Invacare® Van Seat

Power Wheelchair Seat
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.
1 General

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

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

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

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

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

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

1.2 Reference Documents

WARNING!
– Refer to the wheelchair base user manual for additional safety and operation information

Refer to the table below for part numbers of additional documents which are referenced in this manual.

<table>
<thead>
<tr>
<th>MANUAL</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>MK6i™ Electronics Programming Guide</td>
<td>1141471</td>
</tr>
</tbody>
</table>

1.3 General Guidelines
The safety section contains important information for the safe operation and use of this product.

DANGER!
Risk of Death, Injury or Damage
Improper use of this product may cause injury or damage
– If you are unable to understand the warnings, cautions or instructions, contact a health care professional or dealer before attempting to use this equipment.
– DO NOT use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manual, service manuals or instruction sheets supplied with this product or optional equipment.
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.
- Users/Caregivers — DO NOT attempt to repair and/or service this wheelchair.
- Repair and/or service of this wheelchair MUST be performed by a qualified technician. Contact a dealer or Invacare technician.

WARNING!
- DO NOT connect any medical devices such as ventilators, life support machines, etc. directly to the batteries used to power the wheelchair. This could cause unexpected failure of the device and the wheelchair.

WARNING!
Risk of Serious Injury or Damage
Use of non-Invacare accessories may result in serious injury or damage.
- Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.
- DO NOT use non-Invacare accessories.
- To obtain Invacare accessories, contact Invacare by phone or at www.invacare.com

DANGER!
Risk of Death, Serious Injury, or Damage
Use of incorrect or improper replacement (service) parts may cause death, serious injury, or damage.
- Replacement parts MUST match original Invacare parts.
- ALWAYS provide the wheelchair serial number to assist in ordering the correct replacement parts.

WARNING!
Risk of Serious Injury or Damage
Attaching hardware that is loosely secured could cause loss of stability resulting in serious injury or damage.
- After ANY adjustments, repair or service and before use, make sure that all attaching hardware is tightened securely.

DANGER!
Risk of Death, Serious Injury, or Damage
Missing attaching hardware could cause instability resulting in death, serious injury or damage.
- Ensure all attaching hardware is present and tightened securely.

WARNING!
Risk of Serious Injury or Damage
Loss of power due to loose electrical connections could cause the wheelchair to suddenly stop resulting in serious injury or damage.
- ALWAYS ensure that all electrical connections are tightly connected so they don’t vibrate loose.
THE INFORMATION CONTAINED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

Check all parts for shipping damage and test before using. In case of damage, DO NOT use. Contact Invacare/Carrier for further instruction

As a manufacturer of wheelchairs, Invacare endeavors to supply a wide variety of wheelchairs to meet many needs of the end user. However, final selection of the type of wheelchair to be used by an individual rests solely with the user and his/her healthcare professional capable of making such a selection. Invacare recommends working with a qualified rehab technology provider, such as an ATP, (Assisstive Technology Professional).

1.3.1 Set Up

WARNING! Risk of Injury or Damage
Incorrect set up of this wheelchair performed by users/caregivers or unqualified technicians can result in injury or damage.
- User/Caregivers- DO NOT attempt to set up this wheelchair.
- Initial set up of this wheelchair MUST be performed by a qualified technician.

DANGER!
Risk of Death, Serious Injury, or Damage
Continued use of the wheelchair that is not set to the correct specifications may cause erratic behavior of the wheelchair 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 wheelchair has been set up/adjusted, check to make sure that the wheelchair performs to the specifications entered during the set up procedure. If the wheelchair does not perform to specifications, turn the wheelchair Off immediately and reenter set up specifications. Contact Invacare, if wheelchair still does not perform to correct specifications.

WARNING! Risk of Serious Injury or Damage
Moving the seating system from the factory setting may reduce driver control, wheelchair stability, traction and increase caster wear resulting in serious injury or damage.
- 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.
DANGER!  
Risk of Death, Serious Injury or Damage  
Operating the wheelchairs outdoor or in areas of poor lighting may result in death, serious injury, or damage. Operating the wheelchair near motor vehicles may result in death, serious 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.

WARNING!  
Risk of Minor to Serious Injury  
Pinch points can cause minor to serious injury.  
– Be mindful of potential pinch points and use caution when using this product.

WARNING!  
Risk of Serious Injury  
Impacting objects in the surrounding environment can cause serious injury.  
– When maneuvering the wheelchair around, ALWAYS have assured cleared distance with all objects in environment.

WARNING!  
Risk of Serious Injury  
Sharp edges can cause serious injury.  
– Be mindful that some parts may have sharp edges. Use caution when encountering these sharp edges.

WARNING!  
Risk of Serious Injury  
Hot surfaces can cause severe burns.  
– Be mindful of potential hot surfaces and avoid touching.

DANGER!  
Risk of Death, Serious Injury, or Damage  
Lighted cigarettes dropped onto an upholstered seating system can cause a fire resulting in death, serious injury, or damage. Wheelchair occupants are at particular risk of death or serious injury from these fires and resulting fumes because they may not have the ability to move away from the wheelchair.  
– DO NOT smoke while using this wheelchair.

1.3.2 Transport

WARNING!  
– As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type. It is Invacare’s position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare cannot and does not recommend any wheelchair transportation systems.
1.3.3 Repair or Service Information (Dealers and/or Qualified Technicians)

**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.

**WARNING!**
- Except for programming, DO NOT service or adjust the wheelchair while occupied, unless otherwise noted.
- Before adjusting, repairing or servicing the wheelchair, Always turn the wheelchair power Off, otherwise, injury or damage may occur.
- DO NOT overtighten hardware attaching to the frame. This could cause damage to the frame tubing.
- Transport ready packages are not retrofittable to existing models and are not field serviceable.

1.3.4 Wear and Tear Information

**General Information**
Normal wear and tear items and components include but are not limited to: all upholstery items including seat and back upholstery, arm and calf pads, cushions, wheels, tires and casters, all types of batteries, joystick overlays and inductive rubberized protective boots.

Invacare reserves the right to ask for any item back that has an alleged defect in workmanship. Refer to the Warranty section in this manual for specific warranty information.

Refer to the Inspection Checklists for proper preventative maintenance schedule.

This is just a general guideline and does not include items damaged due to abuse and misuse.

