

Invacare® LiNX

Chin Control

en **Remote
User Manual**

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



Yes, you can.®

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1 General

1.1 About This Manual

This document is a supplement to the product's user documentation.

This component itself does not bear a CE and a UKCA mark but is part of a product that complies with the Medical Device Regulation 2017/745, Class I and Part II UK MDR 2002 (as amended) Class I concerning medical devices. It is therefore covered by the product's CE and UKCA marking. See the product's user documentation for more information.

Only use this component if you have read and understood this manual. Seek additional advice from a healthcare professional who is familiar with your medical condition and clarify any questions regarding the correct use and necessary adjustment with the healthcare professional.

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

Invacare reserves the right to alter component specifications without further notice.

Before reading this document, make sure you have the latest version. You find the latest version as a PDF on the Invacare website.

Previous product versions may not be described in this Manual's current revision. If you require assistance, please contact Invacare.

If you find that the font size in the printed document is difficult to read, you can download the PDF version from the website. The PDF can then be scaled on screen to a font size that is more comfortable for you.

For more information about the component, for example safety notices and recalls, contact your Invacare representative. See addresses at the end of this document.

In case of a serious incident with the component, you should inform the manufacturer and the competent authority in your country.

1.2 Warranty

The 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.

1.3 Service Life

We estimate a service life of five years for this product, provided it is used in strict accordance with the intended use as set out in this document and all maintenance and service requirements are met. The estimated service life can be exceeded if the product is carefully used and properly maintained, and provided technical and scientific advances do not result in technical limitations. The service life can also be considerably reduced by extreme or incorrect usage. The fact that we estimate a service life for this product does not constitute an additional warranty.

1.4 Limitation of Liability

Invacare accepts no liability for damage arising from:

- Non-compliance with the user manual
- Incorrect use
- Natural wear and tear
- Incorrect assembly or set-up by the purchaser or a third party
- Technical modifications and / or unauthorised modifications
- Use of unsuitable spare parts

1.5 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.



NOTICE!

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.



Tools

Identifies required tools, components and items which are needed to carry out certain work.

Other Symbols

(Not applicable for all manuals)



UK Responsible Person

Indicates if a product is not manufactured in the UK.



Triman

Indicates recycling and sorting rules (only relevant for France).

1.6 General Safety Notes



WARNING!

Risk of Injury or Damage to the Power Wheelchair

Do not install, maintain or operate this equipment before you have read and understood all the instructions and all the manuals for this product and all other products that you use or install together with this product.

- Follow the instructions in the user manuals.



WARNING!

Risk of Serious Injury or Damage to the Power Wheelchair or Surrounding Property

Wrong settings can make the power wheelchair uncontrollable or unstable. An uncontrolled or unstable power wheelchair can cause an unsafe situation such as a crash.

- Performance adjustments must only be made by qualified technicians or by persons who completely understand the programming parameters, the adjustment process, the configuration of the power wheelchair and the capabilities of the driver.
- Performance adjustments must only be made in dry conditions.

**WARNING!****Risk of Injury or Damage to the Power Wheelchair**

Risk of unintended movement of the power wheelchair or seating system when loose personal belongings (e.g. jewellery, scarfs) become entangled around the joystick.

- Make sure that any loose items are clear of the joystick when your power wheelchair is powered up.
- Power off your power wheelchair immediately to stop any movement.



or train) maybe the Gyro function is impaired and drive demands can result in unintended movement.

- When driving on a moving vehicle choose a drive function with disabled Gyro.
- If the power wheelchair does not have a drive function with disabled Gyro, contact your Invacare provider.

**WARNING!****Risk of Injury or Damage due to Electrical Shorts**

Connector pins on cables connected to the power module can still be live even when the system is off.

- Cables with live pins should be connected, restrained or covered (with non-conductive materials) so that they are not exposed to human contact or materials that could cause electrical shorts.
- When cables with live pins have to be disconnected, for example, when removing the bus cable from the remote for safety reasons, make sure to restrain or cover the pins (with non-conductive materials).

