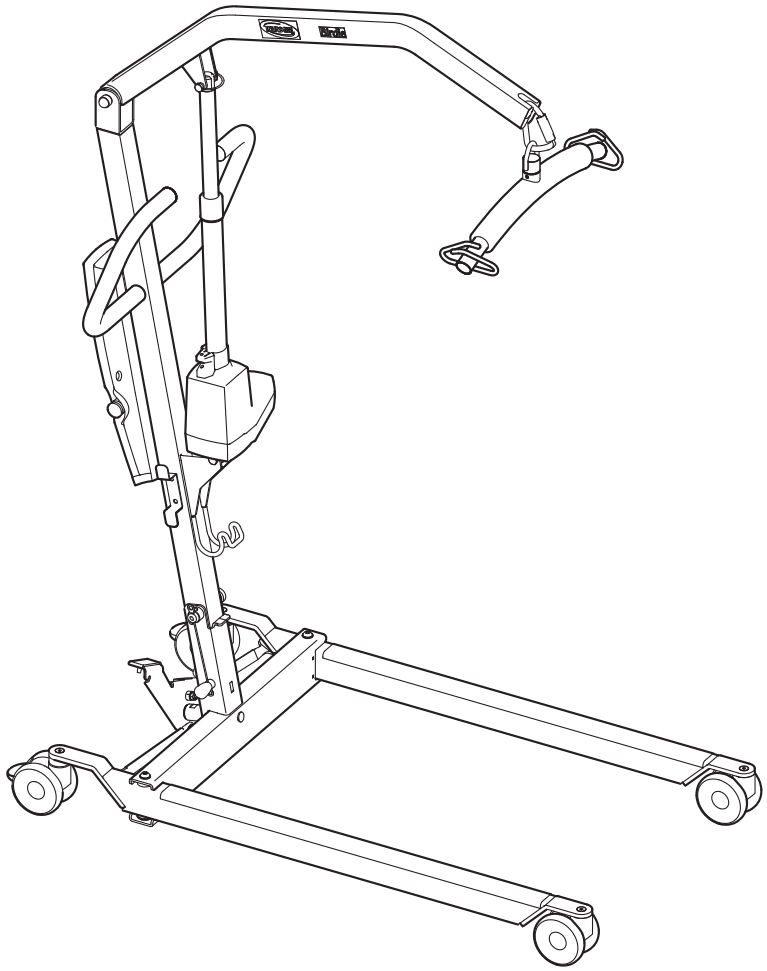

Invacare® Birdie™

Birdie™ , Birdie™ Compact

en **Portable Patient Lift**
User Manual 4

de **Mobiler Patientenlifter**
Gebrauchsanweisung. 50

es **Grúa portátil para pacientes**
Manual del usuario. 98

fr **Lève-personne portatif**
Manuel d'utilisation 146

it **Sollevatore portatile**
Manuale d'uso. 196

nl **Mobiele patiëntlift**
Gebruiksaanwijzing 246

pt **Elevador de transferência móvel**
Manual de utilização 294

CE

This manual MUST be given to the user of the product.
BEFORE using this product, read this manual and save for future reference.

INVACARE®

Yes, you can.®

Contents

This manual MUST be given to the user of the product.
BEFORE using this product, read this manual and save for future reference.

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1 General

1.1 Introduction

Thank you for choosing an Invacare product.

This user manual contains important information about the handling of the product. In order to ensure safety when using the product, read the user manual carefully and follow the safety instructions.

Please note that there may be sections in this user manual, which are not relevant to your product, since this manual applies to all available models (on the date of printing). If not otherwise stated, each section in this manual refers to all models of the product.

1.2 Symbols in this manual

Symbols and signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. See the information below for definitions of the signal words.

WARNING
Indicates a hazardous situation that could result in serious injury or death if it is not avoided.

CAUTION
Indicates a hazardous situation that could result in minor or slight injury if it is not avoided.

IMPORTANT
Indicates a hazardous situation that could result in damage to property if it is not avoided.

Tips and Recommendations
Gives useful tips, recommendations and information for efficient, trouble-free use.

This product complies with Directive 93/42/EEC concerning medical devices. The launch date of this product is stated in the CE declaration of conformity.

Manufacturer of the product.

1.3 Intended Use

WARNING!
Risk of Falling
The Invacare mobile patient lift is NOT a transport device. It is intended to transfer an individual from one resting surface to another (such as a bed to a wheelchair).
Invacare slings and patient lift accessories are specifically designed to be used in conjunction with Invacare patient lifts.

Mobile patient lifts are battery-powered transfer devices, designed to be used in most of the common lifting situations in hospitals, nursing facilities and domestic areas, for example:

- Between the bed and a wheelchair
- To and from the toilet
- Lowering and raising patients to/from the floor

The mobile patient lift can be used to transfer and position completely or partially immobile patients, who cannot be transferred with other types of lifts or transfer aids. All position changes are possible without assistance of the patient. The mobile patient lift is only intended to lift patients up to the maximum weight limit stated in technical data. There are no known contraindications for this product.

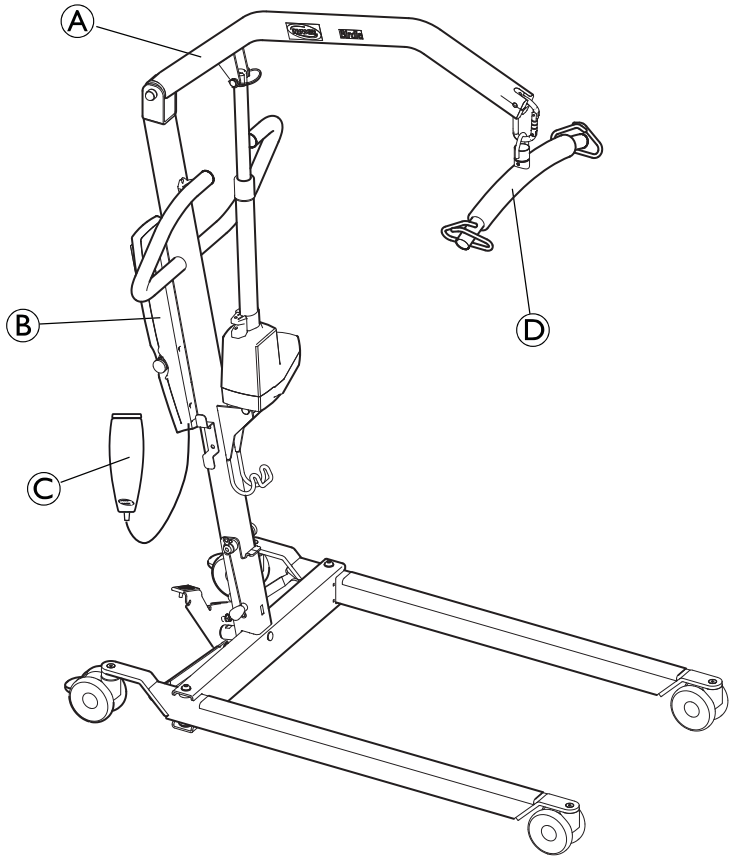
Selecting the appropriate slings and accessories for each individual is important to assure safety when using a patient lift. See Invacare's sling and accessory user manuals for further information on those devices.

Invacare recommends that the patient be transferred to a shower chair or other means for bathing.

The mobile patient lift can be turned (rotated) in place for transfers with limited floor space.

1.4 Scope of delivery

The items listed in the tables are included in your package. Slings and additional hanger bars are sold separately. Depending on your model, the wall charger may be sold separately.



Ⓐ	Lift (1 piece)
Ⓑ	Battery (1 piece)
Ⓒ	Hand control (1 piece)
Ⓓ	Hanger bar (1 piece)
Ⓔ	Mains cable (1 piece)
Ⓕ	User Manual (1 piece)

Ⓖ	Manual leg spreader handle (1 piece, optional)
Ⓗ	Sling (1 piece, optional)

1.5 Service Life

WARNING!
Risk of Injury or Damage
The product has been tested for the service life stated in this manual. Use of the product beyond this time period may cause product damage and injury.
– Only use the product for the service life stated in this manual. DO NOT exceed the service life of the product.
– Remove the product from service when the service life has been met. DO NOT continue to use the product.
– Perform all maintenance according to the recommended schedule in this manual.

The mobile patient lift has an expected lifetime of 8 years when used in accordance with safety instructions, maintenance intervals and correct use, stated in this manual. The effective product lifetime can vary according to frequency and intensity of use.

Actuator Service Life

Number of lifts per day	Service life of actuator (in years)
1–2	10
3	9
4	6
5	5
6	4
7–9	3
10–13	2
14–27	1

1.6 Warranty Information

Terms and conditions of the warranty are part of the general terms and conditions particular to the individual countries in which this product is sold.

Contact information for your local Invacare office is located inside the back cover of this manual.

2 Safety

2.1 Safety information

WARNING!
– Do not use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manuals, service manuals or instruction sheets supplied with this product or optional equipment. If you are unable to understand the warnings, cautions or instructions, contact a healthcare professional, dealer or technical personnel before attempting to use this equipment - otherwise, injury or damage may occur.

The information contained in this document is subject to change without notice.

Check all parts for shipping damage before using. In case of damage, Do not use the equipment. Contact the dealer or Invacare representative for further instructions.

2.2 Operating Information

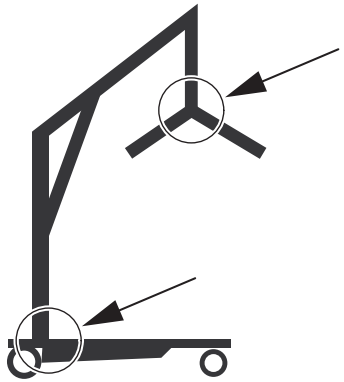
This section of the manual contains general safety information about your product. For specific safety information, refer to the appropriate section of the manual and procedures within that section. For instance, for safety information related to assembling the lift, refer to the Setup section of the manual.

2.2.1 General

WARNING!
Risk of Falling
Do not attempt any transfer without approval of the patient's physician, nurse or medical assistant. Thoroughly read the instructions in this User Manual, observe a trained team of experts perform the lifting procedures and then perform the entire lift procedure several times with proper supervision and a capable individual acting as a patient.
– Use common sense in all lifts. Special care must be taken with people with disabilities who cannot cooperate while being lifted.
– Use steering handle on the mast at all times to push or pull the patient lift.
– Be sure to check the sling attachments each time the sling is removed and replaced, to ensure that it is properly attached before the patient is removed from a stationary object (bed, chair or commode).

WARNING!
– The patient lift can be used indoors or outdoors. If the patient lift is used in the area of a shower or bath, ensure that the patient lift is wiped clean of any moisture after use.
– Periodically inspect all components of the patient lift for signs of corrosion. Replace all parts that are corroded or damaged.

