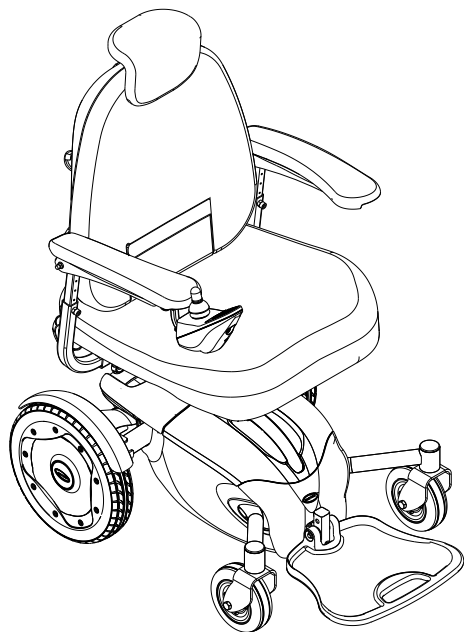


Invacare® Pronto® Air Personal Transporter with MyBody Seating

en **Power Wheelchair**
User Manual



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



Yes, you can.®

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I General

I.1 Introduction

Thank you for choosing an Invacare product.

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

Please note that there may be sections in this user manual, which are not relevant to your product, since this manual applies to all existing modules (on the date of printing).

If you find that the font size in the print version of the user manual is difficult to read, you can download it as a pdf from the Invacare website (see back page of this manual). The pdf can then be scaled on screen to a font size that is more comfortable for you.

This mobility device has been constructed for a large circle of users with different requirements.

The decision whether the model is suitable for the user may only be taken by medical specialists with appropriate expertise.

Invacare or their statutory representatives can accept no liability in cases in which the mobility device has not been adapted to suit the users' handicaps.

Some maintenance and settings can be performed by the user or his/hers attendants. Certain adjustments do however require technical training and may only be carried out by your Invacare specialist dealer. Damages and errors caused by nonobservance of the user manual or as a result of incorrect maintenance are excluded from all guarantees.

I.2 Symbols in this manual

In this user manual warnings are indicated by symbols. The warning symbols are accompanied by a heading that indicates the severity of the danger.



WARNING

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



CAUTION

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



IMPORTANT

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



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



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

I.3 Type classification

This vehicle has been classified according to EN 12184 as a **class A mobility product**. This means it is a compact, manoeuvrable vehicle mainly for internal use and not necessarily capable of negotiating outdoor obstacles.

I.4 Intended use

This vehicle was designed for persons whose ability to walk is impaired, but who are still in terms of their eyesight and physically and mentally able to operate an electric vehicle.

1.5 Regulations

The vehicle was successfully tested according to German and international standards as to its safety. It satisfies the requirements according to RoHS 2011/65/EU, REACH 1907/2006/EC and DIN EN 12184 including EN 1021-1/-2. It was also tested successfully according to EN 60529 IPX4 as to its resistance to spray water, and is therefore well suited for weather conditions such as typical European weather conditions.

1.6 Indications

The use of this power wheelchair is recommended for the following indications:

- The inability or a greatly restricted ability to walk within the scope of the basic requirement to be able to move within one's own four walls.

Provision of power wheelchairs for interior areas is advisable if the use of hand-operated wheelchairs is no longer possible on account of the disability, yet proper operation of an electromotive drive unit is still practicable.

1.7 Usability

Only use a mobility device when it is in perfect working order. Otherwise, you might put yourself and others at risk.

The following list does not claim to be exhaustive. It is only intended to show some of the situations that could affect the usability of your mobility device.

In certain situations, you should immediately stop using your mobility device. Other situations allow you to use the mobility device to get to your dealer.

You should immediately stop using your mobility device if its usability is restricted due to:

- brake failure

You should immediately contact an authorized Invacare dealer if the usability of your mobility device is restricted due to:

- the lighting system (if fitted) failing or being defective
- reflectors falling off
- worn thread or insufficient tire pressure
- damage to the armrests (e.g. torn armrest padding)
- damage to the legrest hangers (e.g. missing or torn heel straps)
- damage to the postural belt
- damage to the joystick (joystick cannot be moved into the neutral position)
- cables that are damaged, kinked, pinched or have come loose from the holder
- the mobility device drifting when braking
- the mobility device pulling to one side when moving
- unusual sounds developing or occurring

Or if you have the feeling that something is wrong with your mobility device.

1.8 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.

1.9 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.

2 Safety

2.1 General safety notes



DANGER!

Risk of death, serious injury or damage

- Read and understand this manual, otherwise, death, serious injury, or damage can result.
- 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 manual, service manuals or instruction sheets supplied with this product or optional equipment.
- If you are unable to understand the warnings, cautions or instructions, contact a health care professional or dealer before attempting to use this equipment.



WARNING!

Risk of injury if mobility device is used in any other way than the purpose described in this manual

- Only ever use the mobility device in accordance with the instructions in this user manual.
- Pay strict attention to the safety information.



WARNING!

Risk of injury if the mobility device is driven when ability to operate a vehicle is impaired by medication or alcohol

- Never drive the mobility device under the influence of medication or alcohol. If necessary, the mobility device must be operated by an attendant who is physically and mentally able.



WARNING!

Risk of damage or injury if mobility device is accidentally set into motion

- Switch the mobility device off before you get in, get out or handle unwieldy objects.
- ALWAYS switch the mobility device off when around pets and/or children to prevent unintended movement.
- When the drive is disengaged, the brake inside the drive is deactivated. For this reason, pushing the mobility device by an attendant is only recommended on flat surfaces, never on gradients. Never leave your mobility device on a gradient with its motors disengaged. Always re-engage the motors immediately after pushing the mobility device (refer to Pushing the mobility device in freewheel mode).

**WARNING!**

Risk of injury if the mobility device is switched off while driving, for example by pressing the On/Off Button or disconnecting a cable, due to it coming to an abrupt, sharp stop

- If you have to brake in an emergency, simply release the joystick which will bring you to a halt (refer to the remote user manual for more information).

**WARNING!**

Risk of injury when transporting the mobility device in a vehicle with the occupant seated in it

This mobility device does not satisfy the requirements of ISO 7176-19 and may not under any circumstances be used as a vehicle seat or to transport the user in a vehicle. Using a mobility device that does not fulfill these criteria as a vehicle seat can lead to the most severe injuries and even death in the event of a traffic accident.

- DO NOT transport an occupied mobility device in a moving vehicle.

**WARNING!**

Risk of falling out of the mobility device

- Do not slide forward on the seat, do not lean forward between your knees, do not lean backwards out over the top of the backrest, for example to reach an object.
- If a postural belt is installed, it must be correctly adjusted and used each time you use the mobility device. Your postural belt helps reduce the possibility of a fall from the mobility device. The postural belt is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, the belt **MUST** be replaced immediately.
- When transferring to a different seat, position the mobility device as close as possible to the new seat.

**WARNING!**

Risk of injury or damage

Moving the seating system from the factory setting may reduce driver control, wheelchair stability, traction and increase caster wear.

- Move the seating system **ONLY** when necessary to fit the wheelchair to the user.
- If the seating system must be moved, **ALWAYS** inspect the wheelchair to ensure the front rigging **DOES NOT** interfere with the front casters.
- If the seating system must be moved, **ALWAYS** inspect to ensure the wheelchair **DOES NOT** easily tip forward or backward.



CAUTION!

Risk of injury if maximum permissible load is exceeded

- Do not exceed the maximum permissible load (refer to 13 Technical data, page 57).
- The mobility device is only designed for use by a single occupant whose maximum weight does not exceed the maximum permissible load of the device. Never use the mobility device to transport more than one person.



CAUTION!

Risk of injury due to wrong lifting or dropping of heavy components

- When maintaining, servicing or lifting any part of your mobility device, take into account the weight of the individual components especially the batteries. Be sure at all times to adopt the correct lifting posture and ask for assistance if necessary.



CAUTION!

Risk of injury by moving parts

- Make sure that no injury is incurred by moving parts of the mobility device, like wheels or one of the lifter modules (if fitted), especially when children are around.



CAUTION!

Risk of injury from hot surfaces

- Do not leave the mobility device in direct sunlight for prolonged periods. Metal parts and surfaces such as the seat and armrests can become very hot.



CAUTION!

Risk of fire or breaking down due to electric devices being connected

- Do not connect any electric devices to your mobility device that are not expressly certified by Invacare for this purpose. Have all electrical installations done by your authorized Invacare dealer.

2.2 Safety information on the electrical system



DANGER!

Risk of death, serious injury, or damage

Misuse of the wheelchair may cause the wheelchair to start smoking, sparking, or burning. Death, serious injury, or damage may occur due to fire.

- DO NOT use the wheelchair other than its intended purpose.
- If the wheelchair starts smoking, sparking, or burning, discontinue using the wheelchair and seek service IMMEDIATELY.



DANGER!

Risk of fire

Switched on lamps produce heat. If you cover the lamps with fabrics such as clothes, there is a risk that the fabric may catch fire.

- NEVER cover the light system with fabric.

**DANGER!****Risk of death, serious injury, or damage**

Corroded electrical components due to water, liquid exposure, or incontinent users can result in death, serious injury, or damage.

- Minimize exposure of electrical components to water and/or liquids.
- Electrical components damaged by corrosion **MUST** be replaced immediately.
- Wheelchairs that are used by incontinent users and/or are frequently exposed to water/liquids may require replacement of electrical components more frequently.

**DANGER!****Risk of death or serious injury**

Failure to observe these warnings can cause an electrical short resulting in death, serious injury, or damage to the electrical system.

- The **POSITIVE (+) RED** battery cable **MUST** connect to the **POSITIVE (+)** battery terminal(s)/post(s). The **NEGATIVE (-) BLACK** battery cable **MUST** connect to the **NEGATIVE (-)** battery terminal(s)/post(s).
- **NEVER** allow any of your tools and/or battery cable(s) to contact **BOTH** battery post(s) at the same time. An electrical short may occur and serious injury or damage may occur.
- Install protective caps on positive and negative battery terminals.
- Replace cable(s) immediately if cable(s) insulation becomes damaged.
- **DO NOT** remove fuse or mounting hardware from **POSITIVE (+)** red battery cable mounting screw.

**DANGER!****Risk of death or serious injury**

Electric shock can cause death or serious injury

- To avoid electric shock, inspect plug and cord for cuts and/or frayed wires. Replace cut cords or frayed wires immediately.



Risk of damage to the wheelchair

A failure in the electric system can lead to unusual behavior such as continuous light, no light, or noises from the magnetic brakes.

- If a failure exists, switch off the remote and switch it on again.
- If a failure still exists, then disconnect or remove the power source. Depending on the mobility device model, you can either remove the battery packs or disconnect the batteries from the power module. If in doubt which cable to disconnect, contact your dealer.
- In any case, contact your dealer.