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Product Wear and Tear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheelchairs</td>
<td>Wheels, Brake Assembly, Hand Grips</td>
</tr>
<tr>
<td>Scooters</td>
<td>Wheels, Braking System, Armrest, Seat</td>
</tr>
<tr>
<td>Mobility Hardware</td>
<td>Rubber Urethane Tires and Casters, Handgrips, Joystick Inductive Tops, Joystick Overlays, Motors and Gearboxes (if exposed to prolonged moisture, urine, etc.), Stability Lock</td>
</tr>
<tr>
<td>and Electronics</td>
<td></td>
</tr>
<tr>
<td>Upholstery and</td>
<td>Arm pads, Seat Cushion Foam, Seat Cushion Covers, Back Cushion Foam, Back Cushion Covers, Headrest Foam, Headrest Covers, Footplate Covers, Calf Pad (if applicable) Foam and Cover</td>
</tr>
<tr>
<td>Seating</td>
<td></td>
</tr>
<tr>
<td>Batteries</td>
<td>Lead acid/Lithium, Coin cell (watch type), Gel (6 months)</td>
</tr>
</tbody>
</table>
1.3.5 Global Limited Warranty (Excluding Canada)

PLEASE NOTE: THE WARRANTY BELOW HAS BEEN DRAFTED TO COMPLY WITH FEDERAL LAW APPLICABLE TO PRODUCTS MANUFACTURED AFTER JULY 4, 1975.

This warranty is extended only to the original purchaser who purchases this product within any country excluding CANADA when new and unused from Invacare or a dealer. This warranty is not extended to any other person or entity and is not transferable or assignable to any subsequent purchaser or owner. Coverage under this warranty will end upon any such subsequent sale or other transfer of title to any other person. For product purchased in Canada, please refer to the Canada Limited Warranty.

This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

Invacare warrants the seat frame to be free from defects in materials and workmanship for a period of three (3) years from the date of purchase from Invacare or a dealer, with a copy of the seller’s invoice required for coverage under this warranty. Invacare warrants all remaining components (excluding all upholstered materials and padded materials) to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase from Invacare or a dealer, with a copy of the seller’s invoice required for coverage under this warranty. If within such warranty periods any such product component shall be proven to be defective, the product component shall be repaired or replaced, at Invacare’s option. This warranty does not include any labor or shipping charges incurred in replacement part installation or repair of any such product. Invacare’s sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

For warranty service, please contact the dealer from whom you purchased your Invacare product. In the event you do not receive satisfactory warranty service, please write directly to Invacare at the address on the bottom of the back cover. Provide dealer’s name address, date of purchase, indicate nature of the defect and, if the product is serialized, indicate the serial number. Do not return products to our factory without our prior consent.

Limitations and Exclusions: The foregoing warranty shall not apply to serial numbered products if the serial number has been removed or defaced, products subject to negligence, accident, improper operation, maintenance or storage, commercial or institutional use, products modified without Invacare’s express written consent (including, but not limited to, modification through the use of unauthorized parts or attachments); products damaged by reason of repairs made to any component without the specific consent of Invacare, or to a product damaged by circumstances beyond Invacare’s control, and such evaluation will be solely determined by Invacare. The warranty shall not apply to problems arising from normal wear and tear or failure to adhere to the product instructions. A change in operating noise, particularly relative to motors and gearboxes does not constitute a failure or defect and will not be repaired; all devices will exhibit changes in operating noise due to aging.

The foregoing express warranty is exclusive and in lieu of any other warranties whatsoever, whether express or implied, including the implied warranties of merchantability and fitness for a particular purpose, and the sole remedy for violations of any warranty whatsoever, shall be limited to repair or replacement of the defective product pursuant to the terms contained herein. the application of any implied warranty whatsoever shall not extend beyond the duration of the express warranty provided herein and Invacare shall not be liable for any consequential or incidental damages whatsoever;
SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGE, OR LIMITATION OF HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE EXCLUSION AND LIMITATION MAY NOT BE APPLICABLE.

THIS WARRANTY SHALL BE EXTENDED TO COMPLY WITH STATE/PROVINCIAL LAWS AND REQUIREMENTS.
2 Safety Handling

2.1 Safety/Handling

**WARNING!**
- Refer to wheelchair base user manual for additional safety and operation information.
- DO NOT leave the power button On when entering or exiting your wheelchair.
- DO NOT go up or down ramps or traverse slopes greater than 9°.
- Never leave an unoccupied wheelchair unattended on an incline.
- Do determine and establish your particular safety limits by practicing bending, reaching and transferring activities in the presence of a qualified healthcare professional before attempting active use of the wheelchair.
- Always shift your weight in the direction you are turning. Do not shift your weight in the opposite direction of the turn. Shifting your weight in the opposite direction of the turn may cause the inside drive wheel to lose traction and the wheelchair to tip over.

**WARNING!**
- DO NOT shift your weight or sitting position toward the direction you are reaching as the wheelchair and/or seating system (if any) may tip over.
- Always keep hands and fingers clear of moving parts to avoid injury.
- DO NOT use with a broken or missing joystick knob.
- DO NOT use if joystick does not spring back to the neutral position or becomes sticky or sluggish.
- DO NOT use if joystick boot is torn or damaged.
- Always check foam grips for looseness before using the wheelchair. If loose, contact a qualified technician for instructions.
- DO NOT leave elevating legrests in the fully extended position when proceeding down ramps.

**DANGER!**
*Risk of Death, Serious Injury, or Damage*
Misuse of the wheelchair may cause component failure and/or 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 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.

WARNING!
Risk of Serious Injury or Damage
Dropping the battery can result in serious injury or property damage.
– Batteries can weigh up to 52 lbs (23.6 kg). ALWAYS use a battery lifting strap when lifting the battery. It is the most reliable method of carrying a battery and preventing serious injury.

WARNING!
Risk of Death or Serious Injury
Braking hard and/or sudden stops while on inclines could cause loss of stability resulting in death or serious injury.
– While on inclines, ALWAYS travel at a reduced, constant speed to maintain stability. Traveling down ramps at high speeds will reduce traction and increase stopping distance.
– DO NOT brake hard and avoid sudden stops while traveling on an incline.
– If stopping becomes necessary while on an incline, release the joystick and allow the wheelchair to come to a full stop. Then proceed at a slower speed.

WARNING!
Risk of injury or damage
Improper mounting or maintenance of the Sip n’ Puff control including the mouthpiece and breath tube may cause injury or damage. Water inside the Sip n’ Puff interface module may cause damage to the unit. Excessive saliva residue in the mouthpiece/straw can reduce performance. Blockages, a clogged saliva trap or air leaks in the system may cause Sip n’ Puff not to function properly.
– Ensure moving parts of the wheelchair, including the operation of powered seating DO NOT pinch or damage the Sip n’ Puff tubing.
– Saliva trap MUST be installed to reduce risk of water or saliva entering the Sip n’ Puff interface module.
– Occasionally flush the mouthpiece to remove saliva residue.
– The mouthpiece/straw MUST be completely dry before installation.
– If Sip n’ Puff does not function properly, inspect system for blockages, clogged saliva trap or air leaks. As necessary, replace mouthpiece, breath tube and saliva trap.