2.2.2 Pinch Points and Positioning



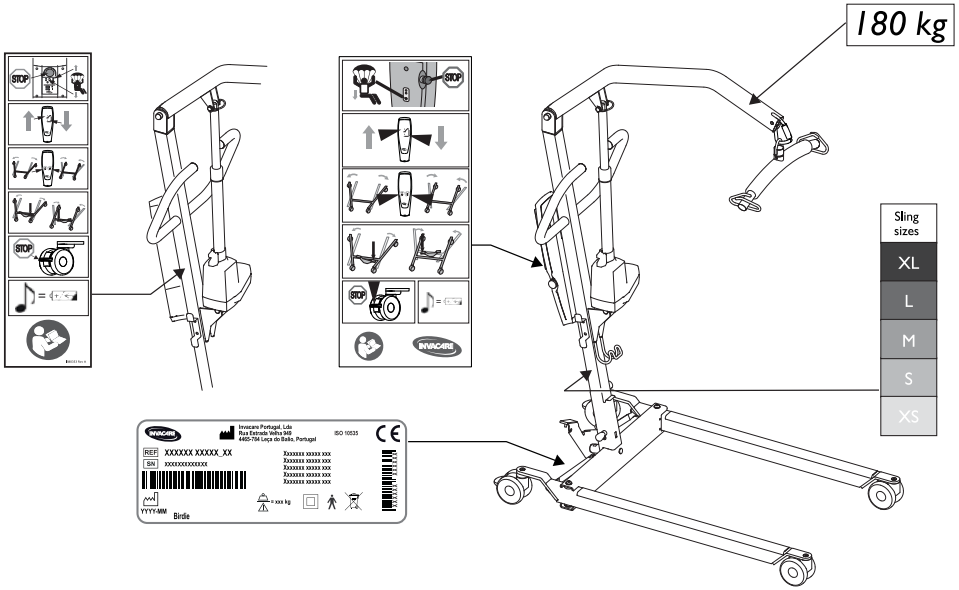
WARNING!
Risk of Injury
Pinch points are present in several locations on the lift and fingers could be pinched.
The hanger bar can move suddenly and cause injury.
– Always keep hands and fingers clear of moving parts.
– When positioning lift, be aware of the position of the hanger bar and the patient.

2.3 Radio Frequency Interference

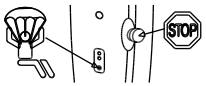
WARNING!
Risk of Injury or Damage
Most electronic equipment is influenced by Radio Frequency Interference (RFI).
CAUTION should be exercised with regard to the use of portable communication equipment in the area around such equipment, otherwise injury or damage may occur.
If RFI causes erratic behavior:
– PUSH the Red Power Switch OFF IMMEDIATELY.
– DO NOT turn the Power Switch ON while transmission is in progress.

2.4 Product labeling

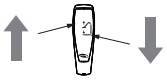
Label location

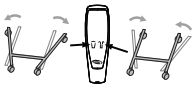


Symbols on the label



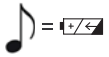
Emergency stop / Emergency release


Raise/lower the boom


Open/close legs


Open/close legs manually

Caster lock


Audible tone when battery low


Read Manual


Manufacturer address


Date of manufacture

REF Type Reference Number

SN Serial Number


Safe Working Load


Class II equipment

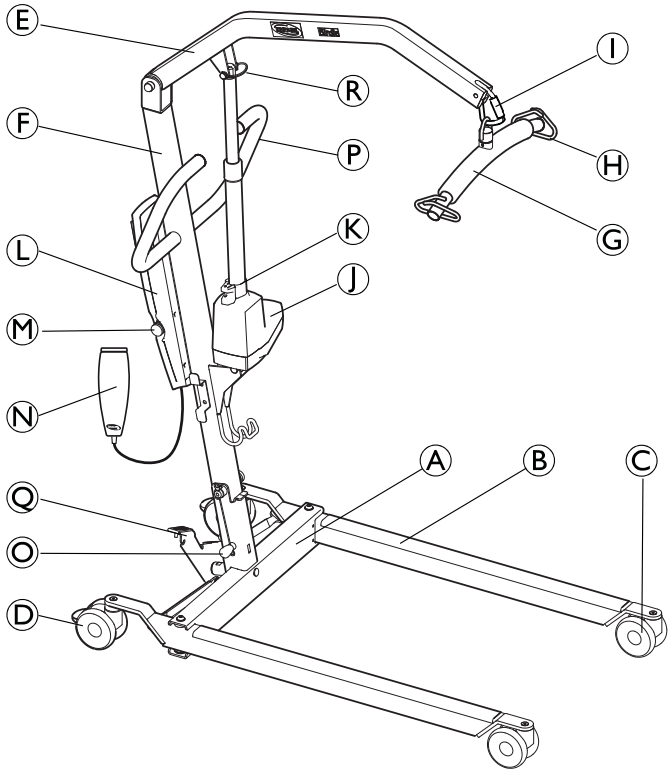

Type B applied part

CE This product complies with Directive 93/42/EEC concerning medical devices. The launch date of this product is stated in the EC declaration of conformity.


WEEE conform.

3 Components

3.1 Main parts of the lift



Ⓐ	Base
Ⓑ	Leg
Ⓒ	Caster
Ⓓ	Rear caster with brake
Ⓔ	Boom
Ⓕ	Mast
Ⓖ	Hanger bar
Ⓗ	Hook for sling
Ⓘ	Carabiner
Ⓙ	Actuator
Ⓚ	Manual emergency lowering handle
Ⓛ	Control unit with Battery
Ⓜ	Emergency Stop
Ⓝ	Hand control
Ⓞ	Locking pin
Ⓟ	Steering handle
Ⓠ	Foot pedal for leg spreader
Ⓡ	Quick release pin
	Leg spreader handle (optional)
	Motor for electrical operation of legs (optional)

3.2 Accessories

CAUTION!
Compatibility of slings and hanger bars / strap hooks
Invacare® uses a "Loop and Coat Hanger Bar / Strap Hook System" as do many other manufacturers.
Therefore other suitable patient transfer systems (slings), manufactured by other companies, can be used on the Invacare patient lift range as well.
However we do recommend:
– A risk assessment is always to be carried out by a professional prior to issuing lifting equipment. It is important that the Task, Individual, Load, Environment and Equipment are considered in the risk assessment.
– Always choose the sling design and size according to the patient's weight, size and physical ability whilst considering the type of transfer to be carried out.
– Do only use slings that are suitable for a "Loop and Coat Hanger Bar / Strap Hook System".
– Do not use slings for "Keyhole Hanger Bar" or for "Tilting Frame Hanger Bar" designs.

Available accessories

- 4 point hanger bar ("Coat Hanger Bar System"), 45 or 55 cm wide
- 2 point hanger bar ("Coat Hanger Bar System"), 35, 45 or 55 cm wide
- Scale to be mounted with the hanger bar
- Handle for leg spread

Sling models for "Loop and Coat Hanger Bar System":

- Full body support slings – without head support
- Full body support slings –with head support
- Slings for dress/toileting – with or without head support
- Slings for amputee

4 Setup

4.1 Safe Assembly

WARNING!
Risk of Injury
Improper assembly may cause injury or damage.
– Assembly MUST be performed only by qualified personnel.
– Use only Invacare parts in the assembly of this patient lift. The base legs, the mast, boom, pump assembly and the hanger bar are manufactured to specifications that assure correct alignment of all parts for safe functional operation.
– DO NOT overtighten the mounting hardware. This will damage the mounting bracket.

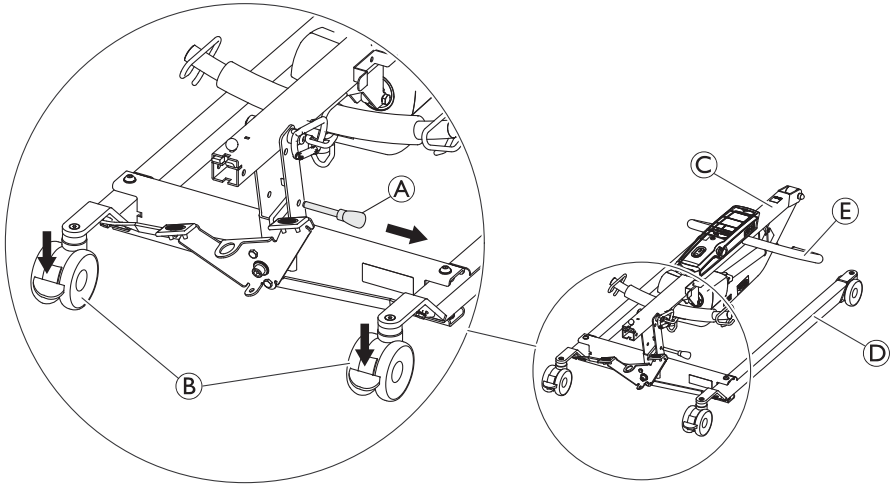
There are no tools required to assemble the patient lift.

If there are any issues or questions during assembly, contact a local Invacare representative. Refer to the contact information on the last page in this manual.

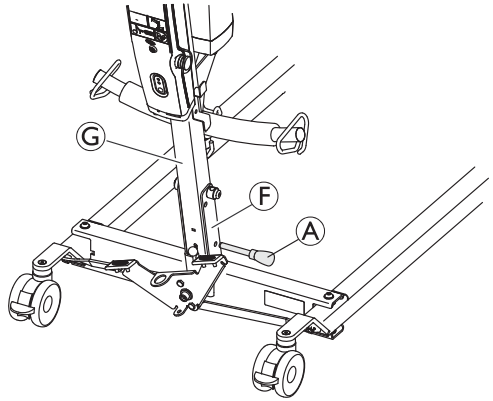
4.2 Assembling the Mast to the Base

WARNING!
– The mast may be folded for storage or transporting. Each time the mast is folded, the mast MUST be properly secured to the base assembly.
– Check all parts for visible defects or damage before assembly. In case of any damage, do not use the product and contact Invacare® .
– Make sure the emergency stop is activated before assembly or disassembly.
– Take care when lifting components during assembly. Some parts are heavy. Always remember to adopt the correct lifting position.

Perform unpacking and assembly operation at floor level.



