



# **ODAK GEL CARD CENTRIFUGE**

## **USER MANUAL CE**



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**PLEASE READ INSTRUCTIONS FOR USE CAREFULLY BEFORE STARTING TO USE THE ODAK GEL CARD CENTRIFUGE INSTRUMENT**

Symbols used in this user's manual are as follows:

**HAZARD!**

Any critical injuries can only be minimized for men (including patients) by following the instructions indicated.



**WARNING!**

It may cause harm to people (including patients) with other protection system. It is only appropriate for use under AUTHORIZED RESPONSIBLE / AFTER SALES SUPPORT AND OPERATOR knowledge.



**CAUTION !**

A hazardous situation for any and all equipment or others. This situation can be reduced by using this indication or other protection.



**NOTE:**

Used for descriptive, supplementary or highlighting information.



**DEFINITIONS:**

**Authorized service / After sales support personnel:** The person or group responsible for the installation, maintenance and repair of the device and for providing these training to the user.

**Operator:** Person authorized to use the device. The user must be trained in use and basic maintenance.

\*All warnings notified to the Authorized Service Provider/After Sales Support Personnel are also applicable for the operator.

The rights to make changes in the device design and technical specifications are reserved.



## **1. INTRODUCTION**

This User manual contains all necessary and adequate information for any operators who will work with Odak Gel Card Centrifuge.

Please read the information especially in maintenance section carefully before attempting to operate the equipment.

This user's manual should be readily accessible for all personnel who work with the instrument.

### **1.1 Intended Use**

Odak Gel Card Centrifuge ensures centrifuging of Gel cards.

### **1.2 Objectives, Limits and Operator Trainings**

#### **1.2.1 Objectives**

Odak Gel Card Centrifuge is designed for centrifuging maximum 24 Gel cards at the same time especially in collective works. Therefore, parameters we may predefine in the instrument (speed and time) are necessary to work with this type of card.

#### **1.2.2 Limits**

Since Odak Gel Card Centrifuge is designed and configured only for Gel cards, it shouldn't be used for different test types.

#### **1.2.3 Trainings**

The Odak Gel Card Centrifuge must be used for its intended purpose, and the user must be trained in its use and basic maintenance.

## 2. SAFETY INFORMATION

### 2.1 Important Safety Instructions

The following warnings are directly related to the user safety:

#### **HAZARD!**

This equipment works with materials with chemical or biological risk. In order to work in laboratories where the instrument is installed, regulations regarding use of appropriate gloves or other personal protection equipment should be observed.



#### **HAZARD!**

Improper use by the operator may damage the equipment.



#### **CAUTION!**

Using any cables other than those indicated may cause an increase in electromagnetic emission and/or a reduction in immunity of the equipment.



#### **WARNING!**

To avoid the risk of electric shock, the appliance must only be connected to a grounded outlet.



#### **WARNING!**

This instrument should only be used by authorized service/after-sales service personnel and qualified operators.



#### **WARNING!**

If the centrifuge makes unusual noises when started, the rotor is not fastened correctly. Switch the device off immediately by pressing "STOP" key.



**WARNING!**

Do not use damaged rotors!

**WARNING!**

Do not move the centrifuge during the run!

**WARNING!**

Do not put your hands or foreign objects into the working parts.



## 2.2 Equipment Labeling

Odak Gel Card Centrifuge instrument is labeled with the following:

- Instrument description label
- Biological risk label

### 2.2.1 Description Label

The identification label is the label on the back of the instrument showing the model, serial number and date of manufacture.

### 2.2.2 Biological Risk Label



Located on inner side of centrifuge housing; gives information about any biological hazard accumulated on the surface as a result of residual material remaining in the housing.

## 2.3 Please Read Before Using

- Use equipment only according to the instructions in the user's manual.



