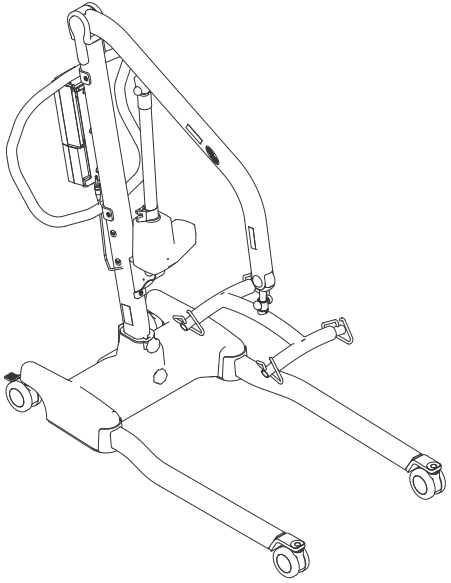


Invacare® Jasmine™

en Powered Lift with Powered Base
User Manual

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

1 General

1.1 Intended Use

The Invacare mobile patient lift is NOT a transport device. It is intended to transfer an individual from one seated surface to another (such as a bed to a wheelchair).

1.2 Indications for Use

To transfer an individual from one seated surface to another.

1.3 Technical Description

Mobile patient lifts are transfer devices designed to be used in most of the common lifting situations, for example:

- Between the bed and the 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 contra-indications 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.

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

1.4 Symbols

Symbols in the Manual

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.

DANGER!
– Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING!
– Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION!
– Caution indicates a potentially hazardous situation which, if not avoided, may result in property damage or minor injury or both.

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

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

Symbols on the Product

Refer to Product Labeling in the Safety section of the manual for the location of the symbols on the product.

CE	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.
	Read Manual
	Audible tone when battery low. Refer to Charging the Battery in the Usage section of the manual.
	Caster lock.
	Open/close legs
	Raise/lower the boom
	Emergency stop
	Safe Working Load

	Double Insulated, Class II equipment
	Type B applied part
	Electrical Hazard
	Recycle this product. Refer to Disposal Section.
	Direct Current
	Manufacturer
EC REP	European Representation
	Battery Indicator
	Blinking LED Lights
	Wrench

2 Safety

2.1 General Guidelines

DANGER!
Risk Of Death, Injury, Or Damage
Improper use of this product may cause injury or damage.
- 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.
- 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.

Continued use of the product with damaged parts could lead to the product malfunctioning, causing injury to the user and/or caregiver.
- Check ALL product components and carton for damage, and test components before use. DO NOT use product if components are damaged or if product is not working properly. Contact a qualified technician or Invacare for repair.

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

WARNING!
Risk of Injury or Damage
The product can be used indoors or outdoors. Some surfaces may cause the product to be unstable and cause injury or damage.

WARNING!
Risk of Injury or Damage
Excessive moisture will damage the product and may cause injury if the product is used in the shower or bath area. Make sure to dry the product carefully.
- DO NOT use the product in the shower or bath or in any prolonged moisture environment. Invacare recommends that the patient be transferred to a shower chair or use other means for bathing.
- Ensure that the product is wiped clean of any moisture after use.
- DO NOT store the product in a damp area or damp condition.
- Periodically inspect all components of the product for signs of corrosion or damage. Replace parts that are corroded or damaged.
- Avoid using this product on an incline. Invacare recommends that the product only be used on a flat surface.
- DO NOT roll product over uneven surfaces that may cause the patient to tip over.

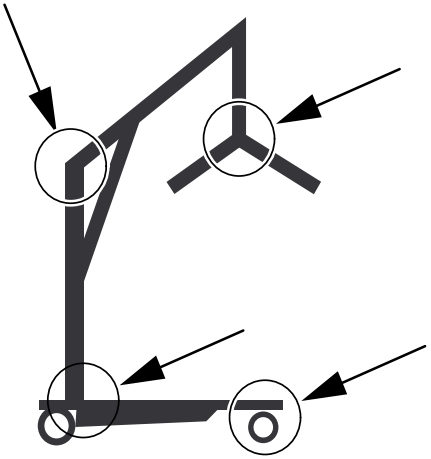
WARNING!
Risk of Death, Injury or Damage
To avoid injury or damage when operating the product:
– Close supervision is necessary when the product is used near children or pets.

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.
– 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.
– Special care MUST BE taken with people with disabilities who cannot cooperate while being lifted.
– Although Invacare recommends that two assistants be used for all lifting preparation, transferring from and transferring to procedures, our equipment will permit proper operation by one assistant. The use of one assistant is based on the evaluation of the health care professional for each individual case.
– DO NOT exceed maximum weight limitation of the patient lift. See Technical Data or the labeling on the lift for the weight limitation of the lift.

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 Pinch Points and Positioning

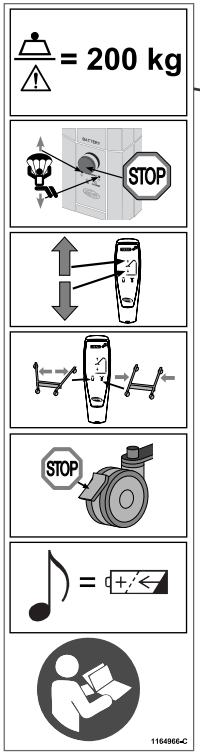


WARNING!
Risk of Injury
Pinch points are present in several locations on the lift and fingers could be pinched.
The hanger bar can move suddenly and cause injury.
- ALWAYS keep hands and fingers clear of moving parts to avoid injury.
- When positioning lift, be aware of the position of the hanger bar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



⚠ WARNING
Risk of injury or damage. Only use the Jasmine mast with this base.

⚠ ATTENTION
Risque de blessure ou de dommages. Utiliser exclusivement le mat Jasmine avec cette base.

⚠ ADVERTENCIA
Riesgo de lesiones o daños. Utilice únicamente el mástil de Jasmine en esta base.

⚠ ADVARSEL
Risiko for ulykke eller skade. Bruk kun Jasmine mast på dette understell.

⚠ ADVARSEL
Risiko for ulykke eller skade. Anvend kun masten til Jasmine til denne base.

⚠ WARNUNG
Verletzungsgefahr oder Gefahr der Beschädigung. Den Jasmine Mast nur mit dieser Basis benutzen.

⚠ ATTENZIONE
Pericolo di lesioni o danni. Con questa base, utilizzare solo l'albero Jasmine.

⚠ ADVERTÊNCIA
Risco de lesões ou danos. Utilize apenas o mastro do elevador Jasmine com esta base.

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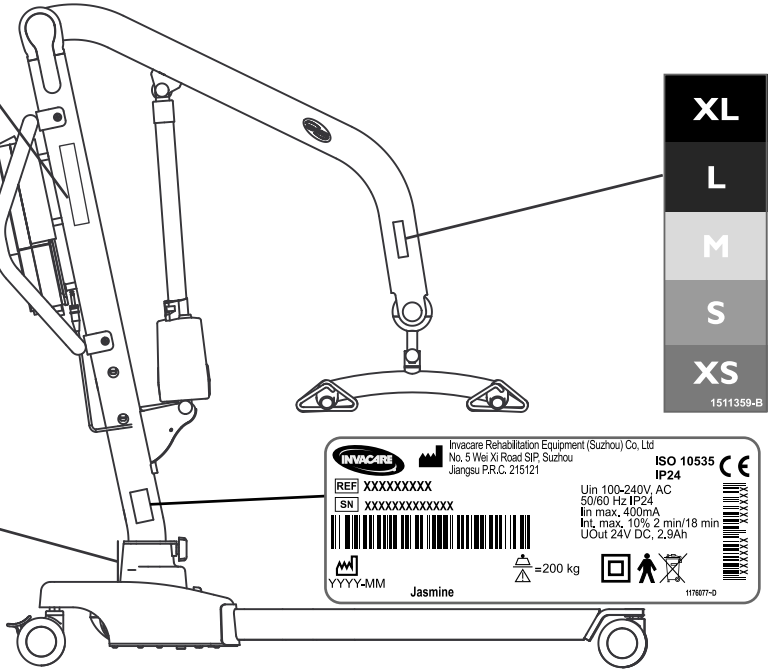
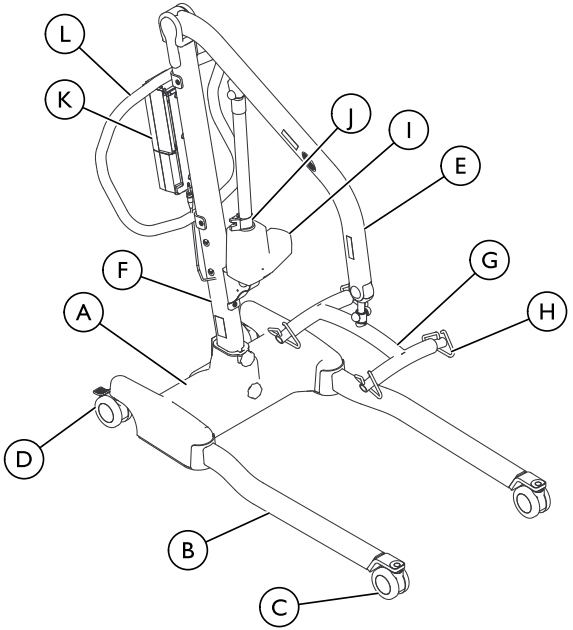


