

User Manual Ceiling Hoist

# AR-200



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# 1. Introduction

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This is the user manual for the AR-200 Ceiling Hoist, hereinafter referred to as 'AR-200' or 'Ceiling Hoist', in combination with the PLS Rail System.

Please read through the user manual in full before operating. All the information you need to operate the AR-200 safely and securely can be found here. This user manual should be kept with the device for future reference.

## 1.1. Purpose

---

The AR-200 is a Ceiling Hoist intended for passively moving care recipients. The care recipient can be lifted with the help of the Ceiling Hoist and then moved by means of a track on the ceiling.

The Ceiling Hoist can be equipped with a 2-point Spreader Bar, a 4-point Spreader Bar, mechanical 4-point Spreader Bar or an electrically adjustable 4-point Spreader Bar, which is used to move the care recipient. The Spreader Bar must be used in combination with appropriate slings. The moving of a care recipient is also referred to as a 'transfer'.

Some examples of transfers for which the Ceiling Hoist can be used are:

- From a chair or wheelchair to a bed and vice-versa.
- From a chair or wheelchair to a toilet and vice-versa.
- From a chair or wheelchair to a shower-bath-toilet chair or stretcher and vice-versa.
- From a chair or wheelchair into a bath/swimming pool and vice-versa.
- From the floor to a chair, wheelchair or bed.

The care recipient is lifted from a seated or lying position. The transfer must be performed in a semi-seated or seated position. After moving the Ceiling Hoist, the care recipient can be returned to a seated or lying position. This depends on the type of Spreader Bar that you use.

## 1.2. Target audience

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The Ceiling Hoist is intended for care professionals who care for people, the care recipients, who are unable to move independently or who have limited mobility.

## 1.3. Symbols used

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Warning: possible risk of physical injury.



Remark.

An explanatory overview of the symbols and the label used on the Ceiling Hoist can be found in the appendix (*section 8*).

## 1.4. Safety

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The Ceiling Hoist is only suitable for moving care recipients. Products and/or any other objects may not be moved with the Ceiling Hoist!



It is not permitted to use the Ceiling Hoist to lift a weight exceeding 200 kg.



It is not permitted to use the Ceiling Hoist to lift a care recipient who exceeds the margins with regards to dimensions of the accessories.



To avoid injury it is mandatory to read and understand these Instructions For Use in full before using the product. If any questions remain after reading this manual you must first contact your distributor for explanation before commencing use of any products that pertain to this manual.



Contents of this manual are subject to change without prior notice.



Do not insert any objects into the Hoist case or battery charging station because of potential risk of electric shock.



PLS and your distributor cannot be held responsible for any damage caused by accidental, inappropriate, improper, incorrect or injudicious use (*described above*) or by insufficiently qualified persons. In case of doubt, please contact your distributor.

## 1.5. Package contents



Be careful when opening the packaging to not cause damage to the product or yourself.

Remove the packaging and check the contents.

The package contains the following:

- One AR-200 Ceiling Hoist (1).
- One Hand Control (2)
- Documentation, consisting of:
  - This user manual.
  - The Basic Instructions Card for the AR-200.

*A short description of the most important functions.*

*Not an adequate replacement for the user manual!*

A wall charger consists of a Hand Control holder and a charger that is mounted on the wall(*section 2.2*).

Wall chargers are separate items and are not included in the package contents.

Please contact your distributor if parts are missing.

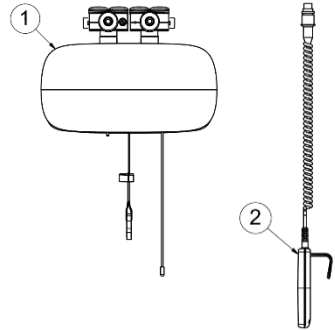


Figure 1, package contents

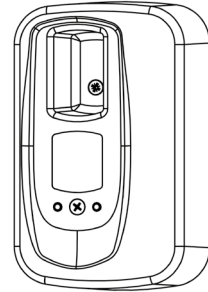


Figure 2, wall charger

## 1.6. Setting up

Make sure the Ceiling Hoist and wall charger(s) are installed by your distributor by PLS approved technicians and are ready for use.



PLS accepts no responsibility for the integrity of building structures. The facility and/or an authorized representative is responsible for verifying building structures can withstand additional loads imposed by lift systems



Please contact your distributor if the installation has not been carried out according to your requirements.

## 1.7. Correct and incorrect use

---

- The Ceiling Hoist is only suitable for lifting of humans.  
The Ceiling Hoist is suitable for use with wheelchairs and does not require footplates/leg supports or armrests to be removed.
- The Ceiling Hoist is suitable for use with a bed, shower frame or dressing table at working height.
- The Ceiling Hoist is suitable for transfers from and to the floor.
- The products described in this manual are for indoors use only and are not intended to be used in environments where there are rapid changes in the environmental temperature and humidity during intended use.

The conditions for the safe transfer of a care recipient are described in section 4.