- Do not apply anything not mentioned in the operating instructions.
  - Do not drop and do not place anything on the cover of the instrument.
  - If there is any damage in the instrument or if it doesn't operate, do not use it.
  - Do not use in a dangerous laboratory environment or with any materials not suitable for the instrument.
  - Do not use flammable gases and volatile products in the instrument.
  - Do not use any accessories which haven't been supplied or recommended by the manufacturing company.
  - Do not expose the centrifuge instrument to any highly flammable, explosive chemical materials.
  - Do not tip centrifuge instrument.
  - Ensure centrifuge cover is fully opened towards the back after it has been removed, otherwise it may fall and cause injury to personnel.
  - Close the lid slowly.
  - In case of a power failure, it is recommended that the centrifuge is used together with UPS(Uninterrupted Power Source) in order to finish the test started.
- Centrifuge instrument should be dismantled by a Qualified Technician/After sales service personnel for its internal cleaning and/or repair, and the instrument should be disconnected from the mains before dismantling.





### 3. ODAK GEL CARD CENTRIFUGE SPECIFICATIONS

#### 3.1 Technical Specifications

Model	Card Centrifuge
Power Supply	AC100-240V 50-60Hz
Fuse	250V F2A 5X20
Maximum Power	100W
Centrifuge Speed	500rpm ~ 1500rpm
Speed relative deviation	$\leq \pm 2.5\%$
Speed relative stability	$\leq \pm 1\%$
Noise	$\leq 70$ dB
Amplitude(of vibration)	$\leq 0.1$ mm
Liquid temp. raise	$\leq 10^{\circ}\text{C}$
Timing relative deviation	$\leq 1\%$



Increasing/Decreasing Time	Time for Increasing speed ≤3 min Time for Decreasing speed ≤5 min
Centrifuge time	1min ~ 20min
Load Capacity	24 gel cards
Ambient temperature	5°C ~ 40°C
Relative humidity	≤80%
Atmospheric pressure	860hPa – 1060hPa
Dimension (WxDxH)	570mm×380mm×170mm
Weight with rotor	20.7 kg
Units	Can be programmed to RPM.
Security Controls	Cover state control
	Security closing
Maximum Voltage Fluctuations in the Mains	%10 nominal voltage



* Operational Speed Range	1100rpm $\pm$ 1 %
* Operational Time Range	10 min.

\* Odak Gel Card Centrifuge applications operating values are shown in table.

#### 4. ODAK GEL CARD CENTRIFUGE DESCRIPTIONS

##### 4.1 General View of Centrifuge

Figure 1



Figure 2





## 5. INSTALLATION

### 5.1 Things to Do Upon Delivery

This instrument can be installed by directly the user or authorized service provider.

### 5.2 Requirements for Installation

Requirements for the place where the instrument will be installed are as follows:

1. Do not place the instrument outside operation area.
2. Prevent contact of the instrument with any liquid.
3. Do not place any flammable material on the instrument.
4. Do not place any other instrument that may prevent use of the main switch.
5. Prevent contact of the instrument or power cable with hot surfaces.
6. Do not put anything on the instrument.
7. The instrument should be connected to the mains through grounded outlet.
8. The surface on which Odak Gel Card Centrifuge instrument is placed should be extremely flat, horizontal, and fixed.
9. While centrifuging, there shouldn't be any person or dangerous material in this area.



### 5.3 External Equipment

After a suitable place is chosen for installation, remove the parts of the instrument from the packaging according to the following instructions:

1. Open top of the box.
2. Unpack all guards and accessories.
3. Remove the instrument and protective package in the position chosen.
4. Check the instrument for any damages as a result of storage and handling.

