
User Manual

Cellspin II

Clinical Centrifuge

Date of Purchase	
Serial No.	
Place of purchase	

Clinical Centrifuge

Cellspin II

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Contact Us

If you have any questions, contact Hanil Scientific Inc. or place of purchase.

+82-2-3452-8966

Order, Inquiry: sales@ihanyl.com

Tech. support: techsupport@ihanyl.com

The contents in this operating manual are subject to change for device improvement.

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1. General Considerations

1.1 Safety

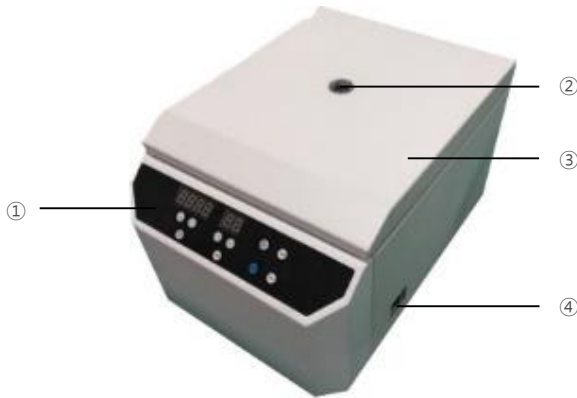
Safety precautions are to prevent personal injury, product damage, and breakdown from possible dangers during use.

Please observe all safety measures described in this manual.

1. The centrifuge should be installed on flat surface to maintain level.
2. Check the voltage to be used, before connecting the centrifuge to the power source.
3. Only use rotors, parts, and accessories provided by Hanil Scientific Inc.
Hanil Scientific Inc. is not responsible for damages of the device and accidents caused by using parts and accessories not recommended.
4. Do not exceed the maximum rated speed of the rotor or buckets in use.
5. Make sure to prepare necessary safety measures before using samples that are toxic or radioactive samples or pathogenic or samples or infectious blood.
6. Substances that may generate volatile or explosive vapor can not be centrifuged.
7. If the centrifuge is contaminated by toxic or radioactive samples or infectious blood samples, remove contaminants completely and take needful actions such as ventilation or isolation of centrifuge.
8. The balancing work of samples should done in advance before operation.
9. Before operation, rotor and chamber should be dry.
10. Do not attempt to slow or stop the spinning rotor by hand.
11. Only centrifuge with rotor and rotor lid firmly locked.
12. Do not block vents.
13. When serving the centrifuge, be sure to remove contaminants in advance.
14. Please contact the place of purchase or Hanil Scientific Inc. for product repairs.
15. When operating according to the IEC61010-2-020 standard, the safety distance (30 cm) around the centrifuge must be observed to preserve ventilation for smooth instrument operation and the safety of users and the surrounding environment.
16. Turn the power switch off after using the device.
17. Disconnect the power plug before cleaning or left unused for a long period of time.

2. Product description

2.1 Appearance



- ① Control panel
- ② Lid window
- ③ Centrifuge Lid
- ④ Power switch

2.2 Components

- ① Cellspin II
- ② Rotor: A-cyto-12
- ③ User manual
- ④ Emergency Door Tool

2. Product description

2.3 Technical Specifications

Max. RPM	3,000 rpm
Max. RCF	1,175 xg
Max. Capacity	12 slides x 0.5~0.6 mL
Time control	< 100 min or continuous
Program memory	10
Dimension (W x D x H, mm)	318 x 436 x 260
Weight without rotor	23kg
Power requirement (VA)	556 VA
Power input (V, Hz)	220V, 50/60Hz
Cat. No.	CE-II

3. Installation

3.1 Packing Inspection



- Check packing conditions carefully, before unpacking.
- Contact Hanil Scientific Inc. immediately if damages found.
- Check the delivery for completeness.

- You can get contact details on packing boxes and the back of the manual.

3.2 Installation

3.2.1 Selecting the location

Installation on hard and flat ground.

- Centrifuge should be installed on hard and flat place.
- If the centrifuge is installed in an inclined place, the shaft may be bent due to the weight of the rotor.

Goodventilation.

