



Invacare[®] **Adjustable ASBA Seats**
Invacare[®] **Adjustable ASBA Standard Seat**
Invacare **Adjustable ASBA Power Tilt Only**
Invacare **Adjustable ASBA Formula™ PTO Plus**
Power Wheelchair Base

User Manual

EN

*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 Symbols

Warnings

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



DANGER

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



WARNING

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



CAUTION

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



IMPORTANT

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



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

1.2 Reference Documents



WARNING

Refer to 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.

MANUAL	PART NUMBER
MK6i™ Electronics Programming Guide	1141471
Adjustable ASBA Service Manual	1143238
PTO Plus Service Manual	1125031

I GENERAL

I.3 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 electronics and electrical components (excluding batteries) and powered seating actuators 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. 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.

1.4 Canada Limited Warranty

This warranty is extended only to the original purchaser who purchases this product within 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.

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 electronics and electrical components (excluding batteries) and powered seating actuators to be free from defects in materials and workmanship for a period of two (2) 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 DEFACTED, 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.

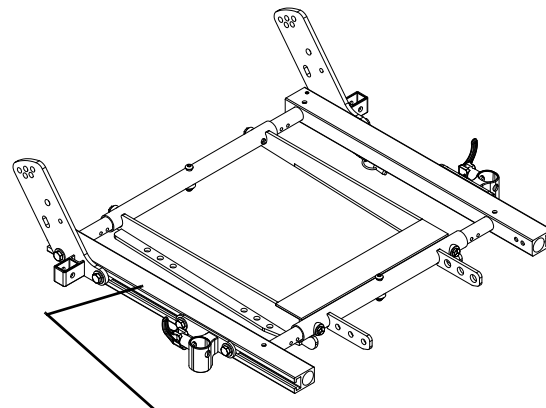
2 LABEL LOCATIONS

2 Label Locations



Refer to the user manual shipped with wheelchair base for additional label located on the wheelchair base.

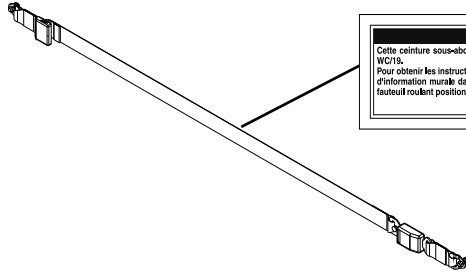
2.1 All Wheelchairs



WARNING Refer to Service Manual to reposition the seat - otherwise serious personal injury and damage will result.

P/N 1114823 Rev B - 5/10/06

2.2 Wheelchairs with TRRO



<p>⚠ MISE EN GARDE</p> <p>Cette ceinture sous-abdominale de retenue de l'occupant est conforme à la norme ANSI/RESNA WC/19.</p> <p>Pour obtenir les instructions d'utilisation, consultez le guide d'utilisateur ou s'il y a lieu la plaquette d'information murale dans le véhicule. Cette ceinture sous-abdominale doit être utilisée avec un fauteuil roulant positionné vers l'AVANT seulement.</p> <p>PIN 1134840 REV B</p>	<p>⚠ WARNING</p> <p>This Occupant restraint/pelvic belt conforms with ANSI/RESNA WC19.</p> <p>For operating instructions, refer to owner's manual, or if equipped, wall-mounted vehicle placard. This pelvic belt is for use with wheelchair in FORWARD facing direction only.</p> <p>PIN 1134840 REV B</p>	<p>SURE-LOK[®]</p> <p>PELVIC BELT TYPE 1</p> <p>FE200974-105INV</p> <p>MXXXXXX XXXXX</p> <p>CONFORMS TO APPLICABLE REQUIREMENTS OF SAE J2249, ADA, FMVSS, BQ K164-1 AND CSA 2265</p>
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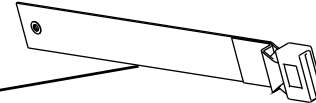
2.3 Wheelchairs without TRRO



Auto style seat positioning strap shown. This label is also on the airline style seat positioning strap.

⚠ WARNING

This seat/chest positioning strap is **NOT** intended for occupant restraint in a moving motor vehicle, and **DOES NOT** conform with ANSI/RESNA WC/19. If signs of wear appear, positioning strap **MUST** be replaced **IMMEDIATELY**.



2 LABEL LOCATIONS

2.4 Pronto® M91™ with Formula PTO Plus Seating System

WARNING ALWAYS reinstall the spring safety bracket AND tether when servicing the PTO Plus seating system is complete. These safety devices must be in place at all times, otherwise, injury or damage may occur. P/N 1125062

WARNING
If tilt function is not operating and is in the down (seated) position, PRIOR to servicing the device, contact Invacare Technical Services for instructions on how to safely service the tilt system, actuator or spring assist module. Call 800-832-4707. P/N 1125066

WARNING
Pinch Point.
1079203

Rear View of Actuator

WARNING
DO NOT remove the hardware attaching the actuator or spring assist to the wheelchair frame, unless the seat has been tilted to an angle greater than 20°. Otherwise, injury or damage may occur. Refer to the seating system service manual for complete instructions. 1122398 Rev B - 02/05

WARNING
DO NOT remove the screws attaching the tilt mechanism to the base unless it has been tilted to an angle greater than 20°. Otherwise, injury or damage may occur. 1125052 Rev A

NOTICE
Ensure prop rod properly engages the support bracket before allowing prop rod to support weight of seat assembly.
➔
1118368 Rev. A 04/03

3 Safety

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

3.1 General Guidelines



WARNING

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

Procedures other than those described in this manual must be performed by a qualified technician.



ACCESSORIES WARNINGS

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 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.



NOTICE

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 highly recommends working with a certified rehab technology supplier and/or a member of NRRTS or RESNA.

3 SAFETY

3.1 Operation Information

Setup



WARNING

A qualified technician must perform the initial set up of this wheelchair. Also, a qualified technician must perform all procedures in the service manual.

Performance adjustments should only be made by professionals of the healthcare field or persons fully conversant with this process and the driver's capabilities. Incorrect settings could cause injury to the driver, bystanders, damage to the wheelchair and to surrounding property.

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. Repeat this procedure until the wheelchair performs to specifications.

Transport



WARNING

DO NOT operate on roads, streets or highways.

WHEELCHAIR TIE-DOWN RESTRAINTS AND SEAT RESTRAINTS (TRRO OR TRBKTS)

Only use the transport brackets included with TRRO or TRBKTS for the purposes described in this manual.

TRRO (Transport Ready Option) - TRRO includes four factory-installed transport brackets and a wheelchair anchored pelvic strap. TRRO has been crash-tested in accordance with ANSI/RESNA WC Vol I Section 19 Frontal Impact Test requirements for wheelchairs with a 130 lb crash test dummy, which corresponds to a person with a weight of 125 to 165 lbs for junior seat sizes or a 168 lb crash dummy, which corresponds to a person with a weight of 165 to 300 lbs for adult seat sizes.

TRBKTS (Wheelchair Transport Brackets) - TRBKTS includes four factory-installed wheelchair transport brackets. TRBKTS has not been crash-tested in accordance with WC 19. Use these transport brackets only to secure an unoccupied wheelchair during transport.

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.

Refer to the transport ready section of the wheelchair base user manual for more information about transporting the wheelchair.

STAIRWAYS AND ESCALATORS

DO NOT use an escalator to move a wheelchair between floors. Serious bodily injury may occur.

DO NOT attempt to lift the wheelchair by any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a wheelchair may result in injury to the user or damage to the wheelchair.

3 SAFETY

Powered Seating



WARNING

This seating system has been custom designed and will be assembled to the wheelchair base before delivery to the user. The information contained in this manual is for maintaining and adjusting the seating system. There are very few adjustments that can safely be made by the user. If there is a procedure or adjustment that needs to be performed on the seating system that is not in this manual, **DO NOT** perform that procedure. Have the seating system serviced by a qualified technician.

Use caution when driving in a tilted position.

DO NOT operate the seating system while on an incline.

DO NOT operate the seating system while the wheelchair is moving.

NEVER operate the wheelchair while in any tilted position over 20° relative to the vertical position. If the drive lock-out does not stop the wheelchair from operating in a tilted position over 20° relative to vertical, **DO NOT** operate the wheelchair. **DO NOT** attempt to adjust the drive lock-out. Have the wheelchair serviced by a qualified technician.

Use only the controls listed in Using the Powered Seating Switch on page 32 to activate the tilt 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.

Specific actuator controls are noted for each function or combination throughout this manual.

DO NOT operate tilt seat around children.

ALWAYS keep hands and feet out from underneath tilt seat - otherwise serious injury may result.

DO NOT tip the seating system/wheelchair without assistance.

DO NOT store items under seat.

Cables must be routed and secured properly to ensure that cables **DO NOT** become entangled and damaged during normal operation of seating system.

Systems equipped with power legrests only - **NEVER** allow items to become trapped between the legrest assemblies. Otherwise, damage to the power legrest could occur.

Repair or Service Information



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.

Wheelchairs should be examined during maintenance for signs of corrosion (water exposure, incontinence, etc.). Electrical components damaged by corrosion should be replaced immediately.

Wheelchairs that are used by incontinent users and/or are frequently exposed to water may require replacement of electrical components more frequently.

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.

TDX[®] OR TDX SP, SR, SI, SC and SPREE WHEELCHAIR BASES ONLY

A pinch point exists between walking beam/head tube cap and telescoping tube when at the lowest seat to floor height.

POWERED SEATING SYSTEMS ONLY

Pinch point may occur when returning the tilted seat to the full upright position. Make sure the hands and body of the occupant, attendants and bystanders are clear of all pinch points before returning the tilted seat to the full upright position.

PTO PLUS ONLY

If tilt function is not operating and is in the down (seated) position, **PRIOR** to servicing the device, refer to the seating system service manual, part number 1125031, or contact Invacare Technical Services for instructions on how to safely service the tilt system, actuator or spring assist module. Call 800-832-4707.

ALWAYS reinstall the spring safety bracket **AND** tether when servicing the PTO Plus seating system is complete. These safety devices **MUST** be in place at all times, otherwise, injury or damage may occur.

3 SAFETY

3.2 Safety/Handling



WARNING

Refer to wheelchair base user manual for additional safety and operation information.

The seat positioning strap is a positioning strap **ONLY**. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety straps. If signs of wear appear, strap **MUST** be replaced **IMMEDIATELY**.

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 NOT attempt to move up or down an incline with water, ice or oil film.

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.

DO NOT attempt to reach objects if you have to move forward in your seat.

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.

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.

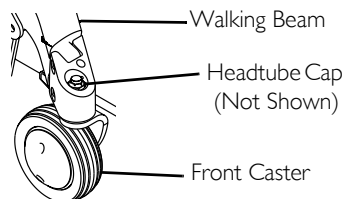
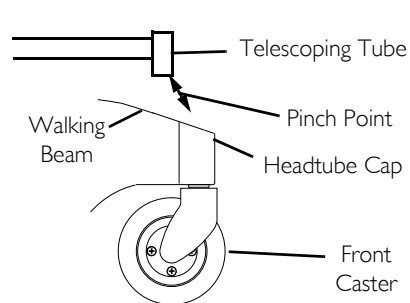
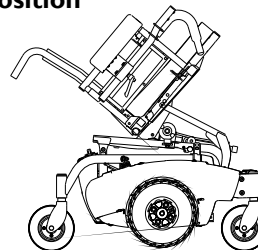
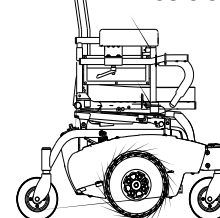
Pinch Points

**WARNING**

TDX and TDX SP, SR, SI, SC and Spree Wheelchairs Only - A pinch point exists between head tube cap and walking beam.

