

# CENTRY™ 103 Minicentrifuge

## User's Guide

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# Chapter 1

## INTRODUCTION



CENTRY™ 103 Minicentrifuge is an easy of use and portable benchtop device ideal for a quick separation of particles from a supernatant according to a density gradient. It also enables a spin down of a drop of liquid from the walls of tubes.

Equipped with robust and easy to change rotors, the CENTRY 103 Minicentrifuge can be used either with microtubes or tube-strips. The round rotor has a capacity of eight 1.5 mL or 2.0 mL microtubes, and the rectangular shaped rotor capacity is two lines of eight connected 0.2 mL tube-strips.

Due to its small footprint and a battery compartment, the CENTRY 103 Minicentrifuge can be used anywhere, from small benches to laminar flow cabinets, or even if there is no power supply available, the Minicentrifuge is convenient and easy to transport.

To start or stop centrifugation, simply press down in the lid. The CENTRY 103 Minicentrifuge will automatically decelerate to a stop after six minutes of continuous spinning.

### Ordering Information

DESCRIPTION	PART NUMBER
CENTRY™ 103 Minicentrifuge	F110736

### Specifications

	ROTOR 8 TUBES 1.5-2.0 mL (PN F1077310)	ROTOR 2 TUBE-STRIPS 8 x 0.2 mL (PN F1077311)
Dimensions (W X D X H)	150 x 163 x 113 mm	
Weight	600 g (excluding rotor and batteries)	
Max. Capacity	8 microtubes: 2.0 mL or 1.5 mL	2 PCR strips: 0.2 mL x 8 connected tubes
Speed	6 000 rpm (+/- 20%)	6 200 rpm (+/- 20%)
Relative Centrifugal Force (RCF)	1.310 - 2.960G (2.0 mL) 1.260 - 2.840G (1.5 mL)	Max. 1.200 - 2.690G Min. 810 - 1.820G
Safety	Automatic stop after six minutes (fixed timer) Lid opening interlocks brake Overcurrent fuse and motor overcurrent detector (Motor locks when the rotor is unbalanced)	
Power	AC adapter with five different plugs (1 SKU) Input: 1-Phase AC 100-240V   50/60Hz   0.6A Or four AA alkaline batteries	
Autonomy with batteries (approx. indication)	<ul style="list-style-type: none"><li>about 170 cycles of 10 seconds spinning</li><li>about 7 cycles of 6 minutes spinning</li></ul>	<ul style="list-style-type: none"><li>about 500 cycles of 10 seconds spinning</li><li>about 15 cycles of 6 minutes spinning</li></ul>
Warranty	12 months	



## Description



**Figure 1**  
CENTRY™ 103 Minicentrifuge components

- 1** Lid
- 2** Chamber
- 3** Motor shaft boss
- 4** Power indicator light
- 5** Main power switch
- 6** AC adapter connector
- 7** Battery compartment  
4 AA size / LR6, alkaline  
batteries (1.5V)
- 8** Rotor for microtubes:  
8 microtubes of 1.5 mL or 2.0 mL
- 9** Rotor for tube-strips:  
2 lines of 8 connected 0.2 mL microtubes
- 10** AC adapter  
Input voltage: AC 100-240V, 50/60 Hz
- 11** Type C (EU)
- 12** Type A (Japan/USA)
- 13** Type A (China)
- 14** Type G (UK)
- 15** Type I (Australia)

# SAFETY AND USER PRECAUTIONS

Read the *User's Guide* carefully before operating the instrument and follow all safety norms.

## General Safety Precautions

### NOTICE

When the CENTRY 103 Minicentrifuge is not in use, ensure the power is switched off (position "O"). When the power is switched on (position "I"), the red, indicator light turns on.

When disposing of the instrument, please follow the relevant laws and local or state regulations for the waste disposal.

### WARNING

Do not modify or alter the instrument or any parts of the instrument, it may cause serious accident or malfunction.

Do not use accessories or parts other than those specified in this *User's Guide*, which may cause serious accident or malfunction.

Do not touch the power plug with a wet hand, it may cause a serious or deadly electrical shock.