### 5.4 Installation Instructions

Follow the steps below for installation of Odak Gel Card Centrifuge instrument:

1. Connect the mains power cord to a grounded outlet.
2. Turn on the main switch.
3. Set centrifuge time correctly on the screen.
4. Open the lid by pressing cursor button and remove the internal guard protecting the centrifuge rotor.
5. Close the lid of the centrifuge instrument .
6. After making sure that the lid is fully closed, press start button.
7. Then terminate centrifuging by keeping STOP button pressed for a few seconds. The instrument warns that centrifuge has stopped by short alarms going on in certain intervals after a long alarm.
8. To ensure that centrifuge rotor has stopped, wait for 30 seconds until you see it has stopped on the screen.
9. Centrifuge speed (1100 rpm), has been certified by accredited institutions using calibrated too

## 6. USER MANUAL

### 6.1 Control elements

START-----for start centrifugation

STOP----- for stop centrifugation

CURSOR----- to open the lid

### 6.2 Rotor insertion and removal

Fit the rotor onto the crossed linker of the motor, the crossed linker will connect the rotor .  
Before each start, check that the rotor is firmly tightened!

### 6.3 Loading the rotor

Place the Gel cards in such a way, put the Gel cards in the card holder as shown by Fig-c. and rotor must always be loaded symmetrically.



**Fig -c**



## 6.4 Centrifugation with a preset time

- 6.4.1 Turn on the mains switch, pressing "CURSOR" to open the lid, load the rotor symmetrically. Close the centrifuge lid.
- 6.4.2 Pressing "START" to start the run. Pressing the "STOP" to end the run prematurely. The remaining run time appears in the display. After the run, the lid lock of centrifuge opens automatically, and buzzer alarms "du du du".

## 6.5 Centrifugation speed and time setting

### 6.5.1 Speed and time setting

First of all, press the "menu" button; the machine comes to the setting interface, at this time the speed and time can be set.

Time Settings	█
RPM Settings	

In this screen can select time or speed settings.

Time1:3min	█
Time2:7min	

In this screen can changes first time and second time settings.

RPM1:700RPM	█
RPM2:1100RPM	

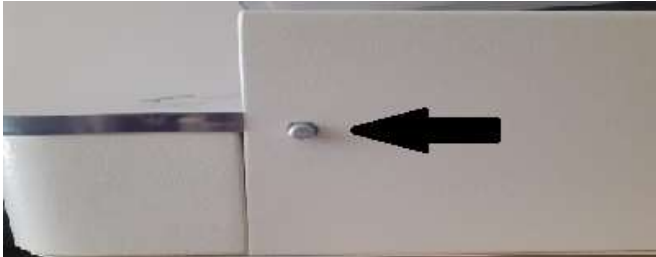
In this screen can changes first speed and second speed settings

At the setting interface, in order to change speed and time, press "start" or "cursor" to move into the value which is needed to set. Press "▲" to increase the set value, and press "▼" to reduce the set value. After press "start" or "cursor", and the system will accept the new setting values. The speed can be set from 500 rpm to 1500 rpm, and the time can be set from 1 min to 20 min.



## 6.6 Opening the centrifuge in the event of a power failure

Disconnect the centrifuge from the mains. Wait until the rotor stops, then push the safety lever towards inside, the cover will unlock.



## 7. ACTIVITY PROCEDURE

### CAUTION !

Do not centrifuge any cards that do not operate properly or have suffered any damage.



### 7.1 Realization of a Centrifuging Stage

To operate Odak Gel Card Centrifuge instrument properly, follow the instructions below:

- 7.1.1 Turn on the main switch, ensure the screen is on and time and speed are preset.
- 7.1.2 Place centrifuge rotor and card grooves and centrifuge gel cards.
- 7.1.3 Close the lid.
- 7.1.4 To start collective centrifuging, press start button thus active timer.
- 7.1.5 After centrifuging finishes, rotor stops automatically and acoustic alarm is engaged.
- 7.1.6 Press CURSOR button and open the lid.
- 7.1.7 Immediately remove Gel cards from their holder grooves.
- 7.1.8 If you want to operate centrifuge head for a new collective centrifuge, load new cards and close the lid. Timer will automatically display preset centrifuge time again.

**CAUTION!**

In order to prevent mixing of the cards, samples and reactive materials during the procedure, they should be directly prescribed to the card holders.

