

# esense



## esense Line series user guide

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## Product versions Line series

Important product changes as of February 2021:

- The Line<sup>+</sup> (max. 175kg) has been replaced by the Line200 (max. 200kg).
- As of this date all manual patient lift versions are also fitted with a sensor in the push bar; therefore all information in this manual regarding functionality for which the force sensor is required (such as Ergo feedback) does *not* apply to manual lifts delivered before this date.

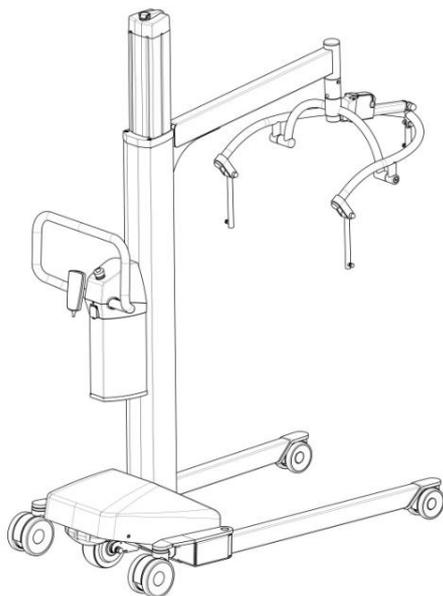
## 1 Introduction

Thank you for choosing an esense patient lift!

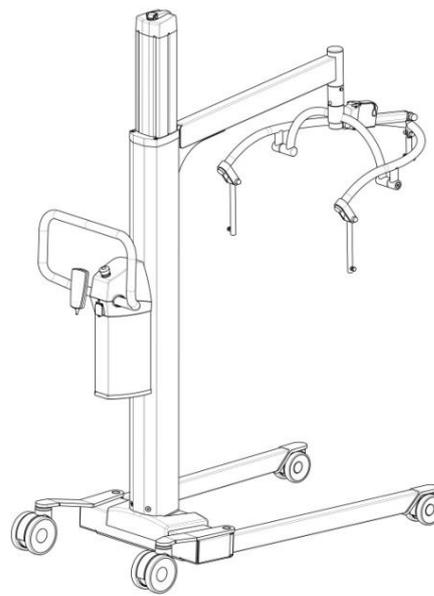
The lifts in the Line series are *passive* patient lifts. With this type of lift you can transfer a patient with minimal force.

To provide a fitting solution for every situation, the Line is available in various models. The standard Line is suited for patients up to 150kg, the Line200 with extended base up to 200kg (Line<sup>+</sup> 175kg) and the Line230 is suited to lift patients up to 230kg.

Esense Line patient lifts are standard equipped with the patented esense power assist drive system, making it possible to move the lift with minimal force in any direction. All lifts in the Line series are also available as manual version without drive system (esense Line *manual*).



esense Line



esense Line *manual*

Esense is a product by Indes, a renowned development and production company based in the Netherlands. With over 30 years of experience in development and production of products for the Cure and Care market, Indes creates products people rely on. By gaining full insight in user needs we aim to develop products that improve the quality of everyday life.

Esense stands for working healthy. That is why esense patient lifts are standard equipped with Ergo feedback, warning the user when too much force is used while moving the lift. The function is created to support and encourage safe use of the lift by making the user aware of peak forces in everyday work situations. See chapter 6 .5 'Ergo feedback' for more information.

Visit our website [www.esense-moves.com](http://www.esense-moves.com) for information about our complete product line.

## 2 About this guide

### 2.1 Definitions

The following terms are used throughout this guide:

**Transfer**

The complete operation of lifting, moving and lowering the patient.

**Patient**

The person being transferred with the patient lift

**Sling**

The textile strap supporting the patient during a transfer with the patient lift.

**(Electrical) system**

Electronics and software necessary for functioning of the electrical lift motors, the power assist drive functionality and the indication LEDs (lights).

### 2.2 Specific sections

**Caution!**

Text in red boxes describes important instructions and potentially dangerous situations and shall be read carefully. Please contact Indes for clarification in case the text raises any questions.

**Notice!**

Text in blue boxes describes points of attention and other issues that are important to be aware of before and during use of the patient lift. These texts shall also be read carefully.

**esense**

Text in green boxes and/or marked with the esense logo applies only to lifts provided with esense drive functionality.



### 3 Important safety instructions

Read this user guide completely before use of the patient lift. This is vital to both your own safety and the safety of the patient.

**Caution!**

Ensure that you never lift patients weighing over 150kg (Line) / 175kg (Line<sup>+</sup>) / 200kg (Line200) / 230kg (Line230).

**Caution!**

Ensure that you never lift more than one patient at a time.

**Caution!**

Ensure that you never leave a patient in the lift unsupervised.

**Caution!**

The patient lift is not suited to be exposed to large quantities of water. Therefore it is not suited for use under a shower. Prevent any parts of the lift and lifting frame to come in contact with shower and bath water.

**Caution!**

The patient lift is not suited for use on slopes. Do not perform a transfer on a slope.

**Caution!**

When using the patient lift, ensure that no lateral forces are being exerted on the patient, the lifting arm or the mast: this may lead to decreased stability of the lift.

**Caution!**

Do not expose the lift to temperatures below -5°C and over 50°C.

**Caution!**

Esense lifts are guaranteed to be safe to use in combination with 'esense' slings, identified by the label. When using slings of other brands, make sure the clips are compatible with the geometry of the lugs on the spreader bar; if in doubt about compatibility, check with the sling manufacturer.  
See chapter 10.3 'Lugs 4-point spreader bar' for specifications.

**Caution!**

The esense power assist functionality is activated by sensitive sensors in the pushbar. Ensure at all times that the pushbar can move freely and that no external forces are exerted on the pushbar, other than the push and pull force required for manoeuvring the lift.

**Caution!**

The power assist functionality on esense patient lifts contains moving parts required for driving and steering of the drive wheel. These components are protected by the blue cover at the back of the lift. Prevent hands or fingers from getting stuck underneath the cover when the esense system is active. Make sure to switch off the system before carrying out any maintenance.

**Caution!**

Do not hang clothes, coats, slings etc. on the pushbar. Do not place or clamp any objects between the pushbar and the mast or any other surfaces.

**Notice!**

Take care to regularly check the patient lift for loose parts and wear of for example rubbers, wiring, straps or plastic covers. In case of any irregularities, stop using the lift immediately and contact your service department or supplier.

Indes shall not be held responsible for any damage and potential resulting consequential damage in case of intentional damage, overdue maintenance, improper use and deviation from the instructions set out in this user guide.

#### **Notice!**

Please be aware that, in compliance with the MDR directive (article 2 – 65), any serious incident that has occurred related to this medical device should be reported to the manufacturer and/or distributor and to the competent authority in the Member State in which the user is located.

A serious incident is an incident that directly or indirectly led, might have led or might lead to:

- Death of the patient, user or any other person;
- temporary or permanent health deterioration of the patient, user or any other person;
- or a public health risk.