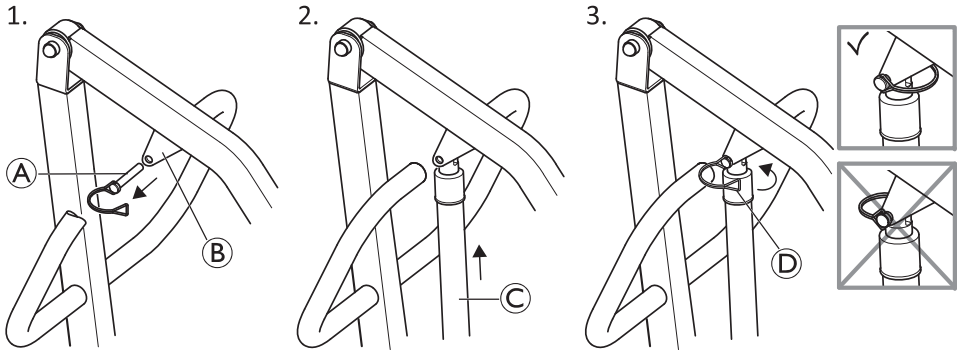
1. Lock both rear casters Ⓑ. Remove the locking pin Ⓐ.
2. Raise the mast assembly Ⓒ to an upright position by stepping with one foot on the leg Ⓓ and pulling the handle bar Ⓔ upwards until it locks in place.



3. Reinstall the locking pin Ⓐ through the mast Ⓖ and base Ⓕ. Ensure that the locking pin is correctly inserted.

4.3 Installing the actuator to the boom

Before installing the actuator, loosen the hanger bar by pulling it downwards out of the welded fork on the mast.

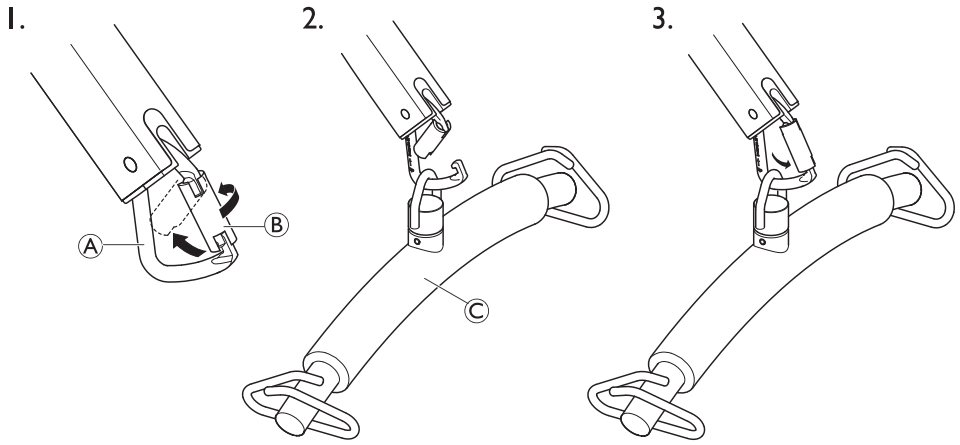


1. Remove the quick release pin Ⓐ from the boom mounting bracket Ⓑ.
2. Place the actuator Ⓒ in the boom mounting bracket and align the holes.
3. Reinstall the quick release pin and secure it with the clip Ⓓ facing forwards.

Make sure that the quick release pin is completely inserted and fixed with the clip facing forwards, as shown in the figure, step 3.

4.4 Mounting the hanger bar

WARNING!
Risk of injury
– Use only hanger bars made for this lift (“Coat Hanger Bar System”).
– Make sure the hanger bar is suitable for the patient and the actual lift or transfer required.
– Check that the hanger bar is firmly attached to the carabiner. The safety catch of the carabiner must be closed after the hanger bar is mounted and before lifting the patient. There is risk of detachment if the safety catch is not correctly closed.



1. Open the carabiner Ⓐ by first twisting the safety catch Ⓑ and then pressing it backwards with one hand.
2. Hold the safety catch in the open position and attach the hanger bar Ⓒ to the carabiner with the other hand.
3. Release the safety catch and move the hanger bar to the lowest point of the carabiner.

4.5 Disassembling of the lift

1. Remove optional leg spreader handle if attached.
2. Lower the boom and narrow both legs completely.
3. Activate the emergency stop button and apply castor brakes.
4. Remove the pipe pin and the motor piston from the boom, reinstall the pipe pin in the piston end, and lock the motor into the clips on the mast.
5. Attach the hanger bar into the welded fork on the mast.
6. Remove the locking pin from the base of the mast, release the safety latch, lower the mast, and relocate the locking pin into the mast near the suspension axle of the mast.

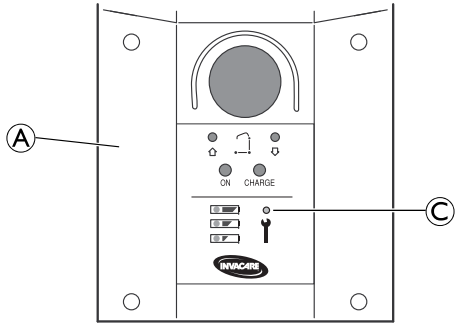
The lift can now be located in the packaging box, pulled on the rear wheels, or parked in an upright position with the mast/boom assembly pointing upwards.

4.6 Checking the service light

(Jumbo Care control unit only)

CAUTION!

– Each time the lift is assembled, and before using the lift, the service light should be checked.
– The service light should only be reset by a qualified technician and must never be reset by untrained personnel.



1. Examine the control box Ⓐ to see if the service light Ⓒ is flashing.
2. When service light is not flashing, the lift is ready for use.
   When service light is flashing, refer to the table:

Initial Assembly	A qualified technician has to reset the service light: 1. Locate the hand control. 2. Press and hold the UP button and the DOWN button at the same time for five seconds. 3. You will hear a sound when the service light has been reset.
Reassembly	The lift requires service. Contact your local Invacare dealer or representative for service.

5 Usage

5.1 Introduction

The operation of the patient lift is an easy and safe procedure.

Before using the lift with a patient, refer to the following procedures for safety information and instruction:

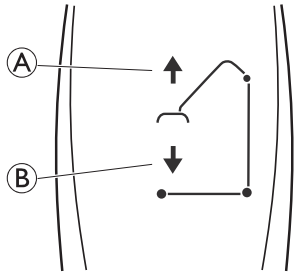
- Operating Information in the Safety section
- Lifting and Transferring the Patient in the Lifting the Patient section

5.2 Raising/Lowering the Lift

WARNING!
Risk of Injury
The lift could tip and endanger the patient and assistants.
– Invacare does recommend that the rear casters be left unlocked during lifting procedures to allow the patient lift to stabilize itself when the patient is initially lifted from a chair, bed or any stationary object.

5.2.1 Raising/Lowering an Electric Lift

The hand control is used to raise or lower the lift.



1. To raise the lift — Press and hold the UP Ⓐ button to raise the boom and the patient.
2. To lower the lift — Press and hold the DOWN Ⓑ button to lower the boom and the patient.

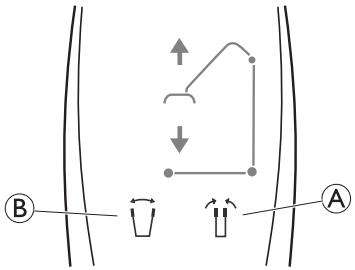
Release the button to stop raising or lowering the lift.

5.3 Closing/Opening Legs

WARNING!
Risk of Injury
The lift could tip and endanger the patient and assistants.
– The legs of the lift must be in the maximum open position for optimum stability and safety. If it is necessary to close the legs of the lift to maneuver the lift under a bed, close the legs of the lift only as long as it takes to position the lift over the patient and lift the patient off the surface of the bed. When the legs of the lift are no longer under the bed, return the legs of the lift to the maximum open position.

5.3.1 Closing/Opening Electric Legs

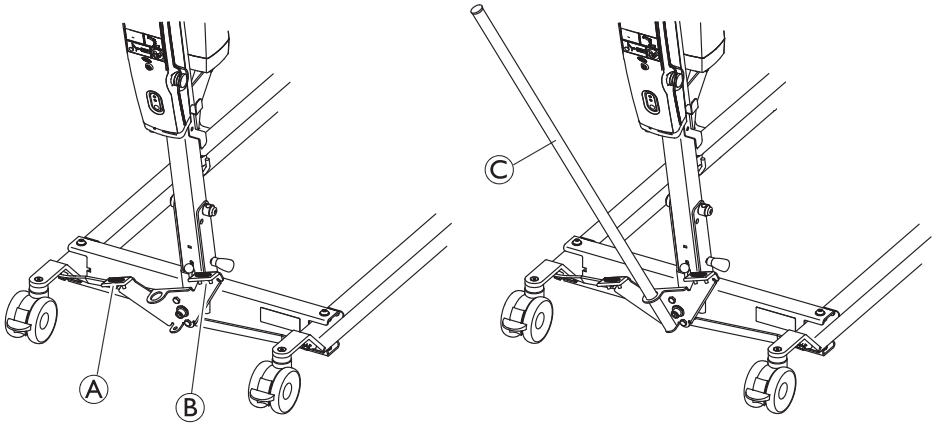
The hand control is used to open or close the legs of the base.



1. To close the legs, press and hold the legs closed button Ⓐ.
2. To open the legs, press and hold the legs open button Ⓑ.

The legs will stop moving when the button is released.

5.3.2 Closing/Opening legs manually



The manual leg spreader is operated by two pedals (Ⓐ and Ⓑ) or by the optional leg spreader handle Ⓒ.

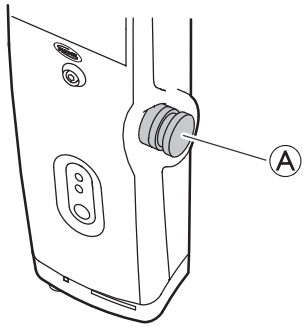
1. To open the legs, press the left pedal Ⓐ with a foot.
2. To close the legs, press the right pedal Ⓑ with a foot.

With the optional handle bar:

1. To open the legs, pull the leg spreader handle Ⓒ to the left.
2. To close the legs, push the leg spreader handle Ⓒ to the right.

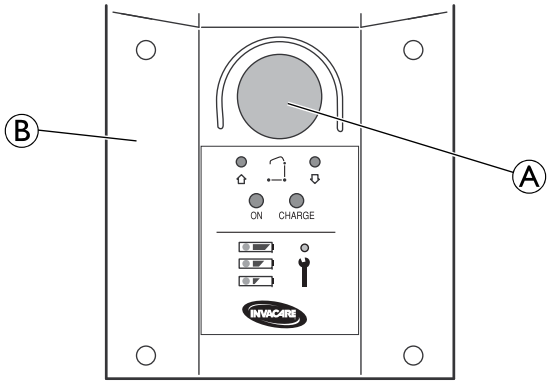
5.4 Performing an Emergency Stop

Emergency Stop with CBJ Home control unit



1. Press the red emergency button Ⓐ on the control unit to stop the boom and patient from raising or lowering.
2. To reset, rotate the emergency button clockwise.