## 1.8. Cautions and warnings

---

- Do not attempt to lift patients whose weight exceeds the lowest weight limit of one of the following: the rail system, the ceiling hoist, the spreader bar, the accessories, the spreader bar. The weight limit is indicated next to the text *WLL/SFL*.
- This Ceiling Hoist has been designed to lift and move care recipients in combination with an appropriate sling and spreader bar and should only be used for this purpose! No other uses are permitted as serious injuries could occur!
- Carefully attach the sling clips or loops to all the hooks of the Spreader Bar of the Ceiling Hoist, so that the loops or clips do not fall out of the hooks. If this is not done properly, the care recipient risks falling from the Ceiling Hoist and suffering serious injuries!
- When lifting, you should always check that there is sufficient space above the care recipient! Make sure there are no obstacles in the transfer path to prevent chance of injury.
- Do not raise the care recipient higher than is necessary for the transfer!
- Handle the Hoist with care and ensure that the work area is well lit, clean and tidy! Avoid injury to people in the work area
- Avoid impacting the end stops at full speed!
- Never move the Ceiling Hoist faster than walking pace along the rail system!
- Move the Ceiling Hoist smoothly to avoid swinging the care recipient unnecessarily!



- Never leave a care recipient unattended while suspended from the Ceiling Hoist!
- Only use the Ceiling Hoist with an approved sling that carries a legible CE label!
- The Ceiling Hoist may only be operated by suitably qualified care providers who have received instructions from the distributor! The Ceiling Hoist is not intended to be operated by the care recipient.
- The Ceiling Hoist must undergo a periodic inspection at least once every year by a technician employed by the distributor.
- The Ceiling Hoist may only be serviced and maintained by suitably qualified technicians!
- Injuries can result from the use of incompatible parts. Only parts designated or approved by PLS should be used on PLS products.
- PLS will not be held accountable for performance deficiencies, incidents or accidents that are the result of any unauthorized alterations to its products. Unauthorized changes can affect the safety of PLS products.
- Structural parts of the Ceiling Hoist may only be replaced by suitably qualified technicians!
- Batteries should always be charged in a well-ventilated and dry area!
- Chargers should be connected in accordance with the applicable installation instructions!
- Chargers must be inspected at least once a year!
- The Ceiling Hoist must not be used if it has been deformed due to transport or incorrect use. Return the Ceiling Hoist to the supplier!
- Wear can cause failure of parts and lead to serious injury. Full safety cannot be guaranteed when the operational life of a product has been exceeded.
- Be aware of strangulation risks concerning the hand control cable, the lifting strap, the emergency cord or the cable of accessories such as an electrical spreader bar and take appropriate precautions to prevent these.
- Keep all parts of the lift clean and dry. Clean with a damp cloth.
- Do not place the battery near a heat source, open flame or in direct sunlight
- Immediately cease use and contact your distributor if the lift or any other part is suspected to be damaged.

## 2. Functional overview and description

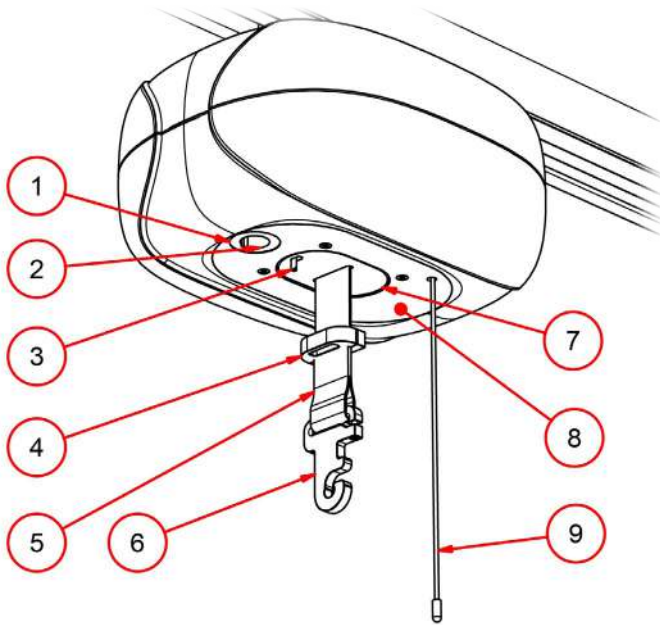


Figure 3, underside of the AR-200 Ceiling Hoist

Number	Explanation	Reference
1	Control lights.	Section 2.3
2	Connection socket for Hand Control.	Section 2.1.2
3	Hand Control latch.	Section 2.1.2
4	Hoisting belt clip for Hand Control.	Section 2.1.3
5	Hoisting Belt.	Section 2.4.4
6	Central Suspension Point for Spreader Bar.	Section 3.5
7	Height limit switch.	Section 2.4.2
8	Connection socket for electrical 4-point Spreader Bar.	Section 2.5
9	Emergency stop cord.	Section 2.4.3

The parts are dealt with in the specified sections.

## 2.1. Operation

---

The Hand Control has two functions: namely both the control and charging of the Ceiling Hoist.

