual tubes may not exceed of 3.0 g.

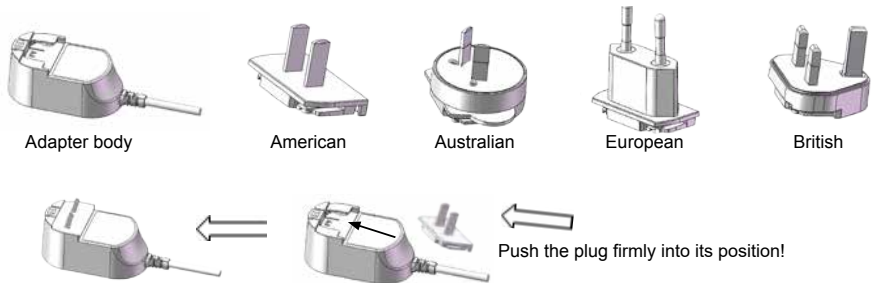
**ALWAYS** locate the centrifuge within easy access to an electrical outlet.

**ALWAYS** use only micro centrifuge tubes made from plastic and designed to withstand centrifugal forces of at least 2,000 x g.

**i** **If the centrifuge is used in a manner not specified by the manufacturer, the protection provided by the centrifuge may be impaired.**

## 4 Installation

1. Make sure to always install the centrifuge on stable flat surfaces only
2. Place the centrifuge near the electrical outlet
3. Power adapter instructions



## 5 Operation

Before operating the centrifuge, be sure that the power switch on the back of the unit is in the "on" position. To begin a run, simply close the lid of the centrifuge. No other controls are required.

### › Fast stop

Press down and release the tab on the front of the lid. This will release the lid lock, allowing the lid to open and the rotor to come to a braked stop.

### › Gradual stop

Put the power switch in the "off" position, this will cut the power to the motor, and the rotor to come to a gradual stop.



**Caution:** Do not attempt to open the lid or remove samples until the unit has come to a complete stop. Once the rotor has come to a full stop, the lid can be manually lifted to the full open position and samples may be removed from the rotor. Safe operation of the centrifuge requires that the rotor be loaded in a balanced fashion. Failure to load the rotor properly presents a hazardous condition and may damage the centrifuge. Individual tubes, strip tubes and/or adapters must always be loaded symmetrically to ensure proper balance. Never run the centrifuge with only one tube or one strip tube in place.

## 6 Equipment Maintenance

The centrifuge should be cleaned periodically. Ensure that the unit is not plugged in. Use a damp cloth and a mild, non-corrosive detergent ( $\text{pH} < 8$ ). Do not immerse the centrifuge in liquid or pour liquids over it. Excessive amounts of liquid should be avoided. Liquid should not come into contact with the motor. After cleaning, ensure all parts are dried thoroughly before attempting to operate the unit.

Should a spill of infectious materials occur within the rotor or rotor chamber, the unit should be disinfected. This should be performed by qualified personnel with proper protective equipment.



## 7 Rotors

The centrifuge is supplied with two interchangeable quick release rotors. No tools are required to exchange the rotors or attach them to the motor shaft. The rotors can be easily exchanged with one hand by way of the quick release system. To remove a rotor, place your thumb on top of the motor shaft and place two fingers underneath the rotor and lift off the shaft. To replace a rotor, simply position on the motor shaft and snap in to place.



8 place tube rotor



4 place strip rotor

## 8 Cleaning

Before using any cleaning or decontamination methods except those recommended by the manufacturer, check with the manufacturer that the proposed method will not damage the equipment. To clean the centrifuge, use a damp cloth and a mild, non-corrosive detergent (pH <8). After cleaning, ensure all parts are dried thoroughly before attempting to operate the unit. Do not immerse the centrifuge in liquid or pour liquids over it.

## 9 Service

Contact **STARLAB** at [www.starlabgroup.com](http://www.starlabgroup.com) if you have a question about the centrifuge or if the unit requires servicing. Please do not send in a unit for service without first obtaining a returns number and a decontamination form. All units returned must be decontaminated and accompanied by a decontamination form. Ensure the unit is properly packed to avoid damage - any damage resulting from improper packaging will be the responsibility of the user.

## 10 Appendix

### 10.1 Symbols and Conventions

Symbols that may be used in this manual or on the product.



#### **CAUTION!**

This symbol refers you to important operating and maintenance (servicing) instructions within the product Instruction Manual. Failure to heed this information may present a risk of damage or injury to persons or equipment

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## 10.2 Equipment Disposal - European Regulations



According to Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE), STARLAB Mini Fuge Plus is marked with the crossed-out wheeled bin and must not be disposed of with domestic waste.

## 10.3 Limited Warranty

STARLAB INTERNATIONAL warrants that this product will be free from defects in material and workmanship. Should this product require service contact STARLAB Customer Service at **[www.starlabgroup.com](http://www.starlabgroup.com)** to receive a return authorization number and shipping instructions. Products received without proper authorization will be returned. All items returned for service should be sent postage prepaid in the original packaging or other suitable carton, and padded to avoid damage. STARLAB will not be responsible for damage incurred by improper packaging. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces, or other causes not arising from defects in original material or workmanship. This warranty does not cover motor brushes, fuses, light bulbs, batteries, or damage to paint or finish. Claims for transit damage should be filed with the transportation carrier.

All warranties, including the implied warranty of merchantability and fitness for a particular purpose, are limited in duration to 24 months from the original date of purchase. STARLAB's sole obligation under this warranty is limited to the repair or replacement of a defective product at STARLAB's discretion. STARLAB is not liable for incidental or consequential damage, commercial loss, or any other damages resulting from the use of this product. No individual may accept for, or on behalf of STARLAB, any other obligation of liability, or extend the period of this warranty.

**For your reference, make note of the model and serial number, date of purchase, and supplier here:**

Cat. No..... Serial No.....

Date Purchased.....

Supplier.....