## **4 Certification**

All esense products are marked with a **CE** certification. The products are classified as class I of the regulation (EU) 2017/745 on medical devices.

All esense products are tested and meet the requirements of **NEN EN ISO 10535** 'Hoist for the transfer of disabled persons – Requirements and test methods' and **NEN EN ISO 60601-1** 'Medical electrical equipment'.

## **5 Product description**

This chapter describes the intended use and provides an overview of the product models and main components of the patient lift. See chapter 6 'User interface' for detail information regarding its use.

### **5.1 Intended use**

The patient lifts in the Line series are *passive* patient lifts, aimed at use with patients with no remaining mobility functions. These patient lifts are intended to transfer patients in mobility class D and E.

The device enables one person to lift and move an incapacitated patient or a person with a disability, of any size and weight, safely and with minimal physical effort.

Operation of esense patient lifts may only be done by trained medical personnel.

Esense lifts are intended for use in indoor care facilities like, hospitals, elderly homes, nursing homes, clinics. The products are typically used in combination with hospital beds and care beds, (electric) wheelchairs and toilets. The product may be used in bathrooms, but is not intended for use in bath or shower. The product is not fully splash water proof. The product may only be used on horizontal, flat floors. Preferably smooth and hard surfaces, but low pile carpet is allowed.

### **5.2 Product models**

Line patient lifts are standard equipped with the esense power assist drive system; an electric drive wheel for power assisted driving and manoeuvring.



All lifts in the esense Line series are also available as manual version without drive system (esense Line *manual*).

Line patient lifts are available in versions for various maximum patient weights:

Line	max. 150kg, small platform size
Line <sup>+</sup>	max. 175kg, more arm length compared to Line; more patient space

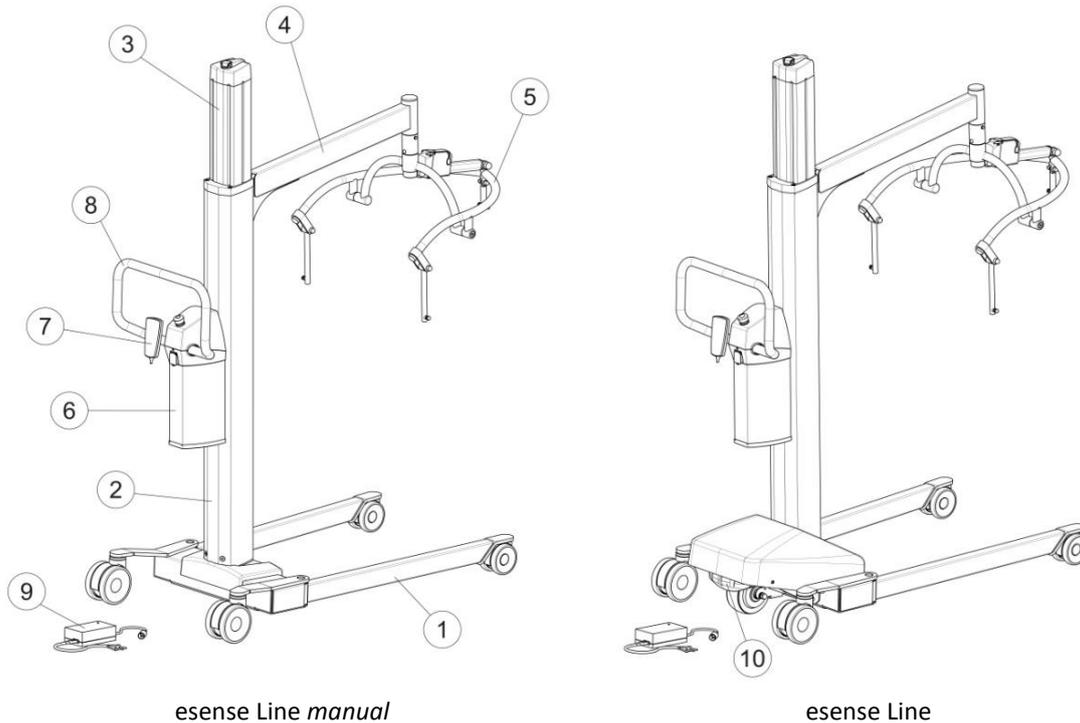
Line200	max. 200kg, wider platform compared to Line+; higher max. lifting weight
Line230	max. 230kg, less arm length compared to Line200; suited for obese patients

All Line patient lifts can be equipped with various hangerbar systems:

- 4-point electrically tiltable hangerbar
- 2-point static hangerbar
- Adapter for a 2-point Guldmann hangerbar

Various lifts can be equipped with a scale system to weight patients.

### 5.3 Main components



- |                |                    |
|----------------|--------------------|
| 1. Base        | 6. Controller box  |
| 2. Lower mast  | 7. Hand control    |
| 3. Upper mast  | 8. Pushbar         |
| 4. Lifting arm | 9. Battery charger |
| 5. Hanger bar  | 10. esense drive   |

### 5.4 Component overview

#### Base (1)

The base of the patient lift is equipped with 4 castor wheels: 2 braked rear castors and 2 unbraked front castors.

Furthermore it is standard equipped with electrical leg adjustment. Adjusting the legs improves accessibility to the patient. The leg adjustment is controlled using the hand control and the motor is located on the bridge (the base part connecting the legs).

See paragraph 6.10 'Leg adjustment' for more information.

#### Mast & lifting arm (2-4)

The lifting arm is provided with an electrical height adjustment to adjust its position along the mast. The height adjustment is controlled using the hand control. The linear actuator for the height adjustment is

located in the lower mast. In case of a power outage the motor can be controlled manually. The hanger bar is attached to the outer end of the lifting arm.

See paragraph 6.11 'Height adjustment' for more information.

#### **Hanger bar (5)**

The patient lift is standard equipped with electric tiltable 4-point hanger bar, fitted with lugs to attach slings with clips. The Line series is also available with manually adjustable 2-point hanger bar with attachment points for slings with loops.

See paragraph 6.12 'Hanger bar adjustment' for more information.

#### **Controller box (6)**

The controller box is located at the back of the mast. It contains the electronics needed to control the various electrical adjustments. In the manual version it also contains the battery pack.

In models with esense drive the battery pack is located underneath the cover on top of the drive.



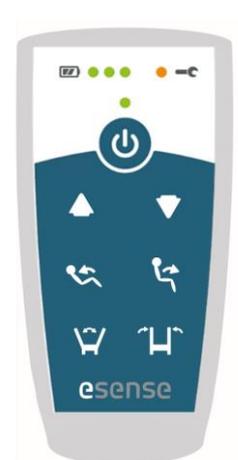
On the outside of the controller box a battery charger plug, USB port, connector for the hand control and an emergency switch are located. Also the pushbar is connected to the controller box.

#### **Hand control (7)**

The hand control is connected to the controller box through a flexible spiral cord. It can be placed and kept in a bracket mounted to the pushbar. With the hook on the back it can also be hung from other parts of the lift.