**CAUTION!****Risk of Injury from Hot Surfaces**

Remote module can get hot when exposed to strong sunlight for long periods.

- Do not leave power wheelchair in direct sunlight for long periods.

**NOTICE!**

If you touch the connector pins, they can become dirty or they can be damaged by electrostatic discharge.

- Do not touch the connector pins.

**NOTICE!**

There are no user-serviceable parts inside any case.

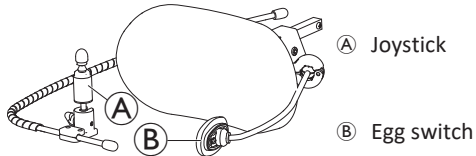
- Do not open or disassemble any case.

**CAUTION!****Risk of Injury due to Unintended Movement**

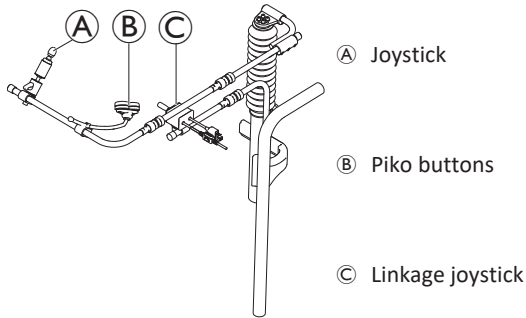
It is recommended that the power wheelchair, fitted with a Gyro module, has a drive function with disabled Gyro. If the power wheelchair is used in a moving vehicle (e.g. boat, bus

1.7 Main Parts

Manual Chin Control



Powered Chin Control



- Once a month, check all vehicle components for loose, damaged or corroded components, such as connectors, terminals or cables. Ensure that all connectors are fully mated. Restrain all cables to protect them from damage. Replace damaged components. Check for and remove any foreign objects or material.
- Every 6 months, test all functions on the controls system to ensure they function correctly.



NOTICE!

- There are no user-serviceable parts in any electronic component.
 - Do not attempt to open any case or undertake any repairs, else warranty will be voided and the safety of the system may be compromised.



If any component is damaged in any way, or if internal damage may have occurred (for example by being dropped), have it checked by qualified personnel before operating. Where any doubt exists, consult your nearest Invacare provider.

1.8 Maintenance

- Keep all electronic components free of dust, dirt and liquids. To clean the product, use a cloth dampened with warm soapy water. Do not use chemicals, solvents or abrasive cleaners, as this may cause damage to the product.

2 Setup

2.1 General Information on Setup

The tasks described in this chapter are intended to be performed by trained and authorised service technicians for initial setup. They are not intended to be performed by the user.

2.2 Wiring

For safe and reliable operation, the installation of looms and cables must follow the basic principles of power wiring.

Cables must be secured between their connectors and any point of flexing so that flexing forces are not transferred to the connectors.



CAUTION!

Risk of Injury and Damage to the Remote

Damage to cables increases wiring impedance. A damaged cable can potentially produce localised heat, sparks or arcing and become a source of ignition to surrounding flammable material.

- The installation must ensure that all power cables, including the bus cable, are protected against damage and potential contact with flammable materials.



NOTICE!

Cables and remote modules can get damaged if not positioned properly.

- Route and position cables and remote modules so that they are free from physical strain, abuse or damage, such as snagging, crushing, impacts from external objects, pinching or abrasion.

Adequate strain relief must be provided for all cables, and the mechanical limits of the cables and looms must not be exceeded.

Ensure that connectors and connector sockets are shielded from water splashes and water ingress. Cables with female connectors should face horizontally or downwards. Ensure all connectors are fully mated.



CAUTION!

Risk of Injury and Damage to the Remote

Connector pins on cables connected to the power module can still be live even when the system is off.

- Cables with live pins should be connected, restrained or covered so that they are not exposed to human contact or materials that could cause electrical shorts.