TDX and TDX SP, SR, SI, SC and Spree Wheelchairs Only - A pinch point exists between walking beam/head tube cap and telescoping tube when the seat is in the lowest seat to floor height.

POWERED SEATING SYSTEMS ONLY - Pinch point may occur when returning the tilted seat to the full upright position. Make sure the hands and body of the occupant, attendants and bystanders are clear of all pinch points before lowering seat or returning the tilted seat to the full upright position.

**Full Tilt Position****Full Upright Position**

3 SAFETY

Stability and Balance



WARNING

ALWAYS wear your seat positioning strap. The seat positioning strap is a positioning strap **ONLY**. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety straps. If signs of wear appear, strap **MUST** be replaced **IMMEDIATELY**.

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 the frame of the wheelchair.

Footplates and Front Rigging



WARNING

DO NOT use the footplates as a platform. 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.

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.

Reaching, Bending - Backward



WARNING

DO NOT lean over the top of the back upholstery. This will change your center of gravity and may cause you to tip over.

Transferring To and From Other Seats



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.

Storage



WARNING

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

DO NOT use if the joystick boot is torn or cracked. If the joystick boot becomes torn or cracked, replace IMMEDIATELY.

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.

Weight Limitation



WARNING

Refer to [Typical Product Parameters](#) on page 26 and Typical Product Parameters in the manual shipped with the wheelchair base to determine the weight limit (total combined weight of user and any attachments) of your wheelchair model. DO NOT exceed the limit - otherwise, injury or damage may result.



3 SAFETY

3.3 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; and
3. Long-range transmitters and transceivers, such as commercial broadcast transmitters (radio and TV broadcast antenna towers) and amateur (HAM) radios.
 -  Other types of hand-held 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.

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 hand-held 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

- 1) DO NOT operate hand-held 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;
- 2) Be aware of nearby transmitters, such as radio or TV stations, and try to avoid coming close to them;
- 3) If unintended movement or brake release occurs, turn the powered wheelchair OFF as soon as it is safe;
- 4) 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
- 5) Report all incidents of unintended movement or brake release to the powered wheelchair manufacturer, and note whether there is a source of EMI nearby.

Important Information

- 1) 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);
- 2) This device has been tested to a radiated immunity level of 20 volts per meter.
- 3) The immunity level of the product is unknown.

Modification of any kind to the electronics of this scooter as manufactured by Invacare may adversely affect the EMI immunity levels.

4 Technical Data

4.1 Typical Product Parameters



All dimensions are $\pm .50$ inches unless otherwise indicated.

Seat

	ADJUSTABLE ASBA ADULT	ADJUSTABLE ASBA JUNIOR	FORMULA PTO PLUS	POWER TILT ONLY
Seat Width Range:	16 to 20 inches or 20 to 24 inches	12 to 16 inches	16 to 22 inches	16 to 22 inches in 1-inch increments (Curved Back) 12 to 22 inches in 1-inch increments (Back Post Only)
Seat Depth Range (1 inch increments):	16 to 22 inches	12 to 18 inches	16 to 22 inches	16 to 22 inches in 1-inch increments (Curved Back) 12 to 22 inches in 1-inch increments (Back Post Only)
Seat-to-Floor Height			18 to 20 inches $\pm \frac{1}{4}$ inch	0° Seat Angle: 18.25 \pm .25 inches 5° Seat Angle: 19.25 \pm .25 inches
*16-inch deep frame with AT5544 Legrests				

4 TECHNICAL DATA

	ADJUSTABLE ASBA ADULT	ADJUSTABLE ASBA JUNIOR	FORMULA PTO PLUS	POWER TILT ONLY
Overall Width With Joystick: Without Joystick			27 inches (with TRSS)	22.5 to 26.2 inches 22.25 to 26.25 inches
Overall Height:			37 to 45 inches	38.75 inches
Overall Length with Front Riggings			43¼ inches	*41 inches
Turning Radius with Front Riggings			28 inches	
Back Height Range:	12 to 24 inches	12 to 22 inches	16 to 24 inches	12 to 24 inches in 1-inch increments
Back Angle Range:	85° to 105° in 5° increments	85° to 105° in 5° increments	85° to 105° in 5° increments	85° to 105° in 5° increments
Seat Pan Angle:	Adjustable Seat Angle (0° to 10°)		0° or 5°	
Tilt Range 0° Seat Pan Angle: 5° Seat Pan Angle:			0° to 55° 5° to 60°	0° to 45° ± 3° 5° to 50° ± 3°
Armrests:	Flip Back, Fixed or Adjustable Height (Desk and Full Length)		Adjustable Angle, Height and Depth	Adjustable Height (10.5 to 14.5 inches) - Desk or Full Length
Upholstery Options:	Nylon			
Seat Cushion:	Cushion (Optional)			
Front Riggings:	Center mount, Swingaway, Manually Elevating, Power Elevating			
Footrests:	Telescoping Front Rigging Supports, 2-inch and 4-inch long Pivot Slide Tube			
*16-inch deep frame with AT5544 Legrests				

4 TECHNICAL DATA

Weight



WARNING

If the seating system is mounted onto a power wheelchair that has a weight limitation greater than 275 lbs, the weight limitation of the power wheelchair is 275 lbs. Example: The power wheelchair has a 300 lb weight limitation, the seating system still has a weight limitation of 275 lbs, so the power wheelchair now has a 275 lb weight limitation.

	ADJUSTABLE ASBA ADULT	ADJUSTABLE ASBA JUNIOR	FORMULA PTO PLUS	POWER TILT ONLY
**Seat Weight:	43 lbs	36 lbs	25 lbs	65 lbs
Maximum Weight Limitation	Up to 400 lbs	Up to 150 lbs	Up to 275 lbs Up to 375 lbs (with Spring Assist)	On Torque™ SP systems: 200 lbs On all other systems: 250 lbs



**Adult seat weight based on 18 x 18 inch seat frame. Junior seat weight based on 12 x 12 inch seat frame.

Weight limitation is total weight (user weight plus any additional items that the user may require [back pack, etc.]).

Example: If weight limitation of the wheelchair is 300 lbs and additional items equal 25 lbs, subtract 25 lbs from 300 lbs this means the maximum weight limitation of the user is 275 lbs.

5 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 of the Electronic Control Unit is to be performed only by a qualified technician. The final adjustments of the controller may affect other activities of the wheelchair. Damage to the equipment could occur under these circumstances.

5.1 Preparing the Joystick for Use



For this procedure, refer to FIGURE I.

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 Joystick on page 71.

1. Turn the adjustment lock lever to release the adjustment lock from joystick mounting tube.
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.

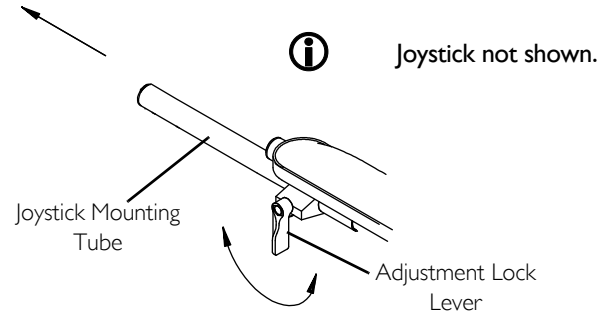


FIGURE I Preparing the Joystick for Use

5 USAGE

5.2 A Note About Drive Lock-Out





WARNING

NEVER operate the wheelchair while the back is in any tilted/back angle position over 20° relative to the vertical position. If the drive lock-out does not stop the wheelchair from operating in a tilt/back angle position over 20° relative to the vertical position, DO NOT operate the wheelchair. 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 or tilt system, tilt 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. Otherwise injury or damage may occur.

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 tilt, back angle and/or surface angle.

Refer to [Typical Product Parameters](#) on page 26 for tilt angle ranges.

5.3 Operating Powered Seating Systems



GENERAL WARNINGS

Refer to A Note About Drive Lock-Out on page 30 before performing this procedure.

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.

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

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.

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

5 USAGE



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

Using the Powered Seating Switch



The powered seating switch can be used with all joysticks.

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.
2. Press the powered seating switch once to activate the actuator.
3. Press the powered seating switch again (after at least 3 seconds) to activate the actuator in the opposite direction.

Using the MK6i SPJ+ w/ACC Joystick



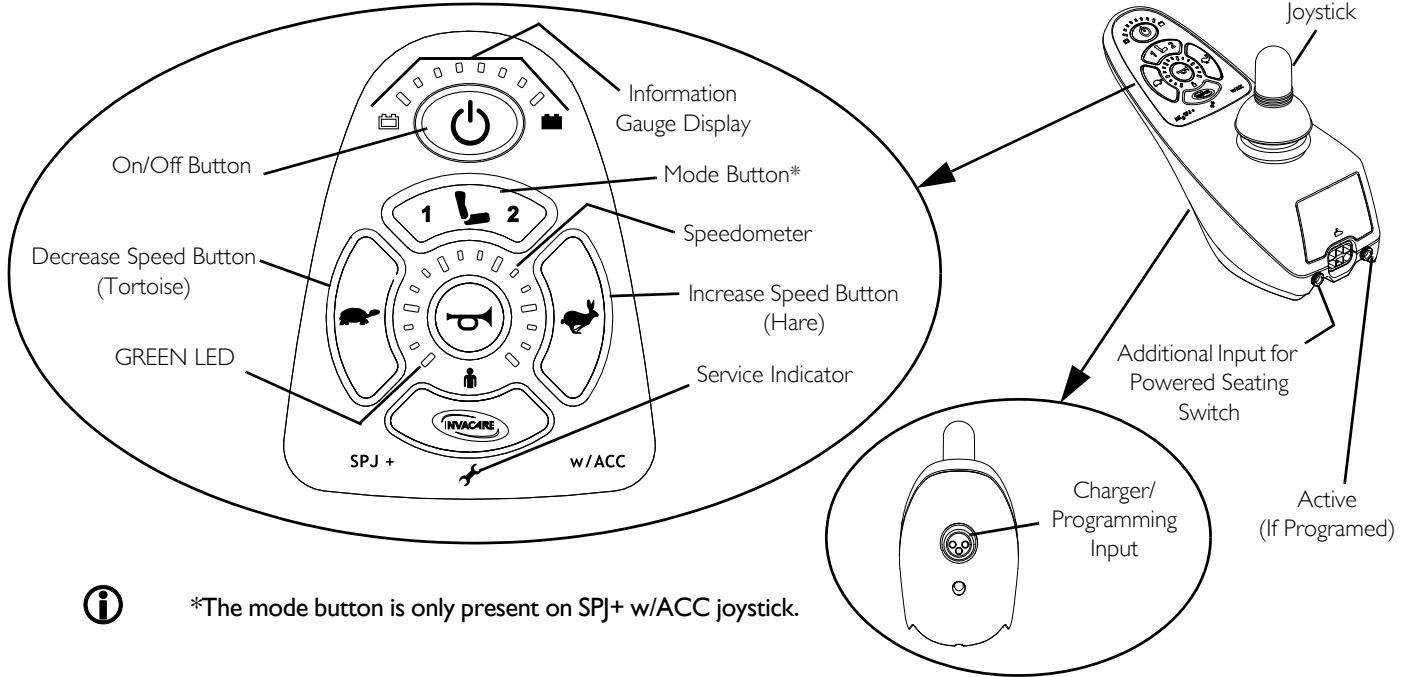
For this procedure, refer to FIGURE 2 on page 33.