3 Components

3.1 Main parts of the lift



ITEM	Description
Ⓐ	Base
Ⓑ	Leg
Ⓒ	Front Caster
Ⓓ	Rear Caster with brake
Ⓔ	Boom
Ⓕ	Mast
Ⓖ	Hanger bar
Ⓗ	Hook for sling
Ⓘ	Actuator
Ⓙ	Manual emergency lowering handle
Ⓚ	Control unit with Battery
Ⓛ	Steering handle

3.2 Accessories

WARNING!
Risk of Injury or Damage
Accessories designed by other manufacturers have NOT been tested by Invacare.
Use of NON-Invacare accessories may result in injury or damage.
In certain instances, the use of other manufacturer's slings may be possible.
– Contact your local Invacare office for more information about accessories.

CAUTION!
Compatibility of slings and hanger bars
Invacare® uses a "Loop and Coat Hanger Bar 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.
– Only use slings that are suitable for a "Loop and Coat Hanger Bar 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”), 45 or 55 cm wide
- Scale to be mounted with the hanger bar

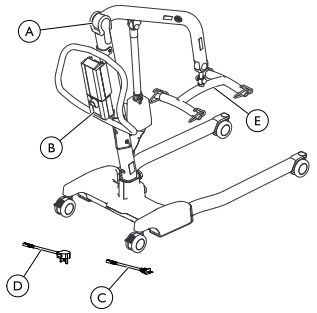
Sling models for "Loop and Coat Hanger Bar System":

- 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 Scope of Delivery

The items listed in the tables are included in your package. Slings are sold separately.



Item	Description	Quantity
A	Lift	1
B	Controller with Battery	1
C	Charging Cord, EU	1
D	Charging Cord, UK (optional)	1
E	Hanger Bar	1
Not Shown	Hand Pendant	1
Not Shown	Lifter User Manual	1
Not Shown	Wall Charger (if equipped)	1

4.2 Safe Assembly

WARNING!
Risk of Injury or Damage
Improper assembly may cause injury or damage. Use of incorrect or improper parts, including replacement (service) parts, 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, mast, boom and hanger bar are manufactured to specifications that assure correct alignment of all parts for safe functional operation.
- Replacement parts MUST match original Invacare parts.
- ALWAYS provide the lift serial number to assist in ordering the correct replacement parts.
- DO NOT overtighten the mounting hardware. This will damage the mounting bracket.

Risk of Injury or Damage
There is a risk of squeezing of both limbs and wires during assembly and disassembly of the lift.
- Activate the emergency stop before assembly or disassembly to prevent entrapment/squeezing.
- Take the utmost care when lifting components during assembly. Some parts are heavy. Always remember to adopt the correct lifting position.

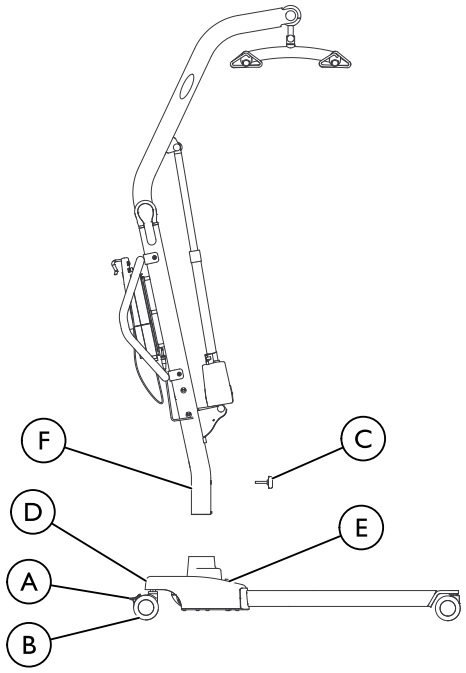
The following tools are required to assemble the patient lift: 1/2” wrench (spanner) and 3/16” Allen key.

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

4.3 Assembling the Mast to the Base

WARNING!
Risk of Fire
Incorrect electrical connections can cause fire.
- Before making electrical connections, inspect connectors for damage. If damage is found, contact an Invacare dealer or qualified technician for service.
- Ensure electrical connectors are completely connected.
- Ensure electrical connectors are connected to the correct components.
- DO NOT force connectors together. If connections are not easy and smooth, verify the correct components are being connected. Contact Invacare, a dealer or a qualified technician for service.

WARNING!
Risk of Death, Injury or Damage
During assembly or maintenance of the lift, it may be necessary to manually raise the boom or spreader bar.
– DO NOT release the boom or spreader bar while raising them manually. After assembly or maintenance is complete, slowly lower the boom or spreader bar to the original position before releasing the lift.
– Never manually raise the boom arm while using the lift.

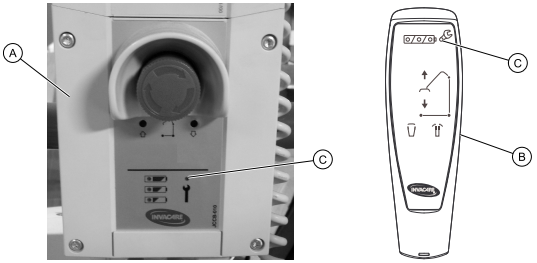


Invacare recommends two (2) individuals undertake assembly of lift components. However, one (1) skilled individual can assemble the lift components if necessary.

1. Put the base on a level surface so all casters make contact with the floor.
2. Press down on the tabs Ⓐ to lock rear casters Ⓑ.
3. Unscrew the top knob Ⓒ and remove it from the base Ⓓ.
4. Loosen the bottom knob Ⓔ, but leave it screwed into the base.
5. Connect the mast assembly cable (not shown) to the base cable (not shown).
6. Position the tube of the mast assembly Ⓕ into the hole in the base assembly. Make sure not to squeeze the cables between mast and base.
7. While supporting the mast assembly, tighten the bottom knob.
8. Screw the top knob into the hole in the base, ensuring the top knob is tightened.
9. Reverse STEPS 2–8 to disassemble the lift.

WARNING!
Risk of Injury or Damage
To avoid injury or damage from instability of the mast:
– DO NOT remove the plastic bushing in the base that surrounds the mast during disassembly.

4.4 Checking the Service Light

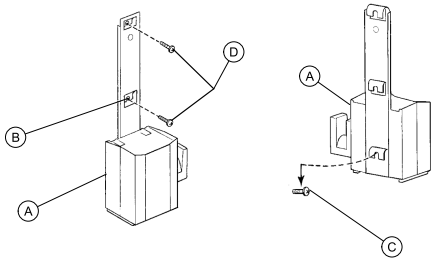


Each time the lift is assembled, and before using the lift, the service light should be checked.

1. Assemble the lift.
2. Examine the control box Ⓐ or the hand pendant Ⓑ to see if the service light Ⓒ is flashing.
3. Refer to the table.

Service Light	Initial Assembly	Reassembly
Flashing	Reset the service light. Refer to *8.4 Resetting the Service Light, page 51*.	The lift requires service. Contact your local Invacare dealer or representative for service.
Not Flashing	N/A	The lift is ready for use

4.5 Attaching the Battery Charger Mounting Bracket to the Wall



Refer to your local regulations concerning proper mounting procedures.

1. Place the battery charger with mounting bracket Ⓐ on the wall at the desired position.
2. With a pencil, mark the middle hole Ⓑ position.
3. Measure down 6½ inches (16.5 cm) from the pencil mark and drill one mounting hole.
4. Install bottom mounting screw Ⓒ until there is an approximate 1/8-inch (3 mm) gap between screw head and wall.
5. Install the battery charger with mounting bracket onto the bottom mounting screw.
6. Drill the remaining two mounting holes.
7. Install the two remaining mounting screws Ⓓ through the mounting bracket and into the wall. Tighten securely.
8. Plug the battery charger into the wall electrical outlet.

   LED light indicating ON should illuminate.