The hand control is equipped with several buttons and indication LEDs to control the various electrical adjustments.

See paragraph 6.1 'Hand control' for more information.



#### **Pushbar (8)**

The patient lift is moved using the pushbar. The bracket for the hand control is mounted to the pushbar. The pushbar is equipped with force sensors monitoring both the magnitude and the direction of force exerted on it.

In models with esense drive the information from the sensors is used to control the electrical drive support.



See paragraph 6.8 'Driving / manoeuvring' for more information.

#### **Battery charger (9)**

The battery of the patient lift is charged using the supplied battery charger. To do so, connect it to the charger plug on the controller box. Then make sure the lift is switched off and connect the charger to the mains socket.

See paragraph 6.7 'Charging the battery' for more information.

#### **Esense power assist functionality (10)**

Esense lifts are equipped with an additional electrical drive wheel. The wheel can be positioned electrically and turned sideways to ease manoeuvring. It provides the lift with electrical drive support up to a max. speed of 6 km/h. The wheel is activated by exerting force on the pushbar with both hands. A spring pushes the drive wheel against the floor surface, enabling the wheel to move several centimetres up and down while driving over thresholds and other obstacles.

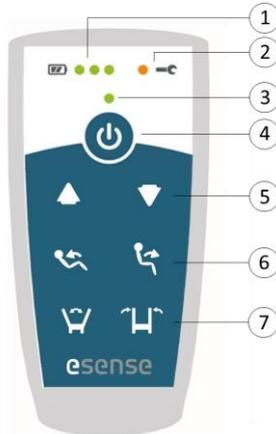
See paragraph 6.9 'Driving / manoeuvring' for more information.



## 6 User interface

### 6.1 Hand control

The patient lift is controlled using the hand control. It can be taken out of the bracket and held in hand, making it possible to control the lift from many different positions.



#### Indication LEDs

1. Battery level indication
2. Service indication
3. On-off indication

#### User controls

4. On-off switch
5. Height adjustment
6. Hanger bar adjustment
7. Leg adjustment

#### Notice!

When the hand control is disconnected from the controller box the various motors switch off. The electrical adjustments and drive support (in esense models) are unavailable and all indication LEDs are inactive. The motors become active again after reconnecting the hand control.

### 6.2 Switching the patient lift on-off

Shortly press the on-off switch (4) to switch the lift on.

A beep signal will sound, the on-off indication LED (3) lights up orange and the system automatically runs a system test. When the system test is complete the on-off LED turns green and a second beep signal sounds. The battery level indicator (1) shows the current battery level.



To switch the lift off press the on-off switch for a few seconds. All indication LEDs will go out.

#### Notice!

Pay attention not to place your hands on the pushbar immediately after turning on the lift. The sensors need a few seconds to calibrate. Do not touch or move the pushbar during calibration. If this happens, calibration is postponed: the indication LEDs are blinking and a beep signal sounds. As soon as the pushbar is released the system will resume calibration.



### 6.3 Auto-off

After 30 minutes of inactivity the lift automatically switches off completely.

## 6.4 Service indication

### Periodic maintenance notification

When the service indication LED (2) blinks 3 times when the lift is switched on, it is time for periodic maintenance.



During start-up the current date is compared to the date for next periodic maintenance that is set in the system. The moment the current date passes the maintenance date, the hand control displays this notification every time the lift is switched on. When periodic maintenance is carried out a new maintenance date is set in the system and the notification stops.

The maintenance notification is shown for a maximum period of 1 year, regardless of whether maintenance has been carried out.

### System fault notification

When the service indication LED is continuously blinking orange the system has encountered an error.



When this happens turn the lift off and then on again. If the service LED keeps blinking the electrical system encounters an error and immediate maintenance is required. Please contact your supplier in this case.

## 6.5 Ergo feedback

### Physical overload prevention

The internationally accepted technical report ISO/TR 12296:2013\* provides guidance for assessing the problems and risks associated with manual patient handling in the healthcare sector, and for identifying and applying ergonomic strategies and solutions to those problems and risks. An important guideline that is emphasised in this report is that the force required for moving a patient with both hands must never exceed 20 kg. Each time a force of more than 20 kg is applied is considered an unwanted risk. For pushing and pulling with one hand (wringing or rotating movements during manoeuvring) the guidelines give a limit of 15 kg.

Esense stands for working healthy and esense products contribute to achieving this goal. A patient lift equipped with esense drive functionality is a great and effective solution to bring the physical workload within these guidelines. But when the drive functionality is not used correctly use forces can still be too high. Therefore it is very important to use the lift the right way.

See paragraph 6.9 for user instructions for correctly moving patient lifts with esense drive functionality.

### Feedback on used force

To help the user monitor the forces used while moving the lift, esense patient lifts are standard equipped with ergo feedback. When the user moves the lift the force sensor in the pushbar measures how much force is applied. When this exceeds the threshold value for the Ergo feedback the user gets a warning: all LED's on the hand control blink 4 times.

### Switching the feedback off-on

Upon delivery of the lift the Ergo feedback is standard switched on. The feedback can easily be switched off by a key combination on the hand control. To do so, keep pressing the right button of the leg adjustment (7) and shortly press the on-off button (4). The feedback is switched off and to confirm all LED's on the hand control blink once.

Use the same key combination to switch the feedback on again. To confirm all LED's on the hand control blink 4 times.

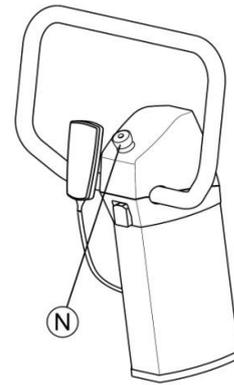
### The feedback threshold setting

The threshold value is standard set at 15 kg for patient lifts equipped with esense Drive and at 20 kg for manual versions. If desired the threshold value can be set higher or lower in PowerTalk, the service software for esense products. Please contact your supplier for more information.

## 6.6 Emergency switch

If the lift behaves unpredictably it is possible to immediately switch off all motors by pressing the red emergency switch (N) on the controller box. When the button is pressed all LEDs on the hand control start blinking and a beep signal sounds. This also happens if the lift is switched on while the emergency switch is already pressed.

To unlock the system first turn the button clockwise until it comes back up. Then shortly press the on-off switch (4). The LEDs go off and the lift is ready to use.

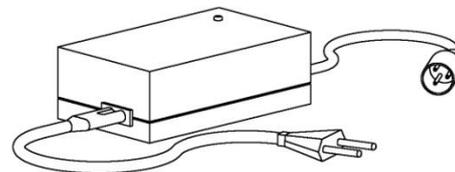


### Caution!

Do not use the emergency switch as on-off switch.

## 6.7 Charging the battery

To be able to use the lift, the battery needs to be charged. The lift is supplied with a compatible battery charger.



### Caution!

Make sure to only charge the patient lift with the charger supplied with the it. Using other chargers can potentially damage the lift.

