

Revision : ----	Document Code: WI- ML- 2766	Document Title: Standard Operating Procedure (SOP) for Sigma Refrigerated Centrifuge	 دانشگاه گجرات و خدایا بختی و درانی آستان خدا والسلام و برکات
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Standard Operating Procedure: Refrigerated Microcentrifuge

Device Model: Sigma 1-15 PK

Manufacturer: Sigma (Germany)

1. Purpose

To provide detailed instructions for the safe operation, parameter setting, and maintenance of the **Sigma 1-15 PK Refrigerated Microcentrifuge**, ensuring efficient sample separation while preserving sample temperature and integrity.

2. Scope of Operation

This procedure is applicable for the centrifugation of microcentrifuge tubes and vials with a maximum volume of **2 mL**.

3. Responsibility

Compliance with this protocol is the responsibility of the trained laboratory personnel and experts.

4. Operating Procedure

A. Startup and Loading

- Power On:** Connect the device to the power supply and turn it on using the main power switch located on the side of the unit.
- Lid Opening:** Press the **Blue Release Button** (located on the right side of the device) to unlock and open the centrifuge lid.
- Rotor Selection & Loading:**
 - Select and install the appropriate rotor corresponding to the tube/vial size (e.g., Falcon tubes).
 - Symmetrical Loading (Critical):** Load samples in an **opposing/symmetrical pattern** to ensure the rotor is perfectly balanced. **Failure to balance the load can lead to severe vibration or mechanical failure.**
- Closing:** Close the lid manually by pressing it down firmly until it is securely locked.

B. Parameter Setting (Time, Speed, and Temperature)

The device uses a manual dial mechanism for setting parameters. Follow these steps precisely:

- Parameter Selection:** Use the **Left Blue Dial** to navigate through the different settings (e.g., Time, Speed, or Temperature).
- Adjustment:** Once the desired parameter is highlighted, press the **Right Blue Dial** to “unlock” or activate the adjustment mode.

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3. **Value Setting:** Use the **Left Blue Dial** to turn the value up or down to the required setting.
4. **Confirmation:** Press the **Right Blue Dial** again to “lock” or save the adjusted value.

C. Running and Shutdown

1. **Start:** Press the **Green Start Button** (located on the left side of the device) to initiate the centrifugation cycle.
2. **Termination:** Once the cycle is complete and the rotor has come to a complete standstill, turn off the device.

5. Safety Precautions

1. **Emergency Stop:** If any **unusual vibration, abnormal noise, or rattling** is detected during operation, press the **STOP** button immediately and do not attempt to open the lid.
2. **Balancing Verification:** Always double-check that the tubes are balanced by weight and position before starting the cycle.
3. **Lid Safety: NEVER** attempt to force the lid open while the rotor is still in motion. Wait for the device to signal that the cycle is fully complete.

6. Maintenance and Care

1. **Lid Management:** Ensure the lid remains closed when the device is not in active use to maintain internal temperature stability and hygiene.
2. **Routine Cleaning:** Regularly clean the interior chamber and the rotor to prevent the accumulation of dust, spills, or chemical residues.
3. **Protective Covering:** After the work session is completed and the device has cooled down, place the **protective dust cover** over the centrifuge to prevent contamination.

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