

**ARA M6**



**ARA**

# ARA

## ARA M6

### RESEARCH USE ONLY

### PRODUCT INFORMATION

Model : ARA M6

Manufacturer : Hanil Scientific Inc.

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To improve performance, the product specifications and instructions can be changed without pre-notice.

## 1. Safety Precautions



This manual contains information for proper use and maintenance of M6 table-top centrifuge.  
Thus, Please read the manual before using it.

### 1-1. Precautions for Installation

1. Avoid hot, humid places and install in well-ventilated areas.
2. Keep a distance of 30 cm from the wall and install it horizontally on a vibration free, rigid table.
3. For safety reasons, avoid flammable materials and places that may cause explosive risks.
4. Be sure to check the rated voltage and connect it to the correct power supply.
5. Do not use it at the areas with high voltage fluctuation.  
(Allowable voltage variation +/- 10%)

## 1-2. Precautions for Use



### WARNING

- Do not close the lid unless the rotor is properly balanced with identical tubes.
- Do not touch the rotor or tubes unless it makes a complete stop.

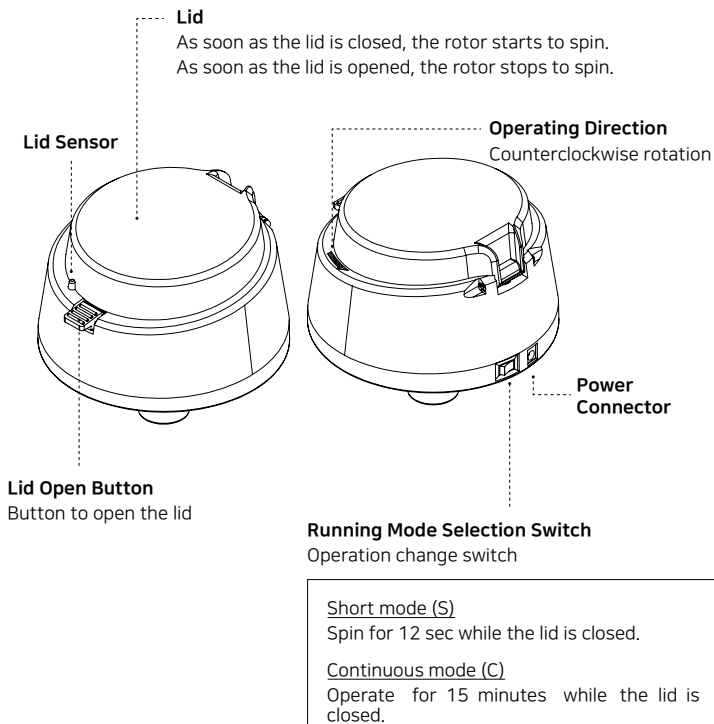
1. Place the body on a flat, rigid surface.
2. Keep the body dry and clean.
3. When adding samples to the rotor, adjust the weight of the samples and place them symmetrically.
4. Do not move the equipment while it is spinning.
5. Do not arbitrarily decelerate or stop the rotating rotor.
6. Do not spill liquid or put foreign substances into the body or power adaptor.  
If liquid is spilt inside the equipment or around the power connection, disconnect the power adaptor and clean and dry all parts completely. If it is not working even with full cleaning, contact A/S center.
7. Stop running if the equipment makes big noise or trembling. Check the rotor coupling and sample balance. If the problem is not eliminated, contact A/S center.
8. Do not apply a strong impact or move the equipment while it is spinning.
9. Precautions for handling power adaptors
  - Do not pull or bend the power adaptor hard.
  - Do not heat the cord or use it in humid places.
  - Do not keep the power adaptor with power supplying status if it is not in use.

## 2. Product Description

The M6 table-top centrifuge runs up to 6,500 rpm with fast acceleration and deceleration, 4 seconds and 2 seconds respectively. It starts to spin when the lid is closed and stops when the lid is open. Simple action of "Lid Open Button" make its operation much easier.

The magnet sensor between the lid and the body recognizes the status of lid and keeps its safe operation.