- For air circulation and safety, maintain a 30cm “clearance envelope” around the centrifuge while the rotor is spinning.

Constant temperature/humidity

- Centrifuge equipped with the sensitive electronic software which is fragile with humidity and temperature.
- Must avoid direct ray or heater and be put in the ambience of controlled temp. and air.

Avoid the corrosive gas

- Install the centrifuge in a place where corrosive gas is not generated.
- Sulfur dioxide gas and chlorine gas may cause corrosion.

Leveling

- The shaft should be put exactly vertical on the horizontally flat ground by the leveling tool

3. Installation

3.1 Packing Inspection

3.2.2 Power Connection

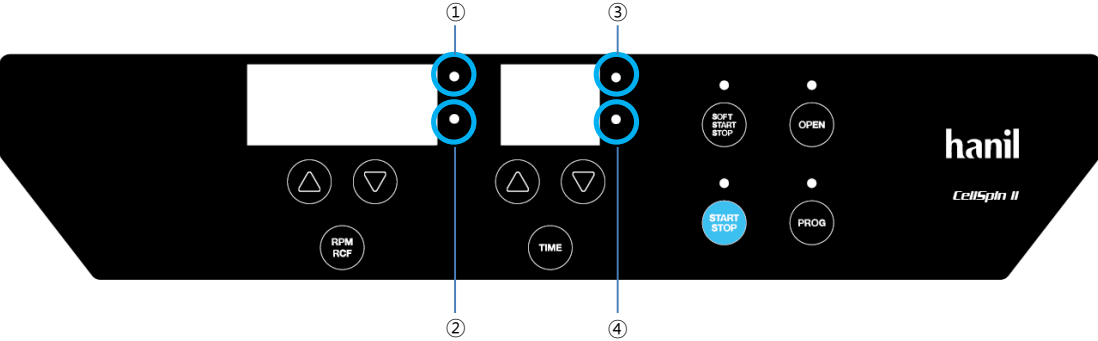


- Connect the device to voltage sources which correspond to the electrical requirements on the label attached to the device.
- Use sockets with a protective earth conductor and provided powercord.

1. Plug the cord into the outlet.
2. Switch the centrifuge on using the power switch.

4. Operation

4.1 Control Panel



Button	Function
RPM RCF	To set the speed and for automatic conversion between RPM and RCF
Time	To set time up to 99 min 59sec (0:00:00: continuous)
Soft Start Stop	To operate with slower and smoother acceleration / deceleration
Open	To open the instrument lid
Start Stop	To start or stop operation
Prog	To save the set values and recall the saved programs

Lamp	Function
① / ②	① 'RPM' lamp: The light indicates that you can set the rpm. ② 'RCF' lamp: The light indicates that you can set the rcf.
③ / ④	③ 'Minute' lamp: The light indicates that you can set the run time in minutes. ④ 'Second' lamp: The light indicates that you can set the run time in seconds.

4. Operation

4.2 Opening the lid



- The lid can only be opened when the centrifuge is switched on.
- Do not reach with your fingers between the housing and lid.
- Close the lid completely before operation.

1. To open the door, press the [Open] button.

The door is automatically opened with end alarm upon completion of the rotation.

Close the door until you hear the door clank.

When the door is opened, the door LED turns on

4.3 Loading and removal of the rotor



- Only use rotors, parts, and accessories provided by Hanil Scientific Inc.
- Do not use scratched or cracked rotor in use.

Loading

- ① Clean the motor shaft and the chamber.
- ② Load the rotor vertically onto the motor shaft.

Unloading

- ① Hold the blue handle at the center of the rotor and lift it up.

4. Operation

4.4 Loading Cytocell accessories



- Only use tubes and accessories provided or approved by Hanil Scientific Inc.
- Always use the same type of tube.
- Tubes should be loaded symmetrically.
- Do not exceed the maximum rated speed of the tube.
- Same volume of sample should be put on tubes.
- Check symmetric loading by balancing tubes with scales.

-Cytocell accessories assembly-

- ① Place the rubber plate and filter on the sus holder in this order.