5 Usage

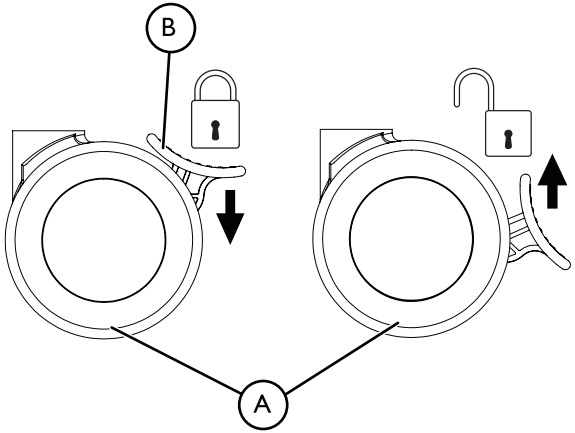
5.1 Introduction

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
- Lifting the Patient

5.2 Locking/Unlocking the Rear Casters



1. To Lock the Caster Ⓐ: Press tab Ⓑ down.
2. To Unlock the Caster Ⓐ: Press tab Ⓑ up.

5.3 Closing/Opening Legs of the Lift

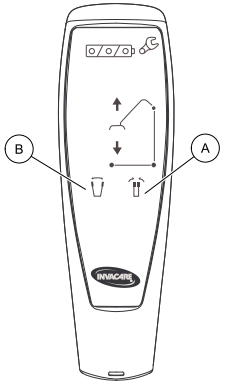
WARNING!
Risk of Death, Injury or Damage
Improper use of this product may cause death, injury or damage.
The lift could tip and endanger the patient and assistants.

– The 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 Legs of the Electric Lift

The pendant is used to open or close the legs of the base for stability when lifting a patient.

Refer to the safety information in Closing/Opening Legs of the Lift in the Usage section of the manual before performing this procedure.



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

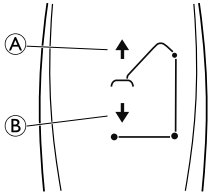
The legs will stop moving when the button is released.

5.4 Raising/Lowering the Lift

WARNING!
Risk of Injury
The lift could tip and endanger the patient and assistants.
– 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.

5.4.1 Raising/Lowering an Electric Lift

The pendant is used to raise or lower the lift.



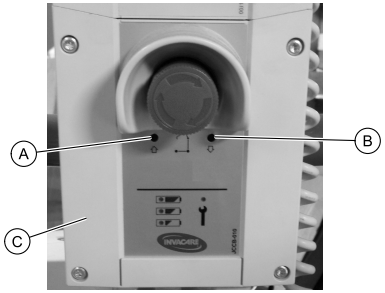
1. To raise the lift — Press and hold the UP Ⓐ button to raise the boom and the patient.
2. To lower the lift — Press and hold the DOWN Ⓑ button to lower the boom and the patient.

Release the button to stop raising or lowering the lift.

5.5 Activating a Mechanical Emergency Release

There are two types of mechanical emergency release — primary and secondary.

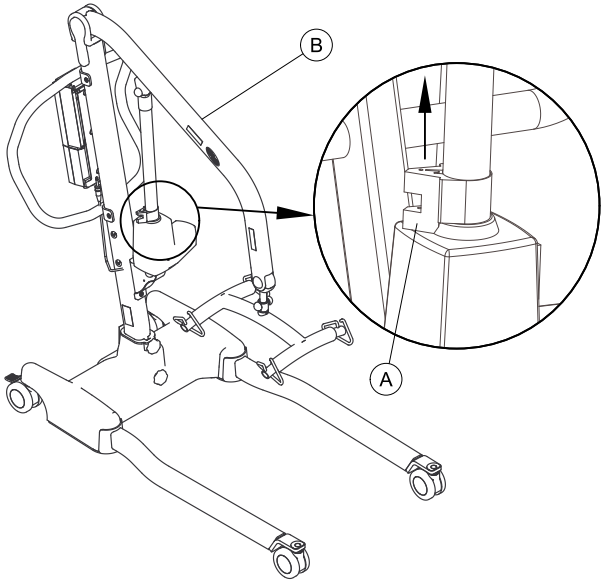
5.5.1 Primary Emergency Release



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

Pen must remain in position within the hole for the Emergency Release to function. Removal of the pen will stop the lowering process.

5.5.2 Secondary Emergency Release



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

The secondary emergency release is used only to lower the patient.

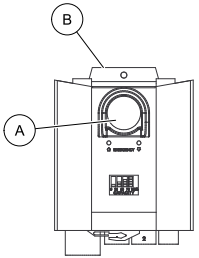
In cases where the primary release is either not functioning or unreachable, a secondary emergency release may be used.

The secondary release will only operate when there is a patient in the lift.

The secondary emergency release is set for 75 kg (165 lbs). If the patient weight is more or less than 75 kg (165 lbs), the speed of the secondary emergency release must be adjusted.

1. Adjust the speed of the secondary release:
   a. Increase the speed — Use a screwdriver to loosen the screw in the EMERGENCY grip Ⓐ.
   b. Decrease the speed — Use a screwdriver to tighten the screw in the EMERGENCY grip.
2. Pull up on the EMERGENCY grip Ⓐ and push down on the boom Ⓑ at the same time to lower the patient.

5.6 Performing an Emergency Stop



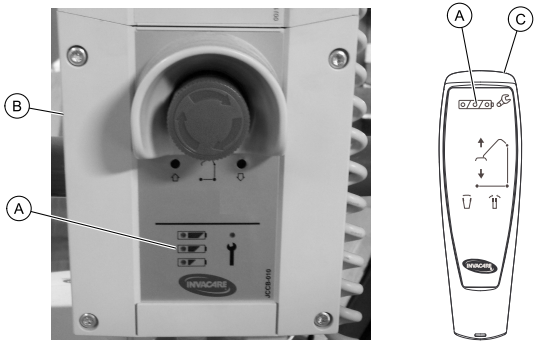
1. Press the RED button Ⓐ on the control box Ⓑ in to stop the boom and patient from raising or lowering.
2. To reset, rotate the emergency button clockwise.

5.7 Charging the Battery

Invacare recommends the battery be recharged daily to prolong battery life.

There are two different methods to charge the battery. One method uses a power cord that attaches to the control box, the other requires the battery to be mounted to the battery charger. Follow the appropriate procedure to charge the battery for your patient lift.

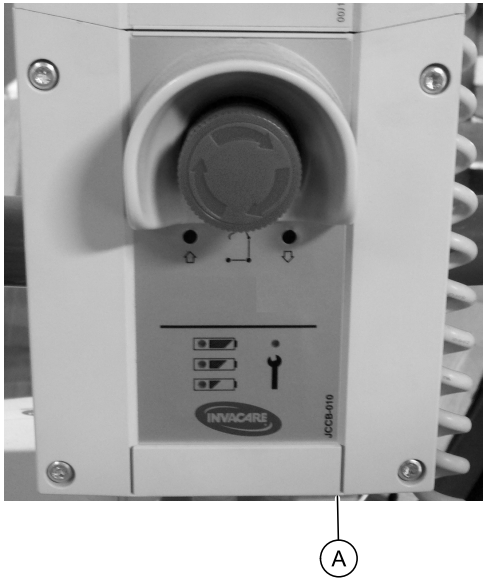
5.7.1 Battery Indicator



The battery indicator Ⓐ is located on the control box Ⓑ and on the hand pendant Ⓒ. The LEDs indicate the battery state:

Hand Pendant Battery Indicator Ⓐ	Control Box 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.

5.7.2 Using a Power Cord to Charge the Battery



Ⓐ = Power cord connects here.

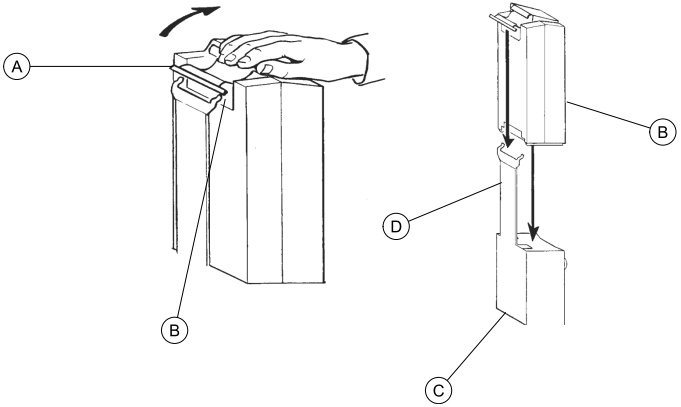
WARNING!
Risk of Death, Injury or Damage
The battery is capable of being charged while attached to the lift.
- DO NOT activate the emergency stop when attempting to charge the battery. The battery will not charge if the emergency stop is activated.
- While charging takes place, the patient lift cannot be used. DO NOT attempt to move or use the patient lift without unplugging the power cord from the wall outlet.
- DO NOT attempt to use the patient lift if the battery housing is damaged. Replace the battery before any further use.