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



The LED will light up with a circle around it.

3. Move the joystick:
 - Forward - Tilts the seat back.
 - Backward - Tilts the seat upright.




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


FIGURE 2 Using the MK6i SPJ+ w/ACC Joystick


5 USAGE


Using the CMPJ+ Joystick





 For this procedure, refer to FIGURE 3 on page 35.

1. Make sure the wheelchair is on a level surface.


 The drive select toggle switch is located on the left side, below the LCD. 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 (Detail “A”).
4. Four of the following icons will display when Actuator Control Switch Mode is selected:

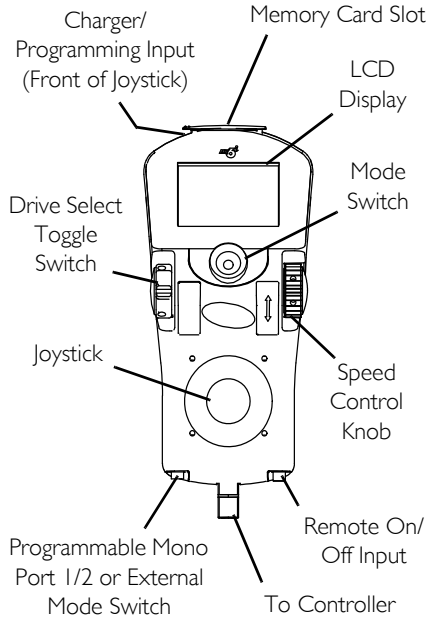
 The location of the icons indicates the joystick direction or quadrant (Detail “B”).
The three icons indicate up/down, up or down, respectively.

ICON	DESCRIPTION
	Tilt Operations
	Combined Power Leg Operations
	Right Leg Operations
	Left Leg Operations
	No powered seating operation has been programmed for this quadrant.

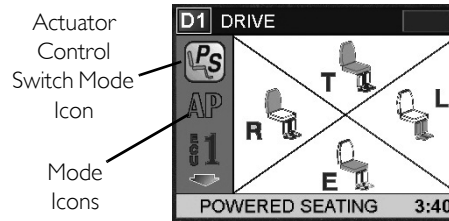
5. Select the desired operation using the joystick or an equivalent switch.

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

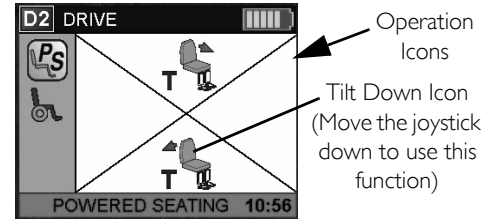
CMPJ+ Joystick Switches and Indicators



DETAIL "A" - SELECTING THE ACTUATOR CONTROL SWITCH MODE



DETAIL "B" - ACTUATOR CONTROL SWITCH MODE EXAMPLE SCREEN



DETAIL "C" - EXAMPLE SCREEN DURING POWERED SEATING OPERATION

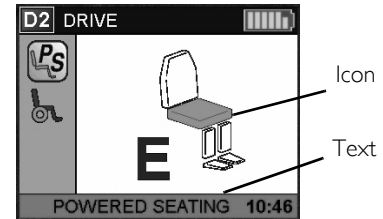
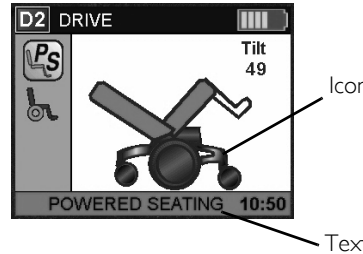


FIGURE 3 Using the CMPJ+ Joystick

5 USAGE

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. Refer to [Mode Switch](#) on page 37.

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.

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.

Memory Card Slot

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

5 USAGE

5.4 About Front Riggings



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.

DO NOT stand on the flip-up footboard. When getting in or out of the wheelchair, make sure that the flip-up footboard is in the upward position.

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.

Installing/Removing Footrests

PH904A, PHAL4A, 70° and PW93

1. Turn the footrest to the side (open footplate is perpendicular to wheelchair).
2. Install the hinge plates on the footrest onto the hinge pins on the wheelchair frame.
3. Push the footrest 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.

4. Repeat STEPS 1-3 for other footrest assembly.
5. To remove the footrest, push the footrest release lever inward, rotate footrest outward.
6. Adjust footrest height, if desired. Refer to [Footrest Height Adjustment](#) on page 51.

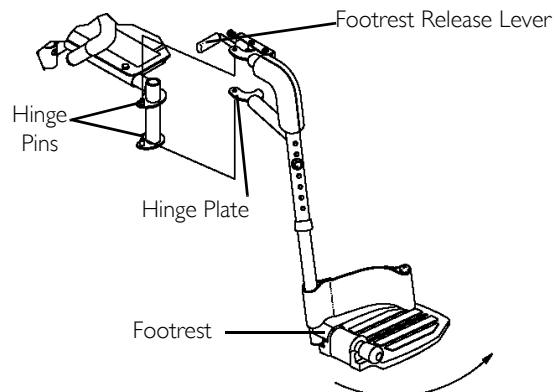


FIGURE 4 Installing/Removing Footrests - Ph904A, Phal4A, 70° and pw93

70° Taper

1. Turn the footrest to the side (open footplate is perpendicular to wheelchair).
2. Insert footrest mounting pin into mounting tube.
3. Push the footrest 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.

4. Repeat STEPS 1- 3 for the other footrest assembly.
5. To remove the footrest, push the footrest release lever inward, rotate footrest outward.
6. Adjust footrest height, if desired. Refer to Footrest Height Adjustment on page 51.

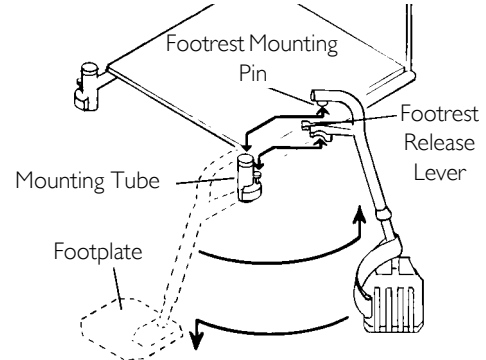


FIGURE 5 Installing/Removing Footrests - 70° Taper

5.5 Raising/Lowering Elevating Front Riggings

1. Perform one of the following:
 - Raising - Pull back on the release lever 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.

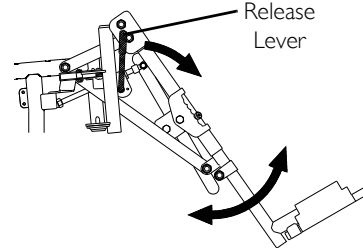


FIGURE 6 Raising/Lowering Elevating Front Riggings

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5.6 Installing/Removing Elevating Legrests

Installing

1. Turn legrest to side (open footplate is perpendicular to wheelchair).
2. Install the legrest hinge plates onto the hinge pins on the wheelchair frame.
3. Rotate legrest toward the inside of the wheelchair until it locks in place.

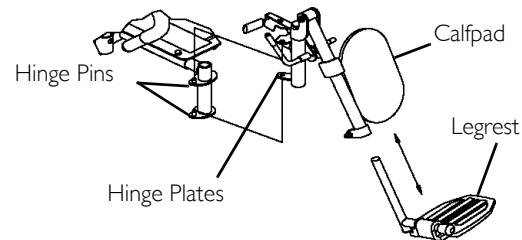


The footplate will be on the inside of the wheelchair when locked in place.

4. Repeat STEPS 1-3 for the opposite legrest.
5. After the user is seated in wheelchair, adjust footplate to correct height by loosening nut and sliding the lower footrest assembly UP or down until desired height is achieved.

Removing

1. Push the legrest release handle toward the inside of the wheelchair (facing the front of the wheelchair) and swing the legrest to the outside of the wheelchair.
2. Lift UP on the legrest and remove from the wheelchair.
3. Repeat STEPS 1- 2 for opposite side of wheelchair.



Legrest Release Handle

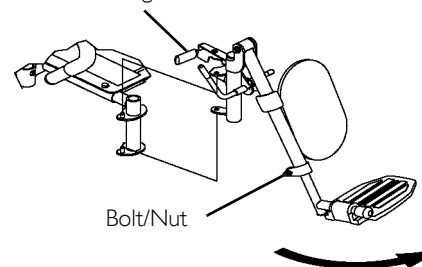


FIGURE 7 Installing/Removing Elevating Legrests

5.7 Raising/Lowering Elevating Legrests and/or Adjusting Calfpads

Raising/Lowering Elevating Legrests

1. Perform one of the following:
 - Raising - Pull back on the release lever until the leg is at the desired height.
 - Lowering - Support leg with one hand and push release lever downward with other hand.

Adjusting Calfpads

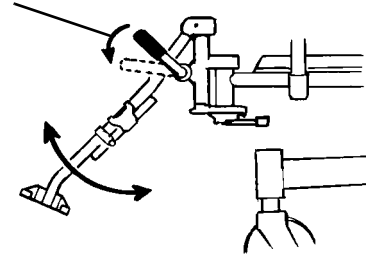
1. Turn the calfpad towards the outside of the wheelchair.
2. Slide the calfpad UP or down until the desired position is obtained.



If one of the top two calfpad 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. Refer to [Raising/Lowering Elevating Legrests](#) on page 41.

3. Turn the calfpad towards the inside of the wheelchair.

Legrest to Normal Position



Adjust Calfpad

Secure Calfpad

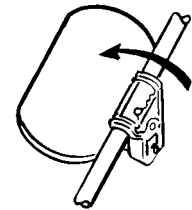
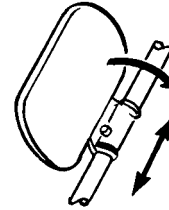


FIGURE 8 Raising/Lowering Elevating Legrests and/or Adjusting Calfpads

5 USAGE

5.8 Removing/Installing the Manual Center Mount Footrest

Removing

1. Remove the rigging pivot pin that secures the footrest to the mounting bracket of the seat frame.
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.

Installing

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

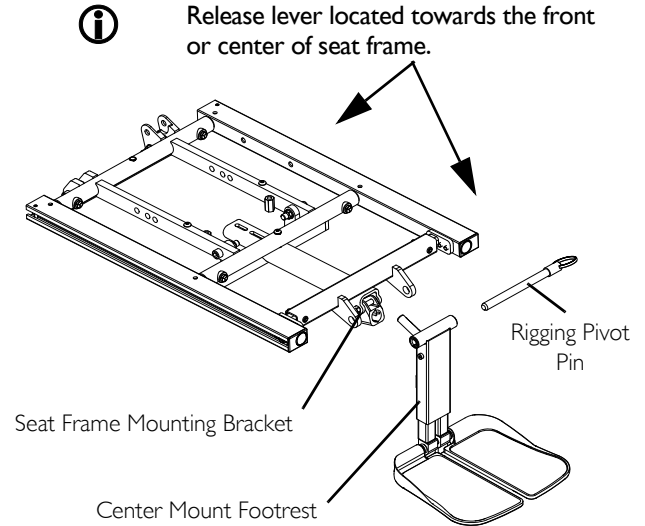


FIGURE 9 Removing/Installing the Manual Center Mount Footrest

5.9 Installing/Removing the Power Elevating Legrests



WARNING

To prevent personal injury, always verify proper positioning of legs and feet prior to use. Individual user weight may impact the rate of travel for each legrest assembly. If simultaneous operation is desired, select a speed which allows for the most uniform travel.

