

Centrifuge Micro III

OPERATING INSTRUCTIONS



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1. Introduction

1.1 Use

The small centrifuge Micro III is used for the determination of fat in milk and dairy products according to Gerber or Babcock.

1.2 Description

The centrifuge Micro III has high safety standards and reliability and following product features:

- Strong sheet steel housing with an acid-resistant paint work
- Cover lock to prevent opening of the centrifuge during operation
- Motor with elastic bearing for a smooth run
- **NEW:** Increased precision thanks to the controlled speed
- **NEW:** Preheating option
- **NEW:** Unbalance switch-off in case of uneven filling or sudden glass breakage

1.3 Ambient conditions

- Permissible ambient temperature +10 °C to +40 °C
- Max. humidity 80 %
- Lowest storage and transport temperature -20 °C

2. Safety instructions

2.1 Symbols of the operating instructions



Warning symbol: Attention, possible dangerous situation



Warning symbol: Dangerous electrical voltage

2.2 General safety

- Before connecting the device to a fused and properly earthed AC outlet it is necessary to compare the indications on the type plate of the centrifuge or by means of the technical data (item 17) with your mains connection.
- The proper function and operational safety of the device can only be ensured by complying with among the mentioned ambient conditions (item 1.3).
- If the device is transported from a cold to a warm environment some malfunction may occur due to the formation of condensation. In this case, it is necessary to wait until the temperature of the device adapts to the room temperature before recommissioning the device.
- The centrifuge should only be operated by authorized persons. Anyone who is under the influence of health disturbances, medications, drugs, alcohol or over fatigue must not operate the device. Users must be familiar with the contents of the operating instructions.
- Do not use the device with a damaged cable or plug.
- The use of accessories which are not original spare parts from Gerber Instruments results in loss of warranty.
- Switch off / disconnect the device from the mains, if it is not being used, if parts are replaced and if the device is being cleaned.
- If you no longer can work properly with the device, then it needs to be decommissioned and secured against recommissioning by labelling it. Contact the technical service of Gerber Instruments AG (item 11).

2.3 Informal safety instructions

- Read the operating instructions carefully before installation. The non-observance of these instructions may result in malfunctions or damages to the centrifuge or persons. A claim under guarantee cannot be granted.
- The operating instructions are a part of the device. Keep these during the life of the centrifuge.
- Pass the instructions on to any subsequent owner or user of the centrifuge.
- The operating personnel must have read and understand the operating instructions.

2.4 Safety instructions for centrifugation



- Please check that the centrifuge is set up properly (see 4.1)
- Please check before commissioning the centrifuge, rotor and accessories for visible damage (see 4.2)
- The rotor must be loaded symmetrically at equal weights (see 6.1 and 7.).
- Avoid corrosion on centrifuge and accessories by careful maintenance (see 8).
- Open the centrifuge when it is not in use so that moisture can evaporate.
- The centrifuge can be stopped at any time. Press the START/STOP button.

2.5 Safety instructions for cover lock

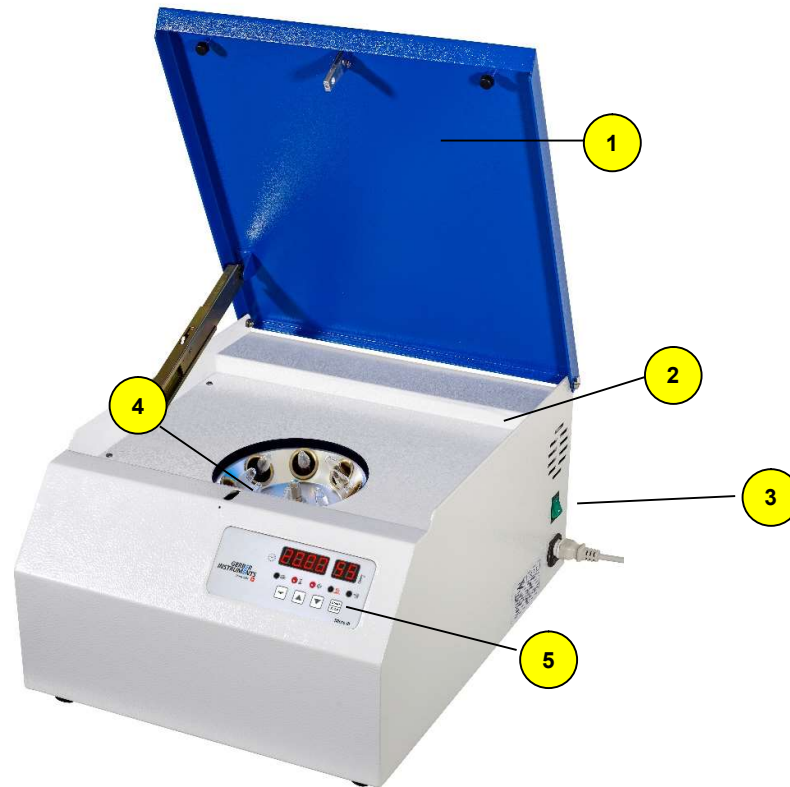
- The centrifuge may only be operated with the cover closed. A cover lock blocks the cover closure during the run and allows you to open only at standstill.
- In case of cut-off of electricity the lid may be opened manually (see 10.2).






