

# User Manual

## Operator chair Carl Mk2

- Model R5 - Easy
- Model R6 - Rilis
- Model R7 - OneGrip
- Model R8 - FlexiDoc



# Table of content

<b>1.</b>	<b>Operator chair Carl Mk2 .....</b>	<b>3</b>
<b>2.</b>	<b>Important – Before Use.....</b>	<b>3</b>
2.1	Unpacking .....	4
2.2	Installation.....	4
2.3	Intended areas of use .....	5
<b>3.</b>	<b>Product identification label .....</b>	<b>6</b>
<b>4.</b>	<b>Basic adjustments of the chair .....</b>	<b>7</b>
4.1	Chassis, wheels and electrical brake .....	7
4.2	Chair height adjustment .....	8
4.3	Seat angle adjustment .....	8
4.4	Backrest angle and height adjustment .....	8
4.5	Model R5 - "Easy" armrest.....	9
4.6	Model R6 - "Rilis" safety armrest .....	10
4.7	Model R7 - "OneGrip" armrest .....	11
4.8	Model R8 - "FlexiDoc" armrest.....	12
<b>5.</b>	<b>On/Off, battery and charging .....</b>	<b>13</b>
<b>6.</b>	<b>Disinfection, cleaning and repairs.....</b>	<b>14</b>
<b>7.</b>	<b>Safety .....</b>	<b>14</b>
7.1	CE Declaration of conformance .....	14
<b>8.</b>	<b>Technical data .....</b>	<b>15</b>
<b>9.</b>	<b>Disposal and recycling .....</b>	<b>15</b>
<b>10.</b>	<b>Warranty .....</b>	<b>15</b>

# 1. Operator chair Carl Mk2

Thank you for choosing the Rini Operator chair Carl Mk2.

- Uniquely designed frame with three wheels, giving room for the operator's feet and product pedals
- Ergonomic comfort for the surgeon through an intuitive setup and with either "Easy" armrest (R5), the patented safety armrest "Rilis" (R6), "OneGrip" armrest (R7) or "FlexiDoc" armrest (R8)
- Convenient to move thanks to easy-rolling wheels and a stable parking position by an electric central brake
- Easy to clean with smooth surfaces and encapsulated details

Carl Mk2 is the second generation of Rini's popular electrically adjustable operator chairs where lots of user feedback and new technologies have been combined. The goal has been to provide a quality chair with a small foot print, maximizing the area around the feet often where pedals and other product are placed.

At the same time for the surgeon, Carl Mk2 offers maximum ergonomic comfort by extensive configuration options achieved by the use of intuitive hand grips. The model R5 is supplied armrest "Easy" where the armrest plate can be angled 360°. The model R6 is supplied with Rini's patented safety armrest "Rilis" that can be adjusted with high precision to the desired position. The model R7 is equipped with "OneGrip" armrest, popular when small adjustments are required. The model R8 is equipped with "FlexiDoc" armrest for the most demanding procedures.

The chair is battery operated and easy to raise and lower using buttons on the side. The single button control central brake provides a very stable operating position. A cover is supplied to protect the wheels frame. Overall, Carl Mk2 gives the surgeon a tailor-made work environment of the highest quality.

Rini is constantly improving existing products and developing new ones. Consequently, we value the professional user's point of view; so don't hesitate to let us know your opinion about any of our product lines.

## 2. Important – Before Use



**To ensure patient safety and the lifespan of the product, it is important to observe the following instructions before use. Please read this manual carefully and understand how to use the product before you start.**

## 2.1 Unpacking

Before the product is unpacked make sure that the packaging has not been damaged during transport. If so, document these with a picture and report this immediately to the transport company and your local Rini representative.

In the packages the chair is normally in the following parts:

- Complete chair with wheels and seat mounted
- Backrest and two armrests
- Battery charger and user manual