WARNING!
Risk of Serious Injury or Damage
Accidental activation of wheelchair caused by pets, children, etc. can result in serious injury or damage.
– ALWAYS turn power off when around pets and/or children to prevent unintended movement.
2.1.1 Stability and Balance

DANGER!
Risk of Death or Serious Injury
Not wearing your seat positioning strap could result in death or serious injury.
- ALWAYS wear your seat positioning strap. Your seat positioning strap helps reduce the possibility of a fall from the wheelchair. The seat positioning strap 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, seat positioning strap MUST be replaced IMMEDIATELY.

WARNING!
- To determine and establish your particular safety limits, practice use of this product on various sloping surfaces in the presence of a qualified healthcare provider before attempting active use of this wheelchair. Other general warnings listed within this document also apply.
- DO NOT stand on frame of the wheelchair.

2.1.2 Footplates and Front Rigging

WARNING!
Risk of Serious Injury or Damage
Operating the wheelchair with a ground clearance of less than 75 mm (3 inches) between the footplates and the ground/floor may cause serious injury or property damage.
- ALWAYS maintain a minimum of 75 mm (3 inches) between the bottom of the footplates and ground/floor to ensure proper ground clearance while the wheelchair is in motion. If necessary, adjust the footplates height to achieve proper ground clearance. After footplates height adjustment, if the wheelchair dips forward and the footplates touch the ground while in motion, please contact your dealer for an inspection and avoid use of the wheelchair if possible.

CAUTION!
Risk of Damage
Interference between footrests and front casters may cause damage.
- When determining the depth of the telescoping front frame tubes, make sure the rear of the footrests do not interfere with the movement of the front casters. Otherwise damage to the wheelchair may result or may impede proper operation.
2.1.3 Reaching, Leaning and Bending - Forward

**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 wheelchair, you MUST at all times maintain proper balance. Your 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 wheelchair 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.

2.1.4 Reaching, Bending - Backward

**WARNING!**
- DO NOT lean over the top of the back upholstery. This will change your center of gravity and may cause the wheelchair to tip over.

2.1.5 Pinch Points

**WARNING!**
- DO NOT store or place items under the seat.
- Pinch point may occur when adjusting the arm angle position.

Refer to adjusting armrests for illustration of potential pinch point.

2.1.6 Transferring To and From Other Seats

**WARNING!**

Risk of Serious Injury or Damage
Improper transfer techniques may cause serious injury or damage.
- Before attempting transfers, consult a health care professional to determine proper transfer techniques for the user and type of wheelchair.
- Reduce gap between transfer surface and wheelchair seat to the minimum distance necessary to perform transfer.
- Align casters parallel to the drive wheels to improve stability during transfer.
- ALWAYS turn the wheelchair power off.
- ALWAYS engage both motor locks/clutches and free wheel hubs (if equipped) to prevent the wheels from moving before transferring into or from the wheelchair.

**WARNING!**
- ALWAYS turn the wheelchair power OFF and engage the motor locks/clutches to prevent the wheels from moving before attempting to transfer in or out of the wheelchair. Also make sure every precaution is taken to reduce the gap distance. Align both casters parallel with the object you are transferring onto.
2.1.7 Storage

CAUTION! Risk of Damage
Operating the wheelchair in rain or dampness may cause the wheelchair to malfunction electrically and mechanically; may cause the wheelchair to prematurely rust or may damage the upholstery.
- DO NOT leave wheelchair in a rain storm of any kind.
- DO NOT use wheelchair in a shower.
- DO NOT leave wheelchair in a damp area for any length of time.
- Check to ensure that the battery covers are secured in place, joystick boot is NOT torn or cracked where water can enter and that all electrical connections are secure at all times. DO NOT use if the joystick boot is torn or cracked. If the joystick boot becomes torn or cracked, replace IMMEDIATELY.

Invacare has tested its wheelchairs in accordance with RESNA WC — 2:2009, Section 9 Part 7.3 “Rain Test”. This provides the end user or his/her attendant sufficient time to remove his/her wheelchair from a rain storm and retain wheelchair operation.

WARNING!
- Avoid storing or using the wheelchair near open flame or combustible products. Serious injury or damage to property may result.

2.1.8 Weight Training

WARNING!
- Invacare DOES NOT recommend the use of its wheelchairs as a weight training apparatus. Invacare wheelchairs have NOT been designed or tested as a seat for any kind of weight training. If occupant uses said wheelchair as a weight training apparatus, Invacare shall NOT be liable for bodily injury and the warranty is void.

2.1.9 Weight Capacity

WARNING!
- Refer to Typical Product Parameters in this manual and the manual shipped with the wheelchair base to determine the weight capacity (total combined weight of user and any attachments) of your wheelchair model.
2.1.10 Electromagnetic Interference (EMI) From Radio Wave Sources

Powered wheelchairs and motorized scooters (in this text, both will be referred to as powered wheelchairs) may be susceptible to electromagnetic interference (EMI), which is interfering electromagnetic energy (EM) emitted from sources such as radio stations, TV stations, amateur radio (HAM) transmitters, two way radios, and cellular phones. The interference (from radio wave sources) can cause the powered wheelchair to release its brakes, move by itself, or move in unintended directions. It can also permanently damage the powered wheelchair’s control system. The intensity of the interfering EM energy can be measured in volts per meter (V/m). Each powered wheelchair can resist EMI up to a certain intensity. This is called its "immunity level." The higher the immunity level, the greater the protection. At this time, current technology is capable of achieving at least a 20 V/m immunity level, which would provide useful protection from the more common sources of radiated EMI.

There are a number of sources of relatively intense electromagnetic fields in the everyday environment. Some of these sources are obvious and easy to avoid. Others are not apparent and exposure is unavoidable. However, we believe that by following the warnings listed below, your risk to EMI will be minimized.

The sources of radiated EMI can be broadly classified into three types:

1. Hand-held Portable transceivers (transmitters/receivers with the antenna mounted directly on the transmitting unit. Examples include: citizens band (CB) radios, “walkie talkie”, security, fire and police transceivers, cellular telephones, and other personal communication devices).
   - Some cellular telephones and similar devices transmit signals while they are ON, even when not being used.

2. Medium-range mobile transceivers, such as those used in police cars, fire trucks, ambulances and taxis. These usually have the antenna mounted on the outside of the vehicle.

3. Long-range transmitters and transceivers, such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios.
   - Other types of handheld devices, such as cordless phones, laptop computers, AM/FM radios, TV sets, CD players, cassette players, and small appliances, such as electric shavers and hair dryers, so far as we know, are not likely to cause EMI problems to your powered wheelchair.
2.1.11 Powered Wheelchair Electromagnetic Interference (EMI)

Because EM energy rapidly becomes more intense as one moves closer to the transmitting antenna (source), the EM fields from handheld radio wave sources (transceivers) are of special concern. It is possible to unintentionally bring high levels of EM energy very close to the powered wheelchair's control system while using these devices. This can affect powered wheelchair movement and braking. Therefore, the warnings listed below are recommended to prevent possible interference with the control system of the powered wheelchair.