### 2.1.1. Functional overview buttons

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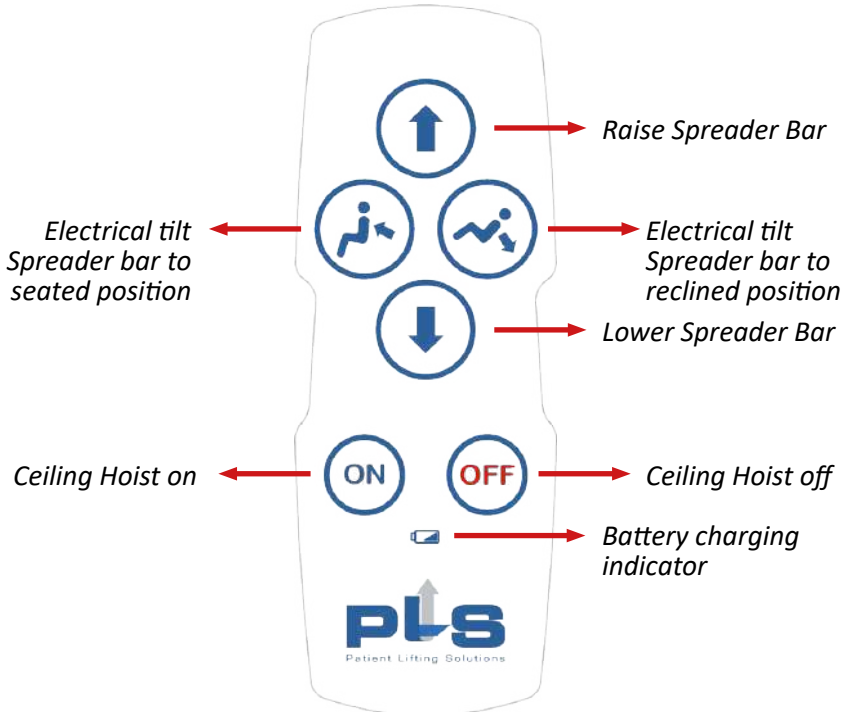



Figure 4, PLS handset buttons

 Before the lowering function starts working, there should be a load hanging on the hoisting belt (see section 2.4.4).

If a Driven Trolley is mounted, the function buttons are as follows;



### 2.1.2. Connecting the Hand Control

---

1. Push the Hand Control latch (no. 3) aside.
2. The plug on the Hand Control must be pressed firmly into the socket on the underside of the Ceiling Hoist, while holding the latch aside.
3. Release the latch.
4. Pull gently on the plug to make sure it is locked in position.

The Hand Control is under less stress thanks to the locking system. This prevents the plug from being pulled out of the Ceiling Hoist.



Use caution when gaining access to the underside of the hoist to attach the hand control. Use a stepladder or other similarly stable aid.

### 2.1.3. Using the Hand Control

---

When moving a care recipient, the Hand Control can be hung on the hoisting belt clip. When the Ceiling Hoist is not in use, it is recommended to place the Hand Control in the wall charger so that the hoist can charge (see section 2.2).



Never use the Hand Control or the Spreader Bar cable as a pull cord! This could damage the cord or make the Hand Control spring back with speed resulting in injuries.

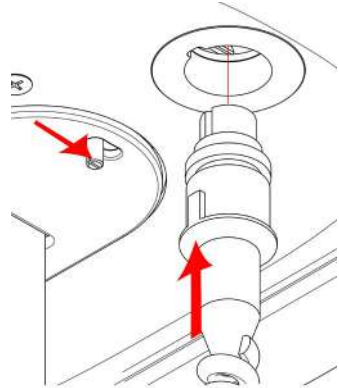


Figure 5, connecting the Hand Control

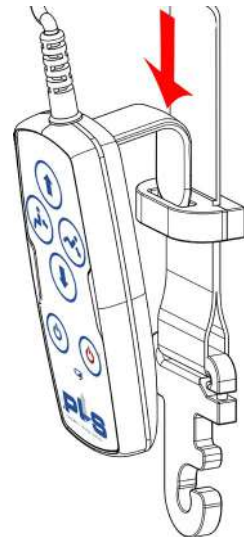


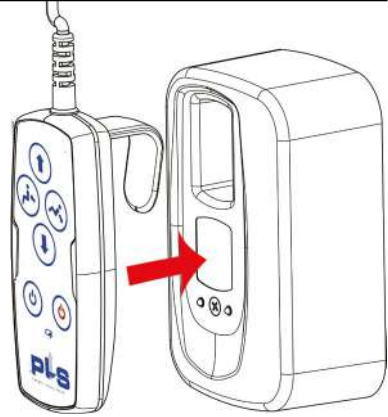
Figure 6, Hand Control in the hoisting belt clip

## 2.2. Charging

---

To maximise the lifespan of the batteries, it is recommended to charge them whenever the Ceiling Hoist is not in use. Charge the batteries as follows:




1. Place the Hand Control in the wall holder (*Figure 7, page 13*).
2. Check that the green charging light is on.
3. Check that the control light lights up. It will successively flash red, orange and green, depending on the charge level of the battery.



*Figure 7, Hand Control in wall charger*

If the flashing of the control light is undesirable, for example in a bedroom, you can switch it off using the button **'Ceiling Hoist off'** on the Hand Control. The Ceiling Hoist continues to charge even when turned off.

You can have the bedroom mode programmed as an extra option if desired. The charging indicator will then automatically switch off after 2 minutes. The Ceiling Hoist still continues to charge.

-  Charge the batteries in a dry area! Do not use the charger where flammable anaesthetic gasses are present.
-  You should allow for a charging time of around 8 hours if the batteries have a very low charge!
-  Do not operate the wall charger if there is any damage to the cord or the charger. Do not bend the cord forcefully or place heavy items on top of it as this could damage the cord which could result in firehazard or electrical shocks that cause injury.

The number of lift movements that can be made with a fully charged battery depends on the duration of the lift movements, the weight lifted, and the age and condition of the batteries.