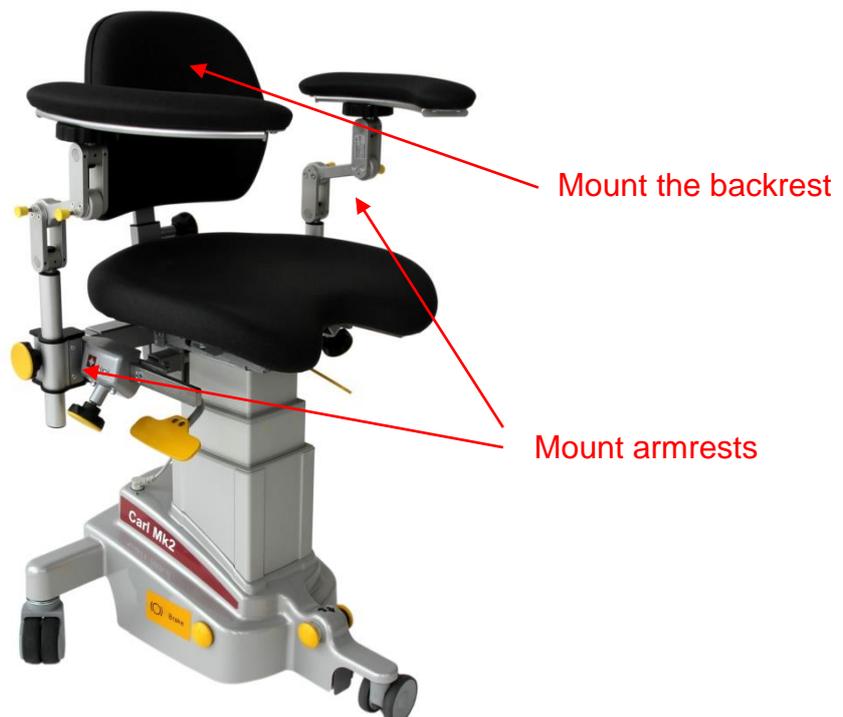
**Be careful when lifting the chair off the pallet. The chair is heavy and may cause injury. Do not use sharp tools when removing the packaging material. This may cause damage.**

Make sure that the delivery includes all ordered parts. Contact your Rini sales representative if you find any discrepancies.

## 2.2 Installation

When you get the operator chair delivered, it is not ready to be used. It must be mounted accordingly to this manual.

Place the chair on a stable floor. The brake on the back wheels are normally locked at delivery and the chair is in its lowest position. Release the brake (yellow button on the left side of the plastic cover seen from behind) and raise the chair to a suitable height (yellow buttons at the front wheel).





**For safety reasons including both person and product it is necessary to have sufficient training in using the product. Before use, please check the following:**

- That the product has not been damaged in transport.
- That adjustment of back, seat, height and armrest can be done according to this manual
- That the electrical brake is working
- That the battery is fully charged

**Please contact your local Rini representative if you have any questions or concerns.**

## 2.3 Intended areas of use

The operator chair Carl Mk2 with three wheels is developed for different types of microsurgery where the operator needs a stable seated work position with flexible relief for the arms.

The design of Carl Mk2 chair gives great freedom of movement to the surgeon while the chair provides space for other product at the feet.

Intended uses include:

- Neurosurgery
- Eye Surgery
- Ear, nose and throat surgery
- Facial Plastic Surgery
- Robotic Surgery
- Dental Surgery



**The chair is intended for indoor use and use on floors with normal hard floor standard. The chair may not be equipped with other accessories or components than those authorized by Rini Ergoteknik AB. Repairs and other technical measures should only be performed by personnel authorized by Rini Ergoteknik AB. The chair may only be used for the purposes specified in this manual. Any other use may pose a risk to the user.**



**The chair should not be used for operators that weigh more than 150kg. The wheels must be locked with the electric brake during surgery. When transporting the chair, it should be empty and in its lowest position. The chair is not designed for person transports.**

### 3. Product identification label

The label is located on the back of the chair and shows the product part number and its unique serial number. For questions about this product, always specify these numbers to facilitate identification.



#### Label description



Warning. Risk is present. Read the applicable information in the user guide.



Type B product with protection against electric shock.

**SWL**

Safe Work Load. The product must not be loaded with more than the specified weight.

**IPX4**

The product is protected from splash of water

**Duty cycle and power**

Average ratio between operating time and idle time of the electrical lifting mechanism. The product is internally powered by 24VDC battery.

## 4. Basic adjustments of the chair

Carl Mk2 has simple, intuitive controls and buttons to adjust the chair to an effective and ergonomic working environment for the operator.

For greater clarity, these are indicated in yellow.



### 4.1 Chassis, wheels and electrical brake

The chassis design with 3 wheels combine high availability of technical product on the floor with high stability. The chair can also be equipped with pedal trays as accessories. The chair is equipped with large high-quality ball bearing wheels which facilitates movement.

The rear wheels are lockable by an electric brake which is controlled by a button (alternating with on and off) on the right side. When the brake is used a tone sound.