Electromagnetic interference (EMI) from sources such as radio and TV stations, amateur radio (HAM) transmitters, two-way radios, and cellular phones can affect powered wheelchairs and motorized scooters.

FOLLOWING THE WARNINGS LISTED BELOW SHOULD REDUCE THE CHANCE OF UNINTENDED BRAKE RELEASE OR POWERED WHEELCHAIR MOVEMENT WHICH COULD RESULT IN SERIOUS INJURY.

![WARNING!]

- DO NOT operate handheld transceivers (transmitters receivers), such as citizens band (CB) radios, or turn ON personal communication devices, such as cellular phones, while the powered wheelchair is turned ON;
- Be aware of nearby transmitters, such as radio or TV stations, and try to avoid coming close to them;
- If unintended movement or brake release occurs, turn the powered wheelchair OFF as soon as it is safe;

![WARNING!]

- Be aware that adding accessories or components, or modifying the powered wheelchair, may make it more susceptible to EMI (Note: There is no easy way to evaluate their effect on the overall immunity of the powered wheelchair); and
- Report all incidents of unintended movement or brake release to the powered wheelchair manufacturer, and note whether there is a source of EMI nearby.

![WARNING!]

Important Information

- 20 volts per meter (V/m) is a generally achievable and useful immunity level against EMI (as of May 1994) (the higher the level, the greater the protection);
- This device has been tested to a radiated immunity level of 20 volts per meter.
- The immunity level of the product is unknown.
- Modification of any kind to the electronics of this power wheelchair as manufactured by Invacare may adversely affect the EMI immunity levels.
3 Label Locations

3.1 Label Locations

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Weight Capacity Label located here</td>
</tr>
</tbody>
</table>

Refer to user manual shipped with wheelchair base for additional labels located on the wheelchair base.
## 4 Technical Data

### 4.1 Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seat Width</td>
<td>18 inch wide, 20 inch Wide, 22 inch Wide</td>
</tr>
<tr>
<td>Seat Depths</td>
<td>18 inch Wide van seat — 16 to 18 inches</td>
</tr>
<tr>
<td></td>
<td>20 inch Wide van seat — 18 to 20 inches</td>
</tr>
<tr>
<td></td>
<td>22 inch Wide van seat — 20 to 22 inches</td>
</tr>
<tr>
<td>Seat-to-Floor Height</td>
<td>22½ to 23½ inches (Cushion not compressed)</td>
</tr>
<tr>
<td>Overall Width Without Joystick:</td>
<td>25-7/8 inches</td>
</tr>
<tr>
<td>Overall Height</td>
<td>36 to 49¼ inches</td>
</tr>
<tr>
<td>Overall Length with Footboard Folded</td>
<td>39 inches</td>
</tr>
<tr>
<td>Back Height without Headrest:</td>
<td>18 inches</td>
</tr>
<tr>
<td>Back Angle Range</td>
<td>35° to 115°</td>
</tr>
<tr>
<td>Semi-Recline:</td>
<td>35° to 170°</td>
</tr>
<tr>
<td>Full Recline</td>
<td></td>
</tr>
<tr>
<td>Armrests:</td>
<td>Adjustable Angle Depth and Width</td>
</tr>
<tr>
<td>Upholstery Options:</td>
<td>Grey Vinyl, Grey Cloth, Tan Vinyl</td>
</tr>
<tr>
<td>Footrests/Legrests:</td>
<td>Flip Up, Depth and Height Adjustable, Footboard, Swingaway Front Rigging, Elevating Legrest</td>
</tr>
<tr>
<td>Incline Capability</td>
<td>9°</td>
</tr>
</tbody>
</table>
5 Usage

5.1 Operation Warnings

![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 of the Driver Control is to be performed only by a qualified technician. The final adjustments of the driver control may affect other activities of the wheelchair. Damage to the equipment could occur under these circumstances.

5.2 Preparing the Joystick for Use

![WARNING!]
Risk of Death, Serious Injury, or Damage
Improperly connected joystick could cause loss of power resulting in death, serious injury, or damage.
– Ensure the joystick is securely connected to controller.

![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.

The joystick is factory installed on the right side of the wheelchair. To reposition the joystick onto the left side of the wheelchair, refer to Repositioning the Joystick.

1. Turn the adjustment lock lever A to release the adjustment lock from joystick mounting tube B.
2. Slide joystick mounting tube to the desired position.
3. Turn the adjustment lock lever to secure the adjustment lock to the joystick mounting tube.
5.3 A Note About Drive Lock-Out

**WARNING! Risk of Death or Serious Injury**
Operating the wheelchair with the seat tilted/reclined/back angle position beyond 20° can cause instability resulting in death or serious injury from the wheelchair tipping over.

- NEVER operate the wheelchair or elevate/lower the seat while in any tilted/reclined/back angle position over 20° relative to the vertical position. If the drive lock-out does not stop the wheelchair from operating or the seat from elevating/lowering in a tilt/recline/back angle position over 20° relative to vertical, DO NOT operate the wheelchair or elevate/lower the seat. DO NOT attempt to adjust the drive lock-out. Have the wheelchair serviced by a qualified technician.

- The wheelchair user MUST have a clear line of sight to drive safely. On initial chair delivery and after adjusting the back angle, drive lock-out switch tilt system or recline system, tilt and recline the seat back to the farthest driving position IMMEDIATELY before drive lock-out engages and ensure there is a clear line of sight present in which to drive the wheelchair. If a clear line of sight is not present, have the back angle repositioned or readjust the lockout angle such that safe driving with a clear line of sight is achieved.

One of the following will occur when the drive lock-out feature has been activated:

- CMPJ+ Joysticks Only -  TILT WARNING or  SPM Controller Inhibited displays on the joystick or display unit.
- SPJ+ Joysticks Only - Left to right chase alternating with a steady display.

Drive lock-out is a feature designed to prevent the wheelchair from being driven after the seating system has been tilted beyond 20°* relative to the vertical position. The back can be positioned at a 10° relative offset to the seat base, thereby resulting in a back angle potential of 30° before which the drive lock-out is activated. This may affect the wheelchair user's line of sight while driving. Make sure the wheelchair user can see properly to ensure safe driving.

*20° back angle can be any combination of recline, tilt, back angle and/or surface angle.

For tilt ranges, refer to Typical Product Parameters.
5.4 Operating Powered Seating Systems

**WARNING!**
- Pinch points may occur when returning the seat from any tilted position to the full upright position or when lowering the elevating seat. Make sure the hands and body of both the occupant and attendants/bystanders are clear of all pinch points before returning the seat to the full upright position or lowering the elevating seat.
- Use caution when driving in a tilted position.
- Do not operate the seating system while on an incline.
- Do not operate seating system while the wheelchair is moving.
- Do not operate the tilt function near or under a fixed object such as a table or desk.
- **ACTUATOR CONTROL WARNING** — Use only the actuator controls listed in the following chart to activate the tilt/recline/elevate functions. DO NOT USE any other actuator controls. Such devices may result in excess heating and cause damage to the actuator and associated wiring and could cause a fire, death, physical injury or property damage. If such devices are used, Invacare shall not be liable and the limited warranty is void.