2.3 Safety information on electromagnetic interference

This electric vehicle was successfully tested in accordance with International standards as to its compliance with Electromagnetic Interference (EMI) regulations. However, electromagnetic fields, such as those generated by radio and television transmitters, and cellular phones can influence the functions of electric vehicles. Also, the electronics used in our vehicles can generate a low level of electromagnetic interference, which however will remain within the tolerance permitted by law. For these reasons we ask you to please observe the following precautions:



WARNING!

Risk of malfunction due to electromagnetic interference

- Do not switch on or operate portable transceivers or communication devices (such as radio transceivers or cellular phones) when the vehicle is switched on.
- Avoid getting near strong radio and television transmitters.
- In case the vehicle should be set in motion unintentionally or the brakes are released, switch it off immediately.
- Adding electrical accessories and other components or modifying the vehicle in any way can make it susceptible to electromagnetic interference. Keep in mind that there is no sure way to determine the effect such modifications will have on the overall immunity of the electronic system.
- Report all occurrences of unintentional movement of the vehicle, or release of the electric brakes to the manufacturer.

2.4 Safety information on driving and freewheel mode



DANGER!

Risk of death, serious injury, or damage

- Malfunctioning joystick could cause unintended/erratic movement resulting in death, serious injury, or damage
- If unintended/erratic movement occurs, stop using the wheelchair immediately and contact a qualified technician.

**WARNING!****Risk of injury if the mobility device tips over**

- Inclines and declines can only be travelled up to the maximum safe slope (refer to 13 Technical data, page 57).
- Always return the backrest of your seat or the seat tilt to an upright position before ascending slopes. We recommend that you position the seat backrest and the seat tilt (if fitted) slightly to the rear before descending slopes.
- Only ever drive downhill at a maximum of 2/3 of the top speed. Avoid abrupt braking or accelerating on gradients.
- If at all possible, avoid driving on wet, slippery, icy, or oily surfaces (such as snow, gravel, ice etc.) where there is a risk of you losing control over the vehicle, especially on a gradient. This may include certain painted or otherwise treated wood surfaces. If driving on such a surface is inevitable, then always drive slowly and with the utmost caution.
- Never attempt to overcome an obstacle when on an uphill or downhill gradient.
- Never attempt to drive up or down a flight of steps with your mobility device.
- When overcoming obstacles, always observe the maximum obstacle height (refer to 13 Technical data, page 57 and information about overcoming obstacles in 7.7 Taking Obstacles, page 39).
- Avoid shifting your center of gravity as well as abrupt joystick movements and changes of direction when the mobility device is in motion.

**WARNING!****Risk of injury if the mobility device tips over (continued)**

- Never use the mobility device to transport more than one person.
- Do not exceed the overall maximum permissible load or the maximum load per axle (refer to 13 Technical data, page 57).
- Note that the mobility device will brake or accelerate if you change the driving mode whilst the mobility device is in motion.

**WARNING!****Risk of serious injury or damage**

Improper positioning while leaning or bending could cause the wheelchair to tip forward resulting in serious injury or damage

- To assure stability and proper operation of your mobility device, you must at all times maintain proper balance. Your power wheelchair has been designed to remain upright and stable during normal daily activities as long as you DO NOT move beyond the center of gravity.
- DO NOT lean forward out of the mobility device any further than the length of the armrests.
- DO NOT attempt to reach objects if you have to move forward in the seat or pick them up from the floor by reaching down between your knees.



WARNING!

Risk of breaking down in adverse weather conditions, i.e. extreme cold, in an isolated area

- If you are a user with severely limited mobility, we advise that in the case of adverse weather conditions DO NOT attempt a journey without an accompanying attendant.



WARNING!

Risk of injury if your foot slides off the footrest and gets caught underneath the mobility device when it is in motion

- Make sure each time before you drive the mobility device that your feet are squarely and securely in place on the footplates, and that both legrests are properly locked into place.



WARNING!

Risk of serious injury or damage

Operating the mobility device with a ground clearance of less than 76 mm between the footplate and ground/floor may cause serious injury or property damage.

- ALWAYS maintain a minimum of 76 mm between the bottom of the footplate and ground/floor to ensure proper ground clearance while the mobility device is in motion. If necessary, adjust the footplate height to achieve proper ground clearance.
- After footplate height adjustment, if the mobility device dips forward and the footplates touch the ground while in motion, please contact your dealer for an inspection and avoid use of the mobility device if possible.



WARNING!

Risk of injury if you collide with an obstacle when driving through narrow passages such as doorways and entrances

- Drive through narrow passages in the lowest driving mode and with due caution.



WARNING!

Risk of injury

If your mobility device has been fitted with elevating legrests, there is a risk of personal injury and damage to the mobility device if you drive the mobility device with the legrests raised.

- To avoid unwanted displacement of the mobility device center of gravity to the front (especially when travelling downhill) and in order to avoid damage to the mobility device, elevating legrests must always be lowered during normal travelling.



WARNING!

Risk of tipping

Antitippers (stabilizers) are only effective on firm ground. They sink in on soft ground such as grass, snow or mud if the mobility device rests itself on them. They lose their effect and the mobility device can tip over.

- Only drive with extreme care on soft ground, especially during uphill and downhill journeys. In the process pay increased attention to the tip stability of the mobility device.

**WARNING!****Risk of injury or damage**

Operating the wheelchairs outdoors or in areas of poor lighting may cause injury or damage. Operating the wheelchair near motor vehicles may cause injury or damage.

- DO NOT operate on roads, streets or highways.
- Use caution when operating the wheelchair outdoors at night or in areas with poor lighting.
- ALWAYS be aware of motor vehicles when using the wheelchair.

2.5 Safety information with regard to care and maintenance

**DANGER!****Risk of death, serious injury, or damage**

Incorrect repair and/or servicing of this wheelchair performed by users/caregivers or unqualified technicians can result in death, serious injury, or damage.

- DO NOT attempt to carry out maintenance work that is not described in this user manual. Such repair and/or service **MUST** be performed by a qualified technician. Contact a dealer or Invacare technician.

**CAUTION!****Risk of accident and loss of warranty if maintenance is insufficient**

- For reasons of safety and in order to avoid accidents which result from unnoticed wear, it is important that this electric mobility product undergoes an inspection once every year under normal operating conditions (see inspection plan contained in service instructions).
- Under difficult operating conditions such as daily travel on steep slopes, or in the case of use in medical care cases with frequently changing wheelchair users, it would be expedient to carry out intermediate checks on the brakes, accessories and running gear.
- If the mobility product is to be operated on public roads, the vehicle driver is responsible for ensuring that it is in an operationally reliable condition. Inadequate or neglected care and maintenance of the mobility product will result in a limitation of the manufacturer's liability.

2.6 Safety information regarding changes and modifications to the mobility device

**DANGER!****Risk of serious injury or damage**

Use of incorrect or improper replacement (service) parts may cause injury or damage

- Replacement parts **MUST** match original Invacare parts.
- Always provide the wheelchair serial number to assist in ordering the correct replacement parts.



CAUTION!

Risk of injuries and damage to mobility device due to unapproved components and accessory parts

Seating systems, additions and accessory parts which have not been approved by Invacare for use with this mobility device can affect the tipping stability and increase tipping hazards.

- Only ever use seating systems, additions and accessory parts which have been approved by Invacare for this mobility device.

Seating systems which are not approved by Invacare for use with this mobility device do not, under certain circumstances, comply with the valid standards and could increase the flammability and the risk of skin irritation.

- Only use seating systems that have been approved by Invacare for this mobility device.

Electrical and electronic components which have not been approved by Invacare for use with this mobility device can cause fire hazards and lead to electromagnetic damage.

- Only ever use electrical and electronic components which have been approved by Invacare for this mobility device.

Batteries which have not been approved by Invacare for use with this mobility device can cause chemical burns.

- Only ever use batteries which have been approved by Invacare for this mobility device.








CE marking of the mobility device




- The conformity assessment/CE marking was carried out in accordance with Directive 93/42 EEC and only applies to the complete product.
- The CE marking is invalidated if components or accessories are replaced or added that have not been approved for this product by Invacare.
- In this case, the company that adds or replaces the components or accessories is responsible for the conformity assessment/CE marking or for registering the mobility device as a special design and for the relevant documentation.



Important information about maintenance work tools

- Some maintenance work which is described in this manual and can be carried out by the user without problems require the correct tools for proper work. If you do not have the correct tool available we do not recommend that you try to carry out the relevant work. In this case, we urgently recommend that you contact an authorized specialist workshop.

	NEVER bridge poles – risk of electrical short and personal injury
	Read the user manual
	Date of manufacture
	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.
	<p>This product has been supplied from an environmentally aware manufacturer. 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.</p> <ul style="list-style-type: none"> • The 'crossed out wheelie bin' symbol is placed on this product to encourage you to recycle wherever possible. • Please be environmentally responsible and recycle this product through your recycling facility at its end of life.

	<p>This symbol indicates the “Drive” position of the coupling lever. In this position the motor is engaged and the motor brakes are operational. You can drive the mobility device.</p> <ul style="list-style-type: none"> • Note that for driving purposes both motors must always be engaged.
	<p>This symbol indicates the “Push” position of the coupling lever. In this position the motor is disengaged and the motor brakes are not operational. The mobility device can be pushed by an attendant and the wheels turn freely.</p> <ul style="list-style-type: none"> • Note that the remote must be switched off. • Also note the information provided in section 7.9 Pushing the mobility device in freewheel mode, page 41.
	<p>The mobility device is a class A product. It is intended mainly for internal use and not necessarily capable of negotiating outdoor obstacles.</p>

3 Components

3.1 Remotes

Your mobility device may be fitted with one of several different remotes. For information on the different functions and how to operate a particular remote, refer to its corresponding user manual (enclosed).

4 Accessories

4.1 Postural belts

A postural belt is an option which can either be fixed to the mobility device ex-works or can be retrofitted by your specialist dealer. If your mobility device is fitted with a postural belt, your specialist dealer will have informed you about fitting and usage.

The postural belt is used to help the mobility device user keep an optimum sitting position. Correct use of the belt assists the user in sitting securely, comfortably and well-positioned in the mobility device, especially for such users who do not have such a good sense of balance while sitting.



We recommend using the postural belt whenever the mobility device is used. The belt should be tight enough to ensure that you are sitting comfortably and that your body is in the correct sitting position.

4.1.1 Types of postural belts

Your wheelchair can be fitted with the following postural belt types ex-works. If your wheelchair has been fitted with a different belt to those listed below, please ensure that you have received the manufacturer's documentation with regard to correct fitting and use.

Belt with metal buckle, adjustable one side



Belt can only be adjusted on one side which can result in the buckle not sitting centrally.