DO NOT insert fingers between legrest components, otherwise personal injury may occur.

CAUTION

Never allow items to become trapped between the legrest assemblies, otherwise damage to the power legrests may occur. Ensure that all parts of both power legrests are clear of any obstructions before raising and lowering, otherwise damage to the power legrests may occur.



Refer to FIGURE 10 on page 44.

Installing the Power Elevating Legrests

1. Turn power legrest to side (open footplate is perpendicular to wheelchair) (Detail “A” of FIGURE 10).
2. Insert the mounting pin of power legrest into the mounting hole of the seat frame (Detail “A” of FIGURE 10).



Make sure the legrest sits flush on the seat frame.

3. Rotate the power legs toward the INSIDE of the wheelchair until it locks in place.



The footplate will be on the INSIDE of the wheelchair when locked in place.

4. Repeat STEPS 1-3 for the opposite legrest.
5. Connect power legrest connector to jumper cable (Detail “B” of FIGURE 10).

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Removing the Power Elevating Legrests

1. Disconnect power legrest connector from jumper cable.
2. Push legrest release handle and swing legrest to the outside of the wheelchair.
3. Lift up on powered legrest and remove from wheelchair.
4. Repeat STEPS 1-3 for opposite power legrest.

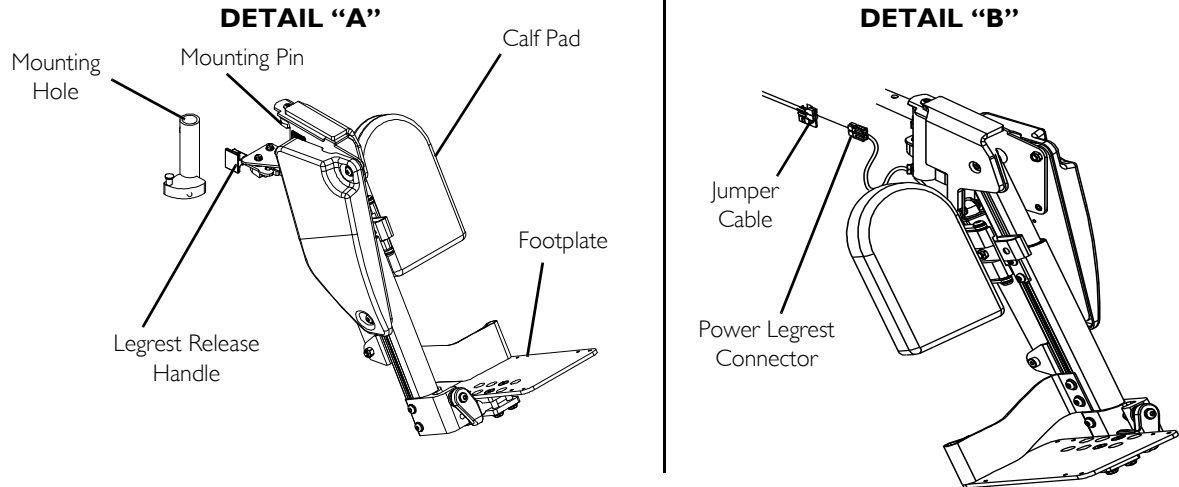


FIGURE 10 Installing/Removing the Power Elevating Legrests

5.10 Installing/Removing Flip Back Armrests



WARNING

Make sure the flip back armrest release and height adjustment levers are in the locked position before using the wheelchair.



Flip back armrest release lever must be in the unlocked (up-horizontal) position when placing the armrest into the arm sockets.

Installing

1. Visually inspect to ensure flip back armrest release lever is in the unlocked (up-horizontal) position.
2. Slide the flip back armrest into the arm sockets on the seat frame.
3. Install the quick-release pin through the rear arm socket and flip back armrest.
4. Lock the flip back armrest by pressing the flip back armrest release lever into the down (vertical) position.
5. Repeat STEPS 1-4 for the opposite flip back armrest.

Removing

1. Unlock the flip back armrest by positioning the flip back armrest release lever into the up (horizontal) position.
2. Remove the quick-release pin that secures the flip back armrest to the rear arm socket.
3. Pull up on the flip back armrest and remove the armrest from the arm sockets.
4. Repeat STEPS 1-3 for the opposite flip back armrest, if necessary.

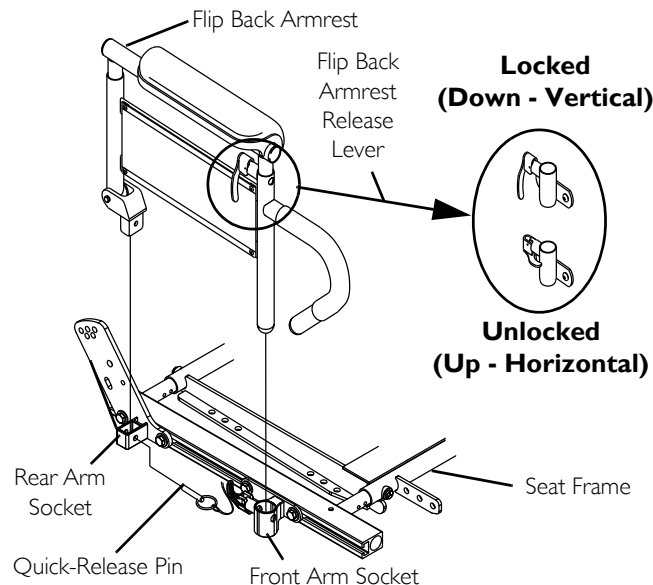


FIGURE 11 Installing/Removing Footrests

5 USAGE

5.11 Adjusting Flip Back Armrests



WARNING

Make sure the flip back armrest release and height adjustment levers are in the locked position before using the wheelchair.

Positioning Flip Back Armrests for User Transfer

1. Unlock the flip back armrest by pulling the armrest release lever into the up (horizontal) position.



WARNING

Armrest release lever **MUST** remain in the horizontal position during transfer, otherwise injury may result.

2. Pull up on the flip back armrest and remove the armrest from the front arm socket.
3. Continue to pull up on the flip back armrest until the armrest is out of the way.
4. Repeat STEPS 1-3 for opposite flip back armrest, if necessary

Positioning Flip Back Armrests for Use

1. Make sure the flip back armrest release lever is in the up (horizontal) position.
2. Install the flip back armrest into the front arm socket.
3. Lock flip back armrest by pressing flip back armrest release lever into the down (vertical) position.
4. Lift up on flip back armrest to make sure the armrest is locked in place.
5. Repeat STEPS 1-4 for opposite flip back armrest, if necessary.

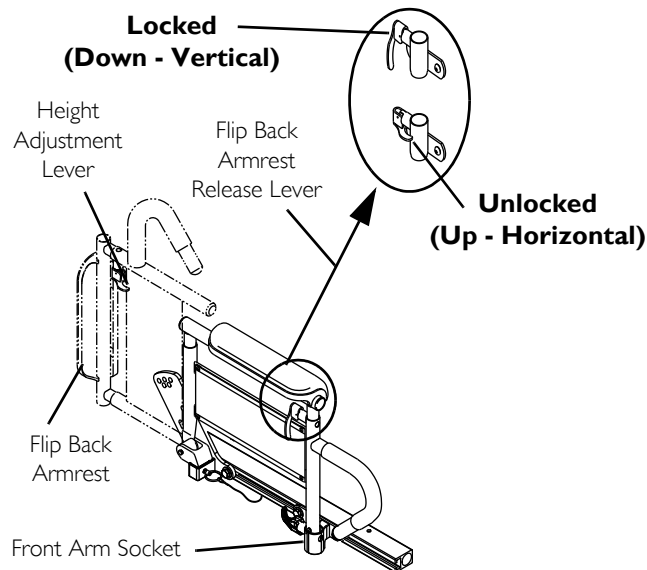


FIGURE 12 Adjusting Flip Back Armrests

Adjusting

1. Unlock flip back armrest by pulling height adjustment lever into the up (horizontal) position.
2. Adjust the flip back armrest to the desired height.
3. Lock flip back armrest by pushing height adjustment lever into the down (vertical) position.

5.12 Using Non-Locking Cantilever Arms



WARNING

DO NOT use lap trays with non-locking cantilever arms.

1. Pull the end of the cantilever arm down to lower the cantilever arm.
2. Pull the end of the cantilever arm up to move it out of the way.

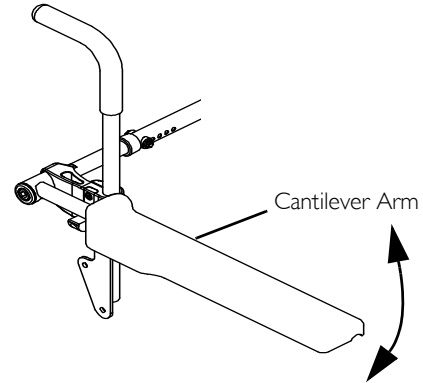


FIGURE 13 Using Non-Locking Cantilever Arms

5 USAGE

5.13 Operating the Manual Recliner Option



WARNING

NEVER operate the wheelchair while in any recline position over 105° relative to the seat frame. If the limit switch does not stop the wheelchair from operating in a recline position greater than 105° relative to the seat frame, DO NOT operate the wheelchair. Have the limit switch adjusted by a qualified technician.

Both gas cylinders MUST be operational and adjusted properly BEFORE using the recliner. DO NOT operate the recliner option if only one of the gas cylinders is operational or adjusted properly.

TO HEALTHCARE PROFESSIONALS/ASSISTANTS:

Make sure the occupant of the wheelchair is properly positioned.

When returning the occupant of the wheelchair to the full upright position, more body strength will be required for approximately the last twenty degrees of incline (reverse recline). Make sure to use proper body mechanics (use your legs) or seek assistance if necessary to avoid injury.

1. Make sure the wheelchair is on a level surface.
2. Inform the occupant of the wheelchair that the wheelchair is about to be reclined.
3. Stand behind the wheelchair and grasp both back canes firmly.
4. Pull up on the handles of the recliner cable assemblies to release the gas cylinders.
5. Slowly, push down on the back canes while squeezing the handles of the recliner cable assemblies in a continuous motion.
6. When the back reaches the desired angle, slowly let go of the handles of the recliner cable assemblies.
7. To return the back to the full upright position, reverse the above steps keeping in mind proper body mechanics.