## 2.3. Control lights

---

On the underside of the Ceiling Hoist, around the connection socket for the Hand Control, you can see a coloured ring (*Figure 3, page 10*). The control lights show the status of the batteries, and whether these are being charged (*flashing, see section 2.2*) when the Hand Control is placed in the wall charger. This ring lights up in one of the following three colours, depending on the status:

### 2.3.1. Green ring

---

The green light indicates that the Ceiling Hoist is active. In order to save battery life, the Ceiling Hoist will switch off automatically after 30 minutes of not being used. Press the button **'Ceiling Hoist on'** on the Hand Control to switch the Ceiling Hoist back on.

### 2.3.2. Orange ring

---

The orange light indicates that the batteries must be charged as soon as possible. The level is not yet critical, but it is recommended to charge the batteries. Charge the batteries as described in section 2.2.

### 2.3.3. Red ring

---

The red light indicates that the batteries have reached a critical level. You can no longer use the Ceiling Hoist. Charge the batteries as described in section 2.2. If the critical level is reached while moving a care recipient, you can still lower the care recipient (once).

## 2.4. Safety system

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### 2.4.1. Battery monitoring (light and sound signals)

---

Because discharging the batteries fully reduces their lifespan considerably and also affects the lift capacity and ease of use, the Ceiling Hoist is equipped with a system to prevent complete discharge.

During the orange status (*section 2.3.2*), when charging is recommended but not yet strictly necessary, the system will emit a beep every 10 seconds to signal that the Ceiling Hoist needs to be charged (as soon as possible).

If this signal is ignored for a long time, then the Ceiling Hoist will go into red status (*section 2.3.3*). The system will now beep every other second. The only function that will still be available is lowering the hoisting belt.



The Ceiling Hoist should now be continuously charged for at least 2 hours before it can be used again.



Batteries that are not used for an extended period of time will gradually lose their charge. Allowing the battery to lose too much charge harms its capacity and lifespan.



The red status is only reached when the orange status has been ignored for a long time. However, if the red status follows the orange status quickly, it is likely that the batteries have reached the end of their lifespan. In this case, contact your distributor.

### 2.4.2. Height limit switch

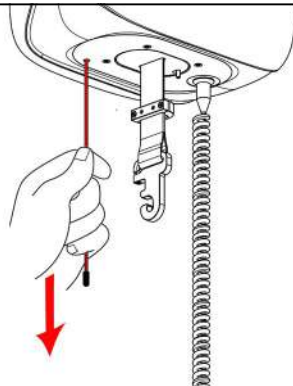
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The height limit switch or limit stop (*Figure 3, page 10*) ensures that the system switches off when the maximum lift height is reached or if the care recipient is hoisted at a skewed angle. You can still lower the hoisting belt.

### 2.4.3. Emergency stop

---

The Ceiling Hoist has a red emergency stop cord (*Figure 8, page 16*). Use this cord in emergency situations. When you pull the cord shortly, the Ceiling Hoist will stop. Continue pulling the cord to lower the Spreader Bar slowly. This will still enable you in all situations to place the care recipient into a wheelchair, for instance.



*Figure 8, emergency stop*

Release the cord to stop lowering. The Ceiling Hoist will then be switched off fully.

Press the button '**Ceiling Hoist on**' on the Hand Control to switch the Ceiling Hoist back on (*Figure 4, page 11*).

### 2.4.4. Belt tension

---

This function prevents the hoisting belt from congesting in the Ceiling Hoist when the belt is lowered without a load. The Ceiling Hoist is activated by a load equivalent to the PLS Spreader Bar, and without a load the Ceiling Hoist is on but the motor will not work. If you want to lower the hoisting belt without a load, you can pull gently on the belt or the Central Suspension Point while also pressing the '**Lower hoisting belt**' button.

### 2.4.5. Belt switch

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Turns off the Ceiling Hoist's motor when the hoisting belt is at its end. The hoisting belt can now only be raised.



## 2.5. Mechanically or electrically adjustable 4-point Spreader Bar

---

The Ceiling Hoist is available with a 2-point Spreader Bar, or a mechanically or electrically adjustable 4-point Spreader Bar or tilt Spreader Bar. A tilt Spreader Bar enables you to bring the care recipient to a seated or lying position. If you use an electrical 4-point Spreader Bar, this should be connected with a coiled cable into the socket indicated (*no. 8, Figure 3, page 10*). The Spreader Bar can then be operated using the Hand Control.



The hoist is designed to be used in conjunction with PLS track, accessories and slings. Please refer to any user guides supplied with these components while reviewing this manual.

### 3. PLS Spreader Bar

---

The PLS Spreader Bar can be attached to the PLS Central Suspension Point (CSP).

#### 3.1. Safe Working Load table

---

Type + number	Safe Working Load	Suitable to;
2-point Spreader Bar (8102)	275 kg	AR-200 and AR-275
4-point Spreader Bar (8103)	500 kg	AR-350 and AR-500



Slings may have another Safe Working Load than the Spreader Bar! Please, check this before lifting!



The PLS Spreader Bar may only be modified, to be added to the hole version of the CSP, by your distributor!



PLS and your distributor cannot be held responsible for any damage caused by accidental, inappropriate, improper, incorrect or injudicious use (described above and in section 1.4) of the PLS Spreader Bar or by insufficiently qualified persons. This also applies the use of a Spreader Bar or Sling made by any other company than PLS. In case of doubt, please contact your distributor.

#### 3.2. Important

---

Plan the movement of the care recipient. Avoid situations in which the care recipient is in the sling without supervision. Before lifting, check that the care recipient is completely free of his / her environment so that body parts do not get trapped. Be careful with hoses and / or wires that are attached to the user. The user is not allowed to hold the carrying strap during movement because there is a chance that the loops will shift during lifting.