### 6.7.1 Battery charger

To charge the battery open the cover at the back of the controller box. Plug the charger into the controller box and connect it to the mains socket. The charging process starts shortly thereafter.

Charging of a fully empty battery takes up to 4.5 hours. Ensure to close the cover on the controller box after disconnecting the charger.

The indication LED on the battery charger informs about the status of the charging process. The following table lists the possible LED indications and their explanation.



Indication LED (battery charger)	Explanation
Off 	Charger is not connected to the mains socket
Yellow 	Charger connected to the mains socket, but not connected to the lift or in start-up
Orange 	Battery is being charged
Green/yellow 	Battery level between 80-100%
Green 	Battery fully charged
Orange/green 	Charging error *

\* In case a charging error occurs disconnect the plug from the mains socket and plug it in again.

**Notice!**

Even when the lift is not used the battery will drain slowly. A fully discharged battery can get damaged. Therefore it is advised to fully charge the battery at least once every 3 months.

**Notice!**

The battery can be charged at any time. It does not harm to charge it when it is not yet fully discharged.

**Notice!**

The lift cannot be used during charging. All electrical adjustments and the drive support (in models with esense drive) are inactive.

**Notice!**

It is advised to disconnect the charger from the mains socket after charging. Otherwise it will keep consuming a small amount of energy.

**Caution!**

The battery charger is designed for use in dry environments. It is not suited for use in bathrooms or other damp/wet environments.

**Caution!**

Do not cover the battery charger. The charging process can cause the charger to warm up and high temperatures can negatively influence its functioning.

**6.7.2 Battery indication on hand control**

The battery level indication LED on the hand control reflects the approximate percentage of battery capacity left. It is only lit if the hand control is switched on.

Indication LED (hand control)	Percentage of battery capacity left
Green 	Over 70% charged
Green 	45-70% charged
Green 	20-45% charged
Orange 	Less than 20% charged
Blinking orange 	Battery level sufficient for one more lifting movement *
Blinking orange and beep sounding 	Battery empty

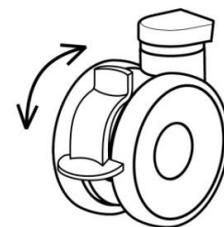
\* When the orange LED is blinking the battery has sufficient power for only one more downward lifting movement (moving the arm upward is no longer possible).

**Notice!**

If the lift is switched on while it is charging the battery indicator on the hand control shortly shows an animation of an increasing number of green LEDs.

**6.8 (Dis)engaging the mechanical brakes**

Before you are able to move (drive/manoeuvre) the patient lift the mechanical brakes on the castor wheels need to be disengaged. They are operated by foot: bring the treadle up to disengage the brake and push it down to activate the brake.



## 6.9 Driving / manoeuvring

The lift is easily moved by pushing and pulling the pushbar with your hands.

In lifts with esense drive functionality the information registered by the sensors in the pushbar – the magnitude and direction of the force exerted by the user – is used to control the electrical drive wheel.



The drive support is automatically activated when force is put on the pushbar (push/pull). The drive wheel turns to match the direction of the force on the pushbar. The level of support relies on the magnitude of the force.

### Driving wide turns

When the pushbar is pushed sideways while the lift is *moving*, the drive wheel will gradually turn sideways. It is now possible to drive a wide turn.

### Manoeuvring sideways

When the pushbar is pushed sideways while the lift is *standing still*, the drive wheel will turn fully sideways (90°). The lift can now be manoeuvred sideways. When the pushbar is released after performing a sideways manoeuvre the drive wheel will automatically return to its forward position within 2 seconds.

### Instructions for moving a lift with esense drive

The best way to control a lift (drive and manoeuvre) with esense drive is to gently push against the pushbar. This way the drive support is given time to bring the lift in motion and it is ensured that it can be moved with minimal force.

When the lift is not used the right way forces can still be too high. Follow the instructions below to use the lift correctly and to avoid high (peak) forces:

1. Do not use (too) much force: steer and guide the lift but enable the esense drive to do most of the work.
2. Move the lift fluently: drive calmly and avoid unnecessary starting/accelerating and stopping/braking.
3. Start/stop calmly: give the drive support time to become active/inactive.
4. Avoid wringing and rotating movements during manoeuvring: for example, when turning or driving up against e.g. the toilet, stand next to the lift and gently push against the side (when turning) or front (when driving up) of the pushbar with one hand.

### Notice!

If excessive force is put on the pushbar (e.g. when it is pushed into motion from rest) the sensors may need to recalibrate. The electrical drive wheel switches off and the service indication LED starts blinking.

If this happens then switch the lift off and on again and wait until the on-off LED turns green.



### Caution!

Prevent excessive force on the pushbar. In exceptional situations the sensors might react unpredictably to high (peak) forces.

### Caution!

Be careful not to drive the drive wheel against your toes while driving backwards. Slowly drive the lift backwards and walk with it in its backwards motion.



## 6.10 Leg adjustment

The patient lift is standard equipped with electrical leg adjustment. This improves accessibility to the patient and makes it possible to drive the lift closer.

The electrical leg adjustment is activated and controlled using the corresponding buttons on the hand control.

After pressing the left button the legs move outwards; after pressing the right button the legs close again (the legs move towards each other). The legs keep moving as long as the control buttons are pressed or until their final position is reached (max. or min. base width).



### Notice!

If movement of the legs is hindered the motor will automatically stop the motion.

### Caution!

Be careful not to entrap body parts or objects while operating the leg adjustment.

## 6.11 Height adjustment

The patient lift is standard equipped with an electrical height adjustment functionality to lift and lower patients during the transfer.

The height of the lifting arm relative to the mast is adjusted using the corresponding buttons on the hand control.

After pressing the left button the lifting arm will move upward; after pressing the right button the lifting arm will move downward. The lifting arm keeps moving as long as the control buttons are pressed or until its final position is reached (max. or min. height).



### Notice!

If movement of the lifting arm is hindered in downwards direction the motor will automatically stop its motion.

### Caution!

Be careful not to entrap body parts or objects while operating the height adjustment.

## 6.12 Hanger bar adjustment

The patient lift is standard equipped with an electric tiltable 4-point hanger bar to move the client during a transfer comfortably from sitting to lying position and vice versa.

The hanger bar is tilted forwards and backwards using the hanger bar adjustment buttons on the hand control.

After pressing the left button the hanger bar will tilt backwards (towards a lying position); after pressing the right button the hanger bar will tilt forwards (towards a seated position). The hanger bar keeps moving as long as the buttons are pressed or until its final position is reached (fully backwards or forwards).



### Notice!

If movement of the hanger bar is hindered in downwards direction the motor will automatically stop its motion.