**NOTE:**

It is not possible to start another collective centrifuge procedure when the lid is open " before the previous procedure is completed. After the lid is opened, the user should remove the cards to prevent centrifuging of the cards for the second time.



## 7.2 Terminating Centrifuging

If the instrument has to be turned off before waiting for the completion of set time for some reason, it is necessary to keep STOP button pressed for a few seconds. Odak Gel Card Centrifuge device indicates that centrifuging has stopped by short alarms going on in certain intervals after a long alarm signal.

To start a new collective centrifuge procedure, you should open the closed lid by pressing Lid button and load centrifuge head with new cards and start it. The screen has been previously programmed to centrifuge speed and time.

**WARNING!**

If centrifuging stops, cards should be cancelled.  
Reliable results can only be achieved by single, continuous and full centrifuging of the cards.



## 8. MAINTENANCE

Maintenance of Odak Gel Card Centrifuge is only provided by cleaning and decontamination.

### **WARNING!**

Blood, serum samples or other biological fluids contaminated with any part of the device should be treated as potential contamination.



### **HAZARD!**

The rotor and the outside of centrifuge should be cleaned regularly with a moist cloth. Disconnect the centrifuge from the mains supply, remove the rotor and clean it separately. Only neutral agents may be used for cleaning.



### **HAZARD!**

Please check the rotor and especially the rotor bores regularly for deposits or damage, then reinsert the rotor.



### 8.1 Maintenance Plan

Maintenance is comprised of a series of operations carried out regularly for protection Odak Gel Card Centrifuge.

To protect Odak Gel Card Centrifuge instrument, the maintenance plan is performed by following the steps below:

<b>Protective maintenance</b>	<b>Identification</b>
Instrument cleaning	To clean the instrument frame
LID control	To check lid functions
Program control	To control display values
Electromagnetic lock control	To check electromagnetic lock function.
Housing control	To check housing
Cleaning of interior part	For cleaning of rotor housing

**WARNING !**

Before cleaning and disinfection procedures, all cards should be removed from the instrument.

**HAZARD!**

During cleaning and/or decontamination procedures, the Operator should wear protective gloves.

**8.1.1 Cleaning Procedure**

If biological samples, physiological serums, acidic or alkaline solvents aren't kept away from the outer surface of the instrument; they may cause damage to the instrument.

Outer surfaces of the instrument should be cleaned with a mild detergent and wiped regularly with adamp cloth.

**WARNING !**

During cleaning of instrument surface, disconnect the instrument from the mains.

**WARNING !**

Ensure that no cleaning solution seeps through the openings of the instrument.

**8.1.2 Decontamination of the Instrument****WARNING !**

In case any liquid is spilled into the instrument, do not dismantle the instrument; cleaning of the liquid and disinfection procedure should be carried out by qualified personnel, so call a technical service provider/after-sales service personnel.



It is very important to carry out decontamination procedure of the instrument before performing certain processes in order to prevent any infection risk.

Decontamination of the instrument should be done according to the following steps: □

After spillage of potential contaminants, seeping liquids, etc

- After storage or handling of the instrument and its parts.
- Before technical service provider intervenes.

### 8.1.3 Dismantling the Instrument.

For dismantling of the instrument, follow the procedures below:

1. Open centrifuge lid and lift rotor.
2. Turn the instrument off and disconnect it from the mains.
3. In case of fluid spillage, absorb the fluid with a disposable absorbent material (e.g. paper towel, gauze or paper clothing).
4. Surfaces (centrifuge chamber, lid, rotor, card grooves, etc) should be decontaminated by using none corrosive proper dezenfectant solution.
5. In order to eliminate any smell and residuals of harmful chemical components, rinse the surface with water.
6. Dry the surface.
7. Dispose the contaminated cleaning materials used during decontamination in a biological waste bin.

**NOTE:**

The procedures described above do not guarantee that the instrument has been fully decontaminated but minimize any contamination risk.



## 9. HANDLING AND STORAGE

### **WARNING !**

The instrument should be decontaminated before handling and/or storage.