Emergency Stop with Jumbo Care control unit

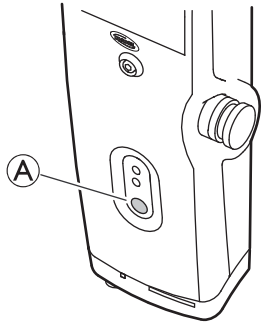


1. Press the red button Ⓐ on the control unit Ⓑ to stop the boom and patient from raising or lowering.
2. To reset, rotate the emergency button clockwise.

5.5 Activating an Emergency Release

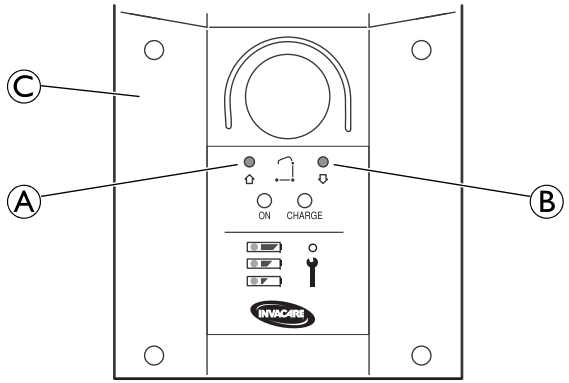
Emergency release with CBJ Home control unit

If the hand control fails, the boom can be lowered by using the circular switch for emergency release.



1. Lower the boom by pressing and holding button Ⓐ at the front of the control unit.
2. Stop lowering the boom by releasing the button.

Emergency Release with Jumbo Care control unit



1. Insert a pen into the hole labeled Emergency Up Ⓐ or Emergency Down Ⓑ on the control unit Ⓒ.

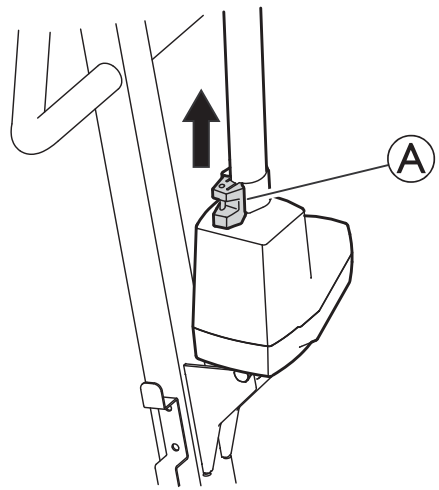
Activating an emergency release manually

(Not available on Birdie™ Compact)

For the case of partial or total power failure, or if the battery runs down while using the lift, Birdie™ is equipped with a manual emergency release system located at the bottom of the actuator.

It is recommended that the primary emergency release be used. The secondary (manual) emergency release is only a back-up to the primary emergency release.

1. Pull up on the emergency grip Ⓐ and push down on the boom at the same time.



The manual emergency release system will only operate with a patient in the lift. It can be adjusted according to the patient's weight as described below. The weight is preset to 75 kg.

Adjusting the lowering speed for manual emergency lowering

1. Locate the screw on top of the red emergency grip Ⓐ.
2. Loosen the screw to increase the speed.
3. Tighten the screw to decrease the speed.

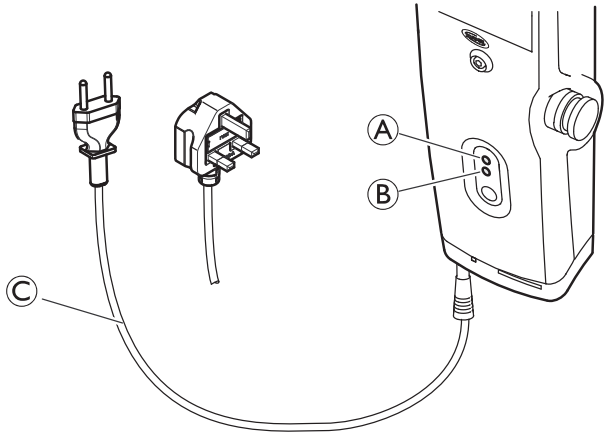
5.6 Charging the battery

IMPORTANT!
- Make sure the emergency stop is not activated while charging the battery.
- Do not use the lift while charging the battery.
- Make sure that charging takes place in a room with good air ventilation.
- Do not use or move the lift without unplugging from the socket outlet after charging.
- Do not attempt to use the lift if the battery housing is damaged.
- Replace a damaged battery housing before further use.

It is recommended to charge the battery daily to ensure optimal use of the lift and prolong the life of the battery. Furthermore, it is recommended to charge the battery before first use.

CBJ Home control unit

The control unit is equipped with a sound signal. A beep indicates that the battery has low capacity, but lowering the patient is still possible. It is recommended to charge the batteries as soon as the sound signal is heard.



1. Plug the power cord Ⓒ into a power outlet.

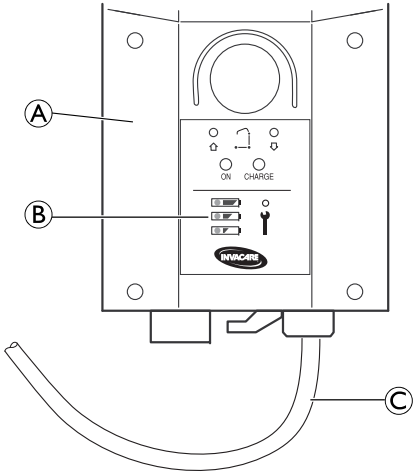
   The battery will charge in approximately 4 hours. The charger stops automatically when the batteries are fully charged.

   The upper yellow diode Ⓐ will blink during charging, and switch to continuous light when fully charged.

   The lower green diode Ⓑ will light continuously while the control unit is connected to the mains, and lights up when any button on the hand control is pressed or when the electric emergency lowering is activated.

2. Disconnect the power cord from the power outlet after the battery has been fully charged.

Jumbo Care control unit



The battery indicator Ⓑ is located on the control box Ⓐ. The LEDs indicate the battery state (See following table).

1. Plug the power cord Ⓒ into a power outlet.

The battery will charge in approximately 4 hours.

2. Disconnect the power cord from the power outlet after the battery has been fully charged.

Battery Indicator	Battery State	Description
	Full Charge	The battery is OK — no need for charging (100–50%). The third LED is GREEN.
	Partial Charge	The battery needs to be charged (50–25%). The second LED is YELLOW.
	Low Charge	The battery needs to be charged (Less than 25%). The horn beeps when a button is pressed. The first LED is YELLOW.
	Low Charge (LED blinking)	The battery needs to be charged. Some of the functionality of the lift is lost and it is only possible to lower the boom. An audible alarm will sound (horn will beep) when battery is low. If the audible alarm sounds during a transfer, complete that transfer and then charge the battery.

6 Lifting the Patient

6.1 Safe Lifting

WARNING!
Risk of Injury
The lift could tip and endanger the patient and assistants.
– Refer to the safety information and instructions in the following procedures BEFORE performing this procedure:

6.2 Preparing to Lift

6.3 Attaching the Sling to the Lift

6.4 Lifting and Transferring the Patient

WARNING!
Risk of Death, Injury or Damage
Improper use of this product may cause death, injury or damage.
– Use the steering handle on the mast at all times to push or pull the patient lift.
– Avoid using the lift on an incline. Invacare recommends that the lift only be used on a flat surface.
– During transfer, with the patient suspended in a sling attached to the lift, DO NOT roll caster base over uneven surfaces that could cause the patient lift to tip over.

WARNING!
Risk of Death, Injury or Damage
Improper use of this product may cause death, injury or damage.
The lift could tip and endanger the patient and assistants.
The Invacare mobile patient lift is NOT a transport device. It is intended to transfer an individual from one resting surface to another (such as a bed to a wheelchair).
– Wheelchair and bed wheel locks MUST be in a locked position before lowering the patient onto or lifting the patient off of the wheelchair or bed to prevent the wheelchair or bed from moving during transfer.
– Before transferring, check that the wheelchair weight capacity can withstand the patient's weight.
– The legs of the lift must be in the maximum open position for optimum stability and safety. If it is necessary to close the legs of the lift to maneuver the lift under a bed, close the legs of the lift only as long as it takes to position the lift over the patient and lift the patient off the surface of the bed. When the legs of the lift are no longer under the bed, return the legs of the lift to the maximum open position.
– Invacare recommends locking the rear casters ONLY when positioning or removing the sling from around the patient.
– Invacare recommends that the rear casters be left unlocked during lifting procedures to allow the patient lift to stabilize itself when the patient is initially lifted from a chair, bed or any stationary object.

WARNING!
Risk of Injury or Damage
Damage to parts of the lift (hand control, casters, etc.) caused by impact with the floor, walls or other stationary objects may cause damage to the product and lead to injury.
– DO NOT allow parts of the lift to impact the floor, walls or other stationary objects.
– ALWAYS store the hand control properly when not in use.

6.2 Preparing to Lift

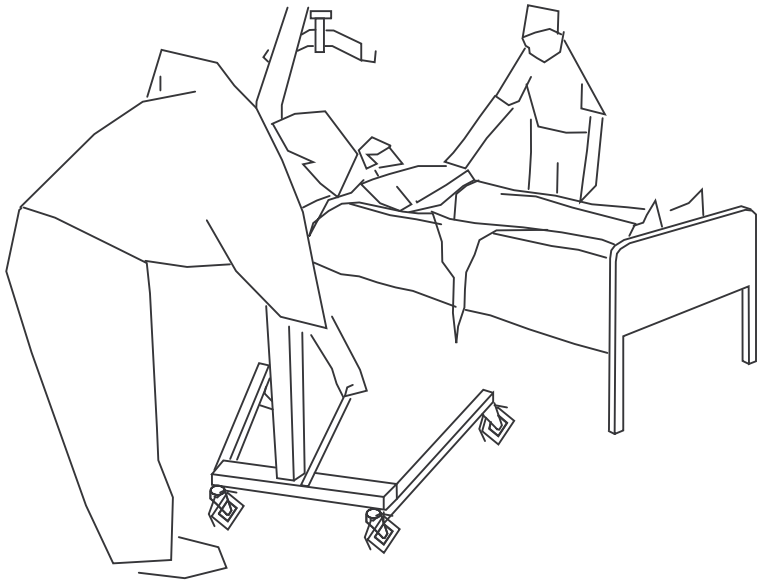
Refer to the Safety section in this manual and review the information in 6.1 Safe Lifting before proceeding further and observe all warnings indicated.

Before positioning the legs of the patient lift under a bed, make sure that the area is clear of any obstructions.