2.6 Safety instructions for unbalance switch-off



- The centrifuge stops automatically in case of strong vibrations. The switch-off sensitivity is set at the factory.
- If an unbalance switch-off took place, the centrifuge is stopped immediately and a message appears on the display.
- Open the cover and remove the causes of the unbalance.
- Close the cover and press START/STOP again.

3. Description of centrifuge Micro III



-  1 Cover
-  2 Housing
-  3 Main switch and mains plug connection
-  4 Rotor with inserts
-  5 Operating unit

4. Unpacking/Device control

4.1 Unpacking

- Make sure that the packaging has not been damaged.
- Take the device and the inserts out of the packaging box.
- Remove the remaining packaging material.
- **Remove the foam material in the centrifuge, see 6.1.**
- Place the device on a flat and dry substructure.



4.2 Device control

Control the centrifuge according to the following criteria:

- Transportation damages
- Other irregularities

If one of these criteria applies, immediately inform the forwarding agent or the supplier.

4.3 Control accessories

Check with the delivery note and your order if the scope of delivery is complete:

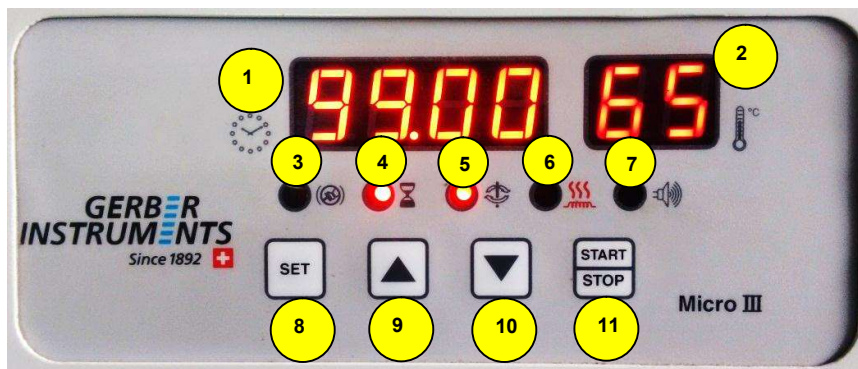
- Type of centrifuge
- Sleeves
- Specific country cable
- Fork key
- Wire for emergency unlocking
- Operating instructions

4.4 Avoiding damages on the device



- Do not drop or disassemble the device.
- The centrifuge must always be placed on a firm and dry substructure.
- During transport from cold to warmer places, condensation water will collect inside the centrifuge. It is important to allow sufficient time for drying before the centrifuge can be used again.

5. Description of operating unit



The control unit consists two segment displays, 5 LED's and 4 buttons.







5.1 Segment display

- 1 Time display**
 - It is a 4-digit display showing the set time in the standby mode and the elapsed time in the operating mode (centrifugation).
 - Factory setting: 5 minutes
- 2 Temperature display**
 - It is a 2-digit display showing the set temperature in the standby mode and the actual temperature in the operating mode (centrifugation).
 - Factory setting: 55 °C, as the reaction milk + sulphuric acid also generates heat.

5.2 LED displays

- 3 LED Brake**
 - This LED is simple and lights up red shortly before the end of the braking process.
- 4 LED Time**
 - This LED is dual. In standby mode it lights up red. In the operating mode (centrifugation) it lights up green and starts flashing.
- 5 LED Rotor**
 - This LED is dual. In standby mode it lights up red. In the operating mode (centrifugation) it lights up green.
- 6 LED Heating**
 - This LED is single and flashes red in operating mode (centrifugation).
- 7 LED Alarm**
 - This LED is single and flashes red when a failure occurs.