<table>
<thead>
<tr>
<th>SYSTEM TYPE</th>
<th>JOYSTICK</th>
<th>POWERED SEATING CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 POLE MOTOR</td>
<td>SWITCH OPTION</td>
<td>THROUGH THE JOYSTICK (TTJ)</td>
</tr>
<tr>
<td>Single Actuator (Tilt Only)</td>
<td>MK6i SPJ+ w/PSS</td>
<td>Powered Seating Switch</td>
</tr>
<tr>
<td></td>
<td>MK6i SPJ+ w/ACC</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>CMPJ+</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes with SANODE</td>
</tr>
</tbody>
</table>

This procedure only applies to wheelchairs with Formula PTO Plus or Power Tilt Only seating systems.

5.4.1 Using the Single Function Switch

The powered seating switch will alternate functions (increase tilt angle, decrease tilt angle) after it has been released for a minimum of three seconds.

1. Make sure the wheelchair is on a level surface and that the wheelchair is turned on.
2. Press and hold the powered seating switch to activate the actuator until the seating system is in the desired position.
3. Release the powered seating switch after the desired position is achieved.
5.4.2 Using the MK6™ SPJ+™ w/ACC Joystick

1. Make sure the wheelchair is on a level surface.
2. Press the mode button* to switch from driving mode to tilt mode.

*The mode button is only present on SPJ+ w/ACC joystick.

The LED will light up with a circle around it.

3. Move the joystick:
   • Forward - To raise the seat (elevate up).
   • Backward - To lower the seat (elevate down).

5.4.3 Using the CMPJ+ Joystick

<table>
<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Mode Button</td>
</tr>
<tr>
<td>B</td>
<td>Joystick</td>
</tr>
<tr>
<td>C</td>
<td>Additional input for powered seating switch</td>
</tr>
<tr>
<td>D</td>
<td>Active (if programmed)</td>
</tr>
<tr>
<td>E</td>
<td>Charger/Programming Input (Located in front of joystick)</td>
</tr>
</tbody>
</table>
### Usage

1. Make sure the wheelchair is on a level surface.
   - The drive select toggle switch is located on the left side, below the LCD display. The drive select position is momentary, meaning that it will return to the neutral position after a selection is made.

2. Select a drive that has the Actuator Control Switch Mode icon displayed.

3. Select the Actuator Control Switch Mode icon.

4. Four of the following icons will display when Actuator Control Switch Mode is selected:
   - The location of the icons indicates the joystick direction or quadrant.

---

#### ITEM | DESCRIPTION
--- | ---
F | Drive Select Toggle Switch
G | LCD Display
H | Programmable Mono Port 1/2 or External Mode Switch
I | Remote On/Off Switch
J | Mode Switch
K | Charger/Programming Input (Located Front of Joystick)
L | Joystick
M | Memory Card Slot
N | Speed Control Knob
O | Elevate Down Icon
P | Operation Icons
Q | Icon
R | Text

---
5. Select the desired operation using the joystick or an equivalent switch.

- While operating the powered seating system, the selected icon will display on the screen along with text indicating the current operation (Detail “C”).

5.4.4 Programmable Mono Ports 1 and 2 with External Mode Switch

The programmable mono port with external mode switch input is located at the rear of the joystick on the left side. The programmable mono port input offers the choice of three options:

- Remote drive select
- Remote stop/mode (reset) input
- Single actuator input

The single switch functions operate through mono port 1. An optional y-cable allows a second programmable function through mono port 2.

Remote Stop Switch

The remote reset switch may be used to stop the wheelchair if the wheelchair is in motion.

The remote reset switch also functions in the same way as the joystick mode switch when the wheelchair is not in motion.

5.4.5 Remote On/Off Switch

The remote On/Off switch input is located at the rear of the joystick on the right side and allows the power switch to be operated by an ability switch (normally open momentary switch with mono plug).

To use the remote On/Off feature, the Drive Select/On/Off switch must be in the On position. Each activation of the ability switch will alternately turn the joystick On or Off.
5.4.6 Mode Switch

The mode switch is used to select the operating mode for the wheelchair. The mode switch is located on the joystick. A mode switch is needed whenever any of the following operating modes are programmed:

- Environmental Controls (ECU 1, ECU 2, ECU 3, ECU 4)*
- 3 Speed Mode in Digital 3 Speed (Slow, Medium, Full)
- Sleep Mode
- RIM Mode*
- Remote Drive Selection Mode*
- Tilt/Recline Mode*
- Information Center Display Selection (does not require Reset activation at power up)

If any of the above modes are selected, the control will require activation of the switch immediately after the power switch is turned On in order to enter the drive mode. The second line of the LCD will display - PRESS RESET.

*In these modes, Standby Select allows the reset switch to be bypassed for users unable to activate the switch.

5.4.7 Memory Card Slot

The memory card slot is used with the basic or professional memory card for saving or reading wheelchair parameters.

5.5 About Front Riggings

WARNING! Risk of Serious Injury or Damage
Operating the wheelchair with a ground clearance of less than 75 mm (3 inches) between the footplates and the ground/floor may cause serious injury or property damage.

- ALWAYS maintain a minimum of 75 mm (3 inches) between the bottom of the footplates and ground/floor to ensure proper ground clearance while the wheelchair is in motion. If necessary, adjust the footplates height to achieve proper ground clearance. After footplates height adjustment, if the wheelchair dips forward and the footplates touch the ground while in motion, please contact your dealer for an inspection and avoid use of the wheelchair if possible.

WARNING! Risk of Injury or Damage
- Using the footplates as a platform may cause injury or damage
- DO NOT use the footplates/footboard as a platform. DO NOT stand on the footplates/footboard. When getting in or out of the wheelchair, make sure that the footplates are in the upward position or swing footrests towards the outside of the wheelchair.
**WARNING!**

- If the wheelchair is not moving, the front rigging must maintain a minimum of one inch ground clearance - otherwise personal injury and damage may result.
- PINCH POINT EXISTS BETWEEN CENTER MOUNT FOOTREST AND CASTERS - There is limited clearance between center mount footrest and casters. The user’s feet MUST remain on the center mount footrest while operating the wheelchair. If the user’s feet are allowed to rest off the side of the center mount footrest they may come in contact with the caster possibly resulting in injury.