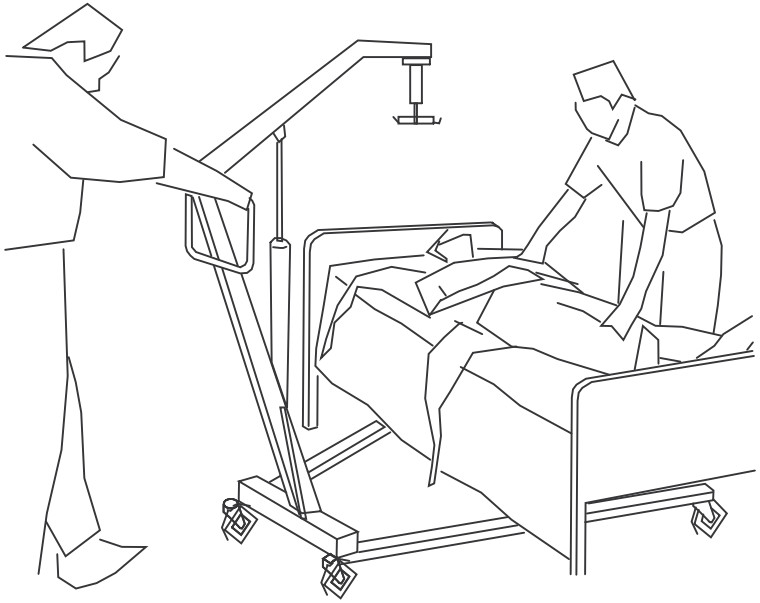
WARNING!
Risk of Injury
The lift could tip and endanger the patient and assistants.
– The legs of the lift must be in the maximum open position for optimum stability and safety. If it is necessary to close the legs of the lift to maneuver the lift under a bed, close the legs of the lift only as long as it takes to position the lift over the patient and lift the patient off the surface of the bed. When the legs of the lift are no longer under the bed, return the legs of the lift to the maximum open position.

WARNING!
Risk of Death
The hand control cord can cause injury if improperly positioned and secured.
– ALWAYS be aware of the location of the hand control cord in relation to the patient and caregivers.
– DO NOT allow the hand control cord to become entangled around the patient and caregivers.
– The hand control must be secured properly. ALWAYS return the hand control to the holder when not in use.

WARNING!
Risk of Injury
During transfers and lift operation, the boom or lift arms can impact the patient or caregivers and cause injury.
– ALWAYS be aware of the position of the boom or lift arms during transfers.
– Ensure the boom or lift arms are not positioned so they can impact the patient or bystanders.
– ALWAYS be aware of your body position in relation to the boom or lift arms during transfers.

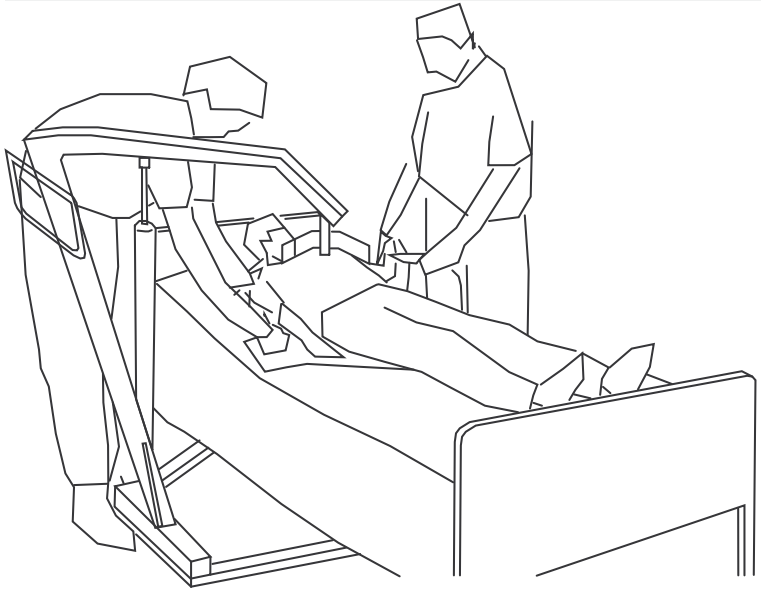


1. Position the patient onto the sling. Refer to your sling user manual.
2. Unlock the rear casters.
3. Open the legs. Refer to 5.3 Closing/Opening Legs.



4. Use the steering handle to push the patient lift into position.

WARNING!
– When using the lift in conjunction with beds or wheelchairs, be aware of the position of the lift in relationship to those other devices so that the lift does not become entangled.



5. Lower the patient lift for easy attachment of the sling.
6. Proceed to 6.4 Lifting and Transferring the Patient.

6.3 Attaching the Slings to the Lift

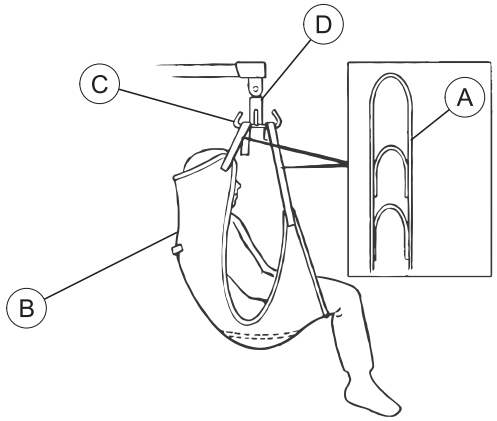
WARNING!
Risk of Injury or Death
Improperly attached, improperly adjusted, or damaged slings can cause the patient to fall or cause injury to assistants.

- Use an Invacare approved sling that is recommended by the individual's doctor, nurse or medical assistant for the comfort and safety of the individual being lifted.
- Invacare slings and patient lift accessories are specifically designed to be used in conjunction with Invacare patient lifts.
- After each laundering (in accordance with instructions on the sling), inspect sling(s) for wear, tears, and loose stitching.
- Bleached, torn, cut, frayed, or broken slings are unsafe and could result in injury. Discard immediately.
- DO NOT alter slings.
- Be sure to check the sling attachments each time the sling is removed and replaced, to ensure that it is properly attached before the patient is removed from a stationary object (bed, chair or commode).
- Position the patient in the sling as directed by the instructions provided with the sling.
- Adjustments for patient safety and comfort should be made before moving the patient.

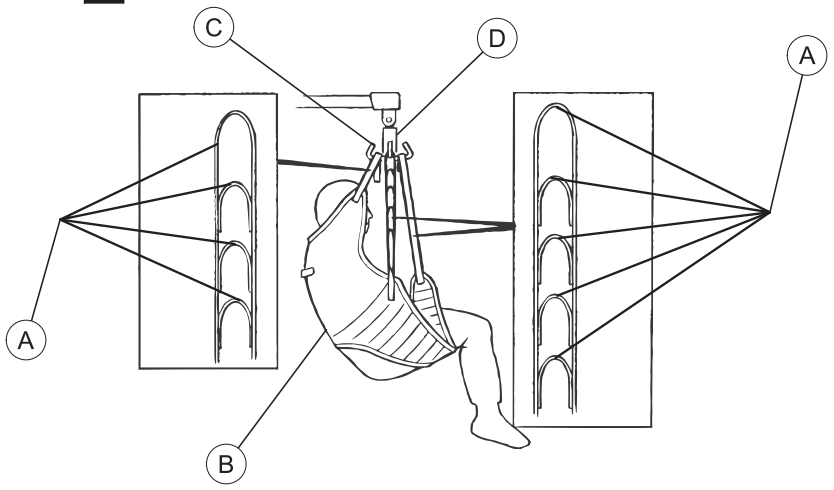
WARNING!
Risk of Injury or Death
Improperly attached, improperly adjusted, or damaged slings can cause the patient to fall or cause injury to assistants.

- DO NOT use any kind of plastic back incontinence pad or seating cushion between patient and sling material that may cause the patient to slide out of the sling during transfer.
- When connecting slings equipped with color coded straps to the patient lift, the shortest of the straps MUST be at the back of patient for support. Using long section will leave little or no support for patient's back. The loops of the sling are color coded and can be used to place patient in various positions. The colors make it easy to connect both sides of the sling equally. Make sure that there is sufficient head support when lifting a patient.
- The hanger bar MUST be attached to the lift BEFORE attaching the sling.

A



B



The slings may be equipped with color coded straps to assist with proper attachment.

1. Place the straps Ⓐ of the sling Ⓑ over hooks Ⓒ of the hanger bar Ⓓ.
2. Match the corresponding straps on each side of the sling for an even lift of the patient.
3. Use the lift. Refer to 6.4 Lifting and Transferring the Patient.

6.4 Lifting and Transferring the Patient

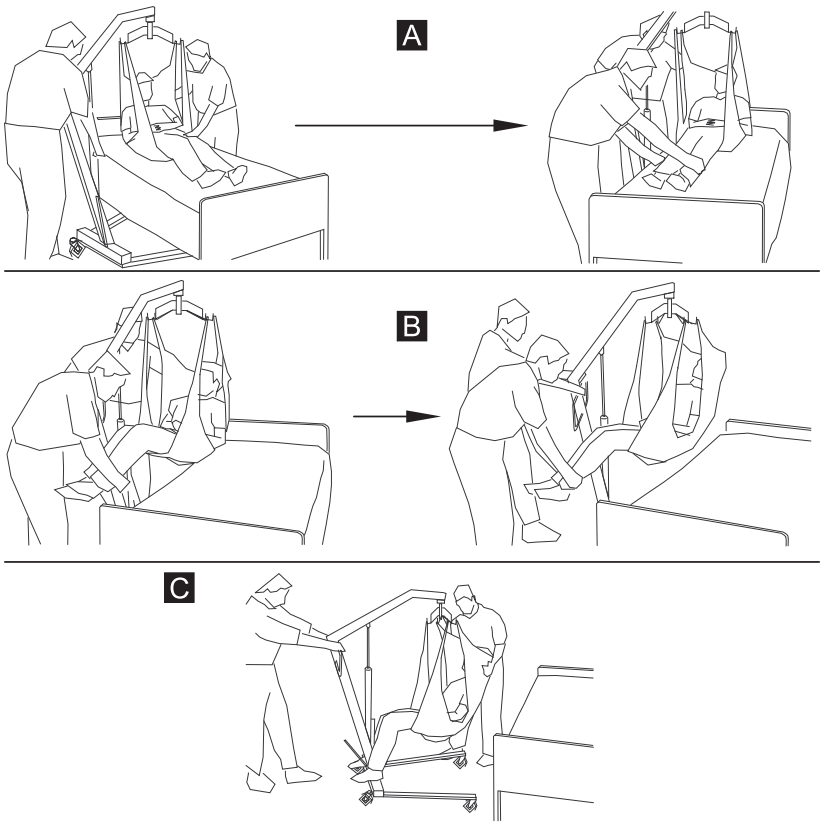
WARNING!
Risk of Injury
The lift could tip and endanger the patient and assistants.
– Refer to the safety information and instructions in the following procedures BEFORE performing this procedure:

6.1 Safe Lifting

6.2 Preparing to Lift

6.3 Attaching the Slings to the Lift

5.2 Raising/Lowering the Lift



1. Move the lift to the patient area and prepare to lift. Refer to 6.2.
2. Attach the sling to the lift. Refer to 6.3.
3. Perform one of the following:

   - Lower the bed to the lowest position.
   - Lift the patient high enough to clear the stationary object with their weight fully supported by the lift. Refer to 5.2.