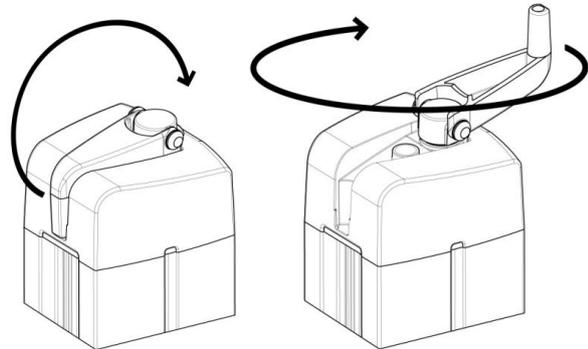
**Caution!**

Be careful not to entrap body parts or objects while operating the hanger bar adjustment.

### 6.13 Emergency lowering

The patient lift is equipped with an emergency lowering function. This enables you to manually lower the patient in case a failure occurs during a transfer.

To do so, take the crank out of the cover on top of mast. Turn the crank clockwise to slowly lower the hanger bar until the desired height is reached.



### 6.14 Use of slings

The patient lift shall be used in combination with a sling that supports the patient during the transfer. The sling is attached to the hanger bar using clips (electrical 4-point hanger bar) or loops (2-point hanger bar).

**Notice!**

Esense lifts are guaranteed to be safe to use in combination with 'esense' slings, identified by the label. When using slings of other brands, make sure the clips are compatible with the geometry of the lugs on the spreader bar; if in doubt about compatibility, check with the sling manufacturer.

See chapter 10.3 'Lugs 4-point spreader bar' for specifications.

**Notice!**

Carefully read the user guide of the sling before use.

### 6.15 Weigh unit (optional)

#### 6.15.1 Use of the weigh unit

In case the hoist is equipped with a weigh unit, it can be used for weighing patients. The weigh unit is available in two versions; certified as a weighing device (NAWI 2014/31/EU Class III) and not certified. Hoists with a certified unit are equipped with an alarm function that warns when the hoist is tilted too far for an accurate measurement. The construction and accuracy of both units is otherwise equal.

Hoists with a certified weigh unit can be recognized by the label on the display of the unit. The label includes a Roman number III in an ellipse.

**Caution!**

Please read the instructions below carefully before use of the weigh unit. Deviations from the measurement procedure can lead to deviations in the measurement results. When used correctly, the measurement accuracy is +/- 0.2 kg up to a patient weight of 100 kg and +/- 0.4 kg at higher weights. However, this can add up to a larger deviation when the posture of the patient strongly deviates from the instructions.

**Notice!**

The version of the weigh unit that is not certified as a weighing device (NAWI 2014/31/ EU ClassIII) only serves as an indicative tool for, for example, indication of weight increase and decrease over a period of time.

**6.15.2 Weight measurement****Notice!**

To achieve highest accuracy, it is recommended to perform measurements with Standard, AllDay and Seamless slings of the brand 'esense'.

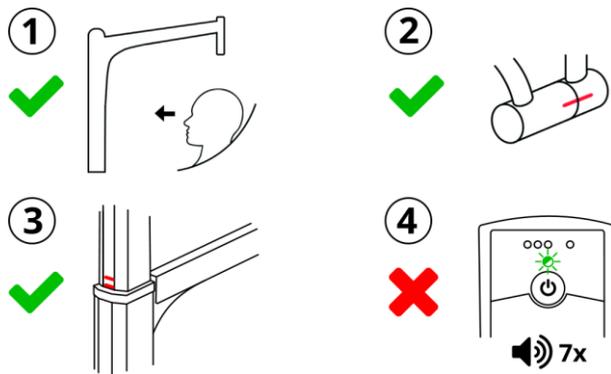
**Notice!**

Make sure that the hanger bar and the sling hang completely free and do not bump into anything surrounding the lift. For correct measurement, the sensor in the lift arm may only be loaded by the weight of the patient.

**Notice!**

Always position the hoist on a completely horizontal plane to perform correct measurements. If the lift is tilted too far, the accuracy of the measurement is affected. Hoists with a certified weigh unit are provided with a function that detects and alerts a tilted position. If the lift is tilted too far to perform a correct measurement, the hand control will beep 7 times in quick succession every 15 seconds while the on-off indication flashes continuously. The lift must then be moved to a more flat surface.

1. Switch the display on by pressing and holding the on-off button for a few seconds. This should preferably be done with the empty sling attached to the hanger bar, before the patient is lifted. The weigh unit sets this situation to 0.0 kg. This zeroing, in which the weight of the sling is deducted from the lifted weight can also be done later by pressing the 'TARE' button.
2. Make sure that the patient is in the middle of the sling and does not lean to the left or right.
3. Lift the patient in the usual way.
4. Rotate the hanger bar in such a way that the face of the patient points towards the mast. The red stripes between the front of the arm and the hanger bar should be aligned (1).
5. For a 4-point hanger bar, put the hanger bar in the position between lying and sitting, where the red stripes on the axes of the hanger bar are in aligned (2).
6. Align the top of the blue cover of the lower mast section between the lower and upper red stripe on the upper mast section. Preferably align the mast parts with the middle stripe (3).
7. When using a lift with a certified weigh unit, check whether the tilt alarm is activated (4). If a series of short beeps can be heard every 15 seconds and the on-off indication of the hand control flashes continuously, the lift is tilted too far. Move the lift to a position where the alarm switches off.



1. Face of the patient points towards the mast.
2. The stripes on the axes of the hanger bar are in line.
3. The mast is aligned to the middle line.
4. The tilt alarm on the hand control is off.

**Notice!**

Changing the client's posture to a position clearly different from the instructions may lead to a deviation in measured values. Therefore, before reading the measured value, check the position and posture of the client again carefully. Make sure that the patient is fully lifted in the sling, and does not touch any surrounding objects.

- The display switches off automatically after 5 minutes. The display can also be switched off by holding down the on-off button for 3 seconds.
- Zeroing (Tar) can be done by briefly pressing the 'TARE' button. The display then shows 0.0 kg and the word 'NET' (Net weight).
- The alarm on tilt can be switched off temporarily. Press the 'up' button for height adjustment twice in quick succession. The alarm remains switched off for 2 minutes.



**Notice!**

When the stripes on the hanger bar and the mast are not present or are no longer clearly visible, they can be reapplied. Please contact your supplier for this.

### 6.15.3 Battery and maintenance

The weigh arm is equipped with 4 AA batteries (penlites). These can be replaced by removing the battery compartment at the bottom of the arm.

The display can be cleaned with a damp cloth with an ordinary, non-aggressive or abrasive, detergent.

During the mandatory annual check of the hoist, the condition of the weigh unit must also be checked. The seal on top of the display must not be broken.

In the event of visible permanent bending of the platform, mast or arm of the hoist, the measurement accuracy of the unit can be affected. Please contact your supplier in that case.

## 6.16 Hangerbar adapter (for patient lifts equipped with Guldmann 2-point hangerbar)

### 6.16.1 Compatibility

This instruction is applicable for esense Line patient lifts that are fitted with the adapter for a Guldmann 2-point hanger bar.