### 5.6 Raising/Lowering Elevating Front Riggings

1. Perform one of the following:
   - Raising - Pull back on the release lever \( A \) and raise front rigging to the desired height.
   - Lowering - Support front rigging with one hand away from the release lever. Push release lever downward with other hand.
5.7 Adjusting Calfpads

1. Rotate the calf pad A towards outside of the wheelchair.
2. Slide the calf pad up or down until the desired position is obtained.

   If one of the top two calf pad adjustment positions is being used, the legrest will need to be raised to avoid interference with the front stabilizers while going over obstacles or going up and down ramps.

3. Rotate the calf pad towards the inside of the wheelchair.
6 Setup and Maintenance

6.1 Setup/Maintenance Information

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.

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

Every six months, and as necessary, take your wheelchair to a qualified technician for a thorough inspection and servicing.

Refer to wheelchair base owner’s manual for additional safety inspection and troubleshooting information.

6.2 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 User/Attendant Inspection Checklists on page 31.

Every six months, and as necessary, take your wheelchair to a qualified technician for a thorough inspection and servicing. Refer to Service Inspection on page 31.

Refer to wheelchair base owner’s manual for additional safety inspection and troubleshooting information.

- Check all parts for shipping damage. In case of damage, DO NOT use
- Ensure arms are secure but easy to release and adjustment levers engage properly.
- Adjustable height arms operate and lock securely.
- Powered Seating Systems - Make sure all electrical connections are secure.
- Powered Seating Systems - Make sure drive lock-out operates properly.
- 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 (Example: seating).
6.3 User/Attendant Inspection Checklists

- Every six months, and as necessary, take your wheelchair to a qualified technician for a thorough inspection and servicing. Service Inspection on page 31.
- Weekly, monthly and periodic inspections should be performed by user/attendant between the six month service inspections.
- Regular cleaning will reveal loose or worn parts and enhance the smooth operation of your wheelchair. To operate properly and safely, your wheelchair must be cared for just like any other vehicle. Routine maintenance will extend the life and efficiency of your wheelchair.
- Refer to wheelchair base owner’s manual for additional safety inspection and troubleshooting information.

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

6.3.1 Inspect/Adjust Weekly
- Inspect all fasteners.
- Ensure seat is secured to wheelchair frame.
- Ensure seat and/or back upholstery have no rips and do not sag. Replace if necessary.
- Ensure arm pivot points are not worn and/or loose. Replace if necessary.

6.3.2 Inspect/Adjust Monthly
- Clean upholstery and armrests.
- 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.

6.3.3 Inspect/Adjust Periodically
- Inspect all fasteners.
- Ensure arms are secure but easy to release and adjustment levers engage properly.
- Adjustable height arms operate and lock securely.
- Ensure upholstery does not have any rips or tears.
- Armrest pad sits flush against arm tube.
- Check center mount front riggings for loose fasteners. Replace/tighten if necessary.
- Check that all labels are present and legible. Replace if necessary.
- Make sure drive lock-out operates properly.

6.4 Service Inspection
- Every six months take your wheelchair to a qualified technician for a thorough inspection and servicing.
- Service inspections MUST be performed by a technician.
- Refer to wheelchair base user manual for additional safety inspection and troubleshooting information.
DANGER!
Risk of Death, Serious Injury, or Damage
Failure to complete the inspection of the critical components listed below could result in death or serious injury.
– Inspect stability control components which could include anti-dive spring, anti-dive cylinder, ratcheting gears, or end stops to ensure proper operation.
– Inspect drive axle nut, locking tab, wheel fasteners or quick release to ensure drive wheel is secure

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 wheelchair:

6.4.1 Six Month Inspection
- Clean upholstery and armrests.
- Ensure arm pivot points are not worn and/or loose. Replace if necessary.
- Ensure seat and/or back upholstery have no rips and do not sag. Replace if necessary.
- Ensure seat release latch is functional.
- Ensure seat is secured to wheelchair frame.
- Check that all labels are present and legible. Replace if necessary.
- Ensure adjustable height arms operate and lock securely.
- Ensure upholstery does not have any rips or tears.
- Ensure armrest pad sits flush against arm tube.
- Ensure arms are secure but easy to release and adjustment levers engage properly.
- 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.
- Check center mount front riggings for loose fasteners. Replace/tighten if necessary.
- Check that cables are routed and secured properly to ensure that cables do NOT become entangled and damaged during normal operation of seating system.
- Inspect electrical components for signs of corrosion. Replace if corroded or damaged.
- Inspect all fasteners.
- Make sure drive lock-out operates properly.
- Check limit switch position.

6.5 Troubleshooting

- For troubleshooting information and explanation of error codes, refer to the wheelchair base user manual and the individual Electronics Manual supplied with each wheelchair.
6.6 Installing/Removing Front Riggings

**CAUTION!**
- If front rigging are used, then the seat MUST be adjusted to the highest mounting position - otherwise damage may occur.

6.6.1 Installing Front Riggings

1. If necessary, remove the footboard. Refer to owner’s manual shipped with the wheelchair.
2. Turn front rigging A to the side (open footplate is perpendicular to wheelchair) and position mounting holes in the front rigging hinge plates B with hinge pins C on the wheelchair frame D.
3. Install the front rigging hinge plates onto the hinge pins on the wheelchair frame.
4. Push the front rigging towards the inside of the wheelchair until it locks into place.
   - The footplate will be on the inside of the wheelchair when locked in place.
5. Repeat STEPS 1-4 for opposite side of wheelchair.

6.6.2 Removing Front Riggings

1. Push the front rigging release lever inward E and rotate the footrest out.
2. Lift up on front rigging and remove from the wheelchair.
3. Repeat STEPS 1-2 for opposite side of wheelchair.

6.7 Replacing Heel Loops

- [Diagram of heel loop replacement]

   - (Diagram and instructions for heel loop replacement)

4. Push the front rigging towards the inside of the wheelchair until it locks into place.
   - The footplate will be on the inside of the wheelchair when locked in place.
5. Repeat STEPS 1-4 for opposite side of wheelchair.
1. Note the position of hex bolt A, coved washers B and locknut C for reinstallation.
2. Remove the hex bolt, coved washers and locknut that secure the lower footrest D to the footrest support E.
3. Remove the lower footrest.
4. Remove the phillips bolt F, spacer G and locknut H that secure the existing heel loop I to the lower footrest.
5. Slide the existing heel loop off the lower footrest.
6. Replace heel loop.
7. Reverse STEPS 1-6 to reassemble.

When securing heel loop to lower footrest, tighten the phillips screw and locknut until the spacer is secure.

6.8 Removing/Installing the Manual Center Mount Footrest

6.8.1 Installing

1. Engage the release lever with one hand, hold the center mount footrest B with the other, and insert the center mount footrest into the mounting bracket C of the seat frame D.
2. Reinstall the rigging pivot pin A to secure the center mount footrest to the mounting bracket of the seat frame.