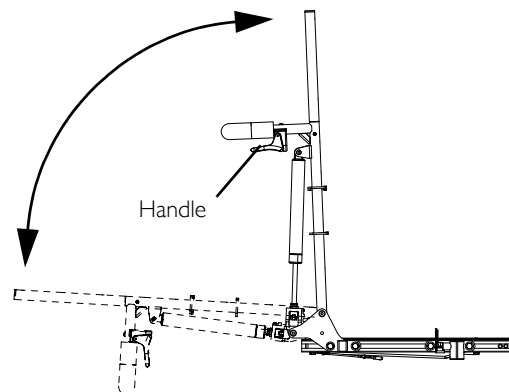


FIGURE 14 Operating the Manual Recliner Option

5.14 Operating the Manual Tilt Option (TDX Spree Only)



WARNING

NEVER operate the wheelchair while the back is in any tilted/back angle position over 20° relative to the vertical position. If the drive lock-out does not stop the wheelchair from operating in a tilt/back angle position over 20° relative to the vertical position, DO NOT operate the wheelchair. 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 or tilt system, tilt 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. Otherwise injury or damage may occur.

Make sure the occupant of the wheelchair is properly positioned in the wheelchair BEFORE using the tilt-in-space to maintain maximum stability and safety.

The wheelchair MUST be operated by an assistant when in any tilt position.

Always engage both wheel locks while using the manual tilt option.

Always wear your positioning strap. If signs of wear appear, strap must be replaced immediately.

ALWAYS make sure that the wheelchair is stable before using the manual tilt option. Rear wheels may have to be repositioned rearward depending on the degree of tilt required. ALWAYS ensure stability before using maximum amount of tilt. test wheelchair before it is occupied by the end user to ensure safety.

DO NOT operate the manual tilt mechanism if the release levers and cables are not properly adjusted to ensure that the wheelchair holds the tilted position. For adjustments on the manual tilt mechanism, refer to [Adjusting the Manual Tilt Cable Assembly](#) on page 61.

A pinch point may occur when returning the tilted seat to the full upright position. Make sure the hands and body of the occupant, attendants and bystanders are clear of all pinch points before returning the tilted seat to the full upright position.

5 USAGE



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

- CMPJ+ Joysticks Only - ⚠ TILT WARNING or ⚠ SPM 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. 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 tilt, back angle and/or surface angle.

Tilt is a term used to define the angle between the seat rails and the ground/floor.

To tilt the seat parallel back to the upright position, reverse the following procedure.

1. Place the wheelchair on a level surface.
2. Inform the occupant of the wheelchair that the wheelchair is about to be tilted and remind them to lean back.
3. Make sure the occupant's hands and body are clear of all pinch points.
4. Stand behind the wheelchair and grasp both release levers on the stroller handle.
5. Pull up on the two tilt release levers to disengage the manual tilt system.
6. Slowly, push down on the stroller handle while holding on the release levers in a continuous motion.
7. When the seat reaches the desired angle, slowly let go of the two release levers to engage the manual tilt system.

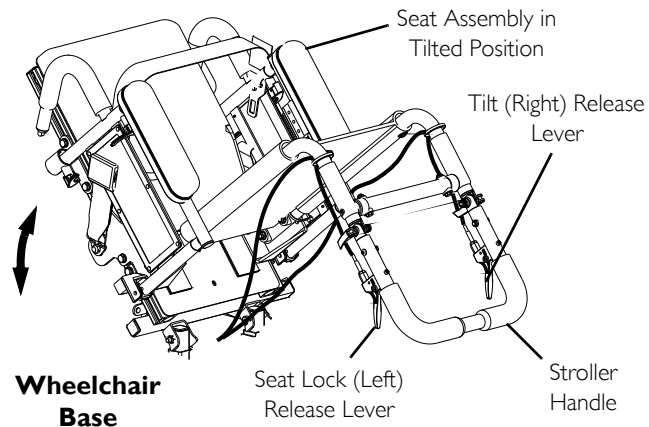


FIGURE 15 Operating the Manual Tilt Option (TDX Spree Only)

6 Adjustment



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.

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.

CAUTION

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

6.1 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.

PH904A and PHAL4A Front Riggings

1. Loosen, but **DO NOT** remove, the lug bolt and locknut that secure the lower footrest to the footrest support.
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.

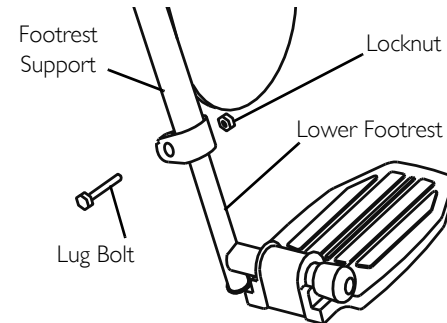



FIGURE 1 Footrest Height Adjustment

6 ADJUSTMENT

70° and PW93

1. Remove any accessory from the footrest(s).
 Lay the footrest on a flat surface to simplify this procedure.
2. Remove the footrest from the wheelchair. Refer to [Installing/Removing Footrests](#) on page 38.
3. Remove the mounting screw, washers and locknut that secure the lower footrest assembly to the upper footrest support (FIGURE 2).
4. Reposition the lower footrest to the desired height.
5. Reinstall the mounting screw, 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 footrest(s) onto the wheelchair. Refer to [Installing/Removing Footrests](#) on page 38.
8. Reinstall any accessory onto the footrest(s).

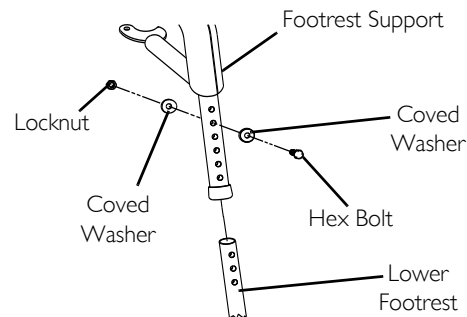


FIGURE 2 Footrest Height Adjustment - 70° and PW93

70° Taper

1. Remove any accessory from the footrest(s).
2. Remove the footrest from the wheelchair. Refer to [Installing/Removing Footrests](#) on page 38.

i Lay the assembly on a flat surface to improve access to the hardware.
Note the position of the spacers before disassembly.

3. Remove the mounting screw and covered spacer that secures the lower footrest assembly.
4. Position the footrest assembly to the desired height.
5. Secure lower footrest assembly with existing mounting screw and covered spacer. Securely tighten.

i Make sure spacers are positioned properly when reassembling to prevent damage to the frame mounting tubes.

6. Reinstall the footrest(s) onto the wheelchair. Refer to [Installing/Removing Footrests](#) on page 38.
7. Reinstall any accessory onto the footrest(s).

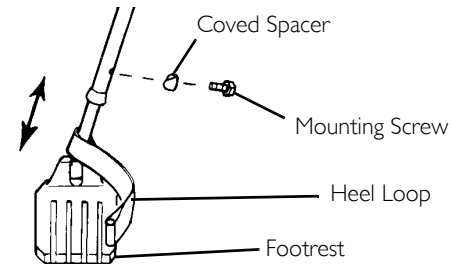


FIGURE 3 Footrest Height Adjustment - 70° Taper

6 ADJUSTMENT

6.2 Adjusting Adjustable Angle Flip-Up Footplates

Depth Adjustment

i For this procedure, refer to FIGURE 4 on page 54. Observe the angle of the footplate for reinstallation. The settings for positioning the footplates on the half clamps may vary for each footplate.

1. Remove the two flat screws, washers and locknuts that secure footplate to the half clamp.
2. Move footplate to one of four mounting positions.

i If desired depth is still not obtained, rotate the half clamp on the footplate hinge 180°.

3. Retighten the two flat screws, washers and locknuts.

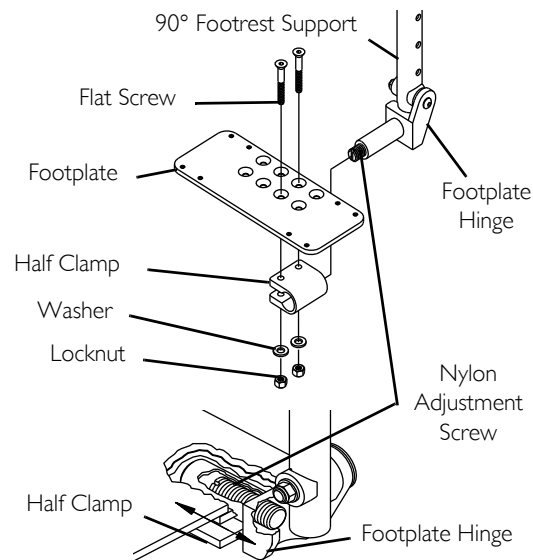


FIGURE 4 Adjusting Adjustable Angle Flip-Up Footplates

Angle Adjustment



For this procedure, refer to FIGURE 4 on page 54 and FIGURE 5.

Observe the angle of the footplate for reinstallation.

The settings for positioning the footplates on the half-clamps may vary for each footplate.

1. Loosen, but DO NOT remove, the two flat screws, washer and locknuts that secure the footplate to the footplate hinge (FIGURE 4).
2. Position the footplate to the necessary angle to accommodate the user (FIGURE 5).
3. Retighten the two flat screws, washers and locknuts.

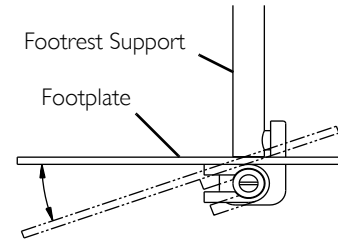
Perpendicular and/or Inversion/Eversion Adjustment



For this procedure, refer to FIGURE 4 on page 54 and FIGURE 6.

It is not necessary to remove the footplate to perform this adjustment.

1. Insert a flathead screwdriver through the half clamp on the footplate (FIGURE 4).
2. Slowly turn nylon adjustment screw in or out until footplate is perpendicular to the footrest assembly or the desired inversion or eversion is obtained (FIGURE 6).



**Side View of
Footplate and
Footrest
Support**

FIGURE 5 Angle Adjust

Front View of Footplate and Footrest Support

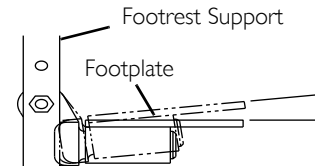


FIGURE 6 Perpendicular and/or Inversion/Eversion Adjustment

6 ADJUSTMENT

6.3 Adjusting the Height of the Manual Center Mount Footrest



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. **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 that secure the button head cleat to the extension housing.
2. Adjust the footrest extension tube 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.

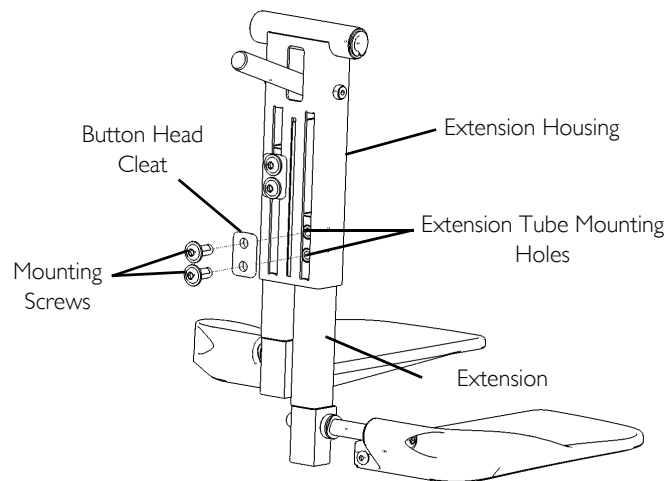


FIGURE 7 Adjusting the Height of the Manual Center Mount Footrest

6.4 Adjusting the Angle of the Manual Center Mount Footrest



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. **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.