**Applicable article numbers**

- Line versions: E1206-5005 / E1206-5007 / E1206-5505 / E1206-5507
- Line+ versions: E1206-4005 / E1206-4505
- Line200 versions: E1206-4205 / E1206-4207 / E1206-4705 / E1206-4707

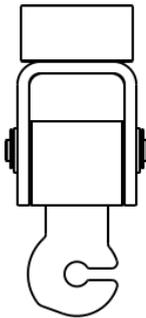
- Line230 versions: E1206-7013 / E1206-7014

### 6.16.2 Use instructions

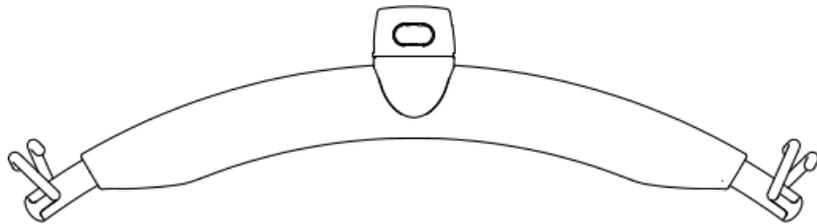
The arm of the patient lift is provided with an adapter hook for Guldmann 2-point hanger bars. The adapter has been verified and released for use with GH lifting hanger (2016) size M; article number 556890.

The hanger bar can be connected to the adapter by use of the standard lock and release system of the hanger bar.

- Push the yellow button and slide the internal axis of the hanger bar through the slot of the adapter until the axis is inside the axis hole of the adapter.
- Release the yellow button and make sure that it is fully released to the surface of the hanger bar housing. Check by hand if the hangerbar is fully locked and is able to pivot sideways freely.



Guldmann adapter



556890 Guldmann lifting hanger (2016)

#### **Caution!**

Ensure that you never lift patients weighing over the maximum patient weight of the patient lift. This weight can be found on the product label and arm of the patient lift, and is always below the maximum lifting weight of the Guldmann lifting hanger (375 kg).

#### **Caution!**

The adapter was only tested and released for use with Guldmann lifting hanger 556890. Only use the adapter with Guldmann lifting hanger 556890.

#### **Caution!**

Check if the hanger bar is correctly mounted to the hanger bar adapter before every use.

Refer to the use instructions of Guldmann lifting hanger 2016 for instructions on the attachment of slings to the hanger bar.

## 7 Performing patient transfers

### Notice!

Always check the patients' medical file to learn if the patient has any limitations regarding patient lift transfers.

- Before performing a transfer select the right size and type of sling and place it within reach.

### Notice!

Check chapter 6.14 for more information on the use of slings.

- Drive the lift within easy reach.
- Explain the steps you are about to take.
- Properly apply the sling under/behind the patient (when using 'esense' slings the label should be on the outside), without connecting it to the patient lift just yet.
- When the sling is in place move the lift towards the patient.
- If necessary adjust the width of the base (see paragraph 6.10 'Leg adjustment').

### Caution!

Pay attention to (protruding) obstacles, such as arm- or footrests.

- Position the lift in front of the patient. Adjust the position of the hanger bar to the seated or lying position, depending on the position of the patient (see chapter 6.12 'Hanger bar adjustment').
- Connect the clips/loops of the sling to the attachment points to the hanger bar. Check if they are properly attached.

### Notice!

It is not necessary to activate the mechanical brakes while performing a transfer.

- Begin the lifting movement using the hand control (see paragraph 6.11 'Height adjustment').

### Caution!

In case a patient becomes unwell or indicates to be experiencing any discomfort, immediately stop the transfer and bring the patient back in his original position.

### Notice!

As soon as you release the height adjustment button on the hand control the lifting motion will immediately stop.

### Notice!

Pressing the emergency switch deactivates all functions of the patient lift.

- Drive the lift backwards, away from the wheelchair or bed.
- Adjust the position of the hanger bar to a for the patient comfortable position, check the patients clothing and correct if necessary.
- Adjust the width of the base to its minimal width to easily drive through doorways (see paragraph 6.9 'Leg adjustment').
- Drive the patient lift to the intended location (e.g. the toilet, a wheelchair or the bed).

**Caution!**

Prevent the patient from bumping into the mast, motor or pushbar during driving.

**Caution!**

The patient lift is meant for short-distance transfers only. It is not designed as means of transportation. Limit the distance covered during a transfer to a minimum.

**Notice!**

It is possible to walk next to the patient while moving (driving and manoeuvring) the lift. To do so hold the pushbar with one hand and the patient or the sling/hanger bar with the other. It is also possible to walk behind the lift.

**Notice!**

Ensure never to lift a patient much higher than the bed or (wheel)chair seating during a transfer. This is much more comfortable for the patient and helps to maximize the distance between the patient and the mast and actuator.

- Position the lift close to the wheelchair, bed or toilet.
- If necessary adjust the width of the base again.
- Adjust the hanger bar to the desired position and lower the patient onto the edge of the bed, (wheel)chair seating or toilet seat.

**Caution!**

Do not activate the mechanical brakes during the lowering action. This ensures that the lift is able to gently move along while seating the patient.

- Detach the clips/loops from the hanger bar and remove the sling.
- Check if the patient is seated safely and drive the patient lift away.

**Caution!**

Ensure that you never leave a patient in the lift unsupervised.

## 8 Service and maintenance

### 8.1 Product lifespan

If used and maintained correctly the average lifespan of the patient lift shall be 8 years minimum. Some parts, like e.g. slings, shin rest, battery and esense drive, are highly sensitive to wear and might have to be replaced during the total lifespan.

### 8.2 Cleaning

For cleaning it is best to use regular, non-aggressive and non-abrasive cleaning products. Like one of the approved cleaning detergents:

- Ordinary, non-aggressive and non-abrasive cleaning detergent (pH 5.5-8)
- Disinfectant wipes – 70% Alcohol
- Disinfectant wipes – 1.5% Hydroperoxide

Wipe the lift with a well-wrung damp cloth using clean water to remove all disinfectant residue.

#### **Notice!**

Never use aggressive solvents for cleaning. Detergents should not contain Petroleum.

### 8.3 Use

For frequently used patient lifts it is advised to pay attention to the points listed below.

#### **Check before every use**

- Check the slings' clips/loops for any signs of wear.
- Check the sling – in particular the straps – for any signs of wear or damage.

#### **Check weekly**

- Check if all the lift functions still work properly.
- Test the height, leg and hanger bar adjustments (over their full operating range), test the emergency switch and functioning of the drive support (in models with esense drive). Please contact your supplier in case of any errors/irregularities.

#### **Check on a regular basis**

- Check if all bolts and axles are still properly secured.
- Check the frame for damage and corrosion.
- Check if all wheels are clean and if they rotate smoothly.

#### **Caution!**

In case you detect any irregularities on points listed above, please immediately stop using the patient lift and contact your technical support department and/or your supplier.

#### **Caution!**

Ensure that sensitive parts of the patient lift are never exposed to water/moisture to prevent problems with electrical components and corrosion.

