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# INSTRUMENT STANDARD OPERATING PROCEDURE MANUAL

## College of Medicine



SAFETY AND LABORATORY COOMMITTEE, C.O.M, K.F.U.

**Prepared by**

| Document Number | Name | Signature | Date |
|---|---|---|---|
| **CM 001**<br>**CM/BCH-003** | **High speed Refrigerated centrifuge** | | |
| **Revision Number** | **Approved by** | | |
| **R0**<br>**Write the revision number** | **Dean:**<br>**Department:** | | |



**Document History**

| Document Section | Details of Amendments | Date | Modified by (Initials) |
|---|---|---|---|
| SOP | First Draft on SOP for the operation of (**High speed Refrigerated centrifuge**) | | |
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1. **OBJECTIVE**

- ☐ The document describes the operation of (**High speed Refrigerated centrifuge**)

## 2. SCOPE

- ☐ A centrifuge that separates mixed components at high speeds and specific temperatures for the purpose of scientific research.

## 3. RESPONSIBILITIES

- ☐ It is the responsibility of designated personnel in the lab to train staff and students on this procedure and to ensure adherence to this procedure under supervision.
- ☐ It is the responsibility of designated personnel (staff or Student) to follow the instructions of this procedure under supervision.

## 4. REFERENCES

- ☐ There is no operating manual from the company.

## 5. DEFINITIONS

The centrifuges have low vibration solid polymer bottom plates. The housing is built of sheet steel. The front panel is made of plastic. Housing and front panel are fixed tightly to the bottom plate.

The rotors are started directly with a frequency controlled induction drive (brushless) with high acceleration power. This drive ensures quiet, low vibration running at high speed with high reliability. The drive is mounted with shock absorbers to the bottom plate and sealed with a rubber flange to the rotor chamber. The main microprocessor controls the functions for speed measuring and regulation, the temperature measuring and regulation (MEGAFUGE 1.0R/2.0R/3.0R) program storage, safety control and error coding. An additional microprocessor is responsible for the key and display functions. The centrifuge is controlled by the "Megacontrol" system (see section 7.)

## 6. SAFETY PRECAUTIONS

- ☐ The centrifuge must not to be operated by unqualified personnel! Avoid causing damage to the unit or its accessories through incorrect operation.
- ☐ Never open the lid manually while the rotor is spinning!
- ☐ Don't operate the centrifuge with any parts or covers removed.
- ☐ Never run the centrifuge when the electrical or mechanical equipment have been tampered with by un authorized or unskilled personnel.
- ☐ Don't operate the centrifuge with incorrectly installed buckets.

- ☐ The maximum rotor load and speed must be observed.
- ☐ Don't spin corrosive sample which may impair the materialstrength of the rotors and buckets without taking all necessary precautions.

## 7. PROCEDURE FOR OPERATING (High speed Refrigerated centrifuge)

### 7.1. Turning on the instrument:

- ☐ Xx
- ☐ Xx

### 7.2. Software Operation.

### 7.3. Steps of the Procedure

- ☐ Xx
- ☐ Xx
- ☐

### 7.4. Turning off the Instrument

- ☐ Xx
- ☐ Xx
- ☐

**7.5.** Warning

**Write any the warning in BOLD and RED FONT.**

## 7. "MEGACONTROL" PROGRAMMING INSTRUCTIONS

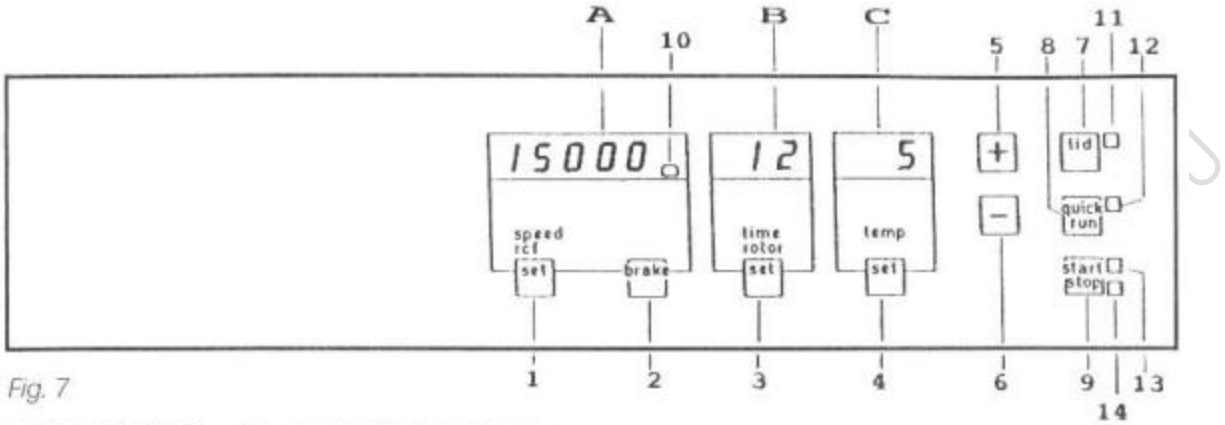


*Fig. 7*

*MEGACONTROL – Key and Indication Board*
*Temperature display is only existant on MEGAFUGE 1.0R/2.0R/3.0R*

| | | |
|---|---|---|
| A | Display | for speed, RCF value, rotor type, brake cut-off point and special indications |
| B | Display | for running time, "hd" (continuous operation), "ro" (rotor type), "rc" (RCF) |
| C | Display | for temperature **(MEGAFUGE 1.0R/2.0R/3.0R)** |
| 1 | "set" – key | for speed- or RCF selection |
| 2 | "brake" – key | a) to set brake cut-off point,<br>b) to switch between normal and slow acceleration<br>c) to switch brake on/off |
| 3 | "set" – key | for running time- and rotor selection |
| 4 | "set" – key | for temperature selection **(MEGAFUGE 1.0R/2.0R/3.0R)** |
| 5 | "+" – key | to increase the selected value (auto-repeat) |
| 6 | "–" – key | to decrease the selected value (auto-repeat) |
| 7 | "lid" – key | to open the lid |
| 8 | "quick run" | press-and-hold key for short cycles, upon release, maximum braking occurs |
| 9 | "start stop" | dual function key for start and stop |
| 10 | red LED | a) on indicates normal acceleration<br>b) on indicates brake activated |
| 11 | yellow LED | on indicates lid may be opened |
| 12 | green LED | on indicates "quick run" may be used |
| 13 | green LED | on indicates run may be started (or restarted) |
| 14 | red LED | on indicates run may be terminated manually |