4.1.2 Adjusting the postural belt correctly

1. Ensure that you are sitting correctly, which means that you are sitting right at the back of the seat, your pelvis is positioned erect and as symmetrically as possible, not to the front, to the side or at one edge of the seat.
2. Position the postural belt so that your hipbones can be easily felt above the belt.
3. Adjust the belt length using one of the adjustment aids described above. The belt should be adjusted so that you can fit a flat hand between the belt and your body.
4. The buckle should be positioned as centrally as possible. In doing so, carry out adjustments on both sides as much as possible.
5. Check your belt every week to ensure that it is still in good working condition, to ensure it has no damage or wear, and that it is fixed properly to the mobility device. If the belt is only fastened with a bolted connection, ensure that the connection has not loosened or come undone. You can find more information about maintenance work on belts in the service manual, which is available from Invacare.

5 Setup

5.1 Preparing the Personal Transporter for Use



Setup of the personal transporter should be performed by dealer at time of delivery.

Perform the following checklist to prepare the personal transporter for use.

- ☐ Check all parts for shipping damage. In case of damage, DO NOT use.
- ☐ Install the seat onto the personal transporter base.
- ☐ Install the Joystick.
- ☐ As necessary, adjust the seat assembly height, seat pan depth, back angle and the head rest height to fit the personal transporter to the user.
- ☐ As necessary, adjust the armrest width, armrest height, arm pad depth and arm pad angle to fit the personal transporter to the user.
- ☐ As necessary, adjust the footboard depth, footboard height and footboard angle to fit the personal transporter to the user.
- ☐ Ensure Batteries are fully charged.

5.2 Setup/Delivery Inspection



Setup/delivery inspection should be performed by dealer at time of delivery/set up.

Initial adjustments should be made to suit your personal body structure needs and preference. Thereafter weekly, monthly and periodic inspections should be performed by user/attendant between the six month service inspections. Refer to 10.3 Inspection checks, page 50.

Every six months, and as necessary, take your personal transporter to a qualified technician for a thorough inspection and servicing. Refer to 5.3 Service Inspection, page 21.

- ☐ Ensure personal transporter rolls straight (no excessive drag or pull to one side).
- ☐ Ensure adjustable height arms operate.
- ☐ Ensure drive wheel mounting hardware is properly secure.
- ☐ Ensure caster wheels are free of debris, and all mounting hardware is secure and not damaged/missing.
- ☐ Check that cables are routed and secured properly to ensure that cables do NOT become entangled and damaged during normal operation of seating system.
- ☐ Ensure proper operation of powered drive functions.

5.3 Service Inspection



Every six months take your personal transporter to a qualified technician for a thorough inspection and servicing.

Service inspections **MUST** be performed by a qualified technician.

**WARNING!**

- After ANY adjustments, repair or service and before use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.

**CAUTION!**

- As with any vehicle, the wheels and tires should be checked periodically for cracks and wear, and should be replaced.

The following are recommended items to inspect during regular service inspections performed by a qualified technician. Actual items to be inspected during the service inspection may vary according to the specific personal transporter:

- ☐ Clean upholstery and armrests.
- ☐ Clean dirt and lint from axles.
- ☐ Clean dirt and lint from bearings.
- ☐ Check that all labels are present and legible. Replace if necessary.
- ☐ Ensure upholstery does not have any rips or tears.
- ☐ Inspect seat positioning strap for any signs of wear. Ensure buckle latches. Verify hardware that attaches strap to frame is secure and undamaged. Replace if necessary.
- ☐ Ensure personal transporter rolls straight (no excessive drag or pull to one side).
- ☐ Ensure that there is no excessive side movement or binding when drive wheels are lifted and spun when disengaged (free-wheeling).
- ☐ Ensure drive wheel mounting hardware is properly secure.
- ☐ Inspect tires for flat spots and wear.
- ☐ Ensure that the casters are free of debris.
- ☐ Ensure wheels/casters have proper tension when wheels/casters are spun (when free-wheeling). Wheels/casters should come to a gradual stop.

- ☐ Loosen/tighten caster locknut if wheel wobbles noticeably or binds to a stop.
- ☐ Ensure all caster/wheel/fork/headtube fasteners are secure and not damaged/missing.
- ☐ Check that cables are routed and secured properly to ensure that cables do NOT become entangled and damaged during normal operation of seating system.
- ☐ Ensure proper operation of powered functions (drive, seating, legrests, ect...).
- ☐ Inspect electrical components for signs of corrosion. Replace if corroded or damaged.
- ☐ Inspect battery terminals for loose cable connection. Tighten if necessary.
- ☐ Inspect all fasteners.

6 Adjusting the mobility device to the user's seating posture

6.1 General information on adjusting the mobility device to the user's seating posture



DANGER!

Risk of death, serious injury, or damage

Continued use of the mobility device that is not set to the correct specifications may cause erratic behavior of the mobility device resulting in death, serious injury, or damage.

- Performance adjustments should only be made by professionals of the healthcare field or persons fully conversant with this process and the driver's capabilities.
- After the mobility device has been set-up/adjusted, check to make sure that the mobility device performs to the specifications entered during the set-up procedure. If the mobility device does not perform to specifications, IMMEDIATELY turn the mobility device Off and reenter set-up specifications. Contact Invacare, if mobility device still does not perform to correct specifications.



DANGER!

Risk of death, serious injury, or damage

Attaching hardware that is loosely secured or missing could cause instability resulting in death, serious personal injury, or property damage.

- After ANY adjustments, repair or service and before use, make sure that all attaching hardware is present and tightened securely.



WARNING!

Risk of injury or damage

Incorrect set up of this mobility device performed by users/caregivers or unqualified technicians can result in injury or damage.

- DO NOT attempt to set up this mobility device. Initial set up of this mobility device MUST be performed by a qualified technician.
- Adjustment by the user is only recommended after they have been given appropriate guidance by the healthcare professional.



CAUTION!

Damage to mobility device and accident hazard

It is possible that collisions can occur between mobility device components due to various combinations of adjustment options and their individual settings

- The mobility device is fitted with an individual, multiply adjustable seating system including adjustable legrests, armrests, a headrest or other options. These adjustment options are described in the following chapters. They are used to adapt the seat to the physical requirements and the condition of the user. When adapting the seating system and the seat functions to the user, ensure that no mobility device components collide.



Electrical adjustment options

- Please refer to the user manual for your remote for more information on operating electrical adjustment options.

6.2 Adjustment possibility for remote

The following information is valid for all seating systems.



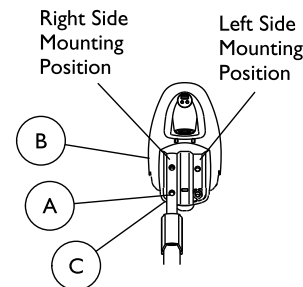
CAUTION!

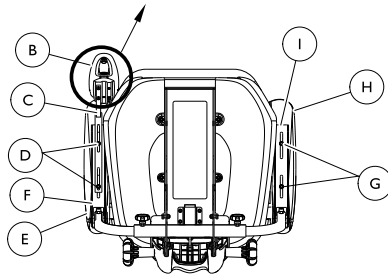
Risk of the remote being pushed backwards during an accidental collision with an obstacle, such as a doorframe or table, and the joystick being jammed against the armpad if the position of the remote is adjusted and all screws are not completely tightened

This will cause the mobility device to drive forward uncontrollably and potentially injure the mobility device user and any person standing in the way.

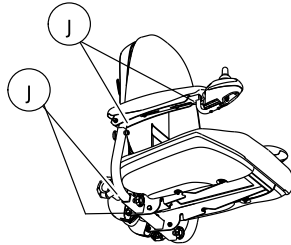
- When adjusting the position of the remote, always make sure to tighten all screws securely.
- If this should accidentally happen, immediately switch the mobility device electronics OFF at the remote.

6.2.1 Installing the Joystick






TIE WRAP LOCATIONS

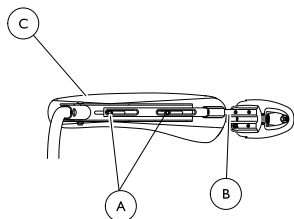


The personal transporter is shipped with the joystick mounting hardware ready to install the joystick on the right side of the personal transporter.

Joystick is shown mounted to the right side armrest assembly.

1. If necessary, perform the following to mount the joystick to the left side of the personal transporter:
 - a. Remove the two mounting screws ① securing the joystick ② to the joystick mount ③.
 - b. Reposition the joystick to the left side position.
 - c. Using the two mounting screws, secure the joystick to the joystick mount.
-  Note the position and orientation of the armrest pad before removing the two mounting screws securing the armrest assembly..
- d. Remove the two long mounting screws ④ securing the right armrest pad ⑤ to the right side armrest assembly ⑥.
 - e. Remove the two mounting screws securing the left armrest pad to the left side armrest assembly.
 - f. Using the two mounting screws ⑦, secure the right armrest pad ⑧ to the right armrest assembly ⑨.
 - g. Proceed to STEP 3.
2. Remove, the two long mounting screws used to secure the right armrest pad to the right side armrest assembly.
 3. Position the joystick mount under the armrest assembly.
 4. Using the two long mounting screws, secure the joystick mount to the armrest assembly and armrest pad. Hand tighten the mounting screws.
 5. Move the joystick mount forward or backward to achieve the desired position.
 6. Securely tighten the two long mounting screws.
 7. Connect the joystick cable.
 8. Using tie wraps ⑩, secure the joystick cable to the armrest assembly as shown, ensuring there is enough slack in the joystick cable to allow the armrest to flip back.

6.2.2 Adjusting the Joystick Depth



The same mounting screws used to secure the joystick mount to the armrest assembly are also used to secure the arm pad to the armrest assembly.

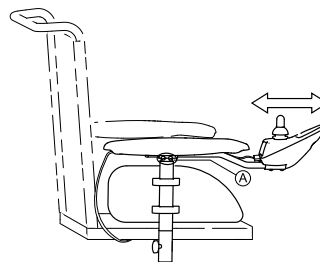
1. Loosen, but do not remove, the two mounting screws (A) used to secure the joystick mount (B) to the armrest assembly (C).
2. Move the joystick mount forward or backward to achieve the desired position.
3. Securely tighten the two mounting screws.

6.2.3 Adjusting the remote for the length of the user's arm



Requirements:

- Allen key 3 mm



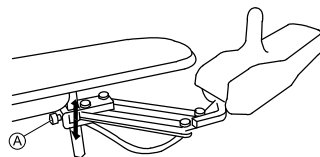
1. Loosen the socket head screws (A).
2. Shift the remote forwards or backwards to the desired distance.
3. Retighten the screws.