1. Attach the power cord to the control box.
2. Plug the power cord into a power outlet.

   The battery will charge in approximately 4 hours. Charging must be done in a room with good air ventilation.

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

5.7.3 Using the Battery Charger to Charge the Battery



REMOVING FROM LIFT:

1. Lift up on the handle Ⓐ on the back of the battery Ⓑ.
2. Lift the battery up and out away from the control box Ⓒ.

CAUTION!
Mounting the battery improperly may cause injury or damage.
– Make sure there is an audible click when mounting battery on the battery charger to confirm proper mounting.

3. Place the battery on the battery charger Ⓓ as shown. Make sure there is an audible click.

The charge LED will illuminate. When charging is complete, charge LED will stop illuminating. A battery needing to be fully recharged will take approximately four hours.

REMOVING FROM CHARGER:

1. Lift up on the handle on the back of the battery.
2. Lift the battery up and out away from the battery charger.

CAUTION!
Mounting the battery improperly may cause injury or damage.
– Make sure there is an audible click when mounting battery on the control box to confirm proper mounting.

3. Reinstall the battery onto the control box as shown. Make sure there is an audible click.

The battery mounts to the control box and battery charger as shown.

6 Lifting the Patient

6.1 Safe Lifting

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 (bed, commode or other surface) weight capacity can withstand the patient's weight.

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).
- 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 of the lift 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 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 product.
– Avoid using the product on an incline. Invacare recommends that the product only be used on a flat surface.
– During transfer, with the patient suspended in a sling attached to the lift, DO NOT roll lift over uneven surfaces that could cause the lift to tip over.

WARNING!
Risk of Injury or Damage
Damage to parts of the lift (pendant, 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 pendant properly when not in use.

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

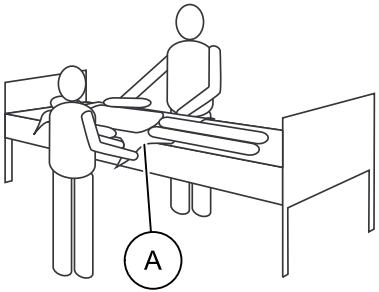
WARNING!
Risk of Entrapment or Strangulation
Items in the patient's surroundings can cause entrapment strangulation during lifting. To avoid entrapment or strangulation:
– Before lifting, check that the patient is completely free of his/her surroundings.

WARNING!
Risk of Entrapment
There is a risk of entrapment between the hanger bar hooks and the sling.
– Use caution when lifting.
– NEVER put hands or fingers on or near the hooks when lifting.
– Ensure the patient's hands and fingers are away from the hooks before lifting.

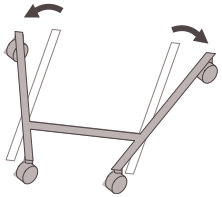
6.2 Preparing to Lift

WARNING!
Risk of Injury
During transfers and lift operation, the boom can impact the patient or caregivers and cause injury.
– ALWAYS be aware of the position of the boom during transfers.
– Ensure the boom is positioned in a way that it cannot impact the patient or bystanders.
– ALWAYS be aware of your body position in relation to the boom during transfers.

1. Refer to the Safety section of the manual and review the information in Safe Lifting in the Lifting the Patient section of the manual before proceeding further. Observe all warnings indicated.
2. Position the patient onto the sling Ⓐ. Refer to your sling user manual.



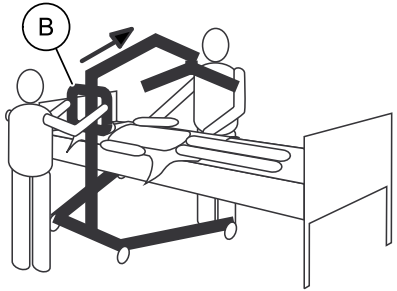
3. Unlock the rear casters. Refer to Locking/Unlocking the Rear Casters in the Usage section of the manual.
4. Open the legs of the lift. Refer to Closing/Opening Legs of the Lift in the Usage section of the manual.



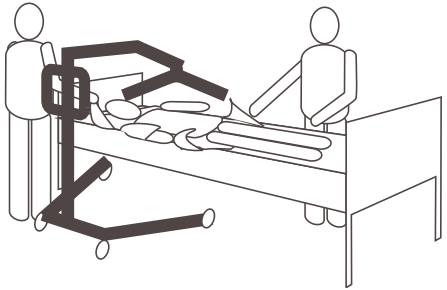
5. Use the steering handle Ⓑ to push the patient lift into position.

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.

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



6. Lower the patient lift for easy attachment of the sling.



7. Lock the rear casters. Refer to Locking/Unlocking the Rear Casters in the Usage section of the manual.
8. Attach the sling to the lift. Refer to Attaching the Sling to the Lift in the Lifting the Patient section of the manual.

6.3 Attaching the Sling to the Lift

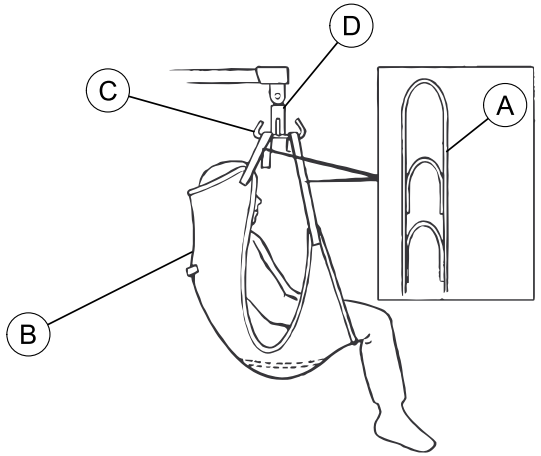
WARNING!
Risk of Injury or Death
Improperly attached, improperly adjusted, or damaged slings can cause the patient to fall or cause injury to assistants.

- 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, tear, 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, use shorter straps at the back of patient for upright support. Using longer straps will leave less support for the patient's back and the patient will be in a more reclined position. 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.

1. Place the straps Ⓐ of the sling Ⓑ over hooks Ⓒ of the hanger bar Ⓓ. The slings may be equipped with color coded straps to assist with proper attachment. Match the corresponding straps on each side of the sling for an even lift of the patient.



2. Lift and transfer the patient. Refer to Lifting and Transferring the Patient in the Lifting the Patient section of the manual.

6.4 Lifting and Transferring the Patient From a Bed

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:

Safe Lifting in the Lifting the Patient section of the manual

Preparing to Lift in the Lifting the Patient section of the manual

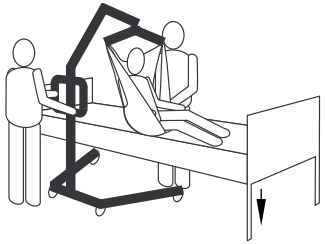
Attaching the Sling to the Lift in the Lifting the Patient section of the manual

Raising/Lowering the Lift in the Usage section of the manual

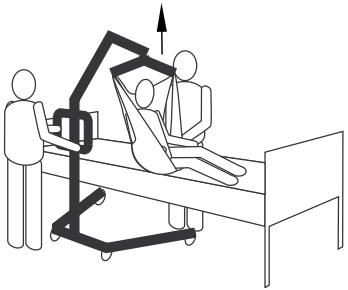
Invacare recommends at least two (2) individuals assist in transferring the patient into and out of a bed using this product.

1. Move the lift to the patient area, open legs and prepare to lift. Refer to Preparing to Lift in the Lifting the Patient section of the manual.
2. Attach the sling to the lift. Refer to Attaching the Slings to the Lift in the Lifting the Patient section of the manual.
3. Unlock the rear casters.

4. Lower the bed to the lowest position.

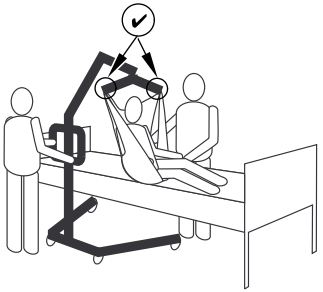


5. Lift the patient high enough to clear the stationary object with their weight fully supported by the lift. Refer to Raising/Lowering the Lift in the Usage section of the manual.

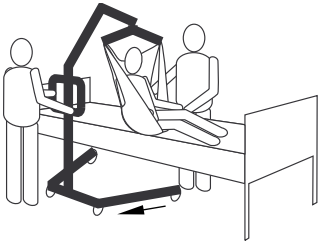


The boom will stay in position until the DOWN ( ) button is pressed.