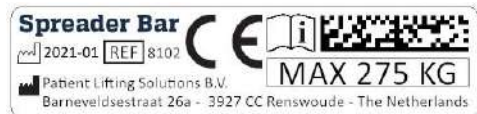
This could cause constriction. Before lifting, make sure that the hand control and the cable are free of the Spreader Bar, the care recipient and any other object. Do not allow the patient to hold the spreader bar to prevent injury from arm or finger pinching. The operator should always hold the spreader bar when in the vicinity of patients to avoid injury from hits from the spreader bar. Pay special attention when lowering to not hit the patient with the spreader bar as this could result in an injury.

### 3.3. Explanatory label overview

---

2-Point Spreader Bar example:

- 2021-01 = Year – Month.  
Also, the batch number.
- 8102 = type number of  
the Spreader Bar, in this case a 2-Point Spreader Bar.
- SWL = Safe Working Load in kilogram and behind this in LBS.
- WLL = Working Load Limit in kilogram and behind this in LBS.
- Manufacturer's name and address data.



### 3.4. Connect and release

---

The blue dot has a marking function. Only when the slot is in the same line as the dot, the hook can be connected and released on/off the Spreader Bar.

1. Hold the hook 90° to the Spreader Bar.
2. Place the opening of the hook over the pen of the Spreader Bar.
3. Pull back the hook and in the same movement, turn it back up.
4. Please, reverse these steps to release the Spreader Bar.



Spreader bars and accessories should always be installed by a trained person. Check the connection with Central Suspension Point before every transfer.

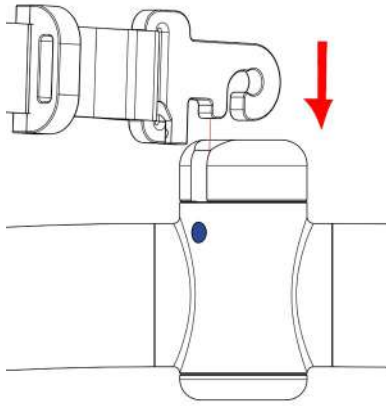


Figure 9, step 1 and 2

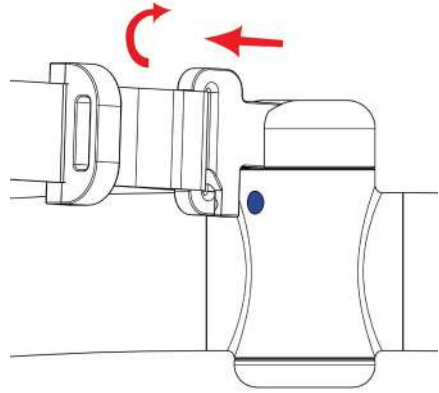


Figure 10, step 3

### 3.5. Attaching the Sling

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Be careful when attaching the lifting slings loops in/on the hooks! Use **all the available** hooks to attach the sling!



Please make sure that the loops of the sling are secured in **all available** (2 or 4 hooks) hooks of the Spreader Bar!



When the hoist is not in use remove the sling(s) from the product to prevent strangulation or entrapment should the device be tampered with.

⚠ Stay alert when lifting is started. The loops must stay in place and correctly positioned!

⚠ To prevent injury check that the sling is not caught on any obstructions when lifting.



*Figure 11, attaching the loops of the Sling on all the available hooks*

## 4. Lifting a care recipient

---

Follow the steps below to lift a care recipient safely:

1. Before using the Ceiling Hoist, always inspect the devices you will be using and the area. Make sure the area is well lit.
2. Secure the sling according to the instructions provided by the supplier of the sling.
3. Secure the sling to the Spreader Bar with loops or clips.
4. Use the Hand Control to lift the care recipient. The ideal lifting height is when there is good eye contact between the care recipient and the carer (eye level).
5. Walk alongside the Ceiling Hoist when riding and stay near to the care recipient.
6. Move the Ceiling Hoist to the bed, chair or toilet.
7. Now lift the care recipient to the height required to bring the person to the desired position.

When using an electrically adjustable 4-point Spreader Bar, you can use the Hand Control to bring the care recipient into a seated or lying position.

8. When lowering the care recipient, ensure that the hoisting belt is taut at all times. The Ceiling Hoist will stop if the hoisting belt becomes slack.



Never use the Hand Control or the Spreader Bar cable as a pull Cord. The Spreader Bar can be used as a handle to move the Ceiling Hoist. Always follow behind the care recipient and push the person along the path of the rail to the desired place.



Do not raise the care recipient higher than is necessary for the transfer.



The Ceiling Hoist may only be operated by suitably qualified care providers who have received instructions from the distributor.



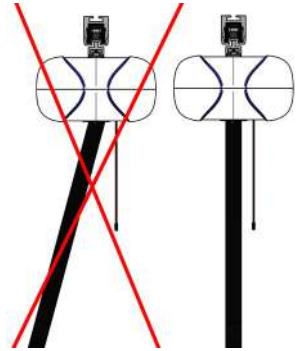
It is not permitted to use the AR-200 Ceiling Hoist to lift a weight exceeding 200 kg! The slings, accessories and the rail may have other maximum payloads. The lowest value determines the maximum payload of the total system.



Always lift the care recipient with a straight hoisting belt hanging vertically beneath the Ceiling Hoist (*Figure 12*).