6.2.4 Adjusting the height of the remote (only for swing-away remote holders)



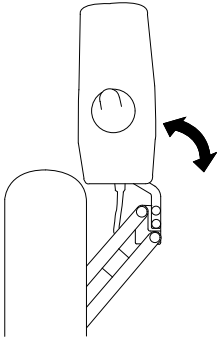
Requirements:

- 1 x 6 mm Allen key



1. Loosen the Allen screw (A).
2. Adjust the remote to the desired height.
3. Re-tighten the Allen screw.

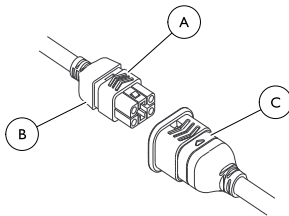
6.2.5 Swivelling the remote to the side



If your mobility device is fitted with a swing-away remote holder, then the remote can be moved away to the side, for example, to drive up close to a table.

6.3 Disconnecting/Connecting the Joysticks

6.3.1 Joystick connector location



The joystick connector is located at the rear of the seat frame.

6.3.2 Disconnecting

1. Hold the light grey collar (A) portion of the joystick connector (B) with one hand and the controller connector (C) on the personal transporter in the other and disconnect them by pulling them apart.

6.3.3 Connecting



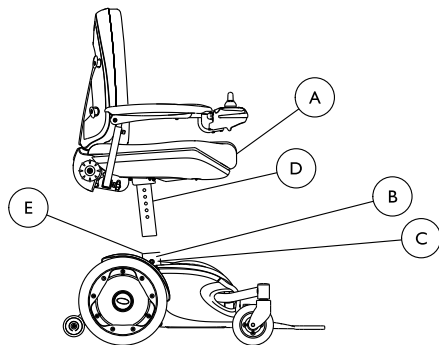
CAUTION!

– The joystick connector and controller connector fit together in one way only. **DO NOT** force them together. Otherwise, damage will occur.

1. Hold the light grey collar portion of the joystick connector with one hand and the controller connector on the personal transporter in the other and align them.
2. Lightly push to engage the joystick connector and the controller connector.

6.4 Seat and Back

6.4.1 Adjusting the Seat Assembly Height

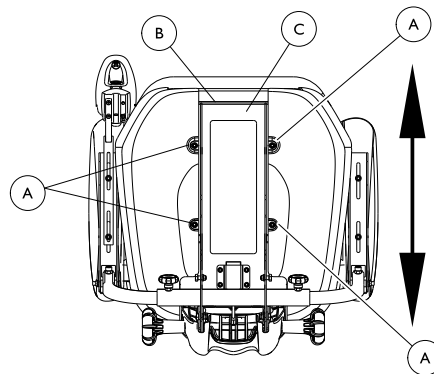


1. Remove the seat assembly **A**. Refer to 6.6 Removing/Installing the Seat Assembly, page 32.
2. Remove the mounting screw **B** and locknut **C** that secures the seat post **D** to the support tube **E**.
3. Adjust the seat post to one of five mounting position.
4. Reinstall mounting screw and locknut. Torque 54 Nm \pm 10%.
5. Reinstall the seat assembly. Refer to 6.6 Removing/Installing the Seat Assembly, page 32.



The seat height adjustment is between 483 to 584 mm in 25.4 mm increments.

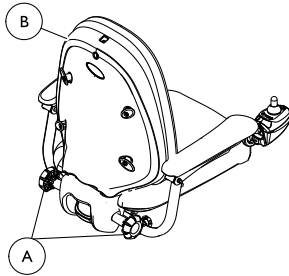
6.4.2 Seat Pan Depth



The seat pan depth adjustment is between 432 to 508 mm.

1. Loosen but do not remove the four locknuts **A** securing the seat pan **B** to the seat mounting bracket **C**.
2. Move the seat pan forward or backward to desired position.
3. Securely tighten the four locknuts.

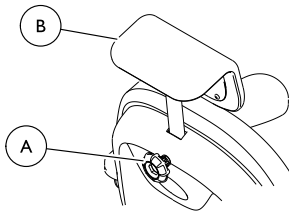
6.4.3 Back Angle Adjustment



I. Perform one of the following to adjust the back angle:

- Lowering the Back - Rotate back angle adjustment knobs (A) at the base of the back (B) towards the front of the personal transporter.
- Raising the Back - Rotate back angle adjustment knobs at the base of the back towards the rear of the personal transporter.

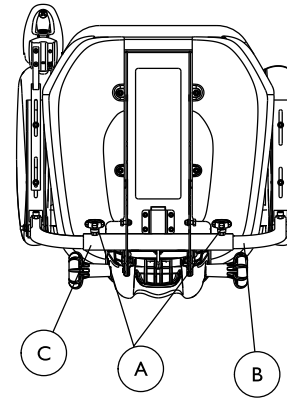
6.4.4 Adjusting the Headrest Height



1. Loosen the headrest knob (A).
2. Raise or lower the headrest (B) to align the headrest knob with one of six mounting positions.
3. Tighten the headrest knob.

6.5 Armrest Assemblies

6.5.1 Adjusting Arm Width

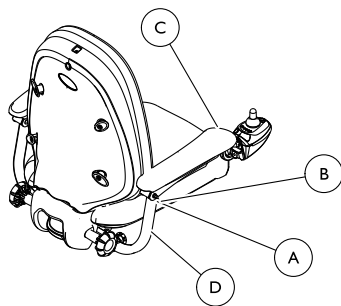



Both armrest should be adjusted to the same distance away from the arm support tube.

It is recommended to keep armrests adjusted as narrow as possible for improved maneuverability.

1. Loosen the two lock knobs that secure the armrest assemblies to the arm support tubes.
2. Reposition armrest to align the lock knobs with one of the mounting positions.
3. Securely tighten the two adjustment knobs that secure the armrest assembly to the arm support tube.

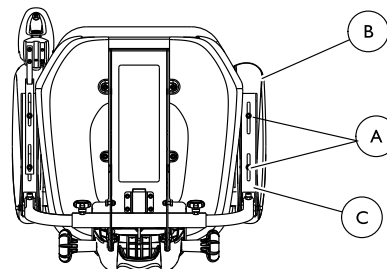
6.5.2 Adjusting the Arm Height



 Armrest height adjustment holes are in 25.4 mm increments

1. Remove the mounting screw (A) and locknut (B) securing the armrest assembly (C) to the arm tube (D).
2. Adjust the armrest to one of four height adjustment holes.
3. Using the mounting screw and locknut, secure the armrest assembly to the arm tube.
4. Repeat STEPS 1 – 3 to adjust the height of the opposite armrest.

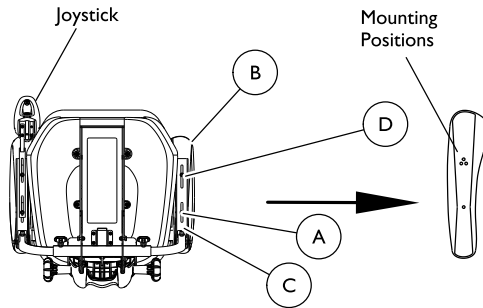
6.5.3 Adjusting the Arm Pad Depth



Armrest with Joystick: The same mounting screws used to secure the joystick mount to the armrest assembly are also used to secure the arm pad to the armrest assembly.

1. Loosen but do not remove the two mounting screws (A) securing the armrest pad (B) to the arm assembly (C).
2. Move the armrest pad forward or backward to achieve the desired position.
3. Securely tighten the two mounting screws securing the armrest pad to the arm assembly.
4. Repeat STEPS 1-3 to reposition the opposite armrest pad.

6.5.4 Adjusting the Armrest Pad Angle (Left or Right)



Armrest with Joystick: The same mounting screws used to secure the joystick mount to the armrest assembly are also used to secure the arm pad to the armrest assembly.

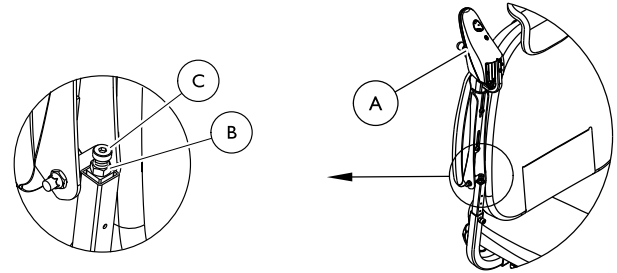
1. Loosen but do not remove the rear mounting screw (A) securing the arm pad (B) to the armrest assembly (C).
2. Remove the front mounting screw (D) securing the arm pad to the armrest assembly.
3. Shift the arm pad to the right or left to one of three mounting positions.
4. Using the front mounting screw, secure the arm pad to the armrest assembly.



Adjusting the armrest pad angle may change the armrest pad depth. If necessary, adjust the armrest pad depth. Refer to 6.5.3 Adjusting the Arm Pad Depth, page 30.

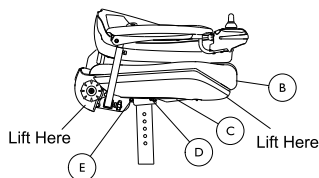
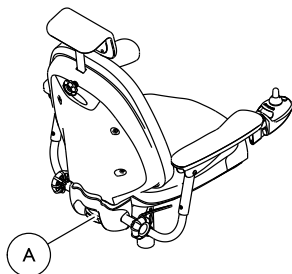
5. Repeat STEPS 1-4 to reposition the opposite arm pad.

6.5.5 Adjusting the Armpad Angle (Up or Down)



1. Raise the armrest assembly vertically as shown.
2. Loosen the locknut on the angle adjustment screw.
3. Perform one of the following:
 - Turn the angle adjustment screw clockwise to lower the armrest angle.
 - Turn the angle adjustment screw counterclockwise to raise the armrest angle.
4. Tighten the locknut on the angle adjustment screw.
5. Lower the armrest to the horizontal position.

6.6 Removing/Installing the Seat Assembly



6.6.1 Removing

1. Disconnect the joystick. Refer to 6.3 Disconnecting/Connecting the Joysticks, page 27.
2. Fold down the seat back. Refer to 6.7 Using the Folding Back Assembly, page 32.
3. Lift the seat lever **A** up to release the seat.
4. While holding the seat lever, lift the rear of the seat assembly **B** to tilt the seat assembly up.



WARNING!

– DO NOT use armrests to lift seat, otherwise injury or damage may occur. Use lifting locations shown in illustration.

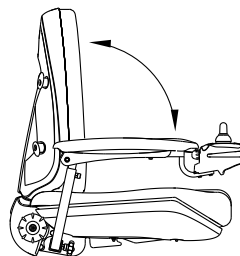
5. Pull seat upward towards the rear of the personal transporter and remove the seat assembly from the seat post mounting pins.