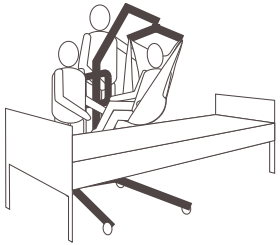
6. Before moving the patient, check again to make sure that the sling is properly connected to the hooks of the hanger bar. Refer to Attaching the Sling to the Lift in the Lifting the Patient section of the manual. If any attachments are not properly in place, lower the patient back onto the stationary object and correct the problem.



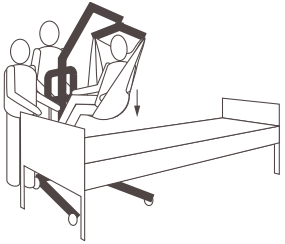
7. Using the steering handle, move the lift away from the stationary object.



8. Using the handles on the sling, turn the patient so that he/she faces the assistant operating the patient lift.

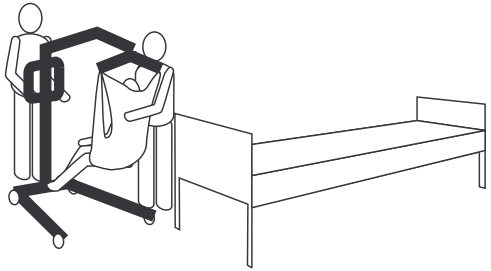


9. Lower the patient so that his/her feet rest on the base of the lift, straddling the mast.



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

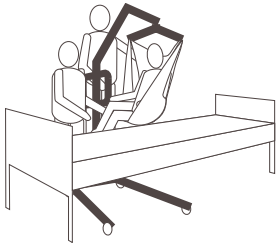
10. Move the patient lift with both hands firmly on the steering handle.



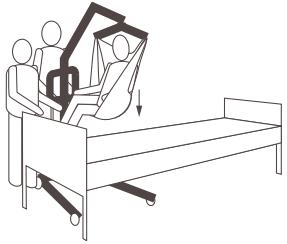
11. Read and understand the information in the Lifting the Patient section of the manual that pertains to transfer to or from specific types of surfaces BEFORE proceeding:

    - Bed Transfer
    - Floor Transfers (Lifting from the Floor)
    - Commode Transfer Guidelines
    - Wheelchair Transfer

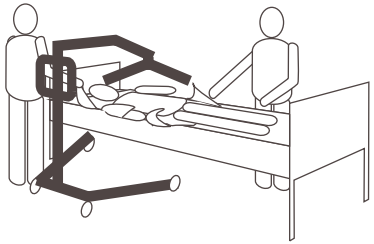
12. Raise or lower the lift to position the patient over the stationary surface. Be sure to raise or lower the patient enough to clear the sides of the stationary object.



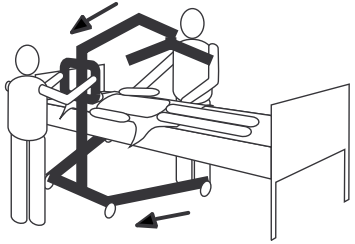
13. Lower the patient onto the stationary surface.



14. Ensure the patient is fully supported by the surface to which you are transferring.
15. Lock the rear casters.
16. Raise the bed to a good working height (usually hip height of caregivers).
17. Detach the sling from the hanger bar.



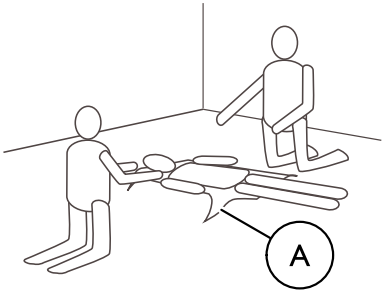
18. Unlock the rear casters.
19. Move the lift away from the area.



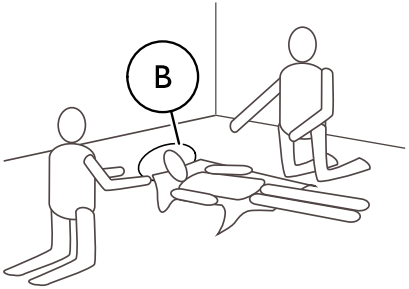
6.4.1 Floor Transfers (Lifting from the Floor)

WARNING!
Risk of Injury
The lift can injure a patient who is on the floor or an assistant working on the floor.
– Always use two assistants when transferring a patient from the floor.

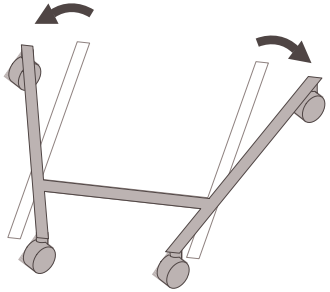
1. Perform these steps in addition to those in Lifting and Transferring the Patient From a Bed when transferring from the floor.
2. Determine if the patient has suffered any injuries from a fall. If no medical attention is needed, proceed with the transfer.
3. Position the sling Ⓐ under the patient. Refer to the sling user manual for more information about positioning slings.



4. One assistant should have the patient bend his/her knees and raise his/her head off of the floor. This assistant should support the patient's head with a pillow Ⓑ.

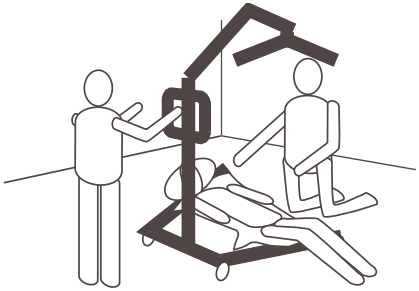


5. The other assistant should open the legs of the lift. Refer to Opening/Closing Legs of the Lift in the Usage section of the manual.

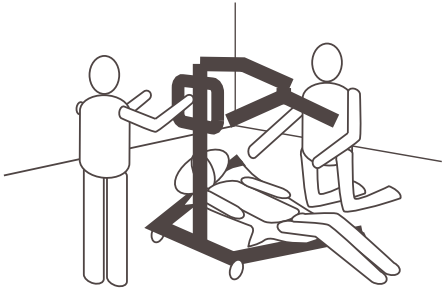


6. Unlock the rear casters.

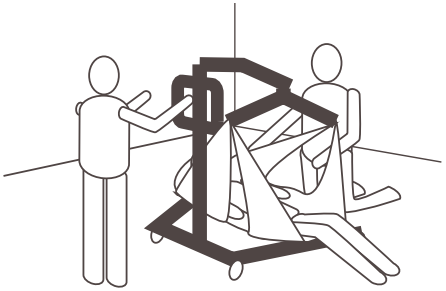
7. Position the lift with one leg under the patient's head and the other leg under the patient's bent knees. Keep the sling straps inside of the legs of the lift.



8. Lower the boom so the hanger bar is directly over the patient's chest.



9. Attach the sling. Refer to Attaching the Sling to the Lift in the Lifting the Patient section of the manual.



10. Proceed with the transfer. Refer to Lifting and Transferring the Patient From a Bed in the Lifting the Patient section of the manual.

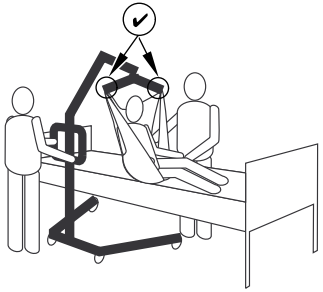
6.4.2 Commode Transfer Guidelines

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.

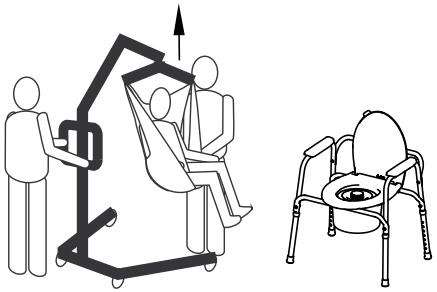
The slings with commode openings are designed to be used with either a commode chair or standard commode.

Invacare recommends at least two (2) individuals assist in transferring the patient onto and off of a commode using this product.

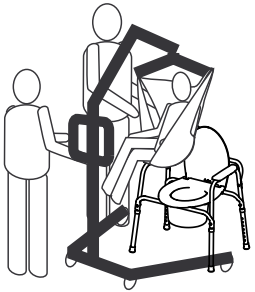
1. Perform these steps when transferring to a commode in addition to those in Lifting and Transferring the Patient From a Bed.
2. Before transferring the patient, the patient lift should be guided to the bathroom facilities to check that it can be easily maneuvered towards the commode.
3. Attach the slings to the lift. Refer to Attaching the Slings to the Lift in the Lifting the Patient section in the manual.