6.8.2 Removing

Release lever is not shown. It is located towards the front or center of seat frame.

1. Remove the rigging pivot pin A that secures the footrest B to the mounting bracket C of the seat frame D.
2. Hold the footrest with one hand and engage the release lever with the other while simultaneously pulling the center mount footrest out of the mounting bracket of the seat frame.
6.9 Adjusting/Replacing Telescoping Front Rigging Supports

1. Remove the two socket bolts A, spacers B, and locknuts C that secure telescoping front rigging support D to the seat frame E.

2. Perform one of the following:
   - Adjusting - Align the appropriate mounting hole F of the telescoping front rigging support with the front mounting hole G in the seat frame tubes to achieve the desired depth as shown in the illustration.
   - Replacing - Perform the following steps:
     - Remove the existing telescoping front rigging support from the wheelchair frame.
     - Insert the new telescoping front rigging support into the seat frame.
     - Align the appropriate mounting hole of the telescoping front rigging support with the front mounting hole in the seat frame tubes to achieve the desired depth as shown in the illustration.

When installing the front riggings support tubes, ensure that the hinge pins H are on the outside of the wheelchair facing away from the seat frame.

When adjusting the telescoping front rigging support depth, ensure the footplate does not interfere with the caster wheel rotation.

Telescoping front rigging supports may be extended up to 2-inches from the wheelchair frame in 1-inch increments. This adjustment does not affect seat depth.

3. Using the two socket bolts and locknuts, secure the telescoping front rigging support to the seat frame as shown in.

4. If necessary, repeat steps 1-3 on remaining telescoping front rigging support.
6.10 Footrest Height Adjustment

**WARNING!**
- While the wheelchair is moving, minimum ground clearance for the front rigging is three inches. If the wheelchair is not moving, the front rigging must maintain a minimum of one inch ground clearance - otherwise personal injury and damage may result.

<table>
<thead>
<tr>
<th></th>
<th>18 inches wide</th>
<th>20 inches wide</th>
<th>22 inches wide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard Position</strong></td>
<td>Holes 2 and 3</td>
<td>Holes 2 and 3</td>
<td>Holes 3 and 4</td>
</tr>
<tr>
<td><strong>1 Inch Out</strong></td>
<td>Holes 3 and 4</td>
<td>Holes 3 and 4</td>
<td>Holes 5 and 6</td>
</tr>
<tr>
<td><strong>2 Inches Out</strong></td>
<td>Holes 4 and 5</td>
<td>Holes 4 and 5</td>
<td>Holes 6 and 7</td>
</tr>
</tbody>
</table>

6.10.1 Model PHWH93

1. Remove any accessory from the footrest(s).
   - Lay the footrest on a flat surface to simplify this procedure.
2. Remove the front rigging from the wheelchair.
3. Remove the hex bolt A, washers B, and locknut C that secure the footrest assembly D to the footrest support E.
4. Reposition the lower footrest to the desired height.
5. Reinstall the hex bolt, washers and locknut that secure the lower footrest to the footrest support and tighten securely.
6. Repeat STEPS 1-5 for the opposite wheelchair footrest, if necessary.
7. Reinstall the front riggings onto the wheelchair.
8. Reinstall any accessory onto the footrest(s).
6.10.2 PH904A and PHAL4A

1. Loosen, but DO NOT remove, the lug bolt A and locknut B that secure the lower footrest C to the footrest support D.
2. Reposition the lower footrest to the desired height.
3. Securely tighten the lug bolt and locknut that secure the lower footrest to the footrest support.
4. Repeat STEPS 1-3 for the opposite side of the wheelchair footrest, if necessary.

PH904A style front rigging shown. PHAL4A front rigging adjusts the same way.

6.11 Adjusting the Height of the Manual Center Mount Footrest
**WARNING!**

**Risk of Serious Injury or Damage**
Operating the wheelchair with a ground clearance of less than 75 mm (3 inches) between the footplates and the ground/floor may cause serious injury or property damage.

– ALWAYS maintain a minimum of 75 mm (3 inches) between the bottom of the footplates and ground/floor to ensure proper ground clearance while the wheelchair is in motion. If necessary, adjust the footplates height to achieve proper ground clearance. After footplates height adjustment, if the wheelchair dips forward and the footplates touch the ground while in motion, please contact your dealer for an inspection and avoid use of the wheelchair if possible.

**WARNING!**

– PINCH POINT EXISTS BETWEEN CENTER MOUNT FOOTREST AND CASTERS - There is limited clearance between center mount footrest and casters. The user’s feet MUST remain on the center mount footrest while operating the wheelchair. If the user’s feet are allowed to rest off the side of the center mount footrest they may come in contact with the caster possibly resulting in injury.

1. Remove the two mounting screws A that secure the button head cleat B to the extension housing C.
2. Adjust the footrest extension tube D to the desired height.
3. Secure the extension tube to the desired height with the button head cleat and mounting screws. Securely tighten.
4. Repeat steps 1-3 for the other extension tube.

6.12 Adjusting the Angle of the Manual Center Mount Footrest

**WARNING!**

– PINCH POINT EXISTS BETWEEN CENTER MOUNT FOOTREST AND CASTERS - There is limited clearance between center mount footrest and casters. The user’s feet MUST remain on the center mount footrest while operating the wheelchair. If the user’s feet are allowed to rest off the side of the center mount footrest they may come in contact with the caster possibly resulting in injury.

Release lever located towards the front or center of seat frame.
**WARNING!**
Risk of Serious Injury or Damage
Operating the wheelchair with a ground clearance of less than 75 mm (3 inches) between the footplates and the ground/floor may cause serious injury or property damage.
- ALWAYS maintain a minimum of 75 mm (3 inches) between the bottom of the footplates and ground/floor to ensure proper ground clearance while the wheelchair is in motion. If necessary, adjust the footplates height to achieve proper ground clearance. After footplates height adjustment, if the wheelchair dips forward and the footplates touch the ground while in motion, please contact your dealer for an inspection and avoid use of the wheelchair if possible.

1. Engage the release lever with one hand (not shown) and move the center mount footrest A to the desired angle with the other hand.
2. Disengage the release lever (not shown) to lock the center mount footrest in the new position.

### 6.13 Adjusting the Footplate Width of the Center Mount Footrest

1. Flip footplate A down
2. Remove the mounting screw B, nylon washer C, washer D and wave washer E securing the footplate to the extension tube F of the center mount footrest G.
3. Reposition the four 1/4 inch spacers H between the footplate and washer as necessary to achieve the desired footplate width
4. Using the mounting screw, nylon washer, washer and wave washer, secure the footplate to the extension tube.
5. Repeat STEPS 1 and 4 for the other footplate.
### Medium Narrow (One Spacer)

- **D**
- **H**
- **A**

### Medium (Two Spacers)

- **H**
- **B**
- **A**

### Medium Wide (Three Spacers)

- **H**
- **D**
- **A**

### Wide (Four Spacers)

- **H**
- **D**
- **A**

---

#### 6.14 Adjusting the Footplate Angle

1. Flip footplate up.
2. Rotate the adjustment screw **B** in or out until the desired angle is achieved.
3. Repeat STEPS 1 and 2 for the other footplate.