-Loading cytocell accessories-

- ① Check the maximum load for each tube.
- ② Put cytocell accessories into rotor holes vertically.



- ③ Cytocell accessories located opposite each other must be the same type and contain the same quantity.

4. Operation

4.5 Setting RPM/RCF

[Setting RPM]

1. Press a [RPM/RCF] button once.
RPM MODE is on by pressing the [RPM/RCF] button once.
2. Press the [▲▼] buttons to change the set value.
Speed setting unit: 10 rpm
3. Press the [RPM/RCF] button again to set the value.

[Setting RCF]

1. Press a [RPM/RCF] button twice.
RCF MODE is on by pressing the [RPM/RCF] button twice.
2. Press the [▲▼] buttons to change input value
3. Press the [RPM/RCF] button again for saving.

4.6 Setting run time

[Setting the MIN Value]

1. Press the [TIME] button once.
The MIN mode is on by pressing the [TIME] button once.
2. Press the [▲▼] buttons to change the set value.
3. Press the [TIME] button again to set the value.

[Setting the SEC value]

1. Press the [TIME] button twice.
The SEC mode is on by pressing the [TIME] button twice.
2. Press the [▲▼] buttons to change the set value.
3. Press the [TIME] button again to set the value.

4. Operation

4.7 Save / Recall a program

[Save a program]

1. Set parameters.
2. Keep the [PROG] button pressed over 3 seconds to save your set values.
The LED of [PROG] button and SEC/Save are turned on.
3. Input the program number by using the [▲▼] button.
Up to 10 programs can be stored.
4. Press the [PROG] button again to complete saving.
The set value is saved.
In case of no input for 5 seconds, you will get out of the Save mode.

[Recall a program]

1. To recall a saved program, press the [PROG] button shortly.
The LED of [PROG] and MIN/Call are turned on.
2. Enter the program number you want to recall by pressing [▲▼] button.
3. Press [PROG] button once again.
The set values of the saved program are displayed.
In case of no input for 5 seconds, you will get out of the Recall mode.

4.8 Start / Stop the centrifugation run

1. After setting all parameters, press [START/STOP] button.
While running, the 'START LED' is turned on.
To stop the operation, press the [START/STOP] button while running.

4. Operation

4.9 Soft start / stop

The [SOFT START/STOP] button is used for gentle acceleration and deceleration for sensitive samples.

1. After setting TIME and RPM, press the [SOFT START/STOP] button once.

The LED of [SOFT START/STOP] button is on while running.

The door is automatically opened when the operation is completed.

When operating in the [SOFT] mode, the operation cannot be stopped by pressing the [START/STOP] button.

5. Maintenance

5.1 Care instructions

- The following procedures should be performed regularly.
 - ① Regularly inspect the rotor chamber for check the motor shaft is normal.
 - ② Rotate the shaft with your hand to make sure it turns smoothly
 - ③ Use the stopwatch to check that the time setting is correct

5.2 Cleaning



- Before cleaning the centrifuge, be sure to switch off the device and disconnect the power cord.

- Outside of the device

- ① Clean the outside of equipment with a soft and dry cloth.
- ② Do not use aggressive chemicals on the device such as Alcohol, Benzene, Acetone or Phenol.
- ③ Use the stopwatch to check that the time setting is correct
 - ▶ If the device is contaminated, use a mild cleaning fluid to clean.
- ④ Make sure do not scratch the surface of equipment when cleaning it.
 - ▶ Do not use a metal sponge.
 - ▶ If the device is rusted, remove it with a mild detergent and wipe it with a dry cloth.

- Chamber

- ① If the rotor chamber is not dry, wipe moisture from the chamber with a dry cloth.
- ② If the rotor chamber is dirty, clean the chamber and remove moisture with a dry cloth.

- Rotor

- ① To prevent corrosion, remove the rotor from the rotor chamber after finishing centrifugation.
- ② If any sample is spilt inside the rotor, wash and dry the rotor well.

- Disposal

- ① In case of product is to be disposed of, the local wastes laws and regulations are to be observed.