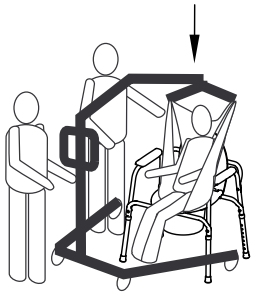
4. Unlock the rear casters.
5. Elevate the patient high enough to clear the commode chair arms and have their weight supported by the patient lift. Refer to Raising/Lowering the Lift in the Usage section in the manual.



6. Position the lift so the legs are outside of the commode legs. The push handles of the lift should be opposite of the commode, as shown in the figure. Both assistants should help guide the patient over the commode.



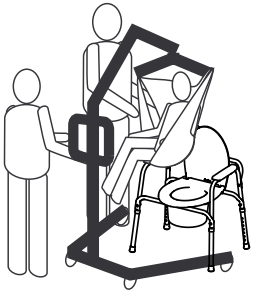
7. Lower the patient onto the commode, leaving the sling attached to the hanger bar hooks. Invacare recommends that the sling remain connected to the hanger bar hooks during the patient's use of either the commode chair or standard commode.



8. When complete, recheck for correct sling attachment.

9. Raise the patient off of the commode.

10. When the patient is clear of the commode surface, use the steering handles to move the lift away from the commode.



11. To return the patient to the bed, wheelchair or other surface. Reverse the following procedures:

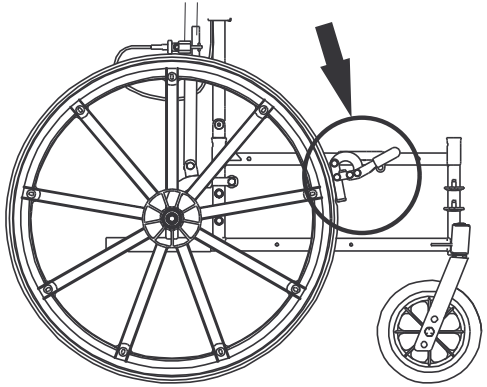
    - Lifting and Transferring the Patient from a Bed in the Lifting the Patient section of the manual
    - Raising/Lowering the Lift in the Usage section of the manual
    - Wheelchair Transfer in the Lifting the Patient section of the manual

6.4.3 Wheelchair Transfer

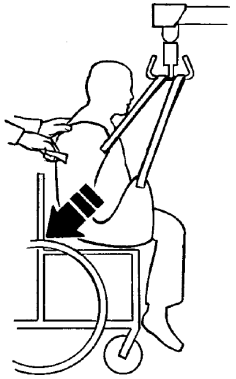
WARNING!
Risk of Injury
– Before transferring, check that the wheelchair weight capacity can withstand the patient's weight.
– The wheelchair wheel locks MUST be in a locked position before lowering the patient into the wheelchair for transport.

Invacare recommends at least two (2) individuals assist in transferring the patient into and out of a wheelchair using this product.

1. Perform these steps in addition to those in Lifting and Transferring the Patient From a Bed when transferring to or from a wheelchair.
2. Engage the wheel locks of the wheelchair to prevent movement of the wheelchair.



3. Position the patient over the seat with their back against the back of the chair. 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.
4. Begin to lower the patient.
5. 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 selected 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.



7 Troubleshooting

7.1 Troubleshooting

SYMPTOMS	FAULTS	SOLUTION
Patient lift feels loose.	Mast/Base joint loose.	Refer to the Assembling the Mast to the Base section in the manual.
Casters/Brakes noisy or stiff.	Lint, dirt, debris or the like in bearings.	Refer to Replacing Front Casters and Replacing Rear Casters sections in the manual.
Noisy or dry sound from pivots.	Needs lubrication.	Refer to Lubricating the Lift section in the manual.
Electric actuator fails to lift or legs fail to open when button is pressed.	Pendant or actuator connector loose.	Connect pendant or actuator connector. Ensure connectors are seated properly and fully connected.
	Battery low.	Charge batteries. Refer to Charging the Battery section in the manual.
	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 section in the manual.
	The connecting terminals are damaged.	Replace the battery pack. Refer to Charging the Battery section in the manual.

SYMPTOMS	FAULTS	SOLUTION
	Boom or leg actuator in need of service or load is too high.	Refer to Replacing the Electric Actuator section or Replacing the Leg Actuators section in the manual. Contact your Dealer or Invacare representative.
Unusual noise from actuator.	Actuator is worn or damaged or spindle is bent.	Refer to Replacing the Electric Actuator section or Replacing the Leg Actuators section in the manual. 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 section in the manual.

If problems are not remedied by the suggested means, please contact your dealer or Invacare.

8 Maintenance

8.1 Safe Maintenance

WARNING!
Risk of Injury or Damage
Lack of product maintenance can lead to loss of product function, injury or damage.
Improper assembly may cause injury or damage.
Use of incorrect or improper parts, including replacement (service) parts, may cause injury or damage.

- Assembly and maintenance MUST be performed only by qualified personnel.
- Regular maintenance of patient lifts and accessories is necessary to assure proper operation.
- Use only Invacare parts in the assembly of this patient lift. The base, legs, mast, boom or lift arms, pump or actuator assembly and the hanger bar are manufactured to specifications that assure correct alignment of all parts for safe, functional operation.
- ALWAYS provide the lift serial number to assist in ordering the correct replacement parts.
- DO NOT overtighten the mounting hardware. This will damage the mounting bracket.

8.1.1 Service Life

WARNING!
Risk of Injury or Damage
Use of the product beyond this time period may cause product damage and injury.

- This product has an expected lifetime of eight (8) years when used in accordance with safety instructions, maintenance intervals and correct use stated in this manual.
- Perform all maintenance according to the recommended schedule in this manual.

The effective lift lifetime can vary according to the frequency and intensity of use.

8.1.2 Wear and Tear Items

Normal wear and tear items and components include, but are not limited to the items in the table:

Product Type	Wear and Tear Items
Slings	None (Replace entire sling)
Lifts	Pendant
	Actuators
	Cords
	Batteries
	Battery Chargers
	Shrouds & Clips
	Casters
	Handle Grips

Invacare reserves the right to ask for any item back that has an alleged defect in workmanship. See the Warranty that shipped with the product for specific warranty information.

Refer to *8.1.1 Service Life, page 45* for the useful life of the product.

Refer to the procedures in *8.1 Safe Maintenance, page 45* for preventative maintenance information.

8.1.3 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, at a minimum, tested with maximum load. All safety features must be checked according to EN ISO 10535:2006 Annex B. Regional requirements may vary.

After the first 12 months of operation, inspect all pivot points and fasteners for wear. If the metal is worn, the parts MUST be replaced. Perform this inspection every year thereafter.

8.1.4 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.

8.1.5 General Maintenance

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.
- Periodically inspect all components of the patient lift for signs of corrosion. Replace all parts that are corroded or damaged.

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 lift is designed to provide a maximum level 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 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.

8.1.6 Daily Inspection

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 pendant is functional (lifting and leg movements).
- ❑ Charge the battery every day the lift is used.
- ❑ Check the emergency stop function.
- ❑ Ensure that the patient lift is wiped clean of any moisture after use.

8.1.7 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.

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.
- ❑ Inspect for SWL label. If label is missing or damaged (cannot be read), replace the label.

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.

CLEANING

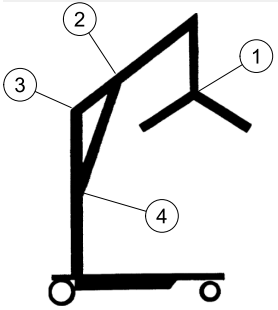
- ❑ Clean whenever necessary.

LEG ACTUATORS

- ❑ Check for leakage.
- ❑ Inspect hardware on base.
- ❑ Check for wear or deterioration. If damaged, return to factory.
- ❑ Cycle to ensure smooth quiet operation of the leg actuators.

8.2 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.



The Invacare lift is designed for minimum maintenance. However, a yearly 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/Actuator Mounting Bracket
3. Boom/Mast Mount
4. Mast/Actuator Mounting Bracket

8.3 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.

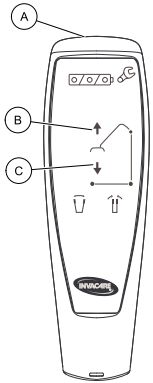
A soft cloth, dampened with water and a small amount of mild detergent, is all that is needed to clean the patient lift. The lift can be cleaned with non-abrasive cleaners.

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.

8.4 Resetting the Service Light

This procedure should only be performed by a qualified technician.
This procedure should only be performed after performing *4.4 Checking the Service Light, page 18*.



