## Display & Control Panel

**At Set Speed**
On : Counts the time at set speed / Off : Counts the time from starting
Touch more than 2 sec. : Repeat time of end alarm (time : 0 ~ 99, 0 : silent)

**Key Lock / UnLock**

**Display**
Status of RPM, RCF, Time, Temperature, ACC, DEC, Running, Lid open/close

h:m ℃

RPM `10000` `09:59` TEMP `4`

1 2 3    KEY LOCK ○    ▶/■ **Start / Stop**

4 5 6    AT SET SPEED ○    ▲ **Lid Open**

7 8 9    PULSE

← 0 ±  ↵    ◀)) **End Alarm** Sound volume (level : 0 ~ 10, 0 : silent)

**Setting Speed**
Touch once : RPM
Touch twice : RCF

RPM RCF    TIME    TEMP ☼    ACC DEC    PROG

**Setting Time**    **Setting ACC / DEC**    **Pulse**

☼ **Temp / Fast Cool**
Touch for more than 2 seconds to reach rapid refrigeration up to setting temp.

**Program SAVE / CALL**
Touch once : CALL / Touch twice : SAVE (up to 100)

## Operation

RPM RCF **or** TIME **or** TEMP ☼ **or** ACC DEC    PROG    7 ←

[RPM / RCF / Time / Temp. / ACC / DEC / Program save, call]
- Touch a parameter to be changed.
- Set the desired values by touching the numeric keys. - Press the Enter.

**Setting Run Parameters**

h:m / m:s ℃    `09:59` `4`    1 2 3    KEY LOCK ○    ▶/■

4 5 6    AT SET SPEED ○

TEMP ☼    ACC DEC    PROG

Set the desired run speed.
- Touch the Start/Stop key more than 3 sec.
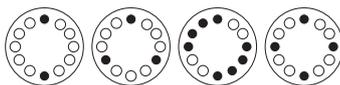
**Pulse**

## Precautions for Use

**1. Level the device**

Check the instrument level by using the bubble leveler.

**2. Arrange the rotor weight balance**   Load tubes symmetrically with identical weight.
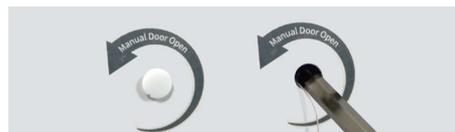
Correct arrangement for Angle rotor

Correct arrangement for Swing-out rotor

**3. Tighten the lid with the rotor**

Fixed angle rotors must always be centrifuged with the rotor lid.

**4. Emergency lid open**

Wait for the rotor to stop before activating emergengy. Remove the Emergency cap on the right side of the device. Insert the wrench into the hole and turn it counter clockwise.

**5. Lubrication**

Grease (Lubricant)

Whenever there is stiff sensation, use the provided lubricant to lubricate the bucket grooves, swing-bucket rotor pivots and the angle rotor thread

**6. Keep the chamber dry**

Clean the centrifuge chamber and rotor with a cloth dampened in mild detergent then dry completely. Keep the chamber dry and the lid open when not in use.

**7. Empty the condensate**

Empty the condensate regularly by removing the drain cap on the left side of the device.

## Common Error Codes

If you continue to get below error messages, contact technical support team. For other error codes, refer to the operating manual supplied with the device.

| Error code | Possible Causes | Actions |
|---|---|---|
| Error8 | Imbalance error | Check weight-balances of samples. |
| Error9 | Rotor ID or RPM sensor error | Check the rotor is firmly tightened. |
| Error12 | Temperature sensor error | Wipe the temperature sensor with a soft cloth. (Temperature sensor is on the bottom of the chamber.) |
| Error16 | Compressor temperature sensor error | Leave a safety clearance of 30 cm around the device during operation and check compressor fan is working properly. |