### 3. Configuration



\* Components



Main Body



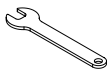
Angle Rotor  
(1.5/2.0 mL x 6-hole)



Rotor  
(2-PCR Strips)



Rotor Fixing Nut



A Spanner for Rotor  
Decoupling & Coupling



0.2/0.5 mL Adaptor  
(Optional)



Power Cable



User Manual

**4. Product Specifications**

Max. RPM	6,500 RPM
Max. RCF	Angle Rotor (1.5/2.0 mL x 6-hole) : 2,234 xg 2-PCR Strips Rotor : 1,412 xg
Radius	Angle Rotor (1.5/2.0 mL x 6-hole) : 47.3 mm 2-PCR Strips Rotor : 29.9 mm
Tube capacity	6 x 1.5/2.0 mL, 2 x 8-tube PCR Strips
Time	Selectable, Short (12 sec) or Continuous (15 min)
Accel/Decel	4 sec/2 sec
Weight	0.65 kg
Power supply	DC 12V 2A , AC100~240V, 50/60Hz
Power consumption	7 Watts
Dimension	150W x 150D x 103H, mm
Cat. No.	AC-M6

## 5. Installation and Operation



- Unpack the box, and check for the included components:  
A main body with an angle rotor coupled, a spanner, power cable, and user manual.
- Do not bend or pull the power adaptor too hard.
- For the first time the power is connected, the lid closure will not initiate spinning even if the lid is completely closed. It is for user's safety. It will be properly functioned when the lid is simply open and closed.

### 5-1. Power Connection

1. Check if the rotor and the lock nut are on place and tightly fixed to the motor shaft.
2. Connect the DC adaptor to the connector on the back of the main body.
3. Plug in the power code into proper wall outlet.
4. Small buzzing sound will be heard when the power is correctly connected.



#### WARNING

Do not close the lid unless the rotor is property balanced with identical tubes.  
Do not touch the rotor or tubes unless it makes a complete stop.



Do not use any other than the power adapter provided by HANIL.  
(Adaptor INPUT : AC 100~240V, OUTPUT : DC12V)



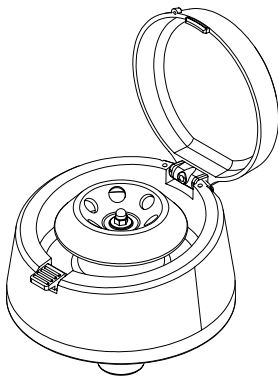
**5-2. Operation**

**1. Rotor coupling and decoupling**

This model is supplied with a coupled rotor. In case of any needs of decoupling, use the supplied spanner. Counterclockwise turns make decoupling and clockwise for coupling the rotor.

**2. Operation**

This model is release with the "C mode" selected. Therefore, it runs for 15 minutes at 6,500 rpm unless the lid is opened. For shorter spinning, it can be stopped any time when the lid is open. Another safer way of short spin is to select "S" mode for 12 sec spinning.



**3. Lid open**

Whenever the termination of spinning is required, the simple action of pressing-down "Lid Open Button" drives deceleration. The lid will be open slightly and should make full opening by hands when complete stop is recognized.

**2. Product operation and stop**



Short mode (S)

- Closing the lid after mode selection starts operation.



Continuous mode (C)

- After mode is selected, it is operated for 15 minutes before it is stopped.

**3. Lid open**

Open the cover by pressing the open button.



As soon as the Lid Open Button is pressed, the deceleration begins with slight opening of the lid. Until the rotor is completely stops, the lid can be open further. Please do not open the lid while spinning for user's safety.

## 6. Trouble Shootings





### If the equipment does not operate,

1. Incorrect connection between power adaptor and equipment.  
→ Please check if the main body and the power adaptor are plugged in properly.
2. When the initial buzzing sound is not followed by power connection, there is high chance of faulty board problem. Then contact service center.
3. When power connection and main board are no problem, there might be a lid sensing failure. Then contact service center.

Hanil Scientific Inc. Service Center

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### Adaptors for 0.2/0.5 mL Tubes

Adaptor (Cat. No.)	 GAS-m0.2(2)	 GAS-m0.5(2)
Tube Capacity	 0.2 mL	 0.5 mL
Adaptor bore (Φ x L, mm)	6.5 x 23	8 x 31
Radius (mm)	29.2	36.2
Max. RPM / RCF	6,500 rpm / 1,379 xg	6,500 rpm / 1,710 xg



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