1. Locate the handset Ⓐ.
2. Press and hold the UP button Ⓑ and DOWN button Ⓒ at the same time for five seconds.

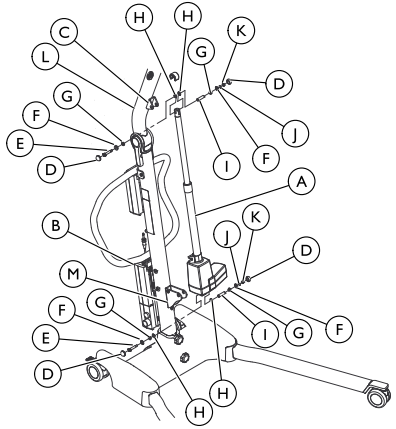
You will hear a sound when the service light has been reset.

The service light is now reset to indicate a service requirement after a 12 month period or 8000 cycles.

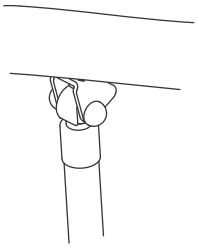
If the service light is required to be set for a period shorter than 12 months, a special handset and further instructions are required. Contact Invacare to order this handset and instructions.

8.5 Replacing the Electric Actuator

ⓘ This procedure should only be performed by a qualified technician.



Detail A



ⓘ If possible, use an assistant while removing and replacing the boom actuator.

WARNING!
Risk of Death, Injury or Damage
During assembly or maintenance of the lift, it may be necessary to manually raise the boom or spreader bar.
- Do NOT release the boom or spreader bar while raising them manually. After assembly or maintenance is complete, slowly lower the boom or spreader bar to the original position before releasing the lift.
- Never manually raise the boom arm while using the lift.

1. Unplug the boom actuator Ⓐ from the control box Ⓑ on the mast assembly. Thread the actuator lead through the actuator lead routing hole in the mast assembly.
2. Remove the hardware that secures the top of the boom actuator to the boom actuator mounting bracket Ⓒ.
   a. Remove the rubber caps Ⓓ from the top of the boom actuator.
   b. Remove the socket head screw Ⓔ, washer Ⓕ, bearing Ⓖ, nylon washers Ⓗ, bushing Ⓘ, bearing, washer, flat washer Ⓙ and locknut Ⓚ.

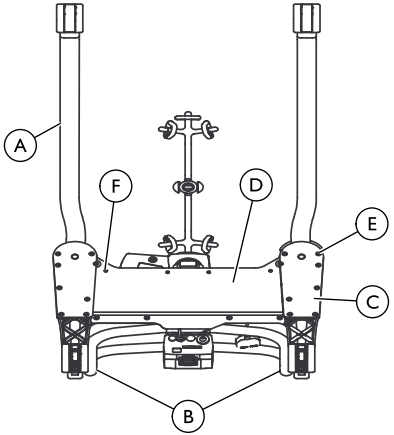
   ⓘ Manually lower the boom Ⓛ carefully to a resting position after the top of the boom actuator is removed from the boom actuator mounting bracket.

3. Remove the hardware that secures the bottom of the boom actuator to the boom actuator mast mounting bracket.
   a. Remove the rubber caps from the locknut and socket head screw.
   b. Remove the socket head screw, washer, bearing, nylon washers, bushing, bearing, washer, flat washer and locknut.
4. Reverse STEPS 1–3 to replace the boom actuator.

CAUTION!
Improper assembly may cause injury or damage.
– DO NOT overtighten the mounting hardware. This will damage the mounting bracket.

8.6 Replacing the Leg Actuators

This procedure should only be performed by a qualified technician.



If the legs Ⓐ of the patient lift do not open and close properly, it may be necessary to replace one or both of the leg actuators.

1. Test the operation of the legs:
   - Press the close button on the pendant to close the legs.
   - Press the open button on the pendant to open the legs.
2. While holding on to the mast handles Ⓑ, carefully tip the patient lift back until it rests on the floor.

   ⓘ It is necessary to remove both small base covers Ⓒ before removing the large base cover Ⓓ.

3. Remove the sixteen screws Ⓔ that attach the small base covers to the base.
4. Remove the eight pan head screws Ⓕ that attach the large base cover to the base.

   ⓘ If the left or the right leg of the patient lift does not operate properly, perform the following steps on the side of the base necessary to replace the actuator. If both legs do not operate properly, perform this replacement procedure on both sides of the base.

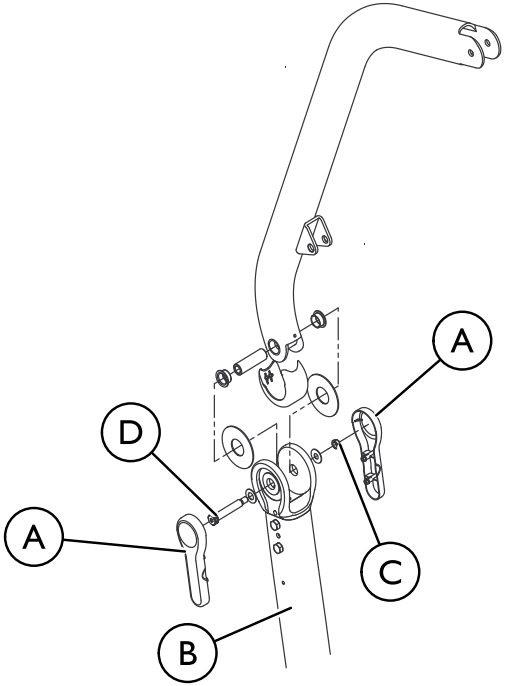
5. Locate and disconnect the leg actuator lead wires.

   ⓘ The actuator lead wires will be visible after the large base cover is removed.

6. Remove the socket head screw and washer that attach the leg actuator to the base.
7. At the other end of the actuator, remove the socket head screw and nut that attach the leg actuator to the leg bracket.
8. If necessary, repeat STEPS 5–7 on the opposite side of the base to remove the other leg actuator.
9. To replace the actuator(s), reverse STEPS 5–7.
10. Reverse STEPS 3–4 to replace the small base covers and large base cover.

8.7 Checking and Tightening Mast Pivot

This procedure should only be performed by a qualified technician.

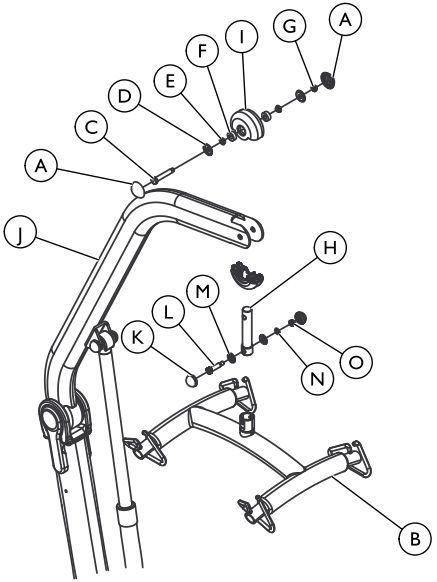


1. To gain access to the attaching hardware, remove the covers Ⓐ that are on either side of the mast Ⓑ.
2. Check that the locknut Ⓒ is tight and secure on the screw Ⓓ.
3. If needed, do one or more of the following:
   - Tighten locknut and back off the locknut 1/8 of a turn.
   - Replace the locknut.

8.8 Replacing the Hanger Bar

This procedure should only be performed by a qualified technician.

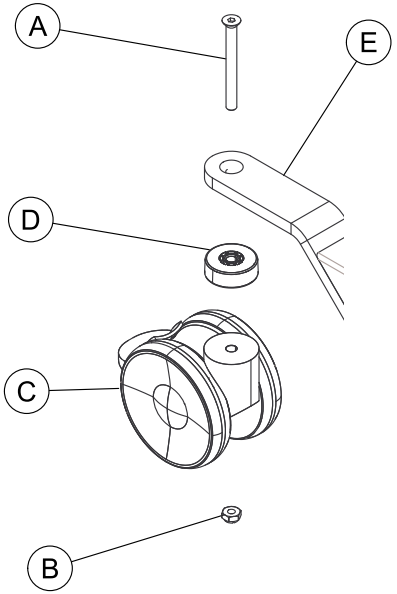
CAUTION!
Risk of Damage
The mounting bracket can become damaged if hardware is overtightened.
– DO NOT overtighten the nut and screw.



1. Remove the side covers Ⓐ.
   Support the hanger bar Ⓑ from underneath while removing the attaching hardware.
2. Remove the screw Ⓒ, washers Ⓓ, flanged bearings Ⓔ, nylon spacers Ⓕ and nut Ⓖ that secure the top of the hanger bar pin Ⓗ and top rubber cap Ⓘ to the boom Ⓙ.
3. Remove the rubber caps Ⓚ.
4. Remove the socket screw Ⓛ, washers Ⓜ, flat washer Ⓝ and nut Ⓞ securing the bottom of the hanger bar pin to the hanger bar.
5. To install the hanger bar, reverse STEPS 1–4.