5.3 Button functions

-  **Button SET**
➤ Setting temperature and time (Setup mode)
-  **Button **
➤ Increase of temperature and time
-  **Button **
➤ Reduction of temperature and time
-  **Button START/STOP**
 - Start the centrifuge, stops the centrifuge before the set time has elapsed.
 - Pre-heating function

6. Commissioning

6.1 Initial start

- Put the centrifuge on a solid surface. The surface must be vibration-free and be sure that there's a space of 30 cm at the rear of the housing.
- Connect the centrifuge with the mains. Check whether the mains voltage and frequency in your country correspond to the technical specifications of the device.
- When you switch on the device, it automatically detects whether the device is connected to the 230 V AC power supply or the 115 V AC power supply.
- Turn on the green main switch on the right side.
- A short click sounds (the lid is unlocked).
- The LED Time and Rotor light up red.
- The segment displays show the factory set time (5 min) and temperature (55 °C).
- Open the cover. The time segment display shows Lid/OPEn.
- Remove the foam from the rotor
- Now insert the sleeves. Generally **all** the places of the rotor should be filled with sleeves.



6.2 Setting the preheating function

- Close the lid.
- Press the Button START/STOP for 5 seconds.
- The segment displays show Pr.HE and the current temperature.
- The centrifuge starts preheating at reduced speed (approx. 400 rpm) to the factory set temperature (55°C).
- To exit, press the START/STOP button.
- If preheating is required, the function must always be reactivated after termination.



6.3 Setting time and temperature

- By pressing the SET button, the centrifuge switches to setup mode. The time display will start flashing and you can set the desired time with the arrow keys (1-99 minutes).
- Press the SET button again to confirm.
- Now the temperature display flashes and the desired temperature can be set with the arrow keys (0-65 °C).
- Press the SET button again to confirm.
- The centrifuge is now in standby mode again.
- It is not possible to change the two parameters in operating mode (centrifugation).


7. Daily work

- Put your prepared and sealed butyrometers into the sleeves.
- To avoid unbalance, the opposite places in the rotor must **always** be filled. The butyrometers must be nearly identical in terms of weight.
- Close the cover.
- Set the desired temperature and duration.
- Press the button Start/Stop, the safety interlock is activated.
- The LED Rotor lights up green, the LED Heating lights up red. The current temperature is displayed, the rotor accelerates.
- Once the rotor has reached the speed, the LED Time flashes green and a short beep sounds.
- The time display starts and counts down.
- The rotor continues to rotate until the set time has elapsed or the Stop button has been pressed.
- After the set time has elapsed, a short signal tone sounds and the centrifuge brakes.
- The standstill of the rotor is indicated by a 3 fold tone, in the time segment display END appears.
- The centrifuge unlocks with a short "click".
- The LED Time and Rotor light up red.





8. Cleaning and maintenance

8.1 General notes for cleaning and maintenance

- Switch off the device by pressing the main switch and disconnect it from the power supply. 
- If necessary, clean the surface and the inside of the centrifuge with a damp, lint-free cloth.
- Open the centrifuge when not in use so that any moisture can escape.
- Protect the centrifuge and rotor from intense UV radiation.

8.2 Notes for cleaning with glass breakage

- If glass breakage occurs during centrifugation, press the START/STOP button.
- Open the cover.
- Switch off the device at the main switch and disconnect it from the power supply. 
- Let the centrifuge cool down.
- Remove the 4 cross-head screws from the intermediate plate and remove the intermediate plate.
- Carefully remove the butyrometers and sleeves.
- Remove the rotor with the supplied fork key.
- In case of glass breakage, remove all splinters immediately and completely.
- If sulphuric acid has leaked out, clean the interior of the centrifuge and the sleeves immediately in accordance with the guidelines for handling acids. 

9. Checking the unbalance switch-off

The function of the unbalance switch-off should be checked at regular intervals. This work may only be carried out by authorized personal. The centrifuge must be supervised during this check.

- Check that all sleeves are clean and free of foreign objects.
- Place a 15 g weight in one of the centrifuge sleeve.
- Close the cover and press the START/STOP button.
- The rotor accelerates and after a few seconds the centrifuge has to switch off. The error message lbal inbalanced appears on the display and a beep sounds. Pressing the START/STOP button or opening the lid will silence the beep.
- If the centrifuge does not switch off, press the START/STOP button immediately. In this case, the centrifuge may no longer be used. If you are unable to determine and remedy the causes of the shutdown yourself, contact Gerber Instruments AG Technical Service (see point 13).
- If the centrifuge with this weight switches off, remove the weight out of the sleeve. The centrifuge is still ready for operation.