Make sure that the cables do not extend beyond the wheelchair to prevent them from being caught or damaged by external objects. Take particular care on wheelchairs with movable structures such as a seat lifter.

**WARNING!****Risk of Injury or Damage due to Electrical Shorts**

Continuous contact between user and cable can result in frayed cable jacket. This increases risk of electric shorts.

- Avoid routing the cable where it will come into continuous contact with the end user.

When installing the bus cable, avoid undue straining of the cable and connection points. Flexing of the cable should be minimised wherever possible, to extend service life and minimize the risk of accidental damage.

**NOTICE!**

Regular bending can damage bus cable

- Use of a cable chain to support the bus cable, where the cable is subject to regular cyclic bending, is recommended. The maximum stretch of the chain should be less than the length of the bus cable. The force applied to flex the cable should never exceed 10 N.



Appropriate life testing should be carried out to determine / confirm the expected service life and inspection and maintenance schedule.

2.3 Connecting the Remote

**CAUTION!****Risk of Unintended Stops**

If the plug of the remote cable is broken, the remote cable may come loose while driving. The remote could suddenly



power down when losing power. This forces an unintended stop.

- Always check the plug of the remote for damage. Contact your provider immediately in case of a damaged plug.

**NOTICE!**

The remote plug and connector socket fit together in one way only.

- Do not force them together.

1. Lightly push to connect the plug of the remote cable and the connector socket. The plug must lock in place with an audible click.

2.4 Adjusting Manual Chin Control

**WARNING!****Risk of Injury or Death**

Small parts can lead to choking hazard that may result in injury or death.

- Do not remove any small parts.
- Closely supervise children, pets or people with physical / mental disabilities.

**CAUTION!****Risk of Injury and Damage**

Remaining burrs and missing end caps after modifications on rods, such as shortened rod, can lead to injury or damage.

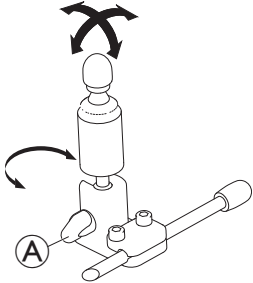
- Deburr cut after cutting excessive length.
- Re-install end cap after deburring.
- Check end cap for tight fitting.

2.4.1 Adjusting Extremity Control Joystick**Adjusting Depth and Height**

Refer to 2.4.3 *Adjusting Swing-Away Mechanism*, page 10.

Adjusting Joystick Orientation

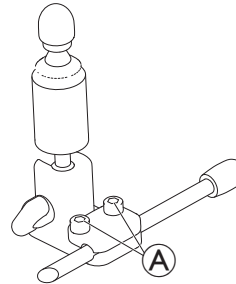
The joystick can be turned through 360 degrees. A slot on the side allows you to angle the joystick at 90 degrees.



1. Loosen hand screw (A).
2. Turn underpart of joystick to position slot.
3. Adjust joystick orientation. If desired, lock joystick in 90 degree angle in slot.
4. Tighten hand screw.

Adjusting Position on Holder

-
- 5/32 inch (4 mm) Allen key
-



1. Loosen screws (A).
2. Position joystick on holder.
3. Tighten screws.

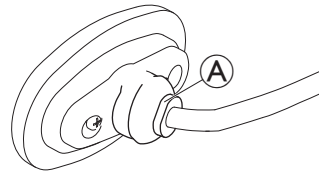
2.4.2 Adjusting Egg Switch**Adjusting Depth and Height**

Refer to 2.4.3 *Adjusting Swing-Away Mechanism*, page 10.

Adjusting Switch Orientation

The egg switch can be turned through 360 degrees.

-
- 7/16 inch (11 mm) wrench
-



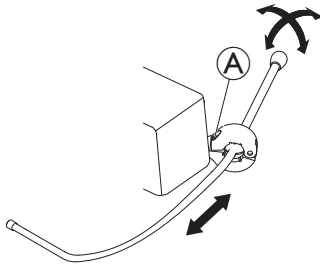
1. Loosen nut (A).
2. Adjust egg switch orientation.
3. Tighten nut.