8.9 Replacing Rear Casters

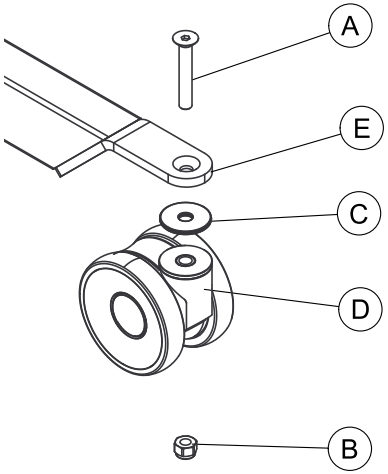
ⓘ This procedure should only be performed by a qualified technician.



1. Place the lift on its side.
2. Remove the bolt Ⓐ and locknut Ⓑ that secure the existing rear caster Ⓒ and bearing Ⓓ to the rear caster bracket Ⓔ.
3. Install the bolt through the rear caster bracket, bearing and new rear caster. Apply thread locker and tighten securely with the locknut.

8.10 Replacing Front Casters

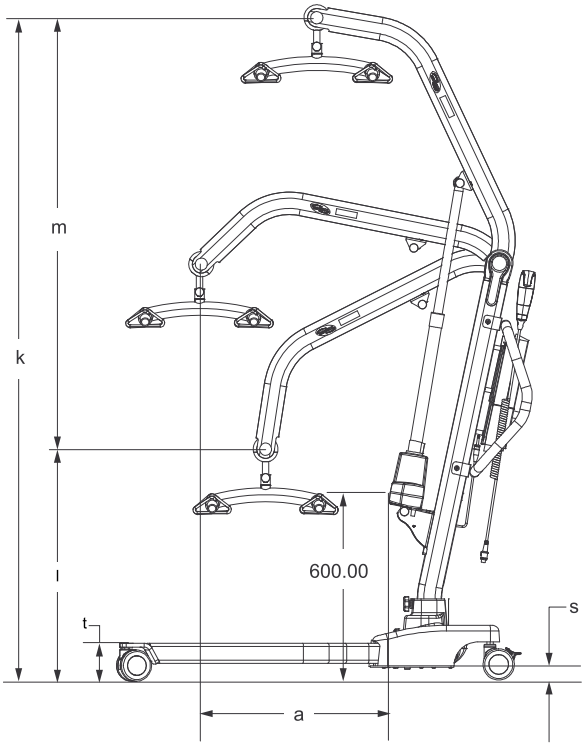
ⓘ This procedure should only be performed by a qualified technician.

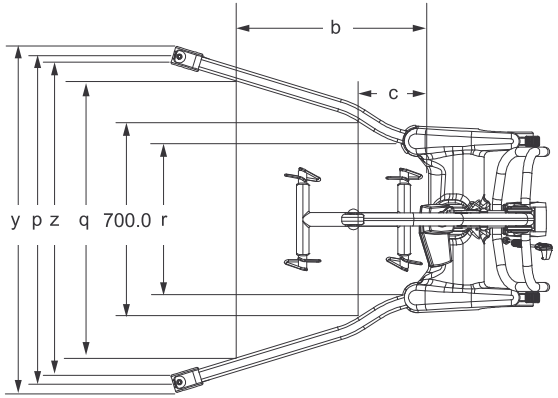


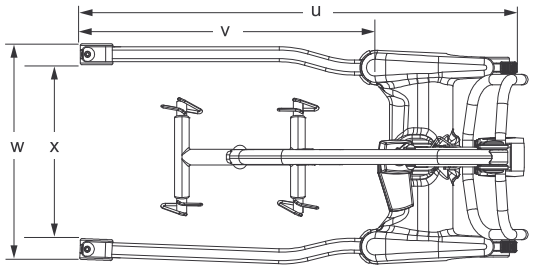
1. Place the lift on its side.
2. Remove the bolt Ⓐ, bearing Ⓒ and locknut Ⓑ that secure the existing front caster assembly Ⓓ to the front caster bracket Ⓔ.
3. Install the bolt through the front caster bracket and the new front caster assembly. Apply thread locker and tighten securely with the locknut.

9 Technical data

9.1 Patient Lift







Lift Type	Electric
Base	Electric
Highest position (max. height of CSP*) (k)	212 cm
Lowest position (min. height of CSP*) (l)	74 cm
Hoisting range (m)	138 cm
Lifting area (height range)	54 — 192 cm
Height to upper edge of legs (t)	12 cm
Min. free height (s)	4,5 cm
Minimum internal width (r)	53 cm
Internal width at maximum reach (q)	103 cm
Maximum length of the base (u)	134 cm
Maximum Internal Length of the Base (v)	90,5 cm
Maximum External Width of Legs Open (y)	128 cm
Total width (open) centre to centre of castors (p)	122,5 cm
Minimum Internal width of legs (open) (z)	118 cm
Maximum External width of legs (closed) (w)	69 cm
Minimum Internal width of legs (closed) (x)	56,5 cm
Castor size (FRONT/REAR)	10 cm
Sling material	polyester
Maximum patient weight limit	200 kg (31 stone)
Total weight (weight out of carton)	43 kg

Weight, mast including battery and hanger bar	21,2 kg
Weight, leg section	21,8 kg
Maximum reach at 60 cm (a)	60 cm
Maximum reach from base (b)	66 cm
Reach from base with legs spread to 70 cm (c)	24,5 cm
Operating forces of buttons Max.	5N
Battery(voltage output)	24V DC mb Max. 240 VA
Charger Input (voltage supply)	100-240V AC ~ 50/60 Hz
Charger Output/Charging Time	29.5V DC 2.9 Ah Max 6 hrs
Audio/Visual Low Battery Alarm	Yes
Motor Safety Devices	Anti-Entrapment
Working ability	**40 lifts without battery charge with batteries at 50% of full capacity
Velocity of lifting and lowering	<0.15 m/s under maximum load and <0.25 m/s unloaded
Max. current input	Max. 400 mA
Standards	ISO 10535:2006
Degree of Protection***, lift	IP24
Lift Actuator	IPX4
Controller	IPX4
Pendant	IPX4

Battery	IPX5
Insulation Class	Class II equipment, Type B applied part
Intermittens	10%, max, 2 minutes/18 minutes
Battery capacity	2,9 Ah
Manual emergency lowering	Yes
Electric emergency lowering/lifting	Yes

*CSP = central suspension point

**Varies depending on load and stroke

*** The degree of protection describes the ability of the device to protect users from accessing hazardous parts, and the protection against the ingress of water and other foreign objects.

9.2 Environmental Conditions

Operating temperature	5°C to 40°C
Operating air humidity	20% to 90% at 30° C — not condensing
Sound pressure	45–50 dB(A)
Atmospheric pressure	700 hPa to 1060 hPa
Storage temperature	above 0°C
Storage air humidity	less than 60%
Storage atmospheric pressure	700 hPa to 1060 hPa

9.3 Materials

Component	Material	Protection
Actuator housing	Plastic — ABS	n/a
End boom plug, mast base handle, washers, spacers	Plastic — PA	n/a
Battery bracket, pins, bushings, screws, tie rods, washers, carabiner, clips, nuts	Steel	Zinc plate
Bolts	CrNiMo	Zinc plate
Retainer wire	Stainless steel	n/a
Mast, boom, push handle, legs, base support plate, sling attachment hooks, hanger bar frame	Steel	Powder coat

9.3.1 Electric Lifts

Invacare® is continuously working towards ensuring that the company's impact on the environment, locally and globally, is reduced to a minimum. We comply with the current environmental legislation (e.g. WEEE and RoHS directives). We only use REACH compliant materials and components.

9.4 Electromagnetic Compatibility (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.

9.4.1 Electromagnetic Compatibility (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

	Separation distance according to frequency of transmitter [m]		
	150 kHz to 80 MHz	80 MHz to 800 MHz	800 MHz to 2,5 GHz
Rated maximum output of transmitter [W]	$d = [\frac{3,5}{V_1}]\sqrt{P}$	$d = [\frac{3,5}{E_1}]\sqrt{P}$	$d = [\frac{7}{E_1}]\sqrt{P}$
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.

10 After Use

10.1 Transportation and Storage

WARNING!
Risk of Damage
Improper storage or transportation of the lift may cause damage. To avoid damage:
- During transportation, or when the patient lift is not to be used for some time, the emergency stop button should be pushed in. Refer to the Usage section of the manual for emergency stop procedures.
- DO NOT store the lift in a damp area or in a damp condition. Refer to Environmental Conditions in the Technical Data section of the manual for storage condition information.

10.2 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.

10.3 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.

10.4 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.

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