### 8.4 Periodic servicing and maintenance

In accordance with NEN-EN ISO 10535 the patient lift needs to be inspected at least once a year by someone qualified by the manufacturer. All functional parts and components need to be checked and it is required to go through (at least) one complete lift cycle with the maximum lifting weight (see chapter 10 'Technical specifications'). All findings need to be reported and documented.

In accordance with NEN-EN ISO 10535 the slings need to be inspected by an authorised person at least twice a year. For slings used or cleaned above average, more frequent inspection is advised.

**Notice!**

It is required to keep a maintenance log in which all relevant observations regarding defects, damage and wear are reported. Any defects, damage or wear need to be reported to the manufacturer or supplier immediately. The concerned lift needs to be taken out of order until further inspection and until after reparation.

## 9 Quick debugging guide

### 9.1 The patient lift is not working

1. Check if the lift is switched on by pressing the on-off switch. The on-off LED has to light up green. If it does not then switch the system off and on again.
2. Check if the connector on the hand control is correctly connected to the controller box. If it is not then plug it in with the cable of the hand control pointing down. Lock the connector by turning the ribbed ring clockwise.
3. Check the status of the emergency switch. If it is pressed then release the button by turning it clockwise until it comes back up. Then shortly press the on-off switch.
4. Check the battery level. If the battery is low then connect the charger to the lift and the mains socket. Switch the system on by pressing the on-off switch. The battery level indication shows an animation of an increasing number of LEDs. Wait until the battery is sufficiently charged.
5. Check if the service indication LED is blinking. If it is then switch the lift off and on again. The service LED now has to be off. Please contact your supplier if the LED keeps blinking.

Please contact your supplier if the problem persists after performing the actions above.

### 9.2 The lift does not drive smoothly

#### Notice!

Be aware that driving over (deep-pile) carpet takes more effort than driving over hard floors.

1. Check if the mechanical brakes of the castor wheels are locked. If they are then release the brakes.
2. Check if an object blocks one or more wheels: if so, remove the object.

3. Check if the lift is switched on by pressing the on-off switch. The on-off LED has to light up green. If it does not then switch the system off and on again.
4. Check the status of the emergency switch. If it is pressed then release the button by turning it clockwise until it comes back up. Then shortly press the on-off switch.
5. Check the battery level. At least one LED on the hand control has to be lit continuously green, otherwise it is advised to charge the lift.
6. Check if the charger is disconnected. If not then disconnect the charger from the lift.
7. Check if the service indication LED is blinking. If it is then switch the lift off and on again. The service LED now has to be off. Please contact your supplier if the LED keeps blinking.



#### Notice!

If the electrical drive wheel remains turned sideways during a transfer instead of returning to its forward position, it is possible to manually turn the wheel in forwards direction. First switch the lift off, then turn the wheel and switch the lift on again. The transfer can now be completed.



Please contact your supplier if the problem persists after performing the actions above.

### 9.3 The height and/or hanger bar adjustment is not working

**Notice!**

Be aware that the lifting motion is deactivated if the weight capacity of the lift is (far) exceeded. Check if the weight of the patient does not exceed the maximum.

**Notice!**

If necessary, use the emergency lowering function to manually lower the patient (see paragraph 6.13 'Emergency lowering').

1. Check if there are any objects blocking the lifting arm or hanger bar (e.g. a chair or table). If so, remove the object(s).
2. Check if the lift is switched on by pressing the on-off switch. The on-off LED has to light up green. If it does not then switch the system off and on again.
3. Check if the service indication LED is blinking. If it is then switch the lift off and on again. The service LED now has to be off. Please contact your supplier if the LED keeps blinking.
4. Check the status of the emergency switch. If it is pressed then release the button by turning it clockwise until it comes back up. Then shortly press the on-off switch.
5. Check the battery level. At least one LED on the hand control has to be lit continuously green, otherwise it is advised to charge the lift.
6. Check if the charger is disconnected. If not then disconnect the charger from the lift.
7. Check if the hanger bar connector in the lifting arm is properly connected. Firmly press the connector in the jack at bottom of the mast.

Please contact your supplier if the problem persists after performing the actions above.

### 9.4 The leg adjustment is not working

**Notice!**

Be aware that the leg adjustment functionality may be deactivated when the lift is used on deep-pile carpet.

**Notice!**

If necessary, use the emergency lowering function to manually lower the patient (see paragraph 6.13 'Emergency lowering').

1. Check if there are any objects blocking the legs (e.g. a chair or table). If so, remove the object(s).
2. Check if the lift is switched on by pressing the on-off switch. The on-off LED has to light up green. If it does not then switch the system off and on again.
3. Check if the service indication LED is blinking. If it is then switch the lift off and on again. The service LED now has to be off. Please contact your supplier if the LED keeps blinking.
4. Check the status of the emergency switch. If it is pressed then release the button by turning it clockwise until it comes up again.
5. Check the battery level. At least one LED on the hand control has to be lit continuously green, otherwise it is advised to charge the lift.
6. Check if the charger is disconnected. If not then disconnect the charger from the lift.

Please contact your supplier if the problem persists after performing the actions above.

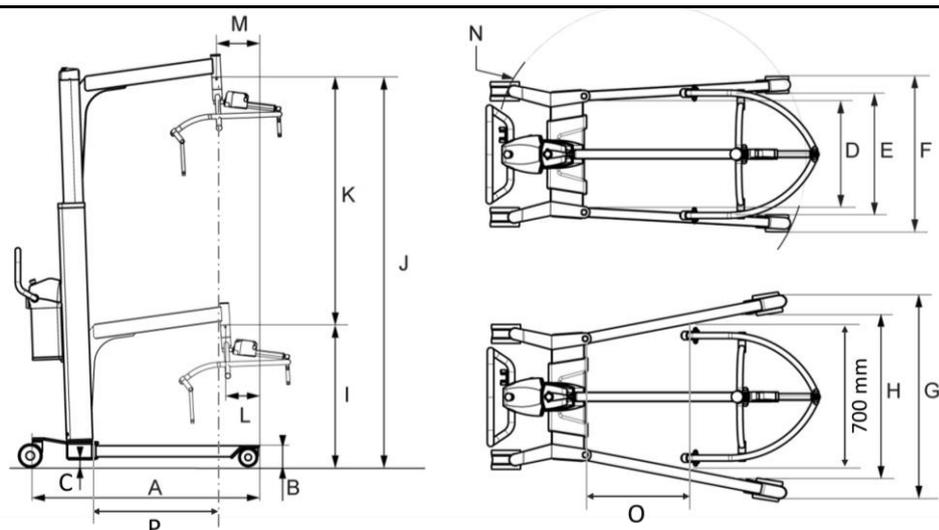
## **9.5 The LEDs on the hand control are blinking when the lift is moved**

Esense patient lifts are standard equipped with Ergo feedback, warning the user when too much force is applied while moving the lift. When the force sensor in the pushbar measures that the force used to move the lift (push or pull) is higher than 15 kg, the LEDs on the hand control blink 4 times.