1. Engage the release lever with one hand (not shown) and move the center mount footrest 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.

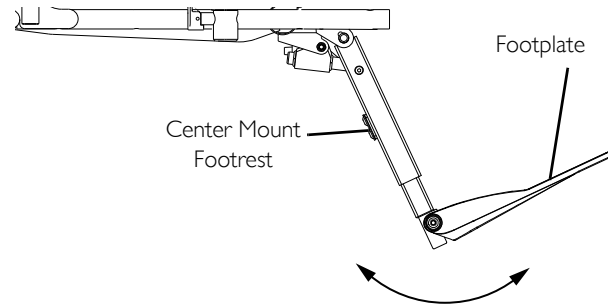


FIGURE 8 Adjusting the Angle of the Manual Center Mount Footrest

6 ADJUSTMENT

6.5 Adjusting the Footplate Angle

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

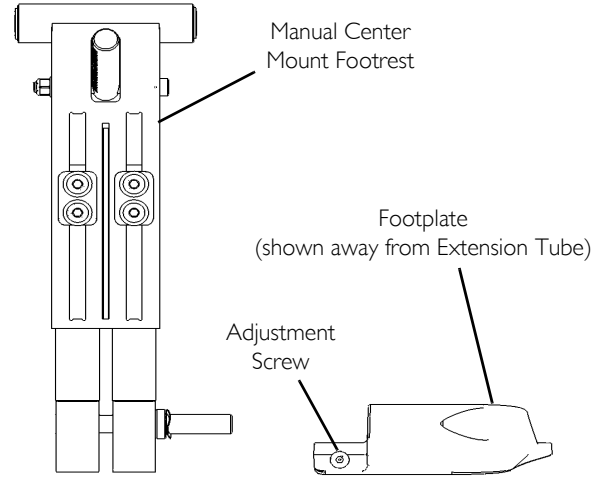


FIGURE 9 Adjusting the Footplate Angle

6.6 Adjusting the Tension of the Flip Up Footplate

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

1. Loosen the mounting screw on the front rigging angle hinge to decrease the rotation effort.

i 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.

6.7 Adjusting the Angle of the Cantilever Arm

i Access to the adjustment screw is on the bottom of the arm tube.

1. Adjust the cantilever arm angle as necessary to accommodate the user.
 - To adjust the arm angle down, turn the adjustment screw clockwise.
 - To adjust the arm angle up, turn the adjustment screw counterclockwise.
2. Repeat STEP 1 to adjust the other cantilever arm (as necessary).

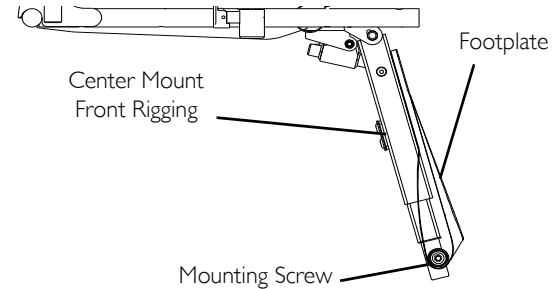


FIGURE 10 Adjusting the Tension of the Flip Up Footplate

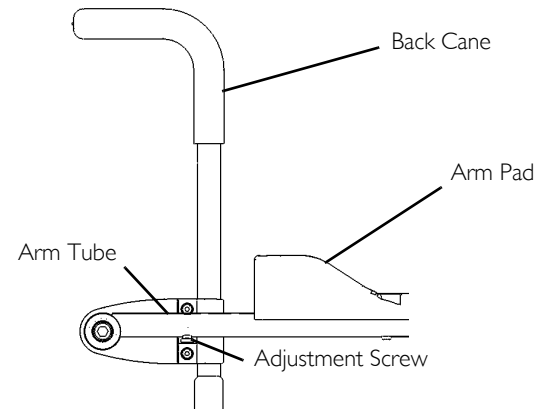


FIGURE 11 Adjusting the Angle of the Cantilever Arm

6 ADJUSTMENT

6.8 Adjusting the Back Angle

1. Loosen, but DO NOT remove, the two lower hex screws securing the cane brackets to the back canes.
2. Remove the two upper hex screws, washers and locknuts securing the cane brackets to the back canes.
3. Align the upper mounting holes in the back canes with the desired mounting holes in the cane brackets (Detail "A").
4. Install the two upper hex screws, washers and locknuts to secure the cane brackets to the back canes.
5. Torque the locknuts to 13 ft-lbs.

DETAIL "A" - CANE BRACKET MOUNTING HOLES

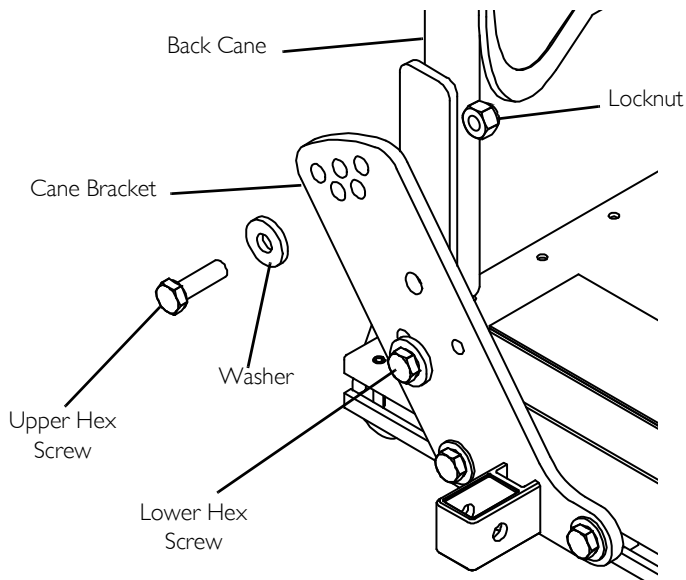
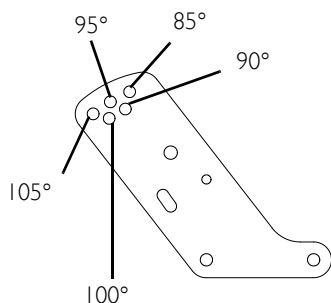


FIGURE 12 Adjusting the Back Angle

6.9 Adjusting the Manual Tilt Cable Assembly



For this procedure, refer to FIGURE 13.

For operating the manual tilt option, refer to Operating the Manual Tilt Option (TDX Spree Only) on page 49.

1. Loosen the jam nut (counterclockwise) on the cable.
2. Turn the cable adjuster until the right release lever engages the tilt mechanism properly.
3. Retighten the jam nut (clockwise) on the cable.
4. Tilt the wheelchair to any tilt position. Refer to Operating the Manual Tilt Option (TDX Spree Only) on page 49. Make sure the wheelchair holds the position.



If the wheelchair does not hold the position, repeat STEPS 1-4 until the wheelchair is able to hold the tilted position.

6.10 Adjusting Back or Headrest Upholstery

1. Rotate the spreader bar either:
 - Counterclockwise (away from back upholstery) to loosen back/headrest upholstery.
 - Clockwise (towards back upholstery) to tighten back/headrest upholstery.

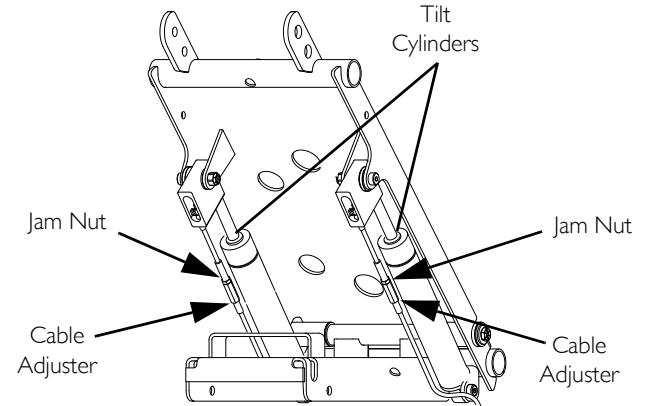


FIGURE 13 Adjusting the Manual Tilt Cable Assembly

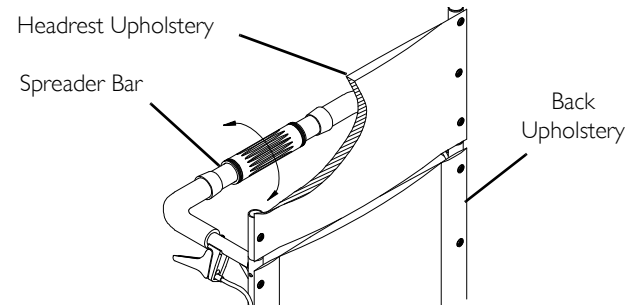


FIGURE 14 Adjusting Back or Headrest Upholstery

7 Setup/Maintenance

7.1 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 63

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 64.

Refer to wheelchair base user manual for additional safety inspection and troubleshooting information.

- Check all parts for shipping damage. In case of damage, DO NOT use.
- Ensure clothing guards are secure
- 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 and legrests).

7.2 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 64.

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 user 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.

Inspect/Adjust Weekly

- Inspect all fasteners.
- Inspect TRRO/TRBKTS fasteners and hardware.
- Ensure proper operation of powered functions (Example: seating and legrests).

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.

7 SETUP/MAINTENANCE

Inspect/Adjust Periodically

- Inspect all fasteners.
- Inspect TRRO/TRBKTS fasteners and hardware.
- Ensure clothing guards are secure.
- 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.
- Inspect foam handgrips for damage. If damaged, have them replaced by a qualified technician.
- Check center mount front riggings for loose fasteners. Replace /tighten if necessary.
- Check that all labels are present and legible. Replace if necessary.
- Powered Seating Systems - Make sure all electrical connections are secure.
- Powered Seating Systems - Make sure drive lock-out operates properly.
- Powered Seating Systems - Make sure tilt mechanism and tilt tracks are clean.

7.3 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 qualified technician. Refer to wheelchair base user manual for additional safety inspection and troubleshooting information.



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:

Six Month Inspection

- Clean upholstery and armrests.
- Check that all labels are present and legible. Replace if necessary.
- Ensure clothing guards are secure.
- 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.
- Ensure proper operation of powered functions (seating, legrests, etc...).
- Inspect electrical components for signs of corrosion. Replace if corroded or damaged.
- Inspect all fasteners.
- Inspect TRRO/TRBKTS fasteners and hardware.
- Inspect foam handgrips for damage. If damaged, have them replaced by a qualified technician.
- Check power center mount front riggings for worn/frayed straps and/or loose fasteners. If found, replace these items.
- Powered Seating Systems - Make sure all electrical connections are secure.
- Powered Seating Systems - Make sure drive lock-out operates properly.
- Check limit switch position.

7 SETUP/MAINTENANCE

7.4 Replacing Heel Loops

1. Note the position of hex bolt, coved washers and locknut for reinstallation.
2. Remove the hex bolt, coved washers and locknut that secure the lower footrest to the footrest support.
3. Remove the lower footrest.
4. Remove the phillips bolt, spacer and locknut that secure the existing heel loop 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.

