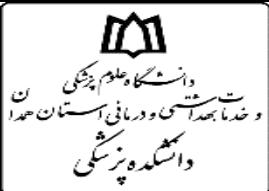


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1. Purpose

To describe the operation of the four-bucket centrifuge manufactured by Oroum Tajhiz, Iran.

2. Scope of Operation

Centrifugation of tube contents at speeds ranging from **600 to 4000 RPM**.

3. Responsibility

The implementation of this procedure is the responsibility of the relevant laboratory experts.

4. Operating Procedure

A. Device Setup

1. Place the device on a flat, vibration-free surface.
2. Connect the power cord to a grounded electrical outlet and turn on the **POWER** switch.
3. The display will show “**PRESS MENU TO**” for three seconds, followed by “**OPEN CASE.**”
4. Press the **MENU** button. If the lid is closed, it will open; if it is already open, only a beep sound will be heard. The screen will then display the speed and time with previous values or zero, indicating that the device is ready for loading the tubes.
5. After arranging the tubes, close and lock the lid with slight pressure.

B. Settings

Speed Selection (SPEED)

- The minimum speed defined for the device is **600 RPM**.
- Press the **MENU** button to enter the speed selection screen.
- Use the **UP** button to increase the speed.
- Use the **DOWN** button to decrease the speed if required.

Time Selection (TIME)

- After selecting the speed, press **MENU** to open the time selection screen.
- Time selection is performed in the same way as speed selection.
- After setting the desired time, press **MENU** again.
- If the selected time is set to zero, the device will display “**END OF PROSES**” after starting, indicating that no time has been selected.
- After the device starts, the countdown begins once the selected speed has been reached.

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Brake Selection (BREAK)

- After selecting the time, press **MENU** to open the brake selection screen.
- If the user wishes to use the braking system, press **UP**.
- If not, press **DOWN**.

Elapsed Time Menu

- After selecting **BREAK**, press **MENU** to display **Elapsed Time**, which indicates the operating time of the device in hours.
- Pressing **MENU** will save all entered settings into the device memory. This button is also used to start the device.
- By pressing it, the device will begin operation according to the entered settings.

Notes

Note 1: The last entered settings remain stored in the device memory and are not erased even when the device is turned off; therefore, reconfiguration is not necessary.

Note 2: If the lid is not closed, the red indicator light related to the lid will start flashing on the control panel, indicating that the lid is open. In this condition, if you attempt to start the device, it will immediately stop.

The message “**DOOR IS OPEN CLOSE THE DOOR**” will appear on the display. To restart the device, close the lid and press the **START** button so that the centrifuge begins operation.

Note

After centrifugation, the last entered time and speed settings remain stored in the device memory. If you wish to start the device again with the same speed and time, it is sufficient to load the tubes, close the lid, and press **START**; the device will begin operation with the previously saved settings.

5. Safety Instructions for Using the Device

Pre-Operation Checks

- Ensure that the tubes and centrifuge containers are intact, free of cracks, and properly placed in position.
- The weight of the samples in the tubes must be balanced and equal to prevent vibration and imbalance of the device.
- Make sure that the tubes and containers are dry before placing them in the centrifuge.
- Ensure that the centrifuge lid and tube caps are securely closed.

During Operation

- Do not open the centrifuge lid while the device is running.
- Use the appropriate centrifugation speed and do not exceed the maximum permitted speed of the device.

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- If any abnormal vibration or unusual noise is observed, stop the device and investigate the cause.

Personal Safety

- Always wear safety goggles, gloves, and appropriate laboratory clothing when working with the centrifuge.
- When working with hazardous materials, use a respirator mask and other personal protective equipment as required.

Additional Notes

- In case of leakage, immediately turn off the device and clean the spilled material according to safety procedures.
- Use mild detergents to clean the centrifuge.
- Do not place hazardous materials in the centrifuge without observing safety precautions.
- Prevent unrelated personnel from gathering around the centrifuge during operation.

6. Maintenance

Cleaning

- Clean the centrifuge regularly, especially after each use.
- Use a soft, damp cloth to wipe the internal and external surfaces of the device.
- Do not use strong or acidic detergents to clean the centrifuge.

Lubrication

- According to the manufacturer's instructions, lubricate the moving parts of the centrifuge regularly.

Periodic Inspection

- Periodically inspect the rotor, containers, and other centrifuge components, and replace any damaged parts if necessary.
- Ensure that all screws and connections are tight and secure.
- Have the centrifuge serviced regularly by maintenance specialists.
- Avoid placing the centrifuge in humid environments or areas with high temperatures.
- Prevent water and cleaning agents from entering the device.
- In case of any problem, inform the laboratory experts immediately.

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