6.6.2 Installing

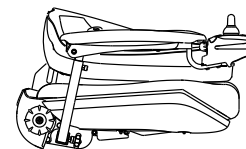
1. Place the seat mounting bracket **C** onto the seat mounting pins and slide the seat assembly forward until the front seat mounting pin **D** engages the front slot in the seat mounting bracket.
2. Lower the rear of the seat until the rear seat mounting pin **E** clicks and locks into the seat mount bracket.
3. Pull the seat assembly up to ensure that it is locked in place.
4. Unfold the back. Refer to 6.7 Using the Folding Back Assembly, page 32.
5. Connect the joystick. Refer to 6.3 Disconnecting/Connecting the Joysticks, page 27.

6.7 Using the Folding Back Assembly

SEAT IN UPRIGHT POSITION



SEAT IN FOLDED POSITION



- To fold the back assembly down, perform the following:
 1. Hold both sides of the back and pull up.
 2. Push the back forward towards the seat, while maintaining upward tension on back.

- To unfold the back assembly, perform the following:
 1. Holding both sides of the back, and while lifting up, rotate the back assembly into the upright position.
 2. Lower the back assembly down, ensuring the back engages the locking pins and will not fold if pushed forward.

6.8 Footboard



WARNING!

Risk of injury or damage

Operating the wheelchair with a ground clearance of less than 3 inches (7.62 cm) between the footplate and ground/floor may cause injury or equipment/property damage.

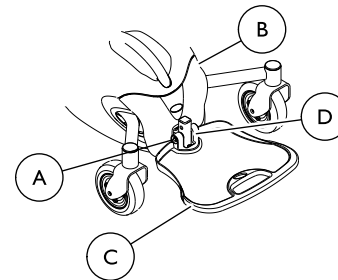
- ALWAYS maintain a minimum of 3 inches (7.62 cm) between the bottom of the footplate and ground/floor to ensure proper ground clearance while the personal transporter is in motion. If necessary, adjust the footplate height to achieve proper ground clearance. After footplate height adjustment, if the personal transporter dips forward and the footplates touch the ground while in motion, please contact your dealer for an inspection and avoid use of the personal transporter if possible. Otherwise, injury or equipment/property damage may occur.



WARNING!

- After ANY adjustments, repair or service and before use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.
- Before performing any maintenance, adjustment or service, verify that ON/OFF switch on the joystick is in the OFF position.
- DO NOT stand on the flip-up footboard. When getting in or out of the personal transporter, make sure that the flip-up footboard is in the upward position.
- Limited Clearance Between Footboard and Caster - The user's feet must remain on the footboard while operating the personal transporter. If the user's feet are allowed to rest off the side of the footboard they may come in contact with the caster possibly resulting in injury.

6.8.1 Removing/Installing the Footboard or Adjusting the Footboard Depth

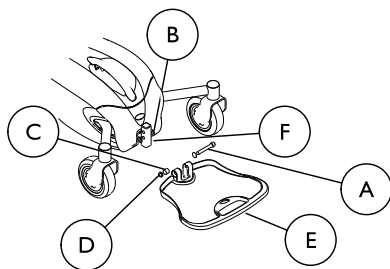


1. Remove the battery box. Refer to 8.2.11 Removing/Installing the Battery Box From/Into the Personal Transporter, page 47.
2. Remove the hex head screw locknut (A), located on the underside of the personal transporter base frame (B), that secures the footboard (C) to the footboard tube (D).
3. Remove the footboard from the footboard tube.

i If adjusting the footboard depth is necessary, align one of three mounting holes in the footboard assembly with the mounting hole in the footboard tube.

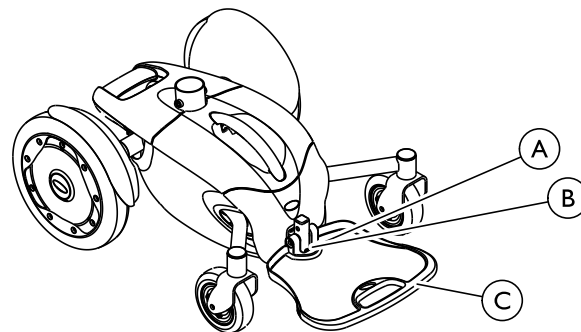
4. Reverse STEPS 1-2 to install/adjust the depth of the footboard assembly.

6.8.2 Adjusting the Footboard Height



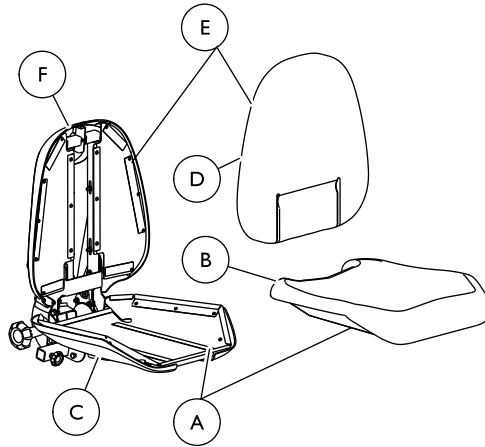
1. Remove the socket head screw (A), three washers (B), spacer (C) and locknut (D) that secures the footboard (E) to the footboard support (F).
2. Remove the footboard from the footboard support.
3. Position the footboard onto the footboard support so that the mounting holes in the personal transporter frame align with the desired mounting holes in the footboard support.
4. Using the socket heat screw, three washers, spacer and locknut secure the footboard to the footboard support.

6.8.3 Adjusting the Footboard Angle



1. Loosen the jam nut (A) and set screw (B) located on the rear of the footboard (C).
2. Adjust the set screw in or out to obtain the desired footboard angle.
3. Thread the jam nut until it is flush with the footboard bracket.
4. Securely tighten the jam nut against the footboard to secure the set screw in place.

6.9 Cushion Covers



6.9.1 Removing/Installing the Seat Cushion Cover

1. Pulling up to release the hook and loop strips (A), remove the seat cushion (B) to the seat pan (C).
2. Open the fold along the bottom of the seat cushion.
3. Remove the seat cushion cover from the seat cushion.
4. Reverse STEPS 1-3 to reinstall the seat cushion cover.

6.9.2 Removing/Installing the Back Cushion Cover

1. Pulling the back cushion (D) towards the front of the personal transporter to release the hook and loop strips (E), remove the back cushion from the back pan (F).
2. Open the fold along the bottom of the back cushion.
3. Remove the back cushion cover from the back cushion
4. Reverse STEPS 1-4 to reinstall the back cushion cover.

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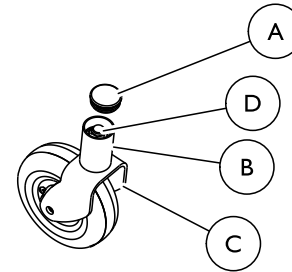
6.9.3 Cleaning the Cushion Covers



CAUTION!

- Machine wash cold. Gentle cycle. Mild detergent. No fabric softeners or bleach.
- DO NOT machine dry. Air dry ONLY out of sun.

6.10 Adjusting Forks



This procedure must be performed by a qualified technician.
This procedure applies to both Forks.

1. Remove the head tube cover (A) from the caster head tube (B).
2. To properly tighten caster journal system and guard against flutter, perform the following check:
 - a. Tip the personal transporter forward, toward the floor.
 - b. Pivot both forks (C) and casters to top of their arc simultaneously.
 - c. Let casters drop to bottom of arc (wheels should swing once to one-side, then immediately rest in a straight downward position).
 - d. Adjust locknuts (D) according to freedom of caster swing.

3. Test personal transporter for maneuverability.
4. Readjust locknuts if necessary, and repeat STEPS 1-3 until correct.
5. Snap head tube cover into the caster head tube.

7 Usage

7.1 Personal Transporter Usage



WARNING!

- After ANY adjustments, repair or service and before use, make sure that all attaching hardware is tightened securely - otherwise injury or damage may result.
- Set-up/programming of the Electronic Control Unit is to be performed only by a qualified technician. The fine tuning adjustments of the controller may affect other activities of the personal transporter. Damage to the equipment could occur under these circumstances. If unqualified individuals perform any work on these units, the warranty is void.



The personal transporter ships in two cartons. It is necessary to install the seat onto the personal transporter base, install the joystick and make any necessary adjustments to fit the personal transporter to the user. Refer to 5.1 Preparing the Personal Transporter for Use, page 21.

Setup of the personal transporter should be performed by dealer at time of delivery.

7.2 Driving



The maximum load capacity that is stated in the technical data only states that the system is designed for this mass in total. However, this does not mean that one can sit a person with this body weight in the mobility device without restrictions. Attention must be paid to the body proportions, such as height, weight distribution, abdominal belt, leg and calf strap and seat depth. These factors have a strong influence on driving features such as tilt stability and traction. The permissible axle loads in particular must be adhered to (refer to I3 Technical data, page 57). It may possibly be necessary to carry out adaptations to the seat system.

7.3 Before driving for the first time

Before you take your first trip, you should familiarize yourself well with the operation of the vehicle and with all operating elements. Take your time to test all functions and driving modes.



If installed, make sure to properly adjust and use the postural belt each time you use the wheelchair.

Sitting comfortably = Driving safely

Before each trip, make sure that:

- You are within easy reach of all operating controls.
- The battery charge is sufficient for the distance intended to be covered.
- The postural belt (if installed) is in perfect order.
- The rear mirror (if installed) is adjusted so you can look behind at all times without having to bend forward or shift your seating position.

7.4 Reaching, Leaning and Bending - Forward



WARNING!

- DO NOT attempt to reach objects if you have to move forward in the seat or pick them up from the floor by reaching down between your knees.
- Proper positioning is essential for your safety. Improper positioning while leaning or bending could cause the personal transporter to tip forward onto anti-tippers.

1. Engage motor locks and turn power off before reaching, leaning or bending only as far as your arm will extend without changing your sitting position.
2. Engage wheel locks/motor locks/clutches.

7.5 Reaching, Bending - Backward



WARNING!

Risk of injury

- Leaning backward over the top of the seat back will change your center of gravity and may cause you to tip over resulting in injury.
- Proper positioning is essential for your safety. DO NOT lean over the top of the seat back.

1. Position personal transporter as close as possible to the desired object.
2. Engage the motor locks and turn power off.
3. Reach back only as far as your arm will extend without changing your sitting position.

7.6 Information about getting in and out



WARNING!

Risk of serious injury or damage

Improper transfer techniques may cause serious injury or damage

- Before attempting transfers, consult a healthcare professional to determine proper transfer techniques for the user and type of wheelchair.
- Follow the instructions below.



If you do not have sufficient muscle strength, you should ask other persons for help. Use a sliding board, if possible.

Getting into the mobility device:

1. Position your mobility device as close as possible to your seat. This might have to be done by an attendant.
2. Align casters parallel to the drive wheels to improve stability during transfer.
3. Always switch your mobility device off.