     The boom will stay in position until the DOWN (🡻) button is pressed.

4. Before moving the patient, check again to make sure that:
   - the sling is properly connected to the hooks of the hanger bar (Refer to Attaching the Slings to the Lift),
   - the hanger bar is firmly attached to the carabiner,
   - the safety catch of the carabiner is closed.

   If any attachments are not properly in place, lower the patient back onto the stationary object and correct this problem.
5. Using the steering handle, move the lift away from the stationary object.
6. Using the handles on the sling, turn the patient so that he/she faces the assistant operating the patient lift (Detail "C").
7. Lower the patient so that his feet rest on the base of the lift, straddling the mast.

   ⓘ The lower center of gravity provides stability making the patient feel more secure and the lift easier to move.

8. Move the patient lift with both hands firmly on the steering handle.

   ⓘ Read and understand the information that pertains to transfer to or from specific types of surfaces BEFORE performing this procedure:
   - 6.4.1 Floor Transfers
   - 6.4.2 Commode Transfer
   - 6.4.3 Bed Transfer
   - 6.4.4 Wheelchair Transfer

9. Raise or lower the lift to position the patient over the stationary surface.

   ⓘ Be sure to raise or lower the patient enough to clear the sides of the stationary object.

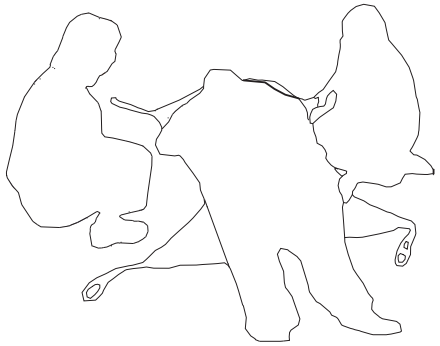
10. Lower the patient onto the stationary surface.
11. Lock the rear casters.
12. Detach the sling from the hanger bar.
13. Unlock the rear casters.
14. Move the lift away from the area.

6.4.1 Floor Transfers (Lifting from the Floor)

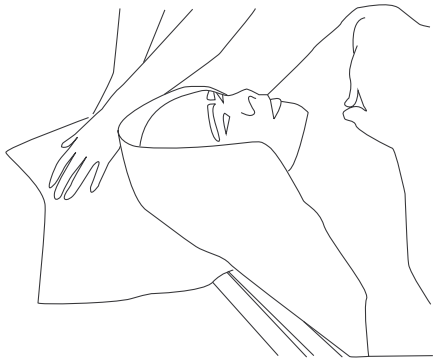
Perform these steps in addition to those in chapter 6.4 when transferring from the floor:

1. Determine if the patient has suffered any injuries from a fall. If no medical attention is needed, proceed with the transfer.
2. Position the sling under the patient.

   ⓘ Refer to the sling user manual for more information about positioning slings.

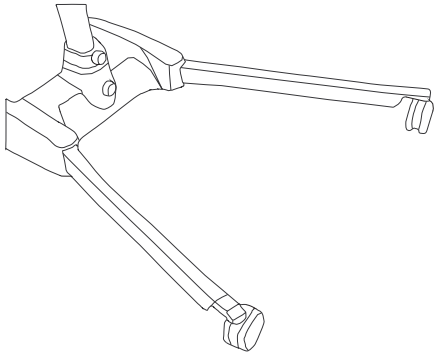


3. One assistant should have the patient bend his knees and raise his head off of the floor.

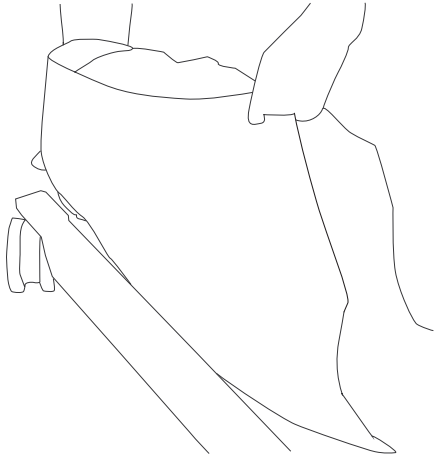


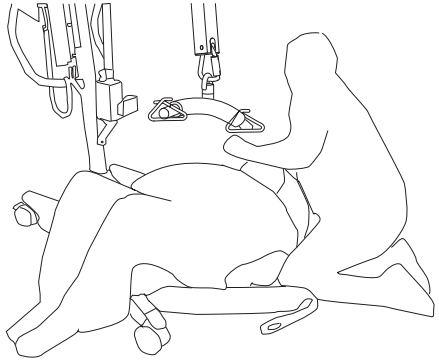
ⓘ This assistant should support the patient's head with a pillow.

4. The other assistant should open the legs of the lift.



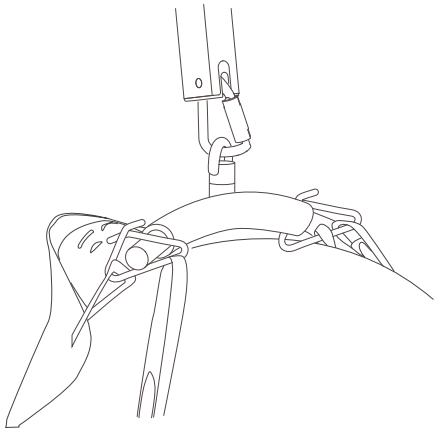
5. Position the lift with one leg under the patient's head and the other leg under the patient's bent knees.





ⓘ Keep the sling straps inside of the legs of the lift.

6. Lower the boom so the hanger bar is directly over the patient's chest.
7. Attach the sling and proceed with the transfer.



6.4.2 Commode Transfer Guidelines

Perform these steps in addition to those in 6.4 when transferring to or from a commode.

The slings with commode openings are designed to be used with either a commode chair or standard commode.

1. Before transferring the patient, the patient lift should be guided to the bathroom facilities to check that it can be easily maneuvered towards the commode.

   The Invacare patient lift is NOT intended as a transport device. If the bathroom facilities are NOT near the bed or if the patient lift cannot be easily maneuvered towards the commode, then the patient MUST be transferred to a wheelchair and transported to the bathroom facilities before using the patient lift again to position the patient on a standard commode.

2. Attach the slings to the lift. Refer to 6.3 Attaching the Slings to the Lift.
3. Elevate the patient high enough to clear the commode chair arms and have their weight supported by the patient lift. Refer to 5.2 Raising/Lowering the Lift.
4. Both assistants should help guide the patient onto the commode.
5. Lower the patient onto the commode, leaving the sling attached to the hanger bar hooks.

   Invacare recommends that the sling remain connected to the hanger bar hooks during the patient's use of either the commode chair or standard commode.

6. When complete, recheck for correct sling attachment.
7. Raise the patient off of the commode.

8. When the patient is clear of the commode surface, use the steering handles to move the lift away from the commode.
9. Perform one of the following:

    - Return the patient to the bed. Reverse the procedures in:

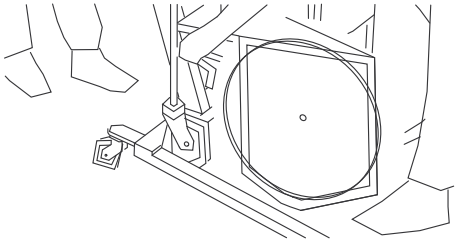
        – 6.4 Lifting and Transferring the Patient
        – 5.2 Raising/Lowering the Lift
        – 6.3 Attaching the Slings to the Lift
    - Return the patient to a wheelchair. Refer to 6.4.4 Wheelchair Transfer.

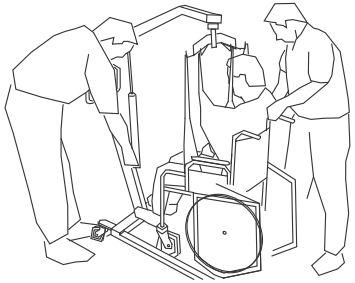
6.4.3 Bed Transfer

Use the following guidelines when transferring to or from a bed:

- Position the patient as far over the bed as possible.
- If patient is being transferred from a surface that is lower than the bed, press the up arrow button to raise the patient above the surface of the bed. The patient should be elevated just high enough to clear the bed with their weight fully supported by the lift.
- When the patient is clear of the bed surface, swing their feet off the bed (Detail "B").
- After transfer, unhook the sling from all attachment points on the lift and remove the sling from around the patient.

6.4.4 Wheelchair Transfer





WARNING!
Risk of Injury
– Before transferring, check that the wheelchair weight capacity can withstand the patient's weight.
– The wheelchair wheel locks MUST be in a locked position before lowering the patient into the wheelchair for transport.

Perform these steps in addition to those in chapter 6.4 when transferring to or from a wheelchair:

1. Engage the wheel locks of the wheelchair to prevent movement of the wheelchair.
2. Position the patient over the seat with their back against the back of the chair.
3. Begin to lower the patient.
4. With one assistant behind the chair and the other operating the patient lift, the assistant behind the chair will pull back on the grab handle (on select models) or sides of the sling to seat the patient well into the back of the chair. This will maintain a good center of balance and prevent the chair from tipping forward.

   Use the straps or handles on the side and the back of the sling to guide the patient's hips as far back as possible into the seat for proper positioning.

7 Maintenance

7.1 Maintenance and Safety Inspection

WARNING!
Risk of Falling
Maintenance MUST be performed only by qualified personnel.
Improper assembly may cause injury or damage.
– Regular maintenance of patient lifts and accessories is necessary to assure proper operation.
– DO NOT overtighten the mounting hardware. This will damage the mounting bracket.

Service Interval

At normal daily operation, a service check-up should take place every year, according to the Safety Inspection Checklist. When performing annual or regular maintenance, all parts designed to carry load must be, as a minimum, tested with maximum load. All safety features must be checked according to EN ISO 10535:2006 Annex B.

LOLER Statement

The UK Health and Safety Executive's Lifting Operations and Lifting Equipment Regulations 1998, require any equipment that is used in the workplace to lift a load be subject to safety inspection on a six monthly basis. Please refer to the HSE web site for guidance www.hse.gov.uk.

The person responsible for the equipment must ensure adherence to LOLER regulations.

General Maintenance

Regular cleaning will reveal loose or worn parts, enhance smooth operation and extend the life expectancy of the lift.

Follow the maintenance procedures described in this manual to keep your patient lift in continuous service.