---

Manual Center Mount Footrest is shown for reference **A**.

Rear view of footplate **C** is shown for clarity.
6.15 Adjusting the Tension of the Flip Up Footplate

The tension can be adjusted to increase or decrease the rotation effort of the flip up footplates A.

1. Loosen the mounting screw B on the front rigging angle hinge to decrease the rotation effort.
   - DO NOT remove the footplate mounting screw.
2. Tighten the front rigging angle hinge mounting screw to increase the rotation effort.
3. Repeat STEPS 1 and 2 for the other footplate.

6.16 Removing/Installing/Adjusting the Adjustable Heel Loop

If the user’s physical or medical condition and health care provider allows, shoes should be worn when occupying the wheelchair.

6.16.1 Removing the Adjustable Heel Loop

1. Remove the mounting screw A, spacer B, washer C (not used on deluxe flip up footplate) and cap nut D securing the adjustable heel loop E to the footplate F.
2. Pull to release the hook G and loop H strips securing the adjustable heel loop to the lower footrest tube I.
3. Remove the adjustable heel loop from the front rigging.
6.16.2 Installing the Adjustable Heel Loop

When installing the adjustable heel loop, wrap the hook and loop strips wrap around the front rigging tube as shown. This will ensure the hook strip is facing towards the rear of the wheelchair.

1. Using the mounting screw A, spacer B, washer (not used on deluxe flip up footplate) C and cap nut D secure the adjustable heel loop E to the footplate F.
2. Secure the hook G and loop H strips around the lower footrest tube I. Refer to Adjusting the Adjustable Heel Loop.

6.16.3 Adjusting the Adjustable Heel Loop

1. If necessary, pull to release the hook G and loop H strips securing the adjustable heel loop E to the lower footrest tube I.
2. Determine the heel loop length and depth appropriate for the wheelchair user.

A red line J is included on the hook strip to help indicate when the hook and loop strips overlap by 1-1/2 inches (38 mm) K.

3. Ensuring at least 1-1/2 (38 mm) K inches of the loop strip connects to the hook strip, firmly press the hook and loop strips together to secure the adjustable heel loop around the lower footrest tube.
4. If necessary, repeat STEPS 1-3 to adjust the remaining adjustable heel loop.
6.17 Adjusting Armrests

6.17.1 Adjusting the Armrest Angle

1. Lift up the armrest A.
2. Loosen the jam nut B.
3. Adjust the socket screw C up or down to the desired arm angle position.
4. Tighten the jam nut.
5. To determine the same angle for the opposite armrest, count the exposed threads after the jam nut has been tightened.
6. Repeat STEPS 1-4 for opposite armrest, if necessary.

6.17.2 Adjusting the Height

1. Remove the lock knob A that secures the armrest B to the seat frame assembly C.
2. Adjust the armrest to one of four positions D.
3. Reinstall the socket screw that secures the armrest to the seat frame assembly and tighten securely.
**6.18 Adjusting the Back Angle**

1. Lift up on the release handle A and adjust seat to desired angle.
2. Let go of the release handle to lock the back in position.

**6.19 Adjusting the Headrest**

1. To raise headrest A, lift headrest Up to desired position.
   
   Headrest is locked in position when an audible “click” is heard.

2. To lower headrest, push release tab B towards the inside of the wheelchair. Lower headrest to desired position.
6.20 Checking Seating System Mounting Position

For Formula CG Seating System and Van Seat - These instructions apply to Formula CG Tilt, Recline, Tilt/Recline seating systems only.

For ASBA Seating System - These instructions apply to ASBA standard seat, power tilt only, and Formula PTO Plus.

1. Determine mounting position:
   • Wheelchairs with Swing Away Front Rigging [A] —
     a. Rotate front casters [B] forward as if the wheelchair were moving in reverse.

   • Wheelchair with Manual or Power Center Mount Front Rigging [E] -
     a. Position center mount front rigging to the lowest setting to position the footplate [F] as close as possible to the front shroud [G].
     b. Measure the gap [H] between the footplate and the front shroud.
     c. Perform one of the following:
        – Gap is 1 to 1½ inch - Formula CG seating system is in the proper mounting position.
        – Gap is Greater than 1½ inches - Formula CG seating system is not in the proper mounting position. Proceed to Adjusting Seating System in next section.

   • Wheelchair with Swing Away Front Rigging [A] —
     If wheelchair is equipped with composite footrests, point the front casters toward the footplate.

b. Measure the gap [C] between the front caster and the footplate [D]. Perform one of the following:
   – Gap is 1 to 1½ inch - Seating system is in the proper mounting position.
   – Gap is Greater than 1½ inches - Seating system is not in the proper mounting position. Proceed to Adjusting Seating System in next section.
6.21 Adjusting the Seating System Mounting Position

For Formula CG Seating System - Applies to Formula CG Tilt, Recline or Tilt/Recline seating systems only.

For ASBA Seating System - Applies to ASBA standard seat, power tilt only, and Formula PTO Plus.

For Van Seat - These instructions apply to elevate power seating (tilt elevate, tilt recline elevate, and elevate only)

1. Loosen, but DO NOT remove, the four hex screws \( A \) and locknuts \( B \) securing the seat frame mounting bracket \( C \) to the interface mounting bracket \( D \).

2. Perform one of the following to ensure the Formula CG seating system is in the proper mounting position:

   - Some front rigging and seat depth combinations may not allow for the 1-inch gap. In this situation, slide the seat frame mounting brackets as far back as possible.
   - Wheelchairs with Swing Away Front Rigging - Slide the seat frame mounting brackets as far as possible towards the rear of the wheelchair. Leave 1 to 1½-inch of clearance between the front riggings and the front casters in all caster positions).
   - Wheelchairs with Manual or Power Center Mount Front Rigging - Slide the seat frame mounting brackets as far as possible towards the rear of the wheelchair. Leave 1 to 1½-inch of clearance between the center mount front riggings and the front shroud.

3. Ensure the interface mounting brackets and the seat frame mounting brackets are flush and square.

4. Secure the seat frame mounting brackets to the interface mounting plates. Torque the four hex bolts and locknuts to 13 ft-lbs ± 20%.

5. Cycle the tilt and/or recline functions to verify wiring harnesses DO NOT obstruct the path of the system. If they do, perform one of the following:

   - Wires were damaged during inspection - Replace damaged wires.
   - Wires were not damaged during inspection - Cut tie-wraps and relocate wires to a location where they will not become damaged.