4. Always engage both motor locks/clutches and free wheel hubs (if fitted) to prevent the wheels from moving.
5. Depending on the armrest type of your mobility device, detach the armrest or swivel it up.
6. Now slide into the mobility device.

Getting out of the mobility device:

1. Position your mobility device as close as possible to your seat.
2. Align casters parallel to the drive wheels to improve stability during transfer.
3. Always switch your mobility device off.
4. Always engage both motor locks/clutches and free wheel hubs (if fitted) to prevent the wheels from moving.
5. Depending on the armrest type of your mobility device, detach the armrest or swivel it up.
6. Now slide onto your new seat.

7.7 Taking Obstacles

7.7.1 Maximum obstacle height

You can find information about maximum obstacle heights in the chapter entitled 13 Technical data, page 57.

7.7.2 Safety information when ascending obstacles



CAUTION!

Risk of tipping over

- Never approach obstacles at an angle but at 90 degrees as shown below.
- Put your backrest into an upright position before climbing an obstacle.

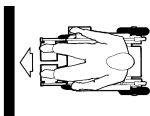


CAUTION!

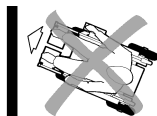
Risk of falling out of the mobility device and damage to the mobility device such as broken casters

- Never approach obstacles that are higher than the maximum climbable obstacle height. For the maximum climbable obstacle height, refer to 13 Technical data, page 57.
- If unsure whether the curb climb is possible or not, move away from the obstacle and if possible find another location.

7.7.3 The correct way to overcome obstacles



Right



Wrong

Ascending

1. Approach the obstacle or the curb slowly, head-on and at a right angle.
2. Depending on the wheel drive type, stop in one of the following positions:
 - a. In the case of centrally driven mobility devices: 5 - 10 cm before the obstacle.
 - b. For all other drives: approx. 30 - 50 cm in front of the obstacle.

3. Check the position of the front wheels. They must be in driving direction and at right angles to the obstacle.
4. Approach slowly and keep at a consistent speed until the rear wheels have also passed over the obstacle.

Descending

The approach to descend an obstacle is the same as to ascend it with the difference that you need not stop before descending.

1. Descend the obstacle very slowly.

7.8 Driving up and down gradients

For information concerning the maximum safe slope, refer to 13 Technical data, page 57.

**CAUTION!****Risk of tipping over**

- Only ever drive downhill at a maximum of 2/3 of the top speed. Avoid sudden changes of direction or abrupt braking when driving on slopes.
- Always return the backrest of your seat or the seat tilt (if adjustable seat tilt is available) to an upright position before ascending slopes. We recommend that you position the seat backrest or the seat tilt slightly to the rear before descending slopes.
- Always lower the lifter (if fitted) to its lowest position before ascending or descending a slope.
- Never attempt to ascend or descend a slope on slippery surfaces or where there is a risk of skidding (such as wet pavement, ice etc).
- Avoid trying to get out of the vehicle on an incline or a gradient.
- Always drive straight in the direction the road or path you are on goes, rather than attempting to zigzag.
- Never attempt to turn around on an incline or a slope.

**CAUTION!****Braking distance is much longer on a downhill slope than on even terrain**

- Never drive down a slope that exceeds the maximum safe slope (refer to 13 Technical data, page 57).

7.9 Pushing the mobility device in freewheel mode

The motors of the mobility device are equipped with automatic brakes, preventing that the mobility device starts rolling out of control when the remote is switched off. When pushing the mobility

device manually whilst freewheeling, the magnetic brakes must be disengaged.



Pushing the mobility device by hand may require more physical force than expected (more than 100 N). The necessary force nevertheless complies with the requirements of ISO 7176-14:2008.

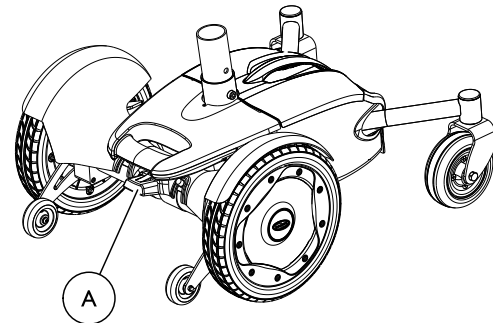
7.9.1 Disengaging/Engaging Motor Lock Levers

**WARNING!**

- DO NOT engage or disengage motor locks until the power is in the OFF position.

**CAUTION!**

- Ensure both motor release levers are fully engaged before driving the personal transporter.





Motor lock disengagement/engagement allows free-wheeling or joystick controlled operation. Free-wheeling allows an assistant to maneuver the personal transporter without power. Motor lock levers are located on each fender between the drive wheel and the personal transporter base frame.

- I. Perform one of the following:
 - Engage (DRIVE) - Push motor lock foot lever Ⓐ down, towards the ground/floor.
 - Disengage (PUSH) - Pull motor lock foot lever Ⓐ up towards the seat.

7.10 A note to mobility device assistants

When assistance to the mobility device user is required, remember to use good body mechanics. Keep your back straight and bend your knees whenever tilting the mobility device or traversing curbs or other impediments.

Also, be aware of detachable parts such as arms or legrests. These must NEVER be used to move the mobility device or as lifting supports, as they may be inadvertently released, resulting in possible injury to the user and/or assistant(s).

When learning a new assistance technique, have an experienced assistant help you before attempting it alone.

8 Electrical system

8.1 Electronics protection system

The vehicle drive electronics is fitted with an overload protection.

If the drive is severely overloaded over a long period (for example, during steep climbs) and, above all, at simultaneous high external temperatures, the electronic system can overheat. In this case, the vehicle performance is gradually reduced until it comes to a standstill. The status display shows a corresponding flash code (please refer to the user manual for your remote). If you switch the drive electronics off and then on again, the error message is deleted and the electronics can be switched on again. It can however take up to five minutes until the electronics has cooled down enough for the drives to apply their full performance.

If the drive is blocked due to an insurmountable obstacle, for example, a curb or similar which is too high, and the driver attempts to run the drive for more than 20 seconds against this obstacle, the electronic system switches the drives off to avoid damage. The status display shows a corresponding flash code (please refer to the user manual for your remote). If you switch the drive electronics off and then on again, the error message is deleted and the electronics can be switched on again.



A defective main fuse may be replaced only after checking the entire electric system. An Invacare specialised dealer must perform the replacement. You can find information on the fuse type in I3 Technical data, page 57.

8.2 Batteries

Power is supplied by two 12 V batteries. The batteries are maintenance-free and only need regular charging.

In the following, you find information on how to charge, handle, transport, store, maintain, and use batteries.

8.2.1 General information on charging

New batteries should always be fully charged once before their first use. New batteries will be at their full capacity after having run through approx. 10 - 20 charging cycles (break-in period). This break-in period is necessary to fully activate the battery for maximum performance and longevity. Thus, range and running time of your mobility device could initially increase with use.

Gel/AGM lead acid batteries do not have a memory effect as NiCd batteries.

8.2.2 General instructions on charging

Follow the instructions listed below to ensure safe use and longevity of the batteries:

- Charge 18 hours prior to initial usage.
- We recommend charging the batteries daily after every discharge even after partly discharge, as well as each night over night. Depending on the level of discharge, it can take up to 12 hours until the batteries are fully charged again.
- When the battery indicator reached the red LED range, charge the batteries for 16 hours minimum, neglecting the charge complete display!
- Try to provide a 24 hour charge once a week to make sure that both batteries are fully charged.
- Do not cycle your batteries at a low state of charge without regularly recharging them fully.
- Do not charge your batteries under extreme temperatures. High temperatures above 30 °C are not recommended for charging as well as low temperatures below 10 °C.

- Use only charging devices in Class 2. This class of chargers may be left unattended during charging. All charging devices which are supplied by Invacare comply with these requirements.
- You cannot overcharge the batteries when using the charger supplied with your mobility device, or a charger that has been approved by Invacare.
- Protect your charger from sources of heat such as heaters and direct sunlight. If the battery charger overheats, charging current will be reduced and the charging process delayed.

8.2.3 How to charge the batteries

Refer to the user manuals for your remote and battery charger for the position of the charging socket and further information about charging the batteries.



WARNING!

Risk of explosion and destruction of batteries if the wrong battery charger is used

- Only ever use the battery charger supplied with your mobility device, or a charger that has been approved by Invacare.



WARNING!

Risk of electric shock and damage to the battery charger if it gets wet

- Protect the battery charger from water.
- Always charge in a dry environment.



WARNING!

Risk of short circuit and electric shock if the battery charger has been damaged

- Do not use the battery charger if it has been dropped or damaged.



WARNING!

Risk of electric shock and damage to the batteries

- NEVER attempt to recharge the batteries by attaching cables directly to the battery terminals.



WARNING!

Risk of fire and electric shock if a damaged extension cable is used

- Only ever use an extension cable if it is absolutely necessary. In case you must use one, make sure it is in good condition.



WARNING!

Risk of injury if using the mobility device during charging

- DO NOT attempt to recharge the batteries and operate the mobility device at the same time.
- DO NOT sit in the mobility device while charging the batteries.

1. Switch off the mobility device.
2. Connect the battery charger to the charger socket.
3. Connect the battery charger to the power supply.

8.2.4 How to disconnect the batteries after charging

1. Once charging is complete, first disconnect the battery charger from the power supply, then disconnect the plug from the remote.

8.2.5 Storage and Maintenance

Follow the instructions listed below to ensure safe use and longevity of the batteries:

- Always store the batteries fully charged.

- Do not leave the batteries in a low state of charge for an extended length of time. Charge a discharged battery as soon as possible.
- In case your mobility device is not used for a longer period of time (that is more than two weeks), the batteries must be charged at least once a month to maintain a full charge and always be charged before use.
- Avoid hot and cold extremes when storing. We recommend to store batteries at a temperature of 15 °C.
- Gel and AGM batteries are maintenance-free. Any performance issues should be handled by a properly trained mobility device technician.

8.2.6 Instructions on using the batteries



CAUTION!

Risk of damaging the batteries.

- Avoid ultra-deep discharges and never drain your batteries completely.

- Pay attention to the Battery Charge Indicator! Charge the batteries when the Battery Charge Indicator shows that battery charge is low.
How fast the batteries discharge depends on many circumstances, such as ambient temperature, condition of the surface of the road, tire pressure, weight of the driver, way of driving and utilisation of lighting, if fitted.
- Try to charge the batteries always before you reach the red LED range.
The last 3 LED (two red and one orange) mean a remaining capacity of about 15 %.
- Driving with flashing red LED's means an extreme stress for the battery and should be avoided under normal circumstances.