This is important:

- with regard to the safety and comfort of the care recipient.
- to avoid wear to the hoisting belt that may occur if it rubs on the height limit switch of the Ceiling Hoist.
- to prevent the height limit switch of the Ceiling Hoist from being activated which means that the Ceiling Hoist can only be lowered.
- Make sure there are no objects that can interfere with the running way of the strap. Damage to the strap could cause a patient to fall!



*Figure 12, correct and incorrect position of the hoisting belt*



A clinical assessment of the patient's suitability for transfer must be carried out by a qualified health professional prior to an attempt at transfer. Among other things the pressure exerted by the sling on a patient's body and its potential implications for the patient's health condition should be considered.



Move the lift by pulling and pushing the spreader bar or use the button on the hand control when using a driven version; do not pull or push on the patient!



When lifting from a bed ensure that the bed safety side is in place to prevent patients from falling.



Clean the Hoist and accessories before use by a different person in order to reduce the risk of cross-contamination.



The products described are suitable for use within the professional health care facility environment as well as the home health care environment. Do not use for any special environments.

## 5. Detachable version

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The AR-200 is also available as a detachable version (AR-200D). The Ceiling Hoist is then fitted with a detachable trolley. The Ceiling Hoist can easily be detached from the trolley by lifting it up about 15 mm and turning it 90 degrees. In order to put the Ceiling Hoist back onto the trolley, push the Ceiling Hoist onto the trolley at a 90-degree angle from the rail. Push the Ceiling Hoist as far as possible onto the trolley and turn it 90 degrees. The Ceiling Hoist should now be attached to the trolley again. For extra safety, the Ceiling Hoist will not work if it is not correctly attached to the trolley.



*Figure 13, detaching of the Ceiling Hoist*



## 6. PLS Rail System

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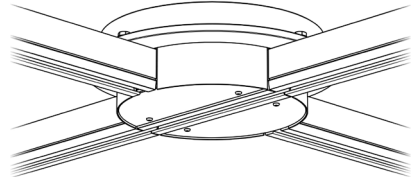
The rail system that you have chosen can be fitted with a Transit Coupling, Turntable or Track-Switch.

### 6.1. Turntable (optional)

---

A turntable allows you to traverse crossings in the rail system.

If you leave the Ceiling Hoist in the middle of the turntable for 1.5 seconds, the status lighting will turn green and it will automatically make a quarter turn. You can leave the turntable at both sides.



*Figure 14, Turntable*

If you use multiple Ceiling Hoists in your system, it is possible that you will not be able to ride straight into a turntable because it is turned. Wait for 1.5 seconds at a safe distance from the turntable, after which the turntable will make a quarter turn, allowing you to ride into it.

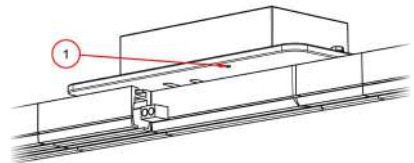
### 6.2. Track-Switch (optional)

---

You can use a Track-Switch to create a junction in a continuous rail.

If the Track-Switch is in the correct position, you can continue moving.

If this is not the case, then stop moving the Ceiling Hoist for 1.5 seconds at a safe distance from the Track-Switch. The status light **(1)** will turn green and the switch will automatically change direction. You can continue the transfer.



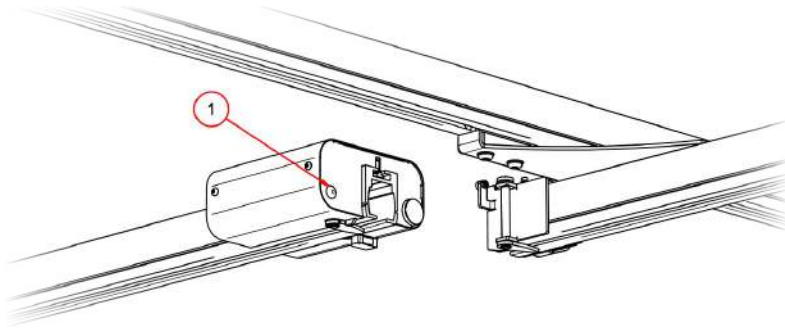
*Figure 15, Track-Switch*

## 6.3. Transit Coupling (optional)

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If your rail system is fitted with an XY system, you can connect the movable rail to the rest of the track. You do this with a Transit Coupling (*Figure 16*).

1. Slide the movable rail level with the fixed rail.
2. Gently move the Ceiling Hoist towards the Transit Coupling until the status light (1) turns red.
3. After 1 second, the Transit Coupling will automatically make the connection between the movable and fixed rails.
4. Upon connection, the status light (1) will turn green.
5. You can now safely move the Ceiling Hoist off the movable rail.



*Figure 16, Transit Coupling*

When you want to move the Ceiling Hoist from the fixed rail back to the movable rail, the Transit Coupling will automatically uncouple so that you can use the XY system again.

-  Keep a safe distance during turn, switch and Transit Coupling events. This way, moving parts are protected. The distance depends on the distributor's settings.
-  Only move the movable rail when the Ceiling Hoist is in the movable rail.
-  There may never be more than one Ceiling Hoist in an XY system at any one time.

## 7. Maintenance

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The Ceiling Hoist meets the requirements and specifications of the applicable European directives, regulations and amendments.

### 7.1. Lifespan

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The expected lifespan of the Ceiling Hoist under normal use and normal circumstances when maintained in accordance with the instructions and regularly inspected is 10 years (~15000 transfers). Excluded from this are parts that are subject to wear for instance, but not limited to, hoisting belts, slings and batteries.