2.4.3 Adjusting Swing-Away Mechanism

The swing-away mechanism can be used for different options such as:

- PROTON wings of head array
- Extremity control joystick for chin control
- Egg switch

-
- 5/32 inch (4 mm) Allen key
-



Adjusting Depth

1. Loosen screw (A).
2. Adjust rod to desired depth.
3. Tighten screw.

Adjusting Position

1. Loosen screw (A).
2. Adjust to desired position.
3. Tighten screw.

The swing-away mechanism can be turned through 360 degrees.

2.5 Adjusting Powered Chin Control



WARNING!

Risk of Injury or Death

Small parts can lead to choking hazard that may result in injury or death.

- Do not remove any small parts.
- Closely supervise children, pets or people with physical / mental disabilities.



CAUTION!

Risk of Injury and Damage

Remaining burrs and missing end caps after modifications on rods, such as shortened rod, can lead to injury or damage.

- Deburr cut after cutting excessive length.
- Re-install end cap after deburring.
- Check end cap for tight fitting.

2.5.1 Adjusting Extremity Control Joystick

Refer to “Adjusting Joystick Orientation” in 2.4.1 *Adjusting Extremity Control Joystick*, page 9.

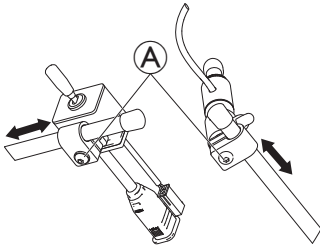
2.5.2 Adjusting Joysticks and Switches on Linkage

Positioning Joysticks / Switches

! NOTICE!

If you tighten screws to an improper torque, they might either come loose or get damaged.
— Tighten the screws to a torque of $3 \text{ Nm} \pm 10 \%$.

- 4 mm Allen key



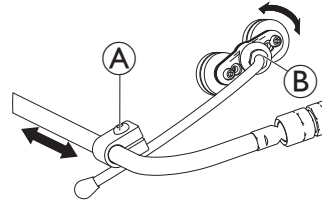
1. Loosen screws **A**.
2. Move joystick or switch to desired position on the linkage.
3. Tighten screws.

Positioning Piko Buttons

! NOTICE!

If you tighten screws to an improper torque, they might either come loose or get damaged.
— Tighten the screws to a torque of $3 \text{ Nm} \pm 10 \%$.

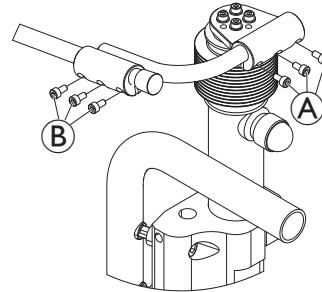
- 4 mm Allen key
- 7/16 inch (11mm) wrench



1. Loosen screw **A**.
2. Move holder to desired position.
3. If necessary, loosen nut **B**.
4. Adjust holder orientation.
5. Tighten screw **A** and nut **B**.


Adjusting Height And Depth of Linkage

- 3 mm Allen key



1. Loosen screws **A** (height adjustment) or **B** (depth adjustment).
2. Move linkage to desired position.
3. Tighten screws.

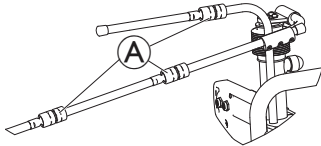
Adjusting Linkage Orientation

 This section only applies to variants with ball joints.

You can additionally adjust the position of joysticks and remote via ball joints in the linkage. The ball joints are freely movable and offer you infinite adjustment possibilities.

! **NOTICE!**
If you tighten ball joints to an improper torque, they might either come loose or get damaged.
— Tighten the ball joints to a torque of 35 Nm.