- When only one red LED is flashing, the Battery Safe feature is enabled. From this time, speed and acceleration is reduced drastically. It will allow you to move the mobility device slowly out of a dangerous situation before the electronic finally cuts off. This is deep discharging and should be avoided.
- Be aware that for temperatures below 20 °C, the nominal battery capacity starts to decline. For example, at -10 °C the capacity is reduced to about 50 % of the nominal battery capacity.
- To avoid damaging the batteries, never allow them to be fully discharged. Do not drive on heavily discharged batteries if it is not absolutely necessary, as this will strain the batteries unduly and shorten their life expectancy.
- The earlier you recharge the batteries, the longer they live.
- The depth of discharge affects the cycle life. The harder a battery has to work, the shorter is its life expectancy.

Examples:

- One deep discharge stresses the same as 6 normal cycles (green /orange display off).
- The battery life is about 300 cycles at 80 % discharge (first 7 LED off), or about 3000 cycles at 10 % discharge (one LED off).



The number of LED can vary depending on the remote type.

- Under normal operation, once a month the battery should be discharged until all green and orange LED are off. This should be done within one day. A 16 hour charge afterwards is necessary as reconditioning.

8.2.7 Transporting batteries

The batteries supplied with your mobility device are not hazardous goods. This classification is based on the German GGVS Hazardous Goods Road Transport Ordinances, and the IATA/DGR Hazardous

Goods Rail Transport / Air Transport Ordinances. Batteries may be transported without restrictions, whether by road, rail or by air. Individual transport companies have, however, guidelines which can possibly restrict or forbid certain transport procedures. Please ask the transport company regarding each individual case.

8.2.8 General instructions on handling the batteries

- Never mix and match different battery manufactures or technologies, or use batteries that do not have similar date codes.
- Never mix gel with AGM batteries.
- Always have your batteries installed by a properly trained mobility device technician. They have the necessary training and tools to do the job safely and correctly.

8.2.9 How to handle damaged batteries correctly



CAUTION!

Corrosion and burns from acid leakage if batteries are damaged

- Remove clothes that have been soiled by acid immediately.

After contact with skin:

- Immediately wash affected area with lots of water.

After contact with eyes:

- Immediately rinse eyes under running water for several minutes; consult a physician.

- Always wear safety goggles and appropriate safety clothing when handling damaged batteries.
- Place damaged batteries in an acid-resistant receptacle immediately after removing them.

- Only ever transport damaged batteries in an appropriate acid-resistant receptacle.
- Wash all objects that have come into contact with acid with lots of water.

Disposing of dead or damaged batteries correctly

Dead or damaged batteries can be given back to your dealer or directly to Invacare.

8.2.10 Using the Proper Batteries

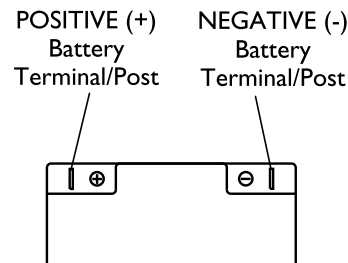


WARNING!

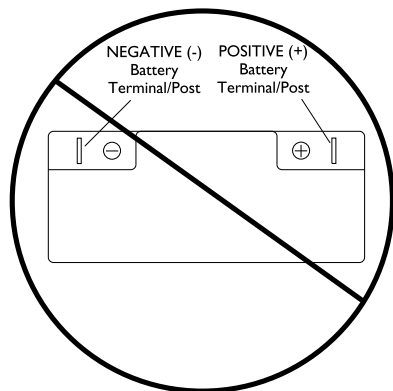
- Use 17AH batteries only. Batteries with terminal configuration (positive on the left and negative on the right) as shown below **MUST** be used. Batteries that have the reverse terminal configuration **MUST** not be used - otherwise injury and damage may occur.
- Terminals must have a cross hole in them as shown below in Detail “A”.

1. Position battery on ground/flat surface as shown below.
2. Visually inspect the battery to ensure proper polarity:

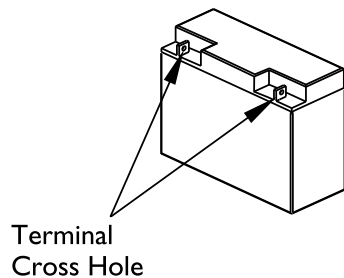
PROPER BATTERY TERMINAL CONFIGURATION TO USE



DO NOT USE THIS TYPE OF BATTERY TERMINAL CONFIGURATION



DETAIL "A"

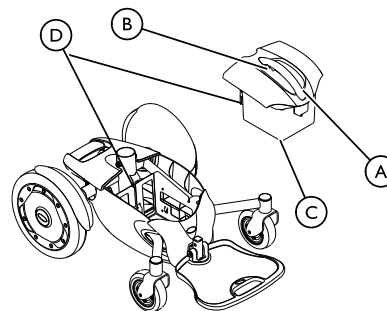


8.2.11 Removing/Installing the Battery Box From/Into the Personal Transporter



CAUTION!

- Place the personal transporter in a well ventilated area where work can be performed without risking damage to carpeting or floor covering.



1. Ensure personal transporter power is turned off.
2. Remove the seat. Refer to 6.6 Removing/Installing the Seat Assembly, page 32.
3. Grasp the battery box handle (A) and squeeze the release trigger (B).
4. Lift the battery box (C) up to disconnect the battery box connectors (D) and remove the battery box from the personal transporter base.
5. Reverse STEPS 3-4 to reinstall the battery box.

8.3 Wire Routing Guidelines



The following are guidelines ONLY. Location of electronic components and wiring may vary from wheelchair to wheelchair according to wheelchair model, manufacturing date, options or accessories.

Decisions regarding routing and securing of wires and cables should only be made by a qualified technician.

If technical questions or problems arise, contact Invacare Technical Service.

In this manual the term “wiring” describes any cable, lead or wire used to connect a electronic/powered device to the wheelchair batteries or charger.

It is important to follow these basic wiring guidelines when installing, adding, repositioning or replacing wiring of electronic components such as the controller, motors, joystick, display, switches or accessory/seating control box(es). This manual points out common procedures and techniques involved in the safe installation, repositioning or maintenance of power wheelchair wiring.

Use this information only as a “basic” guide. Location of electronic components and wiring may vary from wheelchair to wheelchair according to wheelchair model, manufacturing date, options or accessories.

Installation, repositioning or maintenance of power wheelchair wiring requires close attention to ensure wiring does not interfere with the safe operation of the wheelchair and to prevent damage to the wiring, the wheelchair and/or injury to the user.

Service personnel must be aware that the location and wire routing and location of mounting hardware can effect the following:

- User safety.

- Performance of the wheelchair or accessories.
- Location of driver controls such as joysticks, switches and displays.
- The range of motion of accessories such as powered seating and front riggings.

Great care must be used to ensure all wiring is properly routed and secured to the wheelchair to minimize risk of pinched or damaged wiring and to prevent loose wiring from snagging on objects around the wheelchair.

Before attempting to reposition, remove or replace any existing wiring, note the position and orientation of the following:

- The wire routing along the wheelchair frame.
- Location of tie-wraps and any other hardware securing the wiring to the wheelchair.
- Location of wiring connections.

Wiring should only be repositioned if necessary to make an adjustment to fit the wheelchair to the user or if needed to add a new option. Otherwise wiring must be reinstalled, routed and secured in the original path along the wheelchair frame.

9 Transport

9.1 Transporting the mobility device without occupant

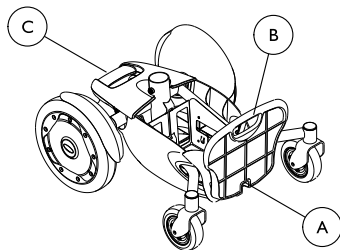


CAUTION!
Risk of injury

– If you are unable to fasten your mobility device securely in a transport vehicle, Invacare recommends that you do not transport it.

- Before transporting your mobility device, make sure the motors are engaged and that the remote is switched off. Invacare strongly recommends that you additionally disconnect or remove the batteries. Refer to Removing the batteries.
- Invacare strongly recommends securing the mobility device to the floor of the transporting vehicle.

9.2 Transporting the Personal Transporter



1. Remove the occupant from the personal transporter.
2. If installed, remove any accessories from the personal transporter.

3. Remove the seat. Refer to 6.6 Removing/Installing the Seat Assembly, page 32
4. Remove the batteries from personal transporter. Refer to 8.2.1 Removing/Installing the Battery Box From/Into the Personal Transporter, page 47.
5. Fold the footboard up against the front of the personal transporter.
6. Bend your knees and keep your back straight.
7. Using the footboard hand hold and the base handle located at the rear of the personal transporter, lift the personal transporter off of the ground and transfer the personal transporter into the vehicle.
8. Transfer seat assembly, battery box and accessories into the vehicle.
9. After reaching the destination, reverse STEPS 2 -7 to reassemble the personal transporter.

10 Maintenance

10.1 Maintenance introduction

The term “Maintenance“ means any task performed to ensure that a medical device is in good working order and ready for use as intended. Maintenance encompasses different areas, such as everyday care and cleaning, inspection checks, repair tasks and refurbishment.



Have your vehicle checked once a year by an authorised Invacare dealer in order to maintain its driving safety and roadworthiness.

10.2 Cleaning the mobility device

When cleaning the mobility device, pay attention to the following points:

- Only use a damp cloth and gentle detergent.
- Do not use any abrasive or scouring agents.
- Do not subject the electronic components to any direct contact with water.
- Do not use any high-pressure cleaning devices.

Disinfection

Spray or wipe disinfection using a tested and recognised product is permitted. A list of the current permitted disinfectants is available from the Robert Koch Institute at <http://www.rki.de>.

10.3 Inspection checks

The following table lists inspection checks that should be performed by the user and their intervals. If the mobility device fails to pass one of the inspection checks, refer to the chapter indicated or contact your authorised Invacare dealer. A more comprehensive list of inspection checks and instructions for maintenance work can be

found in the service manual for this device, which can be obtained from Invacare. That manual, however, is intended to be used by trained and authorized service technicians, and describes tasks which are not intended to be performed by the user.

Regular cleaning will reveal loose or worn parts and enhance the smooth operation of your personal transporter. To operate properly and safely, your personal transporter must be cared for just like any other vehicle. Routine maintenance will extend the life and efficiency of your personal transporter.



As with any vehicle, the wheels and tires should be checked periodically for cracks and wear, and should be replaced.

10.3.1 Before each use of the mobility device

Item	Inspection check	Action
Signal horn	Check for correction function.	Contact your dealer.
Batteries	Make sure the batteries are charged. Refer to the user manual provided with your remote for a description of the Battery Charge Indicator.	Charge the batteries (refer to 8.2.3 How to charge the batteries, page 44).