Do not use any damaged power cord, plug, or loose outlet. It may cause an accidental fire, short circuit, or malfunction.

Never open the lid while the rotor is spinning, accidental contact with the spinning rotor may cause serious injury.

When leaving the instrument out of use for a long period of time, be sure to remove the power plug from the wall outlet for safety. Otherwise the insulation could deteriorate, thereby causing an electrical shock, short circuit, or fire.

## Rotor and Microtubes

### NOTE

After the operation, remove the microtubes immediately from the rotor. If the tubes are left inside the chamber after a run, the remaining heat of the motor may increase the temperature of the samples.

### WARNING

Ensure the rotor is securely installed, otherwise it may fall off during spinning and cause unexpected accidents, or injury.

Do not use any damaged, deformed, or corroded centrifuge microtubes. Ensure that the microtubes used are compatible with the maximum RCF of the instrument, otherwise they could break while spinning and cause a serious injury.

The load of the microtubes must be appropriately balanced. By applying excessive force to the motor shaft, unbalanced load may cause damage to the instrument, resulting in a serious injury.

## Batteries

### NOTE

As the battery life decreases, the rotating speed also decreases. For an optimal use of the instrument, replace the batteries with new ones.

### WARNING

For using the instrument with batteries, ensure that the positive (+) and the negative (-) terminals are correctly oriented, as represented in the battery compartment. Otherwise, the battery may cause heating, leakage, or explosion and could result in damage to the instrument, or personal injury.





## Chapter 3

# OPERATION

Before operating the CENTRY 103 Minicentrifuge, ensure that the following conditions are met:

- Environmental requirements:
  - Ambient temperature from 5°C to 35°C (no dew condensation allowed)
  - Relative humidity: 75% or less
  - Altitude: not exceeding 2000 m
  - Ratings : overvoltage category II, pollution degree 2
- Indoor use

### NOTICE

Maintain a 300 mm clearance boundary around the CENTRY 103 Minicentrifuge during operation, the instrument could get damaged or moved due to an impact.

Do not hold the CENTRY 103 Minicentrifuge by the rotor or the lid, which may damage the instrument.

## Installing

- Place the CENTRY 103 Minicentrifuge on a flat and level surface such as a laboratory bench.
- The location must be well-ventilated and free of direct sunlight.
- Avoid installing the minicentrifuge on a slippery surface or surface prone to vibration.

### WARNING

Do not install the instrument in facilities that store chemicals that could generate flammable gases or fumes.

## Connecting to the Power Source and Turning On

1. Connect the type of plug 11, 12, 13, 14, or 15 compatible with the local power socket to the AC adapter 10. (Refer to Figure 1 on page 4.)

### WARNING

Only use the AC adapter provided with this product. It may cause fire or electrical shock.

2. Insert the other end of the AC adapter 10 into the connector 6 on the back of the CENTRY 103 Minicentrifuge and connect the plug to the power source.
3. To open the lid, lightly push down on the lid to release the lock.

### CAUTION

If the power switch is turned on while the lid is closed, the rotor will start spinning immediately, which may cause damage to the CENTRY 103 Minicentrifuge.

4. Press the main power switch 5 to its ON position ("I" side) to turn the unit on. The red, power indicator light turns on.

# Installing the Rotor



**NOTE**

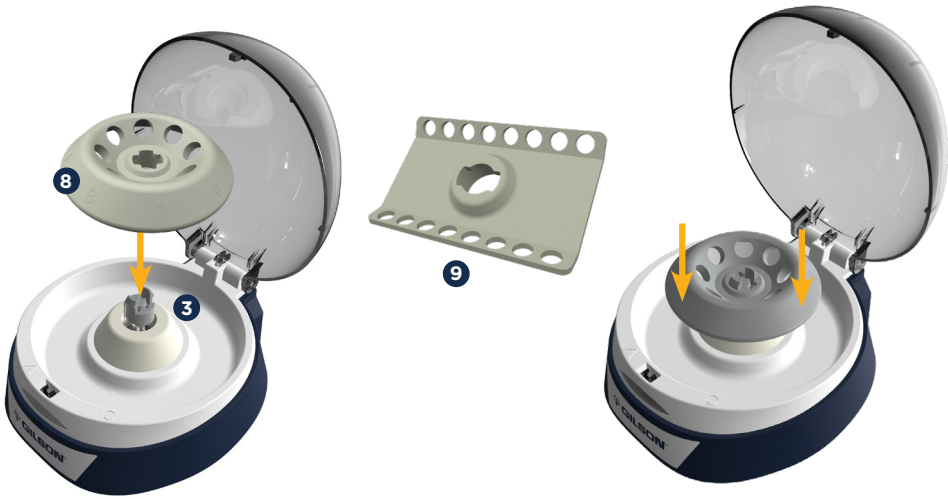
Before the initial use, turn the rotor slowly by hand, five to six revolutions.