**Always activate the brake during surgery to prevent accidental movement of the chair.**

**When the seat is in a high position and used with high load, the chair can overbalance.**

## 4.2 Chair height adjustment

The seat is raised and lowered electrically where the lifting construction consists of a battery-powered motor, control box and a battery pack. Seat height is controlled by two buttons on the sides of the front wheel, this by pressing with the heel on the buttons.



**The chair shall not be used by persons weighing over 150kg.**

## 4.3 Seat angle adjustment

The chair is equipped with a lever on the right-hand side to adjust the seat angle between  $-15^{\circ}$  and  $+5^{\circ}$ .



Adjust the seat to a comfortable position by lifting the lever which then locks in this position when it is dropped.

## 4.4 Backrest angle and height adjustment

The chair is equipped with a lever on the left side to adjust the backrest angle between  $-15^{\circ}$  and  $+20^{\circ}$ .



Adjust the backrest to a comfortable position by lifting the lever which then locks in this position when it is dropped.

The backrest height adjustment device is placed on the back of the chair. Adjust the height by loosening the knob and lock a suitable position by tightening it again.



#### 4.5 Model R5 - "Easy" armrest

Rinis "Easy" armrest have square cup shaped plates that are able to be set in all possible angles.

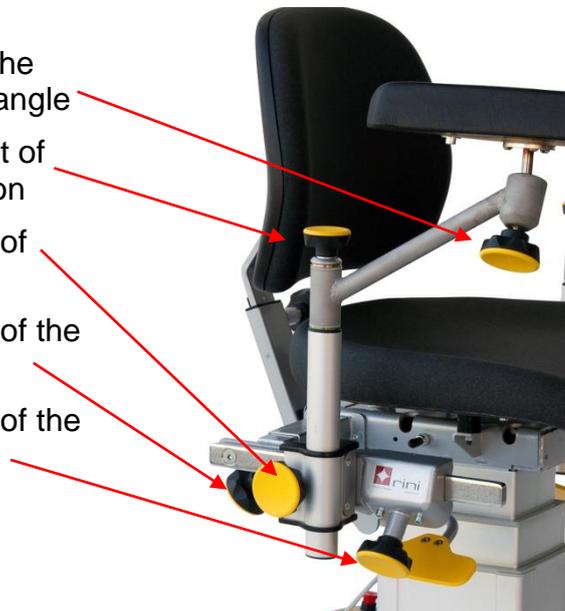
5. Knob for adjusting the armrest plate in 360° angle

4. Knob for adjustment of sideways position/friction

3. Coarse adjustment of armrest height

2. Coarse adjustment of the armrest width

1. Coarse adjustment of the back/forward position



Setting 1 (coarse setting)

Move the position of the armrest by loosening the knob and sliding the armrests.

Setting 2 (coarse setting)

The width between the armrests can be adjusted by loosening the knob under the seat.

Setting 3 (coarse setting)

The height of the entire armrest can be adjusted so it is in the center of the work area for subsequent fine tuning. Use the knob to set the appropriate armrest height.

Setting 4

Turn knob to adjust the sideways position as well as the friction of the armrest.

Setting 5

Turn the knob to release and then set the armrest in the desired position and lock.



**The armrest should not be loaded with more than 8 kg**

## 4.6 Model R6 - "Rilis" safety armrest

Rinis patented safety armrest Rilis has the most extensive adjustment possibilities to offer an optimal ergonomic working position.

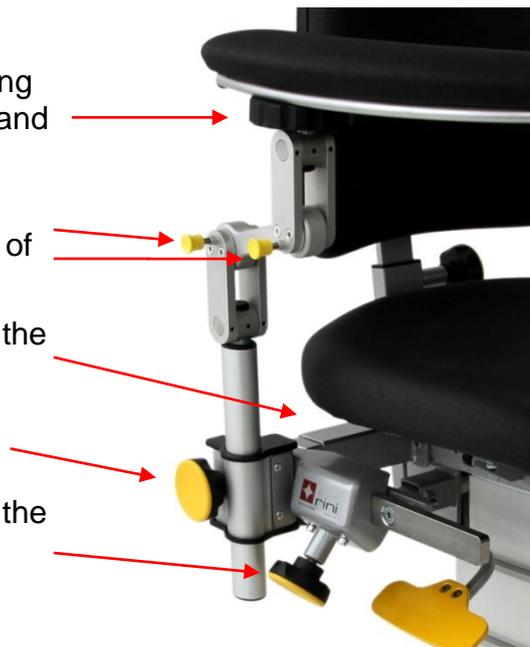
5. Lock wheel for adjusting the armrest longitudinal and lateral

4. Push buttons (without load) for fine adjustment of height and position

3. Coarse adjustment of the armrest width

2. Coarse adjustment of armrest height

1. Coarse adjustment of the position



Setting 1 (coarse setting)

Move the position of the armrest by loosening the knob and sliding the armrests.