Pack the Odak Gel Card Centrifuge if you are going to store or transport it for a long time. The environmental conditions for storage are specified in the 'Technical Specifications' section.

### **WARNING !**

Carry and/or store the instrument only in its original packaging.



## 10. DISMANTLING THE INSTRUMENT

Ensure that there isn't any reactive sample residual in the Odak Gel Card Centrifuge instrument and it is decontaminated before it is fully dismantled. After this, it should be sent to an authorized centre for processing electronic wastes.

### **HAZARD!**

This instrument should only be dismantled by authorized personnel/after sales service personnel.





## 11. TROUBLESHOOTING

The Certain warnings and problems given by Odak Gel Card Centrifuge during normal operation can be resolved by the operator himself without assistance from technical service provider/ after sales service personnel. After changing any part of the Centrifuge, make a full centrifuge operation to ensure proper operation.

Following table shows error messages:

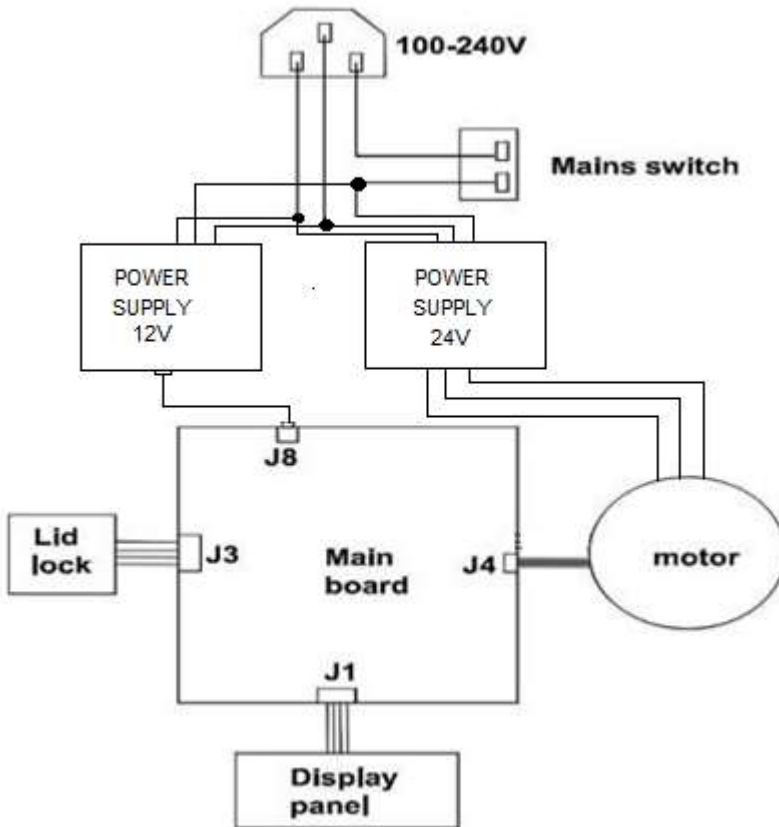
Error	Cause	Solution
No display	No main power connection. Power failure	Plug in mains cable on both sides. Check the mains fuse
Lid can't be opened.	Power failure. Rotor is still spinning. Lid lock failure.	Emergency lid release Stop centrifuge run. Contact Technical Service.
Centrifuge shakes during acceleration.	Rotor is not loaded symmetrically.	Stop centrifuge run andload centrifuge symmetrically.

## 12. GUARANTEE

The guarantee for the instrument does not cover the following:

- The lid is not covered by such gurantee.
- Any damages caused by accidents not covered by the user's manual, negligence and violations.
- Any damages caused by external factors (atmospheric, geological, user's fault, etc.).
- Any damages arising from improper use.
- Plastic and rubber parts exposed to improper use and impacts, ruptured enamel and paints other than a flaw.
- Any malfunctions and defects during handling.

### Annex 1 : Wiring Diagram for ODAK GEL CARD CENTRIFUGE







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