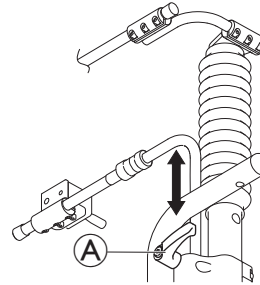
- 19 mm wrench (2x)



1. Loosen ball joint **A**.
2. Position linkage.
3. Tighten ball joint.

2.5.3 Adjusting Height of Linkage Switch

! **NOTICE!**
If you tighten clamping lever to an improper torque, it might either come loose or get damaged.
— Tighten clamping lever only hand-tight.



1. Loosen clamping lever **A**.
2. Adjust height of linkage switch.
3. Tighten clamping lever.

3 Usage



WARNING!

Risk of Injury or Death

Small parts can lead to choking hazard that may result in injury or death.

- Do not remove any small parts.
- Closely supervise children, pets or people with physical / mental disabilities.



CAUTION!

Risk of Injury or Damage

Clothes or personal accessories can restrict or prohibit correct function of Chin Control.

- Check correct wiring of cables before first use.
- Ensure that no clothes or accessories are in range of use at any time.



NOTICE!

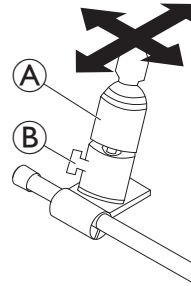
Additional items not belonging to Chin Control can damage it.

- Do not hang items, such as clothes or accessories, on any parts of Chin Control.

3.1 Using Manual Swing-Away Chin Control

Driving

This proportional joystick needs less force to be deflected than a standard joystick.



1. Deflect joystick **A** from neutral position in desired direction.



You can use wing bolt **B** to adjust the joystick to your needs.



For more information about driving, refer to user manual of the main remote.

Changing Function Cards

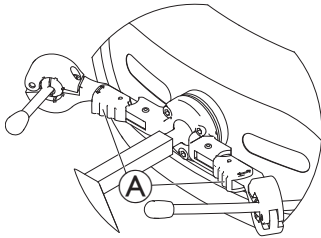
By default an egg switch, used for function or profile changes, is mounted to the headrest.



For operating the powered seating functions and for the difference between function card and profile, refer to user manual of the main remote.

1. Short press egg switch to change function card.
2. Long press egg switch to change profile.

Moving Controls Inwards / Outwards

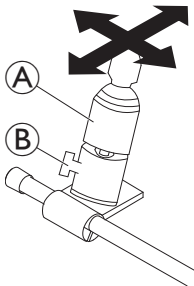


1. Press locking device **A** (behind headrest) and swivel joystick or egg switch inwards or outwards until it clicks in place.


3.2 Using Powered Swing-Away Chin Control


Driving

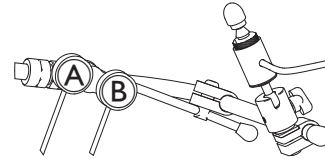
This proportional joystick needs less force to be deflected than a standard joystick.



1. Deflect joystick **A** from neutral position in desired direction.


 For more information about driving, refer to user manual of the main remote.

 By default, two Piko buttons are mounted to the chin beam.



Powering Remote Up / Down Changing Function Cards

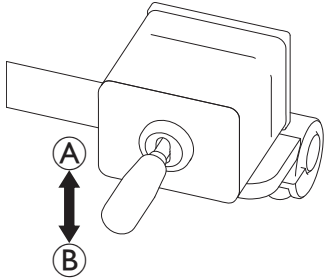
1. Press red Piko button **A** to power remote up or down.
1. Short press black Piko button **B** to change function card.
2. Long press black Piko button **B** to change profile.

 For operating the powered seating functions and for the difference between function card and profile, refer to user manual of the main remote.

Moving Chin Control Inwards and Outwards Electrically

The linkage joystick controls the movement of the Chin Control.

See table for possible movements:



Joystick Position	Movement
up (A)	Chin Control moves upwards and outwards
down (B)	Chin Control moves downwards and inwards

1. Move linkage joystick in desired direction until Chin Control is in desired position.

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Making Life's Experiences Possible®



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