Setting 2 (coarse setting)

The height of the entire armrest can be adjusted so it is in the center of the work area for subsequent fine tuning. Use the knob to set the appropriate armrest height.

Setting 3 (coarse setting)

The width between the armrests can be adjusted by loosening the knob under the seat.

#### Setting 4

By pressing the buttons, the armrest can be adjusted for an optimal working position. To release the armrest, you need to use two hands for safety reasons. One hand to move the armrest pad up and down, while the other hand push the button. Set the armrest in the desired position and release the button to lock the position. **Note! that the adjustment of the armrest should be without load.**

#### Setting 5

The armrest plate is curved and loosen the black locking wheel to position the armrest. Tighten when the correct position is found. The armrest can also rotate around the black locking wheel, allowing maximum flexibility and ergonomic relief. It also helps the operator to be seated or get up from the chair and still be able to maintain sterile hands by using the elbows to rotate the armrests.



**The Rilis armrest should not be loaded with more than 15 kg.**

### 4.7 Model R7 - "OneGrip" armrest

The OneGrip is suitable when an up/down adjustment range is needed, and it is required to be able to adjust the armrest while draped.

5. Lever for fine adjustment of the armrest up/down

4. Knob for adjustment of sideways position/friction

3. Coarse adjustment of the armrest width

2. Coarse adjustment of armrest height

1. Coarse adjustment of the back/forward position



#### Setting 1 (coarse setting)

Move the position of the armrest by loosening the knob and sliding the armrests.

#### Setting 2 (coarse setting)

The height of the entire armrest can be adjusted so it is in the center of the work area for subsequent fine tuning. Use the knob to set the appropriate armrest height.

Setting 3 (coarse setting)

The width between the armrests can be adjusted by loosening the knob under the seat.

Setting 4

Turn knob to adjust the sideways position as well as the friction of the armrest.

Setting 5

By pulling the lever upwards, the armrest can be adjusted to an optimal working position. Set the armrest in the desired position and release the lever to lock the position.



**The armrest should not be loaded with more than 10 kg.**

#### 4.8 Model R8 - "FlexiDoc" armrest

The model R8 is equipped with the patented "FlexiDoc" armrest for the most demanding procedures where fine tuning of the armrest is continuously needed during surgical procedure.

2. Levers for fine adjustment of the armrest position

1. Coarse adjustment of the back/forward position



Setting 1 (coarse setting)

Move the position of the armrest by loosening the knob and sliding the armrests.

Setting 2

The height and length of the entire armrest can be adjusted in a flexible way using the lever.



**The armrest should not be loaded with more than 20 kg.**

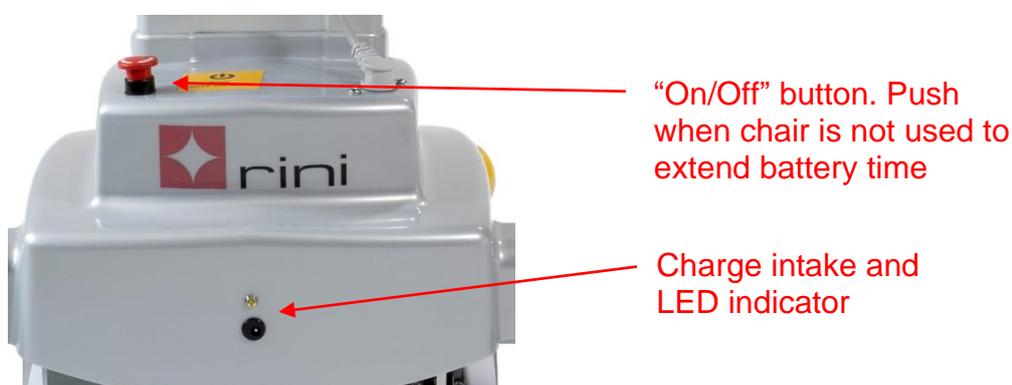
## 5. On/Off, battery and charging

The Carl Mk2 chair is battery powered and has its own battery charger that handles 100-240VAC. The charging socket is located on the back with an LED to indicate charging status.