Special circumstances such as use in a humid environment or in an environment where corrosive vapours are present may reduce the lifespan of the Ceiling Hoist.

At the end of life of the product it should be discarded or offered for recycling according to local laws and regulations. The product may be contaminated in which case it has to be disinfected before decommissioning.

### 7.2. Schedule

---

The Ceiling Hoist has been designed to require minimum maintenance. The following maintenance schedule is recommended:

- Daily and weekly maintenance must be done by Ceiling Hoist users.
- The annual inspection and any repairs to the Ceiling Hoist must be performed by the distributor or by specially trained technicians.

Contact the distributor for details about maintenance contracts.



If you have any doubts about the condition of the Ceiling Hoist, always contact your technical department or the distributor.



Do not use other electronic products closer than 30 cm to the hoist.

Do not use other equipment stacked or adjacent to the hoist.

When pacemakers, defibrillators and other medical devices are used, please consult the user alert card which has been issued to the user regarding use of electrical items close to the hoist.

## 7.3. Before each use

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Prior to each use an inspection should be completed by the user of the Hoist. Should any part of the system fail the inspection, DO NOT use the Hoist.

- Check whether all parts of the Ceiling Hoist are present.
- Check the devices (lifting slings) used for loose stitching or loose parts before each use.
- Check the Spreader Bar's connection to the Central Suspension Point. This must not be loose.
- Check the state of the hoisting belt.

## 7.4. Weekly maintenance

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Weekly maintenance consists of the following actions:

- Checking the operation of the emergency stop and the height limit switch (*see sections 2.4.2 and 2.4.3*).
- Check whether all moving parts can move freely without any annoying noises.
- Check that the user manual, basic instruction card and log book are present.



If you have any doubts about the condition or correct operation of the Ceiling Hoist, always contact the technical department or the distributor.

## 7.5. Annual inspection and maintenance

---

The Ceiling Hoist must be inspected once a year in accordance with the NEN-EN-ISO 10535 standard. The chargers should also be inspected every year in accordance with the applicable requirements. These inspections should be carried out by the distributor or by another suitably authorised body.

The distributor offers you the option of having your Ceiling Hoist thoroughly inspected once a year under a maintenance contract. Contact the distributor for more details about this.

## 7.6. Removing parts

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Any parts that are replaced or removed can be returned to the distributor. You can also give these parts to the technician for destruction. PLS or the distributor will ensure that these parts are processed in an environmentally friendly manner.



If you dispose of parts yourself, the batteries must be disposed of as chemical waste and the electronic components must be processed according to the WEEE guideline.



## 7.7. If the Ceiling Hoist is not working

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Check the following if the Ceiling Hoist is not working:

- Check whether the batteries are sufficiently charged. The control lighting shows the status of the batteries (*see section 2.3*). When they are empty, charge them according to the instructions in *section 2.2*.
- Verify that the emergency stop has not been activated. For problem recognition and resolution, see *section 2.4.3*.
- Verify that the height limit switch has been pushed in (*see section 2.4.2*). It is still possible to lower the Spreader Bar.
- Check whether the belt is slack and pull it tight if necessary (*see section 2.1.1*).
- Check whether the plug of the Hand Control is properly connected. (*If not; remedy this according to section 2.1.2*).

If you continue to experience problems, contact the technical department or your distributor.

## **8. Appendix**

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### **8.1. Warranty Provisions**

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PLS provides a 5-year warranty, counted from the date of purchase, for the AR-200 against failure by virtue of defects in material or workmanship. PLS does not offer any guarantee on components that are prone to wear and tear, such as, but not limited to wheels, hoisting belts, slings and batteries.

The guarantee does not cover damage or defects that may be caused to the AR-200 Ceiling Hoist due to incorrect or imprudent use and repairs by people who are not suitably qualified. PLS or the distributor will evaluate this.













Do not attempt to remove screws, open the cover or service the product yourself as this will void the warranty.

In no event shall PLS incur liability for any consequential or unforeseeable losses.

PLS retains the right to make adjustments to the product which deviate from the descriptions in this user manual. PLS will not be responsible for this.

Should changes be made that affect the function, operation or form, resulting in the inability of the user to operate the Ceiling Hoist without instruction, PLS will provide updated documentation. The distributor is responsible for supplying users with this information.

## 8.2. Explanatory label overview

Symbol	Verklaring
	CE-Marking
	The product manufacturer.
	The article number of the product.
	Read the User Manual before operating the Ceiling Hoist.
	WEEE (Waste of Electrical and Electronic Equipment)
	Protect the product from water.
WLL	Working Load Limit.
	Serial number of the product.
	The date of the product's manufacture.
	Unique Device Identification.
	Data Matrix of the UDI.
	Maximum Temperature Exposure Limits. (while not in use)
	Medical Device

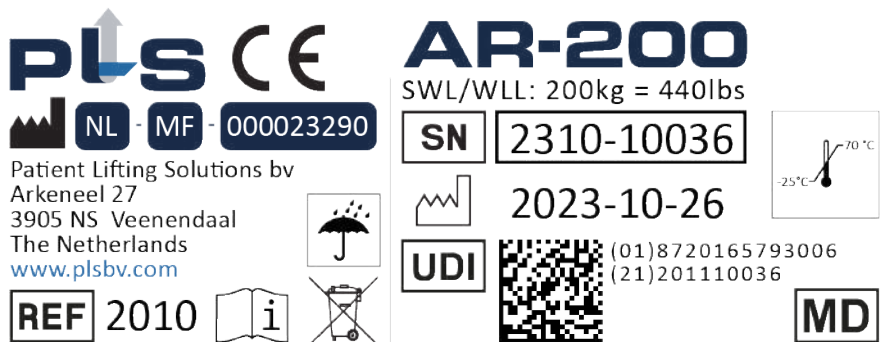


Figure 17, overview of the label

The label can be found on top of the Ceiling Hoist. Information on the label:

- Type of the relevant product.
- Maximum permitted lifting weight.
- Serial number (example 2011-10036) consisting of:
  - o 23: year of manufacture.
  - o 10: month of manufacture.
  - o 1: version of the product.
  - o 0036: number of the product; in this case the 36th Ceiling Hoist produced.
- Manufacturers name address data and website.
- Manufacturer's logo.
- UDI (GS1 Data matrix) consisting of;
  - o GTIN (Product identification): 08720165793006
  - o Serial number, in this case; 2011-10036



### 8.3. Technical specifications

Functions	Value/unit
Maximum lifting capacity	200 kg
Operation	Hand Control
Minimum charging time (critical level)	8 hours
Switch-off time when not in use	30 minutes
Switch-off time charge indication (bedroom mode)	2 minutes
Number of lifts per charge @70 cm	>70 @80 kg >40 @120 kg

Dimensions (Figure 18)	Value/unit
Length (A)	270 mm
Width (B)	307 mm
Height (C)	148 mm
Minimum hoisting belt length (D)	136 mm
Maximum hoisting belt length (E)	2260 mm

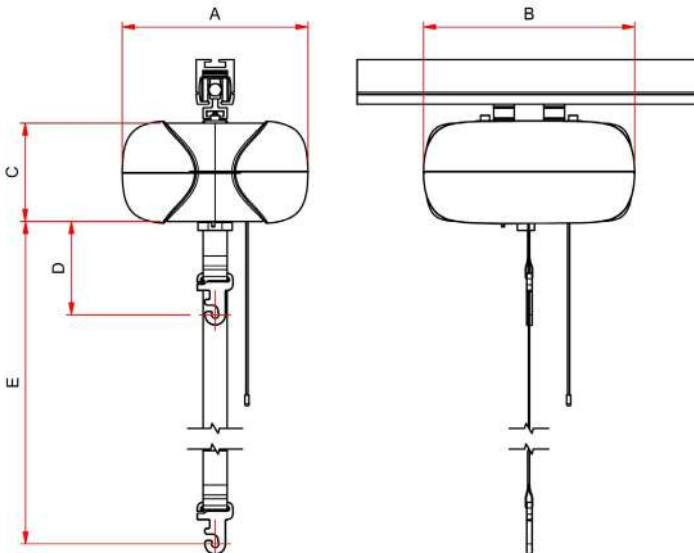


Figure 18, Ceiling Hoist dimensions

# 8.4. EC Declaration of conformity

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Patient Lifting Solutions bv  
 Arkeneel 27  
 3905 NS Veenendaal  
 The Netherlands

## Declaration of Conformity

We;

### Patient Lifting Solutions



accept full responsibility that the devices in the product groups:

- PLS Ceiling Hoist
- PLS Rail System
- PLS Accessories

are in conformity with the Regulation (EU) 2017/745 and the following standards;

- IEC 62366-1
- ISO 14971
- EN 12182
- ISO 10535
- ISO 60601-1-2
- ISO/TR 15608
- EN 1492-1+A1
- ISO 15223-1

List of devices of the product groups (all devices; Class 1, Regulation (EU) 2017/745)			
Product Group	Product Name	Basic UDI-DI	Date of introduction
PLS Ceiling Hoists	AR-200	87201657932010TQ	25 August 2014
	AR-275	87201657932027U9	22 April 2021
	AR-350	87201657932035U8	05 May 2017
	AR-500	87201657932050U4	05 December 2019
PLS Rail System	Transit Coupling	87201657932025U5	04 July 2013
	Track-Switch	87201657931003/4G4	04 July 2013
	Turntable	87201657931001/2FN	04 July 2013
PLS Accessories	PLS 2-point Spreader Bar	87201657938102V8	27 March 2019
	PLS 4-point Spreader Bar	87201657938103VA	05 December 2019

**M. van den Brandt**  
 Chief Executive Officer  
 Patient Lifting Solutions bv

**Place of issue:**  
 Veenendaal, The Netherlands  
**Date of issue:**  
 29 november 2023  
**DOC number:**  
 DOC2023v11

The validity of this Declaration of Conformity is limited to the above-named product groups.  
 This EU declaration of conformity is issued under the sole responsibility of the manufacturer.

## **8.5. About Patient Lifting Solutions**

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Patient Lifting Solutions (PLS) designs, develops and manufactures Ceiling Hoist solutions for the healthcare sector. We can conceive a reliable lifting system for any ceiling and in any situation.

PLS aims to provide a ceiling lift system that is user-friendly and possesses advanced technology.

The products are designed and made by PLS in The Netherlands and distributed by local distributors.

## **8.6. Contact details Patient Lifting Solutions**

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Patient Lifting Solutions B.V.  
Arkeneel 27  
3905 NS Veenendaal  
The Netherlands  
Email: [info@plsbv.com](mailto:info@plsbv.com)  
Web: [www.plsbv.com](http://www.plsbv.com)