6. Troubleshooting

6.1 General errors

Problem	Recommended Action
Power failure	Check the power cord connection. Check the power fuse of the device.
Device cannot be started	Check the lid is closed completely.
Lid cannot be opened	Press the 'Lid open button'.
Lid cannot be closed	Clean and the door latch and close the lid. Check if the lid latch is damaged.
Unusual noise and vibration	Check if the device is installed inclined
	Reload the rotor symmetrically. Reload the tubes symmetrically. Reload the rotor

6. Troubleshooting

6.2 Error messages

Error	Possible Causes	Actions
Error 1	RPM	<ul style="list-style-type: none">* If the speed does not reach 200 rpm within 2 seconds after motor starts to operate, this message may appear.* Check whether the motor is normally working or not.* If the error message does not disappear, please contact a Service Engineer of your local Hanil Scientific's partner.
Error 2	Lid Open	<ul style="list-style-type: none">* If the door opens while spinning or has any trouble in the door sensor, this message may come up.* Clean the door latch and close the door completely. Check the door closing status on the display window.* If the error message does not disappear, please contact a Service Engineer of your local Hanil Scientific's partner.
Error 3	Motor Overheating	<ul style="list-style-type: none">* If the motor is overheated, this message may come up.* Remove the power supply for an hour, and turn on the power to check up the instrument.* If the error message does not disappear, please contact a Service Engineer of your local Hanil Scientific's partner.
Error 4	Low Voltage	<ul style="list-style-type: none">* If the power input (V/Hz) is 10% lower than the recommended power, this message may come up.* Turn off the power supply and check the voltage of the Power supply (V/Hz).* Use AVR to provide proper power.
Error 5	High Voltage	<ul style="list-style-type: none">* If the power input (V/Hz) is at 10% higher than the recommended, this message may come up.* Turn off the power supply and check the voltage of the Power supply (V/Hz).* Use AVR to provide proper power.
Error 6	Overspeed	<ul style="list-style-type: none">* If the instrument spins faster than allowed (1,000 rpm higher than the set speed), it may cause overload to motor capacity or any trouble in the output of motor.* Turn off and on the power supply to check up the instrument.* If the error message does not disappear, please contact a Service Engineer of your local Hanil Scientific's partner..

6. Troubleshooting

6.2 Error messages

Error	Possible Causes	Action
Error 7	Software	<ul style="list-style-type: none">* If the installed software have any bugs, this message may come up.* Contact a Service Engineer of your local Hanil Scientific's partner and get the firmware upgrade. Wire disconnection or tuning of the instrument must be performed only by a Service Engineer authorized by Hanil Scientific's partner.
Error 8	Imbalance	<ul style="list-style-type: none">* Check the balance status of the samples in the rotor and turn off and on the instrument to check the status.* If the error message does not disappear, please contact a Service Engineer of your local Hanil Scientific's partner.
Error 9	RPM Sensor	<ul style="list-style-type: none">* If the rotor recognition fails, this message comes up.* The message will be cleared by coupling an appropriate rotor* Disassemble and couple a compatible rotor and restart the instrument to check out the status.* If the error message does not disappear, please contact a Service Engineer of your local Hanil Scientific's partner.

6. Troubleshooting

6.3 Emergency Lid Open

If the device door cannot be opened, you can activate the emergency open manually.



1. Wait for rotor to stop before activating the emergency open.
2. Insert the pin into the emergency open hole and push it until the door is opened.



Emergency Door Open Hole

7. Rotor

7.1 Angle rotors

Rotor		Tube Capacity	Max. RPM (rpm) Max. RCF (xg)
A-cyto-12 	Type : Angle Rotor Max. Capacity : 12 x 6 mL Size (ø x H) : ø233.5 x 65 mm Radius : 116.8 mm Incl. 12 ea of cytozell set	 Cytocell Accessory 12 slides x 0.5-0.6 mL	3,000 1,175

* Radius : From the center of the rotor to the inner end of tube carrier.

Memo

Memo



Hanil Scientific Inc.
16 Arayukro, Gimpo 10136, Rep. of KOREA
T. +82-2-3452-8965
techsupport@ihanil.com
sales@ihanil.com
www.ihanil.com