1. Install the rotor **8** or **9** onto the motor shaft boss **3**.
2. Push down until it clicks. (Refer to Figure 2.) Make sure that the tabs of the boss are blocked inside the hole of the rotor.

For dismounting the rotor, hold it by both hands and push the tabs inward with two thumbs to disconnect them from the rotor, and then pull the rotor out from the motor shaft boss.

**WARNING**

Do not use any damaged, deformed, or corroded rotors. It may break the rotor while spinning and cause unexpected accidents or injury.



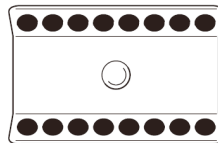
**Figure 2**

Install the rotor onto the motor shaft boss



**Figure 3**

Balanced sample microtubes setting



**Figure 4**

Balanced rotor with 2 tube-strips



## Preparing the Microtubes

- Prepare microtubes that are compatible with the rotor in use.

**⚠ WARNING** Do not use the instrument to centrifuge explosive or flammable samples. It may cause fatal or serious accidents. The instrument does not provide adequate protection against explosion or ignition.

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**⚠ WARNING** Do not use the instrument to centrifuge infectious samples. It may cause a serious hazard to laboratory personnel. The instrument is not a biohazard safety model. If there is the need to handle any potentially infectious or radioactive samples, or other hazardous materials, implement appropriate safety measures.

- Load the microtubes in the rotor symmetrically. Always ensure that the microtubes are appropriately balanced, as described in Figures 3 and 4 on page 7 (black circles indicate different possible tube placement).

**NOTICE** Imbalanced loads will significantly reduce the life of the motor and minicentrifuge.

**⚠ WARNING** In severe cases, imbalances may damage the Minicentrifuge and injure the operator.

**⚠ CAUTION** Do not overfill microtubes. The sample volume should not exceed 70% of the maximum allowable volume of the tube in use. The sample may spill during run and damage the minicentrifuge.

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Always use capped microtubes. The sample may spill during run.

## Starting and Ending Operation

- By closing the lid **1**, the rotor instantly starts spinning. After six minutes of spinning, the rotor will automatically decelerate to a stop.

**⚠ WARNING** Ensure that there is no foreign material in the rotor or in the chamber before operating the instrument. It may break a sample during spinning and the broken pieces may scatter, resulting in a serious accident.

- For ending the operation, lightly press down on the lid **1**. The rotor will decelerate and the lid will lift automatically.
- The operation ends when the rotor is completely stopped, and the sample tubes can be unloaded.

**⚠ WARNING** Never open the lid while the rotor is spinning. Accidental contact with the spinning rotor may cause a serious injury.

## Using Batteries

The instrument can be operated using battery power when there is no power supply available.

- Install four AA alkaline batteries of the same brand in the battery compartment **7**. (Refer to Figure 1 on the first page.)
- The AC adapter is given first priority if connected.

**⚠ WARNING** Do not mix batteries by age or by brand type. The battery may cause heating, leakage, or explosion and could result in damage to the instrument or personal injury. When leaving the instrument out of use for a long period of time, be sure to remove the batteries for safety. The battery may cause leakage and could result in damage to the instrument or personal injury.

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Do not attempt to replace the batteries immediately after use, touching them could result in burns.



# Chapter 4

## MAINTENANCE



### Routine Maintenance

#### NOTICE

Ensure that the instrument or any parts of the instrument have been carefully decontaminated after exposure to infectious, radioactive, or other harmful substances.