The Invacare® Patient Lift is designed to provide a maximum of safe, efficient and satisfactory service with minimum care and maintenance.

It is important to inspect all stressed parts, such as slings, hanger bar and any pivot points for signs of wear, cracking, fraying, deformation or deterioration. All parts of the Invacare® patient lift are made of the best grades of steel, but metal to metal contact will wear after considerable use. Replace any defective parts immediately and ensure that the lift is not used until repairs are made. Refer to the Safety Inspection Checklist for specific information regarding wear items.

There is no adjustment or maintenance of either the casters or brakes, other than cleaning, lubrication and checking axle and swivel bolts for tightness. Remove all debris, etc. from the wheel and swivel bearings. If any parts are worn, replace these parts immediately.

If you question the safety of any part of the lift, contact your Dealer or Invacare® representative immediately and advise him/her of your problem.

Daily Inspections

The patient lift should be checked each time it is used. Perform the following checks in addition to those listed in the Safety Inspection Checklist. If you question the safety of any part of the lift, do not use. Contact your Dealer or Invacare® representative immediately.

- ❑ Visually inspect the patient lift. Check all parts for external damage or wear. If damage is found, do not use. Contact your Dealer or Invacare® representative immediately.
- ❑ Check the emergency lowering function (both electrical and/or mechanical). Check all parts for external damage or wear. If damage is found, do not use. Contact your Dealer or Invacare® representative immediately.
- ❑ Check that all hardware and attachment points for damage or wear. Check all parts for external damage or wear. If damage is found, do not use. Contact your Dealer or Invacare® representative immediately.
- ❑ Verify that the hand control is functional (lifting and leg movements).
- ❑ Charge the battery every day the lift is used.
- ❑ Check the emergency stop function.

7.1.1 Safety inspection checklist

A person who is suitably and properly qualified and well acquainted with the design, use and care of the lift should perform periodic inspections.

Date of Inspection:	Initials:

THE CASTER BASE

- ❑ Inspect for missing hardware.
- ❑ Base opens/closes with ease.
- ❑ Inspect casters and axle bolts for tightness.
- ❑ Inspect casters for smooth swivel and roll.
- ❑ Inspect and clear wheels of debris.
- ❑ Inspect pivot joints for wear.

SLINGS AND HARDWARE

- ❑ Check all sling attachments each time it is used to ensure proper connection and patient safety.
- ❑ Inspect sling material for wear.
- ❑ Inspect straps for wear.
- ❑ Inspect stitching.

THE ELECTRIC ACTUATOR ASSEMBLY

- ❑ Check for leakage.
- ❑ Inspect hardware on mast, boom and base.
- ❑ Check for wear or deterioration. If damaged, return to factory.
- ❑ Cycle to ensure smooth quiet operation of the electric actuator.

THE BOOM

- ❑ Check all hardware and hanger bar supports.
- ❑ Inspect for bends or deflections.
- ❑ Inspect bolted joints of boom for wear.
- ❑ Inspect to ensure that the boom is centered between the base legs.
- ❑ Check the mast pivot bolt. Ensure that the bolt is tightly secured.
- ❑ Inspect pivot joints for wear.
- ❑ Check if safe working load is visibly marked on the boom

THE MAST

- ❑ Mast must be securely assembled to boom.
- ❑ Inspect for bends or deflections.
- ❑ Inspect pivot joints for wear.

THE HANGER BAR

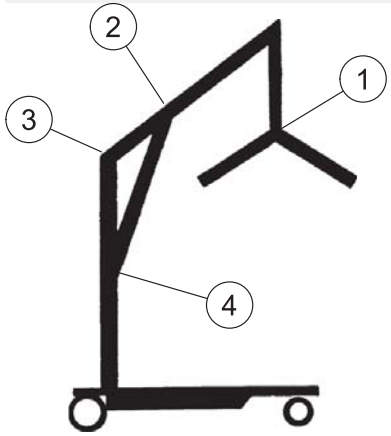
- ❑ Check the bolt/hooks for wear or damage.
- ❑ Check sling hooks for wear or deflection.
- ❑ Inspect pivot joints for wear.
- ❑ Check the carabiner for wear at contact points.
- ❑ Check the welded pin that is carrying the carabiner at the boom.
- ❑ Check if safe working load is visibly marked on the hanger bar

CLEANING

- ❑ Whenever necessary.

7.2 Lubricating the Lift

WARNING!
Risk of Falling
Hydraulic oil or lubricant on the floor can cause a fall and injury.
– Wipe excess lubricant from the lift after lubrication.
– Use a facial tissue to wipe excess oil from around the hydraulic piston.
– If excess oil is leaking from the hydraulic pump, contact a dealer or qualified technician for service.



The Invacare lift is designed for minimum maintenance. However, a six month check and lubrication should ensure continued safety and reliability.

Keep lift and slings clean and in good working order. Any defect should be noted and reported to your Dealer or Invacare representative as soon as possible.

Refer to the figure for lubrication points. Lubricate all pivot points with a light grease (waterproof auto lubricant). Wipe all excess lubricant from lift surface.

1. Hanger Bar
2. Boom Mounting Bracket
3. Boom/Mast Mount
4. Mast Mounting Bracket

7.3 Cleaning the Sling and Lift

Cleaning the Sling

Refer to the washing instructions on the sling and to the sling manual for cleaning details.

Cleaning and Disinfecting the Lift

CAUTION!
Risk of Damage
Motors, control unit and mounting parts can be damaged if the lift is cleaned improperly.
– Never use acids, alkaline or solvents for cleaning the lift.
– Dry the lift carefully after cleaning.

To prevent cross-infection, the hoist must be cleaned and disinfected after each use.

A soft cloth, dampened with water and a small amount of mild detergent, is all that is needed to clean the patient lift. The lift can be cleaned with non-abrasive cleaners.

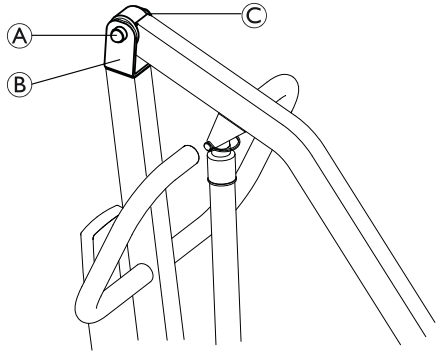
Never use acids, alkaline or solvents for cleaning the lift. Dry the lift carefully after cleaning.

Motors, control unit and mounting parts can be damaged if the lift is cleaned any other way than stated above.

The lift must be wiped with a moistened, firmly wrung cloth with ordinary household disinfectants. Only use disinfection detergents approved by the facility and follow the facility policy.

For more information about the residence time and concentration of disinfectants, please contact your disinfectant dealer or the manufacturer of the disinfectant.

7.4 Checking and Tightening Mast Pivot Bolt



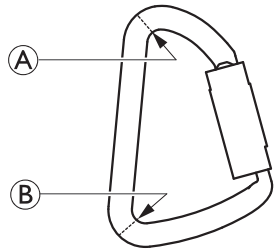
1. Check that the bolt Ⓐ is through the bracket Ⓑ and the locknut Ⓒ is tight and secure.
2. If needed, do one or more of the following:
   - Tighten locknut and back-off the locknut 1/8 of a turn.
   - Replace the locknut.

7.5 Checking the carabiner and its mounting

WARNING!
Risk of Injury
Worn or damaged parts of the lift may cause injury to the patient or assistants.
– After the first year of use, the hooks of the hanger bar and mounting brackets of the boom should be inspected every six months to determine the extent of wear. Check for signs of cracking, fraying, deformation or deterioration. If these parts become worn, replacement must be made.

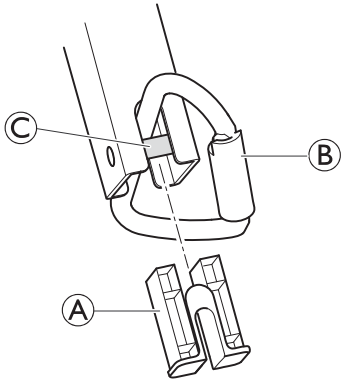
Checking the carabiner

1. Check the carabiner for wear at contact points Ⓐ and Ⓑ.
   Do not use the lift if the carabiner measures less than 6 mm at these points.



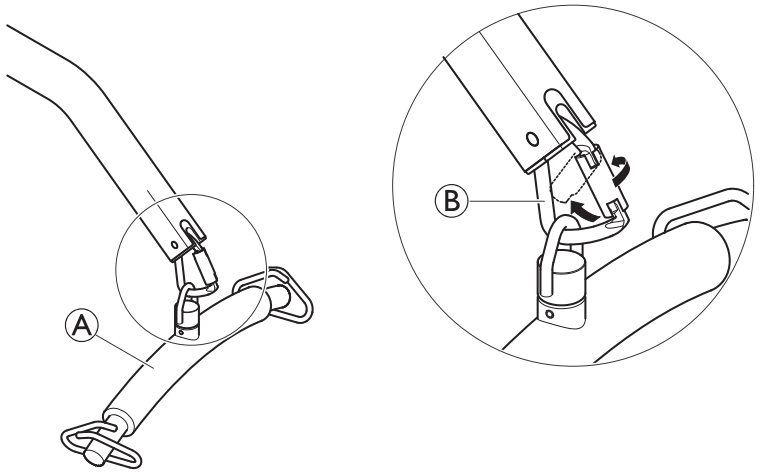
Checking the boom pin

1. Turn carabiner Ⓑ to the side.
2. Remove plastic part Ⓐ.
3. Check the welded pin Ⓒ for wear.
   Do not use the lift if the pin measures less than 7 mm.
4. Insert the plastic part again and release the carabiner to its position.



7.6 Replacing the Hanger Bar

If the scale is installed on the lift, refer to the scale instruction manual to replace the hanger bar.



1. Support the hanger bar Ⓐ with one hand.
2. Open the carabiner Ⓑ by first twisting the safety catch and then press it backwards with one hand.
3. Remove the hanger bar from the carabiner.
4. Reverse STEPS 1- 3 to install the new hanger bar.
5. Check that the hanger bar is firmly attached to the carabiner. The gate of the carabiner must be closed after the hanger bar is mounted.

8 After Use

8.1 Transportation and Storage

During transportation, or when the patient lift is not to be used for some time, the emergency stop button should be pushed in.

The patient lift must be stored at normal room temperature. If it is stored in a damp, cold or wet environment then the motor and other mounting parts may be prone to corrosion. Refer also to Environmental Conditions.

8.2 Disposal

WARNING!
Environmental Hazard
This product has been supplied from an environmentally aware manufacturer that complies with the Waste Electrical and Electronic Equipment (WEEE) Directive 2012/19/EU.
Device contains lead acid batteries.
This product may contain substances that could be harmful to the environment if disposed of in places (landfills) that are not appropriate according to legislation.