The direct feedback provides users with insight into situations in which (too high) peak forces occur and helps to (learn to) work within the ergonomic guidelines. This contributes to the prevention of physical overload. Therefore it is advised to leave the feedback on. However, the function can also be easily switched off; see chapter 6.5 'Ergo feedback' for more information.

## 10 Technical specifications

### 10.1 Patient lift



#	Lift dimensions	Line	Line <sup>+</sup>	Line200	Line230
A	Length of the base	100 cm	120 cm	120 cm	120 cm
B	Height of the base	11,5 cm	11,5 cm	11,5 cm	11,5 cm
C	Min. clearance to floor	3,7 cm	3,7 cm	3,7 cm	3,7 cm
D	Min. internal width	46 cm	46 cm	60 cm	46 cm
E	Max. internal width – closed legs	53 cm	59,5 cm	65,5 cm	59,5 cm
F	Max. external width – closed legs	67,5 cm	74 cm	74 cm	74 cm
G	Max. external width – open legs	117,5 cm	141,5 cm	141,5 cm	141,5 cm
H	Max. internal width – open legs	103 cm	127 cm	127 cm	127 cm
I	Min. height hanger bar attachment point	74,5 cm	74,5 cm	74,5 cm	74,5 cm
J	Max. height hanger bar attachment point	204 cm	204 cm	204 cm	204 cm
K	Vertical range	129,5 cm	129,5 cm	129,5 cm	129,5 cm
L	Dist. front to hanger bar attachment in lowest position	15,5 cm	17,5 cm	17,5 cm	15,5 cm
M	Dist. front to hanger bar attachment in highest position	20 cm	22 cm	22 cm	20 cm
N	Turning circle	125 cm	146 cm	149 cm	146 cm
O	Distance front lower mast to 700mm internal width reference point (open legs)	22,5 cm	21,7 cm	12 cm	21,7 cm
P	Max. distance front lower mast to hanger bar attachment point	50,9 cm	67,7 cm	67,7 cm	50,9 cm
-	Weight capacity	150 kg	175 kg	200 kg	230 kg
-	Weight patient lift (incl. battery, excl. hanger bar)	64 kg	65 kg	67 kg	65 kg
-	Weight electrical 4-point / 2-point hanger bar			7 kg/5 kg	
-	Weight esense drive system			14 kg	
-	Duration of one complete lifting motion (100kg) *			62 sec	
-	Protection grade – patient lift			IPx2	
-	Protection grade – esense drive system			IPx3	
-	Protection grade – hand control			IPx2	
-	Duty cycle			10% max	

\* One complete lifting motion is defined as a movement from the lowest possible point up to the highest possible point and back.

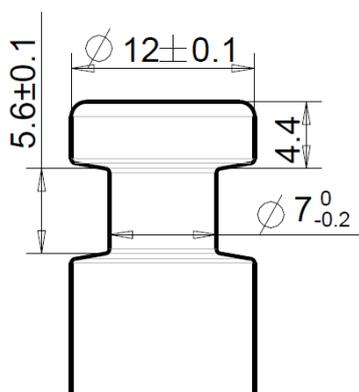
## 10.2 Battery

#	Battery	manual	esense Drive
-	Guaranteed battery lifetime in charging cycles	500 x	500 x
-	Battery type	NiMh	NiMh
-	Battery voltage	24 V DC	24 V DC
-	Battery capacity	3,8 Ah	9 Ah
-	Average number of complete transfers on a charged battery (battery capacity at 80%, with 100kg weight) *	45	78

\* Calculation available on request.

## 10.3 Lugs on 4-point hanger bar

### Specifications of the attachment points (for slings fitted with clips)



## 10.4 Weigh unit (optional)

Specifications	
Range – Line/Line+/Line200/Line230	4 – 150/175/200/230 kg
Resolution	0.2 kg
Accuracy	4 – 100 kg: +/- 0.2 kg 100+ kg: +/- 0.4 kg Accuracy is only achieved when following the measurement procedure.
Certification	Line200 and Line230 are available in a version with NAWI Class III certificate.
Display	Rinstrum R320-K342
Display type	LCD (digit height 20mm)
Display material	ABS
Water protection grade display	IP 65
Functionality	Tar Auto-off (5 min.)
Loadcell	Zemic B8D-C3-1.0t-6B
Battery	4x AA
Use temperature	-10 – 40 °C

## 11 Product label

Each patient lift has an identification label, located below the controller box.

**Notice!**

Displayed label is an example and may differ from the actual label on the patient lift.

**esense line/Drive**

**Max 150kg**

24V DC 9Ah Duty cycle: 10% max

CE MD IPx2

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Indes Production Management B.V.  
Colosseum 20  
7521 PT Enschede  
The Netherlands

(01)08720299452107  
(21)2101SN01013  
E1206-5500

Maximum lifting weight  
UDI (Unique Device Identification)  
Serial number  
Article number

Hoists with a certified weigh unit (NAWI Class 3) have an additional label on the display of the weigh unit.

CE M21

---

Max 200 kg  
Min 4 kg  
e = 0.2 kg

T11978

---

Rinstrum Zemic B8D  
R320-K342 C3-1.0t-6B

Identification of Notified body  
Accuracy class  
Certificate number  
Counter software settings

## **12 Warranty**

The manufacturer guarantees a 2 year warranty on the patient lift.  
For batteries a warranty of 500 charge cycles or 2 years is applicable.

The manufacturer reserves the right to make changes to the product, deviating from what is described in this guide. This requires no further justification.

Warranty does not apply to damage or defects that might result from improper or unqualified use and repairs carried out by third parties. Evaluation is done by the manufacturer or a representative appointed by the manufacturer.

Warranty does not include components particularly sensitive to wear, like straps on slings.

## 13 Distribution and authorization list

Author	Department	Date	Approval
EWG/MRN	Indes Design & Engineering	08-11-2021	LHR

## 14 Revision list

Revisie	Definitie	Datum
1.00	First version of user guide in English	24-04-2019
2.00	Update dimensions 10.1, EN product label, 8.2 (cleaning detergents), 6.15 weigh unit, added ergo feedback for lifts with esense drive (1, 6.5, 6.9)	02-03-2020
3.00	Most important updates: Line200/Line230 in 10.1, various (textual) changes regarding Ergo feedback/sensor manual lift versions/instructions weigh unit/use and compatibility of slings. Added: remark product changes February 2021, Ergo feedback to 9.5, spreader bar lugs specification (10.3)	28-01-2021
4.00	Most important updates: Line200 dimension F in 10.1, paragraph referrals, MDR (chapter 4), product models (5.2) , product label (chapter 11), default threshold ergo feedback (6.5) Added: remark serious incident (chapter 3), Intended use (5.1), Guldmann hangerbar adapter (6.16)	25-05-2021
5.00	Most important updates: Renewed product labels (chapter 11) and certified weigh unit (6.15 and 10.4).	01-10-2021
6.00	Changed Address	08-11-2021

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