#### WARNING

Unplug the instrument before performing maintenance procedures. It may cause a serious electrical shock.

### Cleaning and Disinfecting

For cleaning the CENTRY 103 Minicentrifuge, wipe the unit with a soft cloth moistened with a neutral detergent. The unit can be disinfected with ethanol.

#### CAUTION

Do not sterilize the rotors by autoclave or with UV, it could damage them. The rotors can be disinfected with ethanol.

### Inspecting and Maintaining

- Check the rotor, main body, and lid for damage, deformation, and corrosion.
- Check the lid to make sure it opens and closes smoothly. Press down on the lid to make sure it is locked into place.
- Slowly rotate the rotor by hand to ensure it rotates smoothly and does not contact any other component.
- Operate the minicentrifuge with no microtubes in the rotor and make sure it is running safely without excessive vibration.
- Check the brake for wear. Verify if it takes an abnormally long time for the rotor to come to a complete stop or if it takes longer to stop than it used to.
- Check the AC adapter for damage, cracks, or broken cable.

#### NOTE

Inspection is recommended to be performed on a monthly basis.

# TROUBLESHOOTING

## Troubleshooting Table

The following table may help you to identify and correct the potential problem you might encounter.

SYMPTOM	POSSIBLE CAUSES	ACTION
The rotor does not rotate.	The instrument is not correctly plugged.	Verify and plug in the instrument properly.
	The batteries are close to dying.	Replace the batteries or use the AC adapter.
	Foreign substances are deposited on the axis of the rotor.	Remove the foreign substances.
	Coating on the surface of the motor commutator caused by prolonged storage.	Turn the rotor by hand slowly five or six revolutions.
	Motor's overcurrent is detected, and the overcurrent protection circuit is activated.	Turn off the power switch and wait at least one minute.
The rotor stops while it is spinning.	Motor's overcurrent is detected by unbalanced load, and the overcurrent protection circuit is activated.	Balance the load Turn off the power switch and wait at least one minute.
Excessive vibration and noise occur.	The load is unbalanced.	Balance the load.
	Foreign substances adhere to the rotor or the inside of the chamber.	Remove the foreign substances.

## Return for Repair

If any problem persists, please contact your local Gilson Service Center.

Forced opening of the instrument invalidates any warranty claim. Enclose with the returned instrument a description of the issue that has occurred and specify how the instrument was used (duration, microtubes used, load of the rotor, etc.)



Returned instruments can only be checked and repaired if they have been carefully cleaned and decontaminated by the customer.



## Chapter 5

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# SPARE PARTS



### Accessories

DESCRIPTION	PART NUMBER
CENTRY 103 ROTOR 8 TUBES 1.5-2.0 mL	F1077310
CENTRY 103 ROTOR 2 TUBE-STRIPS 8 X 0.2 mL	F1077311
CENTRY 103 MOTOR SHAFT BOSS	F1077312
CENTRY 103 AC ADAPTER WITH 5 PLUGS	F1077313

# DECLARATION OF CONFORMITY



## Related Standards

The CENTRY 103 Minicentrifuge conforms to the following safety standards:

### EU Directives

- Low voltage equipment: **2014/35/EU**
- Electromagnetic compatibility: **2014/30/EU**
- Restriction of hazardous substances: **2011/65/EU**

### Standards for EU

Safety requirements for electrical equipment for measurement, control, and laboratory use.

- General requirements: **EN61010-1: 2001**
- Particular requirements for laboratory centrifuges: **EN61010-2-020: 2006**
- Electrical equipment for measurement, control, and laboratory use – EMC requirements: **EN61326-1: 2013**

# WARRANTY

Gilson warrants the CENTRY 103 Minicentrifuge against defects in material under normal use and service for 12 months from the date of purchase. This warranty is valid only if the instrument is used in the manner described in this guide and for the purpose for which it is designed. Gilson is not responsible for consequential damages resulting from the misuse or bad cleaning or decontamination of this instrument. Should warranty service be required, repair or replacement will be provided by your local Gilson service center. Freight shipping the unit to Gilson will be the responsibility of the purchaser.





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