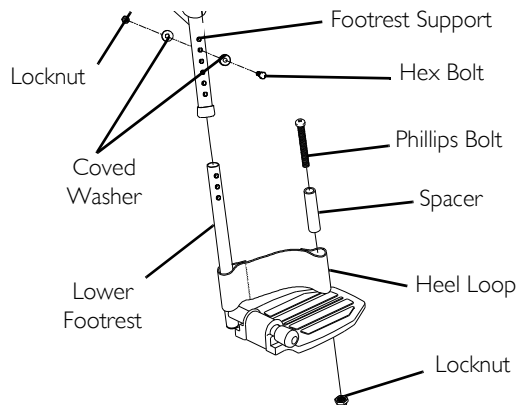


FIGURE I Replacing Heel Loops

7.5 Adjusting/Replacing Telescoping Front Rigging Support



WARNING

If the telescoping tubes need to be extended greater than two inches, then the seat must be repositioned rearward to ensure stability - otherwise personal injury and/or damage to the wheelchair and surrounding property may result.

1. Remove the two cap screws, spacers and threaded blocks securing the telescoping front tube to the side rail.
2. Perform one of the following:
 - Slide existing telescoping front rigging support to one of six depth positions.
 - Remove existing telescoping front rigging.
3. Secure the telescoping front tube to the side rail at the desired depth with the existing two cap screws, spacers and threaded blocks.
4. Repeat STEPS 1 to 3 on the opposite side, if desired.

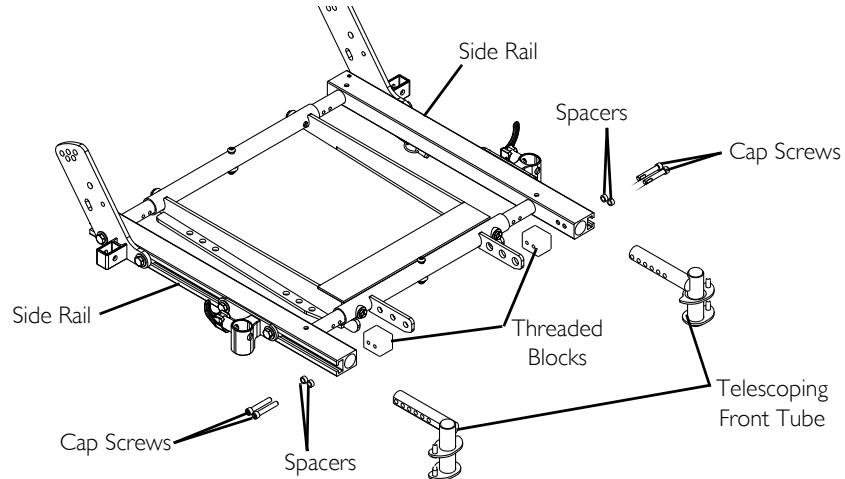


FIGURE 2 Adjusting/Replacing Telescoping Front Rigging Support

7 SETUP/MAINTENANCE

7.6 Installing Adjustable Angle Flip-up Footplate Hinge

1. Position footplate hinge on the footrest support tube at the desired height.
2. Position mounting screw, washers, spacer, and locknut on the footrest support as shown.
3. Flip the footplate hinge to the up position.

i The footplate hinge will fall to the down position.

4. Tighten the mounting screw, washer, and locknut that secure the footplate hinge to the footrest support until the footplate hinge remains in the up position.
5. Check the up and down motion of the footplate hinge to make sure the user of the wheelchair can operate the footplates easily.

i If footplate's motion is too tight, loosen the mounting screw and locknut approximately $\frac{1}{4}$ -turn counterclockwise.
If the footplate's motion is too loose, tighten mounting screw and locknut approximately $\frac{1}{4}$ -turn clockwise.

6. Adjust footplate. Refer to [Installing Adjustable Angle Flip-up Footplates](#) on page 69.

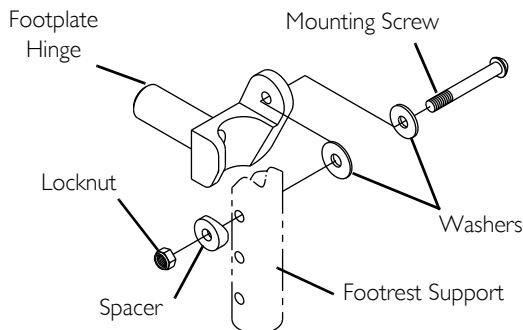


FIGURE 3 Installing Adjustable Angle Flip-up Footplate Hinge

7.7 Installing Adjustable Angle Flip-up Footplates

1. Slide the half clamp over the footplate hinge.
2. Hand tighten the two flat screws that secure the footplate to the half clamp.
3. Adjust the footplates to the necessary angle and depth for the user. Refer to [Adjusting Adjustable Angle Flip-Up Footplates](#) on page 54.

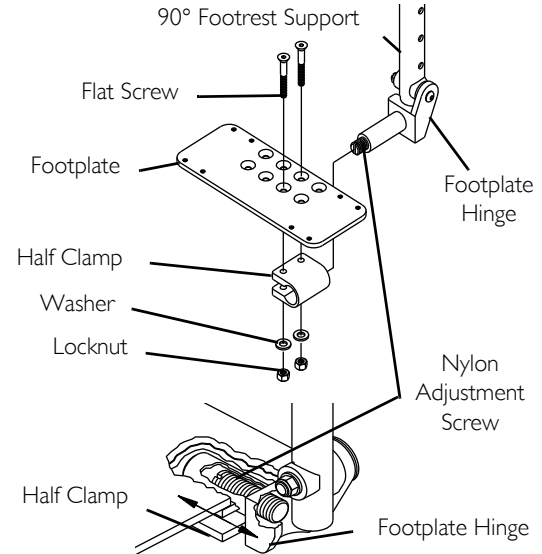


FIGURE 4 Installing Adjustable Angle Flip-up Footplates

7 SETUP/MAINTENANCE

7.8 Composite/Articulating Footplate Heel Loop Replacement

Disassembly

Composite

1. Remove the mounting screw and covered washer that secures the lower half of the footrest to the swingaway footrest assembly.
2. Remove the lower footrest assembly.
3. Remove the mounting screw and locknut that secure the heel loop to the footrest.
4. Slide heel strap over cane of footrest assembly.

Articulating

1. Remove the two mounting screws that secure the heel loop to the articulating footplate.

Assembly

1. Replace heel strap/loop.
2. Reverse steps in Disassembly to assemble.



When securing heel loop to the footrest assembly, tighten mounting screw until the spacer is secure.

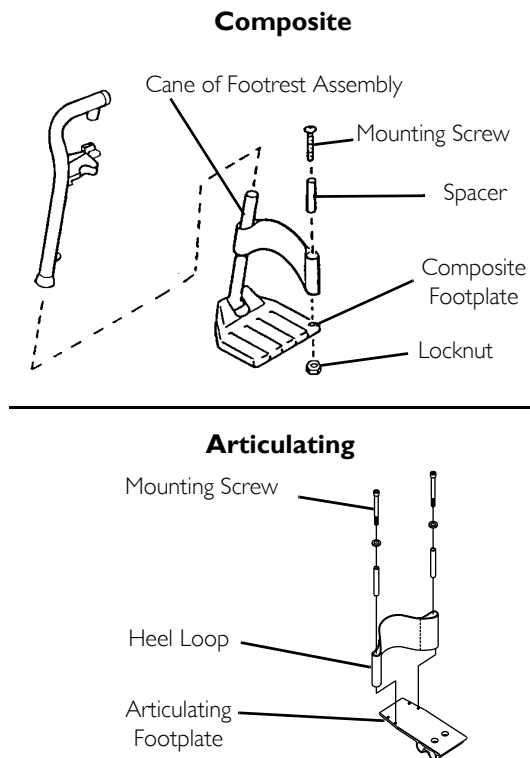


FIGURE 5 Composite/Articulating Footplate Heel Loop Replacement

7.9 Repositioning Joystick

i This procedure must be performed by a qualified technician.

1. Turn the adjustment lock lever to release the joystick mounting tube from the mounting bracket.
2. Remove the joystick from the wheelchair.
3. Remove the three hex screws that secure both halves of the mounting bracket to the arm tube.
4. Reposition mounting bracket on opposite arm tube ensuring the threaded plate of the mounting bracket is on the inside of the arm tube as shown in FIGURE 6.
5. Using the three hex mounting screws and washers, secure both halves of the mounting bracket to the arm tube.
6. Slide the joystick mounting tube through the mounting bracket to the desired position.
7. Turn the adjustment lock lever to secure the joystick mounting tube into the mounting bracket.

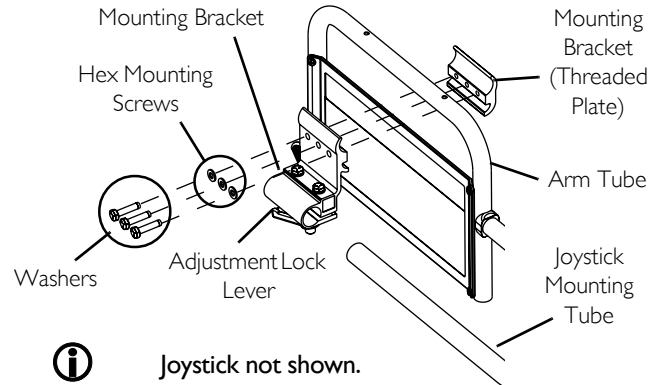


FIGURE 6 Repositioning Joystick

7 SETUP/MAINTENANCE

7.10 Disconnecting/Connecting the Joysticks



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

SPJ+ Joysticks

Disconnecting

1. Hold the light GREY collar portion of the joystick connector with one hand and the controller connector on the wheelchair in the other and disconnect them by pulling them apart.

Connecting



WARNING

The joystick connector and controller connector fit together in one way only. DO NOT force them together.

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

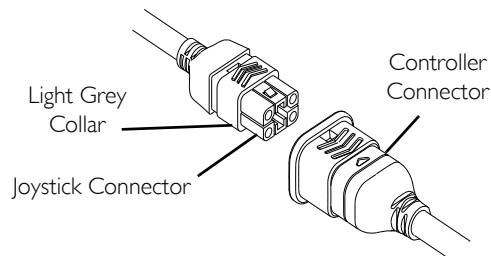


FIGURE 7 Disconnecting/Connecting the Joysticks - SPJ+ Joysticks

CMPJ+ Joysticks

Disconnecting

1. Pull the latch away from the joystick connector.
2. Disconnect the joystick connector from the remaining connectors

Connecting



Ensure the gaskets are installed in the top connector cap and between network connectors.

1. Ensure the latch is pulled away from the network connector.
2. Connect the network connector to the other connectors.
3. Top and Bottom Connectors - Install connector caps onto the network connector.
4. Push the latch in to secure the network connectors and caps.
5. If necessary secure excess cable using tie-wraps.