10. Disturbances

10.1 Error table

| Disturbance/ Error indication | Possible causes | Measures |
|---|--|---|
| The lamp on the main switch no longer lights up. | Main fuse defect Lamp from the main switch defect | Replace the main fuse (at the back of the main socket). Replace lamp from the main switch. |
| No indication on the display despite voltage present. | Electronic defect | Contact the service of Gerber Instruments AG. |
| Cover can no longer be opened. | Power interruption | See 2.5 Safety instructions for cover locking. |
| Centrifuge starts, but stops immediately again. | Electronic defect | Contact the service of Gerber Instruments AG. |
| lbal | Unbalance in the centrifuge | Press the stop button, open the cover and remove the causes of the unbalance. |
| Acoustic alarm sounds and other failure indications. | | Make a note of the error message, make a note of the S/N. Contact the service of Gerber Instruments AG. |

10.2 Emergency release of the lid on power interruption

- Disconnect the centrifuge from the mains (main switch out, mains cable from mains socket).
- Insert the supplied wire into the small hole and move it to the left. As soon as resistance is felt, the lid can be opened.
- Engage the lid upwards, connect the centrifuge to the power supply and turn on the main switch.



11. Packaging

The device will be delivered in a special packaging. Please keep the original packaging for any return shipping.

12. Disposal

At the end of its life time, the instrument must be disposed or collected in the appropriate ways, according to the regulations in force in the country of use.

For further information please contact our sales office:

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Phone: +41 (0)52 343 37 37
Fax: +41 (0)52 343 30 70

13. Technical service

Address:
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Im Langhag 12
CH-8307 Effretikon

Phone: +41 52 343 37 37
Fax: +41 52 343 30 70
Email: info@gerber-instruments.ch

14. Warranty

We refer to our terms and conditions.

Gerber Instruments AG guarantees that this product is free from defects regarding material and functionality during the term of 2 years. Precondition for this is the use as intended and the observance of the instructions included in these operating instructions. If nonetheless a defect occurs during this term Gerber Instruments AG will arrange the replacement free of charge. The device has to be returned during the period of guarantee. The product needs to be returned by the customer to the company Gerber Instruments AG carriage forward.

Guarantees do neither effect a prolongation of the period of guarantee nor a claim on a new guarantee.

Any repairs due to usual wear will not be performed free of charge. The customer pays the freight cost for replacement parts.

Gerber Instruments AG is not liable for any damages:

- which are caused by lack of maintenance (corrosion)
- which are caused by unauthorized repair or reconstruction works
- which are caused by wrong operation or wrong use
- which are caused by using under incorrect environment conditions
- which result from the use of non-original Gerber spare parts

15. Order numbers centrifuges Micro III

| Order No. | Description |
|-----------|--|
| 03.2255 | Centrifuge Micro III with Gerber-Rotor and 8 Butyrometer sleeves, 115/230 VAC, 50/60 Hz |
| 03.2265 | Centrifuge Micro III with Gerber-Rotor and 12 Butyrometer sleeves, 115/230 VAC, 50/60 Hz |
| 03.2275 | Centrifuge Micro III with Universal-Rotor and 8 Babcock sleeves, 115/230 VAC, 50/60 Hz |

16. Order numbers accessories Micro III

| Order No. | Description |
|-------------|------------------------------------|
| 03.17000 | Operating and control unit |
| 03.17001 | Frequency converters |
| 03.17002 | Unbalance sensor |
| 03.17003 | Heating |
| 03.17004 | Main switch |
| 03.17005 | Temperature sensor |
| 03.17006 | Motor |
| 03.17007 | Relay for heating |
| 03.17008 | Power supply |
| 03.17009 | Cover locking |
| 03.17010 | Sensor cover locking |
| 03.16216 | Gerber-rotor for 8 samples |
| 03.16217 | Gerber-rotor for 12 samples |
| 03.16219 | Wire for emergency unlocking |
| 03.16269-8 | Butyrometer sleeves qty.=8 pieces |
| 03.16269-12 | Butyrometer sleeves qty.=12 pieces |
| 03.41001 | Universal-rotor for Babcock |
| 03.17278 | Babcock sleeves qty=1 piece. |

17. Technical data Micro III

| | |
|--------------------|--|
| Control | Microprocessor control |
| Timer | 1 - 99 minutes |
| Power | 115 or 230 VAC |
| Frequency | 60 or 50 Hz |
| Power heating | 900 W |
| Speed | 1280 rpm \pm 50 rpm fixed program |
| Centrifugal power | 350 x g permanent adjusted |
| Temperature | Thermostatically controlled 5 °C above ambient to 65 °C, factory set at 55 °C |
| Dimensions (WxDxH) | 430x530 x 288 mm |
| Weight netto | 23.5 kg without sleeves |
| Weight total | up to 28.5 kg incl. accessories and packaging |
| Warranty | 2 years |
| Test certificate | CE |