- DO NOT dispose of batteries in normal household waste. They MUST be taken to a proper disposal site. Contact your local waste management company for information.
- Please be environmentally responsible and recycle this product through your recycling facility at its end of life.

8.3 Reuse

This product is suitable for reuse. The maximum number of times it can be reused is dependent upon product condition. To prevent the transmission of infection, the patient lift and slings must be cleaned after each use. Before reuse or refurbishment of the lift, refer to Cleaning the Sling and Lift in the Maintenance section of the manual. Always provide the user manual with the reused or refurbished lift.

9 Troubleshooting

9.1 Identifying and repairing faults

WARNING!
– Only personnel having received the necessary instruction or training by Invacare® must perform service and maintenance on the product.

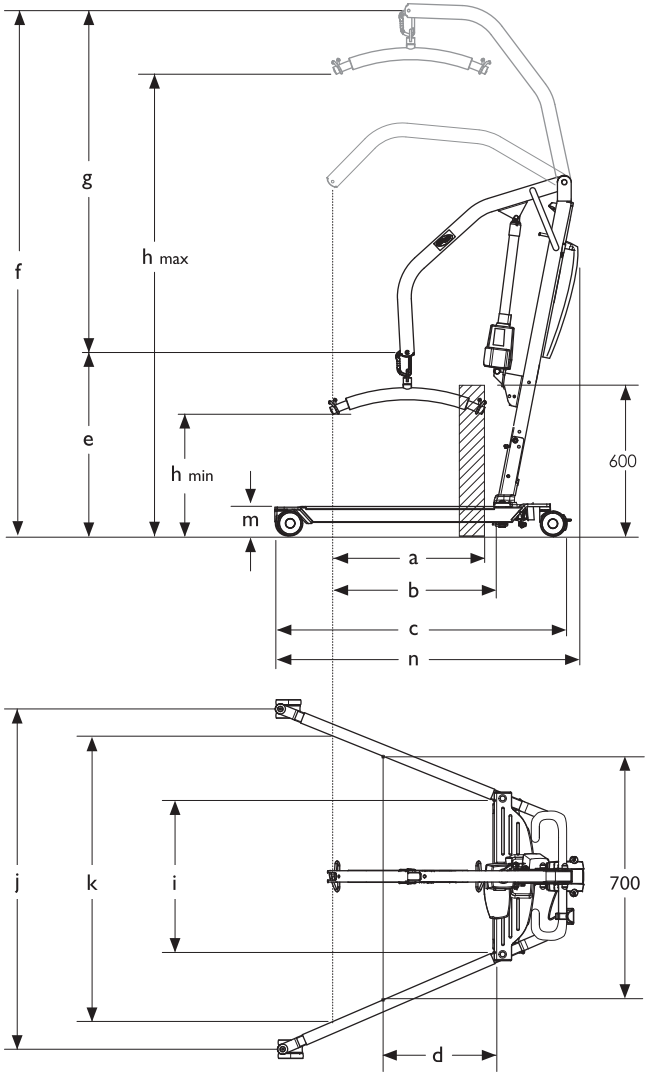
Symptoms	Faults	Solution
Patient lift feels loose.	Mast/Base joint loose.	Refer to Assembling the Mast to the Base in the Setup section.
	Tie - Rods are loose.	Contact your Dealer or Invacare representative.
Casters/Brakes noisy or stiff.	Fluff or debris in bearings.	Clean casters from fluff and debris.
Noisy or dry sound from pivots.	Needs lubrication.	Refer to Lubricating the Lift in the Maintenance section.
Electric actuator fails to lift or legs fail to open when button is pressed.	Hand-control or actuator connector loose.	Connect hand control or actuator connector. Ensure connectors are seated properly and fully connected.
	Battery low.	Charge batteries. Refer to Charging the battery in the Usage section.
	RED emergency stop button pressed IN.	Rotate RED emergency stop button CLOCKWISE until it pops out.
	Battery not connected properly to control box.	Reconnect the battery to the control box. Refer to Charging the battery in the Usage section.

Symptoms	Faults	Solution
	The connecting terminals are damaged.	Replace the battery pack. Refer Charging the battery in the Usage section.
	Boom or leg actuator in need of service or load is too high.	Contact your Dealer or Invacare representative.
Unusual noise from actuator.	Actuator is worn or damaged or spindle is bent.	Contact your Dealer or Invacare representative.
Boom will not lower in uppermost position.	Boom requires a minimum weight load to lower from the uppermost position.	Pull down slightly on the boom.
Boom will not lower during a power retraction.	Shoulder bolt at the junction of the boom and mast may not be properly installed.	Refer to Checking and Tightening Mast Pivot Bolt in the Maintenance section.
The control unit emits a beeping sound during lifting, and the motor stops.	Max. load is exceeded	Reduce the load (and the lift will function normally)

Contact your dealer if the above does not solve your problems.

10 Technical data

10.1 Dimensions and weight



Dimensions		
[mm]	**Birdie™**	**Birdie™ Compact**
Front / rear castor diameter	75	75
Max. reach at 600 mm (a)	450	450
Max. reach from base (b)	560	600
Base length (c)	1240	1090
Total length (n)	1250	1100
Reach from base with legs spread to 700 mm (d)	270	485
CSP* min. height / lowest position (e)	660	740
CSP* max. height (f)	1925	1830
Lifting range (g)	1265	1090
Min. height at Sling Hook-up (h_{min})	445	525
Max. height at Sling Hook-up (h_{max})	1710	1615
Total width (open) centre to centre of castor (j)	1040	870
Total width (open) internal measure	1010	845
Total width (closed), external measure	640	520
Min. internal width (i)	560	440

Internal width at maximum reach (k)	910	760
Turning radius	1400	1070
Height to upper edge of legs (m)	100	100
Min. free height	20	20
Min. space for patient (to motor) in top position	340	300

* CSP = Central Suspension Point

All measures are taken with 75 mm casters. For 100 mm casters add 15 mm for height measures and 20 mm for width.

Weights		
[kg]	**Birdie™**	**Birdie™ Compact**
Maximum lifting capacity	180	150
Total weight incl. hanger bar	42	36
Weight, mast, incl. battery, excl. hanger bar	21	17.5
Weight leg section	19	16.5

10.2 Electrical system

	Birdie™	**Birdie™ Compact**
Voltage output	24 V DC, max. 250 VA	
Voltage supply	100 – 240 V AC, 50/60 Hz	
Maximum current input	max. 280 mA / 400 mA *	
Protection class (entire device)	IPX4	
Insulation class	Class II equipment	
	Type B applied part Applied part complying with the specified requirements for protection against electrical shock according to IEC60601-1.	
Sound level	45 – 50 dB (A)	
Working ability	40 full lifts without battery charge with batteries at 50% of full capacity	
Intermittent (periodic motor operation)	10%, max. 2 min. / 18 min.	
Battery capacity	2.9 Ah	
Manual emergency lowering	Yes	No
Electric emergency lowering / lifting	Yes / No	Yes/ No

* depending on the configuration

10.3 Environmental conditions

	Storage and transportation	Operation
Temperature	-10°C to +50°C	+5°C to +40°C
Relative humidity	20% to 75%	20% to 90% at 30°C, not condensing
Atmospheric pressure	795 hPa to 1060 hPa	

10.4 Materials

Component	Material
Base, legs, mast and boom	Steel, powder coated
Hanger bar	Steel, powder coated and foam
Actuator housing, hand control, mast protector, casters and other plastic parts	material according to marking (PA, PP, PE)
Carabiner, bolts and nuts	Steel, rust protected, zinc-plated

10.5 Electromagnetic compliance (EMC) information

Medical Electrical Equipment needs to be installed and used according to the EMC information in this manual.

This equipment has been tested and found to comply with EMC limits specified by IEC/EN 60601-1-2 for Class B equipment.

Portable and mobile RF communications equipment can affect the operation of this equipment.

Other devices may experience interference from even the low levels of electromagnetic emissions permitted by the above standard. To determine if the emission from the lift is causing the interference, run and stop running the lift. If the interference with the other device operation stops, then the lift is causing the interference. In such rare cases, interference may be reduced or corrected by the following:

- Reposition, relocate, or increase the separation between the devices.

10.6 Electromagnetic compliance (EMC)

Guidance and manufacturer´s declaration – electromagnetic emission

The patient lift is intended for use in the electromagnetic environment specified below. The customer or the user of the patient lift should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11(partly)	Group I	The patient lift uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11(partly)	Class B	The patient lift is suitable for use in all establishments including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

Guidance and manufacturer´s declaration – electromagnetic immunity

The patient lift is intended for use in the electromagnetic environment specified below. The customer or the user of the patient lift should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.

Surge IEC 61000-4-5	± 1 kV line(s) to line(s)	± 1 kV line(s) to line(s)	Mains power quality should be that of a typical commercial or hospital environment. Product is double-insulated. There are no other possible connections to earth
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T (>95% dip in U_T) for 0,5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (>95% dip in U_T) for 5 sec	< 5% U_T (>95% dip in U_T) for 0,5 cycle 40% U_T (60% dip in U_T)for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles < 5% U_T (>95% dip in U_T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the patient lift requires continued operation during power mains interruptions, it is recommended that the patient lift be powered from an un-interruptible power supply or a battery. U_T is the a. c. mains voltage prior to application of the test level.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Conducted RF IEC 61000-4-6 Radiated RF IEC 61000-4-3	3 V 3 V/m	3 V 3 V/m	Portable and mobile RF communications equipment should be used no closer to any part of the patient lift including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance: $d = [\frac{3,5}{V_1}]\sqrt{P}$ $d = [\frac{3,5}{E_1}]\sqrt{P}$ 80 MHz to 800 MHz $d = [\frac{7}{E_1}]\sqrt{P}$ 800 MHz to 2,5 GHz where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and *d* is the recommended separation distance in metres (m).[b] Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the patient lift is used

exceeds the applicable RF compliance level above, the patient lift should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the patient lift.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [V1] V/m.

At 80 MHz and 800 MHz, the higher frequency range applies.

Recommended separation distances between portable and mobile RF communications equipment and the patient lift

The patient lift is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the patient lift can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the patient lift as recommended below, according to the maximum output power of the communications equipment

Rated maximum output of transmitter [W]	**Separation distance according to frequency of transmitter [m]**		
	150 kHz to 80 MHz $d = [\frac{3,5}{V_1}]\sqrt{P}$	80 MHz to 800 MHz $d = [\frac{3,5}{E_1}]\sqrt{P}$	800 MHz to 2,5 GHz $d = [\frac{7}{E_1}]\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.69	3.69	7.38
100	11.67	11.67	23.33

For transmitters rated at a maximum output power not listed above the recommended separation, distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

ⓘ These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.