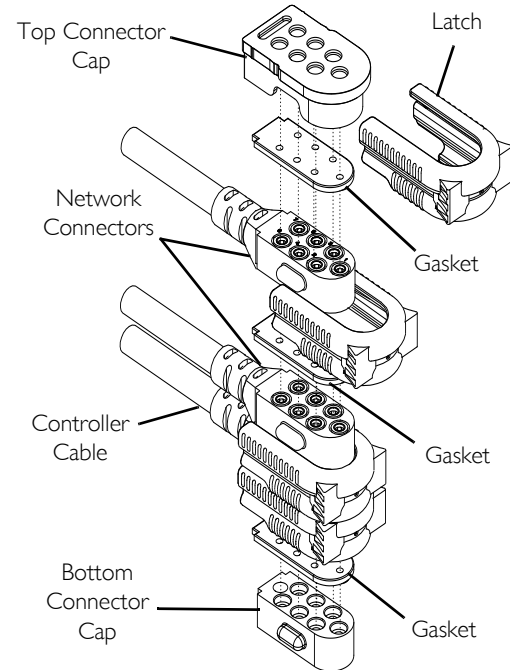


FIGURE 8 Disconnecting/Connecting the Joysticks - CMPJ+ Joysticks

7 SETUP/MAINTENANCE

7.11 Replacing Seat Positioning Strap



WARNING

ALWAYS wear your seat positioning strap. The seat positioning strap is a positioning strap only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety straps. If signs of wear appear, strap **MUST** be replaced immediately.

Wheelchairs with TRRO Option

To replace the seat positioning strap, refer to wheelchair base user manual supplied with wheelchair.

Wheelchairs without TRRO Option

1. Remove the seat cushion from the seat pan.
2. Move the flip back armrests out of the way. Refer to [Adjusting Flip Back Armrests](#) on page 46.
3. Remove the two mounting screws, locknuts, washers and quick-release pin tabs that secure the seat positioning straps to the seat frame.
4. Remove the two halves of the seat positioning strap from the rear seat frame.
5. Reposition the two new seat positioning strap inside of the seat frame as shown.
6. Reinstall the two mounting screws and quick-release pin tabs that secure the seat positioning straps to the seat frame and torque to 75 in-lbs.
7. Reinstall the seat cushion onto the seat pan.

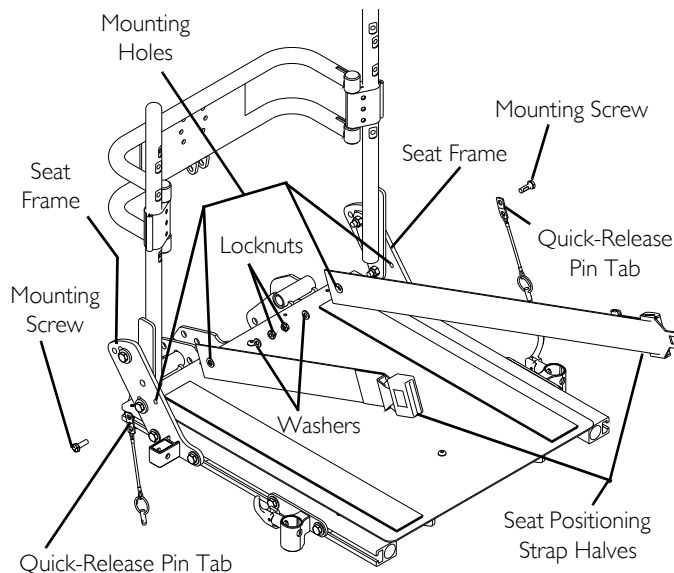


FIGURE 9 Replacing Seat Positioning Strap - Wheelchairs without TRRO Option

7.12 Removing/Installing/Adjusting Headrest



CAUTION

If using a ventilator, verify headrest support does not interfere at all angles. Otherwise, injury or damage may occur.

Removing

1. Loosen, but **DO NOT** remove, the thumb screw that secures the headrest to the headrest mounting bracket.
2. Remove the headrest from the headrest mounting bracket.

Installing

1. Make sure thumb screw is loose.
2. Install the headrest until the headrest stop sits on the headrest mounting bracket.
3. If necessary, adjust the height, depth or direction of the headrest. Refer to [Adjusting Headrest Height](#) on page 75 or [Adjusting Headrest Depth/Direction](#) on page 76.

Adjusting Headrest Height

1. Loosen the set screw on the headrest stop.
2. Loosen, but **DO NOT** remove, the thumb screw that secures the headrest to the headrest mounting bracket.
3. Position the headrest to the desired height.
4. Tighten the thumb screw that secures the headrest to the headrest mounting bracket.
5. Tighten the set screw on the headrest stop.
6. If necessary, adjust the depth or direction of the headrest. Refer to [Adjusting Headrest Depth/Direction](#) on page 76.

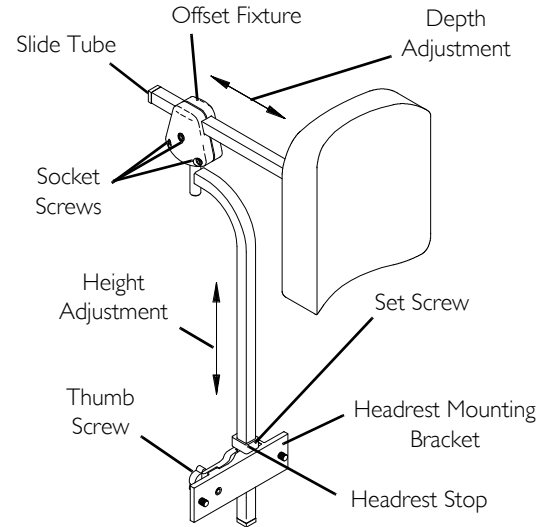


FIGURE 10 Removing/Installing/Adjusting Headrest

7 SETUP/MAINTENANCE

Adjusting Headrest Depth/Direction



For this procedure, refer to FIGURE 10 on page 75.

1. Loosen, but DO NOT remove, the three socket screws that secure the offset fixture to the slide tube.
2. If necessary, reposition the headrest to the desired depth by sliding the headrest towards the front of the wheelchair or towards the rear of the wheelchair.
3. If necessary, reposition the headrest to the desired position (headrest will move in any direction).
4. While holding the headrest in the desired position, securely tighten the three socket screws.
5. If necessary, adjust the height of the headrest. Refer to [Adjusting Headrest Height](#) on page 75.

7.13 Replacing Headrest

1. Remove the three socket screws that secure the headrest to the headrest mounting bracket.
2. Position the new headrest on the headrest mounting bracket and secure with the existing three socket screws.
3. If necessary, adjust the height, depth or direction of the headrest. Refer to [Adjusting Headrest Height](#) or [Adjusting Headrest Depth/Direction](#) on page 76.



One style of headrest shown for clarity. Both styles of headrest attach the same way.

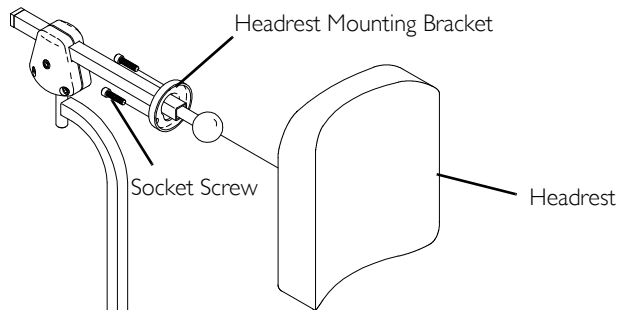


FIGURE 11 Replacing Headrest

7.14 Replacing Back or Headrest Upholstery

Replacing Back Upholstery

1. Remove the ten or twelve mounting screws (depending on back height) that secure the back upholstery to the back canes.
2. Remove existing back upholstery from back canes.
3. Install the new back upholstery onto the back canes.
4. Install the ten or twelve mounting screws (depending on back height) that secure the back upholstery to the recliner back canes.
5. Adjust the back upholstery to the desired tautness. Refer to [Adjusting Back or Headrest Upholstery](#) on page 61.



Changing the back upholstery height must be performed by a dealer or qualified technician.

Replacing Headrest Upholstery

1. Remove the six mounting screws that secure the headrest upholstery to the headrest extensions.
2. Remove the existing headrest upholstery from the headrest extensions.
3. Install the new headrest upholstery onto the headrest extensions.
4. Install the six mounting screws that secure the headrest upholstery to the headrest extensions.
5. Adjust the headrest upholstery to the desired tautness. Refer to [Adjusting Back or Headrest Upholstery](#) on page 61.

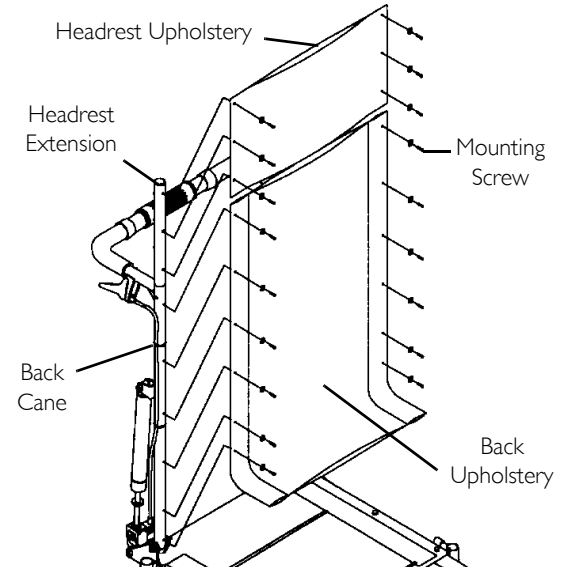


FIGURE 12 Replacing Headrest Upholstery

7 SETUP/MAINTENANCE

7.15 Removing/Installing the Manual Tilt Release Lever from the Stroller Handle



WARNING

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

Removing



For this procedure, refer to FIGURE 13.

1. Cut tie-wrap that secures the cable to the back cane (Detail "A" of FIGURE 13).
2. Remove the mounting screw and square nut that secures the tilt release lever to the stroller handle.



The tilt release cable is still connected to the tilt cylinder.

Installing

1. Secure the tilt release lever to the stroller handle with the existing mounting screw and square nut.
2. Secure the cable to the wheelchair frame with tie wrap (Detail "A" of FIGURE 13).
3. Adjust the tilt release cable, if necessary. Refer to [Adjusting the Manual Tilt Cable Assembly](#) on page 61.

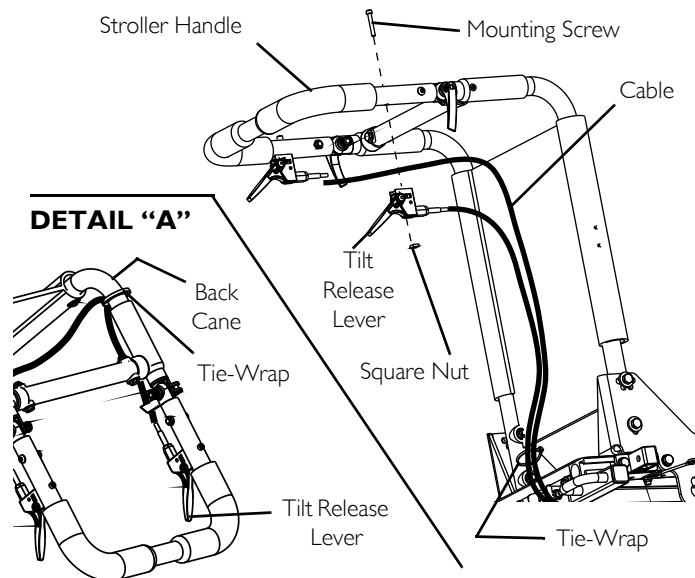


FIGURE 13 Removing/Installing the Manual Tilt Release Lever from the Stroller Handle

Notes

Part No 1143192



Rev H - 5/11



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