A fully charged battery is sufficient for about five days during normal operating conditions, but daily charging is recommended because full discharging of the battery reduces battery lifespan.

For best performance, the battery should be recharged frequently and at least every three months to avoid damage caused by self-discharge.

A new or completely discharged battery must be charged for 24 hours. When the battery is fully charged, the charger switches automatically to maintenance charging to avoid overcharge.



The "On/Off" button must be "On" during charging.



**The chair shall not be used during charging. Only the dedicated charger must be used for the chair.**

LED-indicator shows the following status:

Battery status	Yellow LED-indicator 
Battery charging	Lit constantly
Battery OK	Unlit
Battery < 20%	During operation - blinking twice/sec and buzzer sound

Batteries have a limited lifespan and battery module must during normal working conditions be replaced after about four years. If the operating time is greatly reduced despite 24 hours of charging, the battery module must be replaced. However, the chair can be used with the charger connected. A new battery module can be ordered from your local distributor or Rini.

## 6. Disinfection, cleaning and repairs

No part of the product is normally in contact with the patient and the armrests are normally draped during surgery.

### Disinfection

Part	Product	Other information
Upholstery and armrests	Virkon (including most disinfectants without alcohol).	1% concentration. (Disinfectants containing alcohol cannot be used due possible to dehydration)
Chassis and buttons	Noedischer Dekonta CCOTRADE RW	1-3% concentration 0,5% concentration

### Cleaning

Part	Product	Other information
Upholstery and armrests	Water and soap	Use damp cloth
Chassis and buttons	Water and soap	Use damp cloth
Battery charger	Water	Use damp cloth

### Repairs

The product should only be repaired by Rini or a Rini authorised service centre. Product to be repaired under warranty must be sent to Rini factory or an authorised Rini service centre.



**Unauthorized repairs and modifications may result in loss of function and void warranty.**

## 7. Safety

The product should only be used as intended otherwise it can cause injury to persons or product. Read this manual before the product is put into service. Necessary knowledge of the product is required before clinical use and this manual should always be available when using the product. No accessories other than those mentioned in this manual may be used. Please note the warning signs on the product.



**Warning signs are used when there is a risk for patients, staff or product.**

### 7.1 CE Declaration of conformance



**Operator chair 120-00133-xx follows MDD EU Directive 93/42 EEC for medical products.**

**Tested according to EN/IEC 60601-1.**

## 8. Technical data

<b>General</b>	
Weight base unit	40kg / 88lbs
Length (chassis)	560mm
Width (chassis)	560mm
Medical classification	Class 1 Type B
Standard	EN/IEC 60601
Protective class	IPX4
Battery	24V 2Ah rechargeable lead acid
Charger	100 - 240V
Cushions	Medical classified material - black colour (standard) or other colours as options
<b>Operator data</b>	
Lifting capacity	150kg / 331lbs (max weight operator)
Height adjustment	490 - 800mm - foot control by buttons on the side
<b>Back support</b>	
Type	Standard H 350mm x B 300mm - other types as options
Inclination and height	Angle -15° till +20° Height 200-300mm from seat
<b>Seat</b>	
Type	Standard L 420mm x B 460mm - other types available as options
Inclination	Angle +5° till -15°
<b>Armrest</b>	
Type	Model R5 - Easy Model R6 - Rilis safety armrest Model R7 - OneGrip Model R8 - FlexiDoc
<b>Brake</b>	
Type	Electric with on-button control for back wheels
<b>Operational environment</b>	
Temperature	+5°C to +40°C
Relative humidity	20% to 90% at 30°C
Atmospheric pressure	700 to 1060hPa
<b>Transport and storage</b>	
Temperature	-10°C to +50°C
Relative humidity	20% to 90% at 30°C
Atmospheric pressure	700 to 1060hPa

## 9. Disposal and recycling

The product is mainly made from environmentally recyclable materials as steel, stainless steel, aluminum and plastics. Rini recommends that the material be sorted and recycled in connection with the destruction of the product.



**Electronic parts and cables shall be handled as electronic waste in accordance with local requirements. The battery contains lead and is disposed according to current environmental legislation.**

## 10. Warranty

The warranty is valid one year from the date of purchase. Please contact Rini for further information.

Rini Ergoteknik AB Fågelsångsvägen 3B  
SE-186 42 Vallentuna Sweden  
Phone +46 8 59477170 Email [info@rini.se](mailto:info@rini.se)  
[www.rini.se](http://www.rini.se)