10.3.2 Inspect/Adjust Weekly

- ☐ Ensure that the casters are free of debris.
- ☐ Inspect tires for flat spots and wear.
- ☐ Inspect all fasteners.
- ☐ Ensure proper operation of powered drive functions.

10.3.3 Inspect/Adjust Monthly

- ☐ Clean upholstery and armrests.

- ☐ Clean dirt and lint from axles.
- ☐ Clean dirt and lint from bearings.
- ☐ Ensure that the casters are free of debris.
- ☐ Inspect seat positioning strap for any signs of wear. Ensure buckle latches. Verify hardware that attaches strap to frame is secure and undamaged. Replace if necessary.

10.3.4 Inspect/Adjust Periodically

- ☐ Ensure personal transporter rolls straight (no excessive drag or pull to one side).
- ☐ Inspect all fasteners.
- ☐ Ensure upholstery does not have any rips or tears.
- ☐ Ensure that the casters are free of debris.
- ☐ Check that all labels are present and legible. Replace if necessary.

11 After Use

11.1 Refurbishment

The product is suitable for refurbishment. Actions to be carried out:

- Cleaning and disinfection. Refer to 10 Maintenance, page 50.
- Inspection according to service plan. Consult service instructions, available from Invacare.
- Adaptation to the user. Refer to 6 Adjusting the mobility device to the user's seating posture, page 23.

11.2 Disposal

- The equipment wrapping is potentially recyclable.
- The metal parts are used for scrap metal recycling.
- The plastic parts are used for plastic recycling.
- Electric components and printed circuit boards are disposed of as electronic scrap.
- Exhausted or damaged batteries can be returned to your medical equipment supplier or Invacare.
- Disposal must be carried out in accordance with the respective national legal provisions.
- Ask your city or district council for details of the local waste management companies.

I2 Troubleshooting

I2.1 Driving Performance

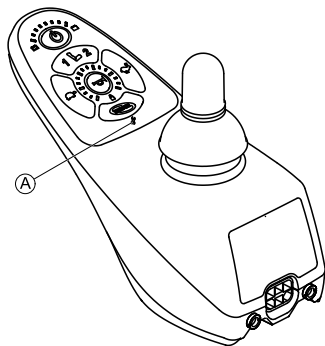
PERSONAL TRANSPORTER VEERS LEFT/RIGHT	SLUGGISH TURN AND/OR PERFORMANCE	CASTERS FLUTTER	SQUEAKS AND RATTLES	LOOSENESS IN PERSONAL TRANSPORTER	PERSONAL TRANSPORTER 3 WHEELS	SOLUTIONS
X	X	X				Check for loose stem nuts/bolts, bearings or signs of wear.
X		X	X	X	X	Check for uneven tire wear, bent fork/frame or loose hardware.
X	X	X		X	X	If pneumatic, check tires for correct and equal pressure.

12.2 Electrical



For additional troubleshooting information and explanation of error codes, refer to the individual Electronics Manual supplied with each personal transporter.

12.2.1 Information Gauge Diagnostics



The joystick information gauge acts as a service indicator to give indications of the type of fault or error detected by the control module. When a fault is detected, the personal transporter may stop and not drive. The LED **A** on the information gauge will flash rapidly. The number of flashes indicates the nature of the error. If multiple errors are found, only the first error encountered by the control module will be displayed.

NUMBER OF FLASHES	ERROR CODE DESCRIPTION	POSSIBLE SOLUTION
1	User Fault	Release joystick to neutral and try again.
2	Battery Fault	Charge the batteries.
3	Left Motor Fault	Contact Invacare/Dealer for service.
4	Right Motor Fault	Contact Invacare/Dealer for service.
5	Left Park Brake Fault	Ensure brake lever is in the drive position before turning on the personal transporter. Ensure motor cable is plugged into the controller. Contact Invacare/Dealer for service.

6	Right Park Brake Fault	Ensure brake lever is in the drive position before turning on the personal transporter. Ensure motor cable is plugged into the controller. Contact Invacare/Dealer for service.
7	Remote Fault	Check to make sure joystick is connected properly. Turn Joystick off then on. Contact Invacare/Dealer for service.
8	Controller Fault	Contact Invacare/Dealer for service.
9	Communications Fault	Check joystick cable connections. Check joystick cable and connectors for damage. Contact Invacare/Dealer for service.
10	General Fault	Contact Invacare/Dealer for service.
11	Incompatible or incorrect Remote	Wrong type of remote connected. Contact Invacare/Dealer for service.

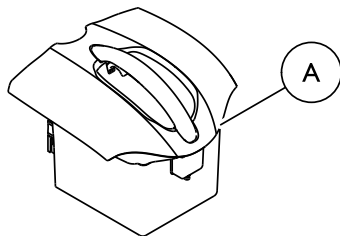
12.3 Checking Battery Charge Level

The following “Dos” and “Don’ts” are provided for your convenience and safety.

DON'T	DO
Don't perform any installation or maintenance without first reading this manual.	Read and understand this manual and any service information that accompanies a battery and charger before operating the personal transporter.
Don't perform installation or maintenance of batteries in an area that could be damaged by battery spills.	Move the personal transporter to a work area before cleaning terminals, or opening battery box.
Don't make it a habit to discharge batteries to the lowest level.	Recharge as frequently as possible to maintain a high charge level and extend battery life.
Don't use chargers or batteries that are not appropriate for the chair.	Follow recommendations in this manual when selecting a battery or charger.
Don't put new batteries into service before charging.	Fully charge a new battery before using.

DON'T	DO
Don't tip or tilt batteries.	Use a carrying strap to remove, move or install a battery.
Don't tap on clamps and terminals with tools.	Push battery clamps on the terminals. Spread clamps wider if necessary.
Don't mismatch your battery and chargers.	Use only a AGM charger for a AGM battery.

12.4 Resetting the Circuit Breaker



WARNING!

– NEVER defeat or bypass the circuit breaker. Only replace with a circuit breaker of the same rating.



1. Remove the battery box from the personal transporter base. Refer to 8.2.11 Removing/Installing the Battery Box From/Into the Personal Transporter, page 47.
2. To reset - press the circuit breaker reset button located on the front of the battery box.
3. Reinstall the battery box. Refer to 8.2.11 Removing/Installing the Battery Box From/Into the Personal Transporter, page 47.

I3 Technical data

I3.1 Technical specifications

The technical information provided hereafter applies to a standard configuration or represents maximum achievable values within the general tolerances. These can change if accessories are added. The precise changes to these values are detailed in the sections for the respective accessories.

Permissible operating and storage conditions	
Temperature range for operation according to ISO 7176-9:	<ul style="list-style-type: none"> • -25° ... +50 °C
Temperature range for storage according to ISO 7176-9:	<ul style="list-style-type: none"> • -40° ... +65 °C

Electrical system	
Motors	<ul style="list-style-type: none"> • 2 x 200 W
Batteries	<ul style="list-style-type: none"> • 2 x 12 V/17 Ah (C20) leakproof/AGM
Main fuse	<ul style="list-style-type: none"> • 40 A resettable circuit breaker
Degree of protection	IPX4 ¹
Insulation class	Class II 
Applied part type	Type B Applied Part ² 

Charging device	
Output current	<ul style="list-style-type: none"> • 5 A ± 5 %
Output voltage	<ul style="list-style-type: none"> • 28.8 V nominal (12 cells)
Input voltage	<ul style="list-style-type: none"> • 100 – 240 V nominal, 50/60 Hz

Charging device	
Operating temperature (surroundings)	• 0° ... +40 °C
Storage temperature	• -40° ... +65 °C

Drive wheel tires	
Tire type	• 12" x 2.5" puncture-proof

Caster tires	
Tire type	• 6" x 2" puncture-proof

Driving characteristics	
Speed	• 6 km/h
Min. braking distance	• 1000 mm
Max. safe slope ³	• 6° (10.5 %) according to manufacturer's specifications with 113 kg payload, 10° seat angle, 100° backrest angle
Max. climbable obstacle height	• 50 mm
Turning diameter	• 1484 mm
Reversing width	• 1480 mm
Drive range in accordance with ISO 7176-4:2008 ⁴	• 16 km

Dimensions in accordance with ISO 7176-15	
Total height	• 1070 – 1170 mm
Max. total width (widest point in parentheses)	• 620 mm (base)
Total length (with footboard)	• 960 mm

Dimensions in accordance with ISO 7176-15	
Seat height ⁵	<ul style="list-style-type: none"> • 535/559/584/610/635 mm
Seat width (armrest adjustment range in parentheses)	<ul style="list-style-type: none"> • 460 mm (460 – 610 mm⁶) • 510 mm (510 – 660 mm⁶)
Seat depth	<ul style="list-style-type: none"> • 460 - 510 mm
Seat angle	<ul style="list-style-type: none"> • 10°
Backrest height ⁵	<ul style="list-style-type: none"> • 535 mm (without headrest)
Backrest angle	<ul style="list-style-type: none"> • 98° ... 122°
Armrest height	<ul style="list-style-type: none"> • 155 – 230 mm
Footboard height	<ul style="list-style-type: none"> • 25.5 mm height adjustable
Footboard depth	<ul style="list-style-type: none"> • 38 mm depth adjustable
Footboard length	<ul style="list-style-type: none"> • 280 mm
Footboard angle	<ul style="list-style-type: none"> • 75° – 90°

Weight⁷	
Curb weight	<ul style="list-style-type: none"> • min. 67 kg

Component weights	
Base	<ul style="list-style-type: none"> • approx. 32 kg
Seat unit	<ul style="list-style-type: none"> • approx. 25 kg
Batteries	<ul style="list-style-type: none"> • approx. 7 kg per battery

Payload	
Max. payload	<ul style="list-style-type: none"> • 113 kg

Axle loads	
Max. front axle load	• 12 kg
Max. rear axle load	• 44 kg

- 1 IPX4 classification means that the electrical system is protected against spray water.
- 2 Applied Part complying with the specified requirements for protection against electrical shock according to IEC60601-1. (An applied parts is a part of the medical equipment which is designed to come into physical contact with the user or parts that are likely to be brought into contact with the user.)
- 3 Static stability according to ISO 7176-1 = 9° (15.8 %)
Dynamic stability according to ISO 7176-2 = 6° (10.5 %)
- 4 Note: The drive range of a mobility device is strongly influenced by external factors, such as the charging state of the batteries, surrounding temperature, local topography, road surface characteristics, tire pressure, weight of user, drive style and use of batteries for lighting, servos etc.

The specified values are theoretical maximum achievable values measured according to ISO 7176-4:2008.
- 5 Measured without seat cushion
- 6 Width adjustable for side panel adjustment
- 7 The actual curb weight depends on the fittings your mobility device has been supplied with. Every Invacare mobility device is weighed when leaving the works. Refer to the nameplate for the curb weight (including batteries) measured.

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