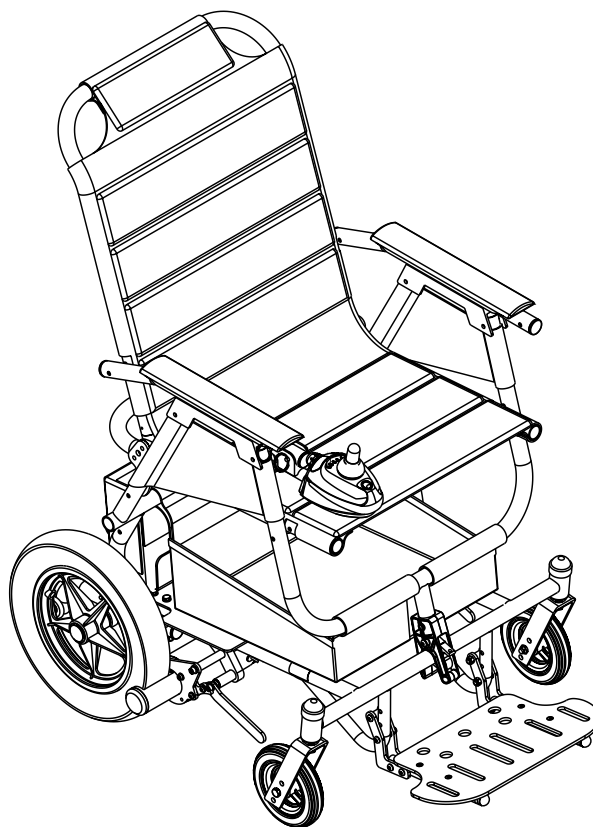


Owner's Operator and Maintenance Manual

At'm



DEALER: This manual **MUST** be given to the user of the wheelchair.

USER: BEFORE using this wheelchair, read this manual and save for future reference.

For more information regarding
Invacare products, parts, and services,
please visit www.invacare.com



Yes, you can.®

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.

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 owner's 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.

ACCESSORIES WARNING

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.

REFERENCE DOCUMENTS

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

MANUAL	PART NUMBER
At'm Service Manual	I I25078
MK ₅ ™ NX™ Electronics	I I10532

NOTE: Updated versions of this manual are available on www.invacare.com.

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REGISTER YOUR PRODUCT

The benefits of registering include:

1. Safeguarding your investment.
2. Ensuring long-term maintenance and servicing of your product.
3. Receiving updates with product information, maintenance tips and industry news.

Register ONLINE at warranty.invacare.com

Please have your model number and purchase date available to complete your registration.

Any registration information you submit will only be used by Invacare Corporation and protected as required by applicable laws and regulations.

SPECIAL NOTES

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

SIGNAL WORD	MEANING
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.

NOTICE

THE INFORMATION CONTAINED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

WHEELCHAIR USER

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.

WHEELCHAIR TIE-DOWN RESTRAINTS AND SEAT RESTRAINTS

Wheelchair users should **NOT** be transported in vehicles of any kind while in wheelchairs. 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.

WARNINGS

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.

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.

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

LABEL LOCATION

At'm

**WEIGHT CAPACITY
LIMITE DE POIDS
250 LBS. (114 kgs.)**
REFER TO OWNER'S MANUAL
SE RÉFÉRER AU MANUEL DE L'UTILISATEUR

P/N 1111026

NO WHEELCHAIR HAS BEEN APPROVED FOR USE AS A SEATING SURFACE WITHIN A MOTOR VEHICLE. THIS LABEL IS FOR INFORMATIONAL PURPOSES ONLY. LIABILITY ISSUES WERE NOT CONSIDERED IN THE ATTACHMENT OF THIS LABEL.

AUCUN FAUTEUIL ROULANT N'A ÉTÉ APPROUVÉ POUR ÊTRE UTILISÉ COMME SIÈGE À L'INTÉRIEUR D'UN VÉHICULE MOTORISÉ. CETTE ÉTIQUETTE NE PEUT ÊTRE UTILISÉE QU'À TITRE D'INFORMATION ET N'A PAS ÉTÉ AFFICHÉE ICI POUR DES RAISONS DE RESPONSABILITÉ LÉGALE.

⚠ WARNING
For use on substantially flat surfaces.
Use with **EXTREME CAUTION** on wet surfaces.
1125069 Rev B

— FOLD —

1125069 Rev B
sur les surfaces mouillées.
Faire preuve de PRUDENCE
relativement planes.
Utiliser sur les surfaces
⚠ MISE EN GARDE

⚠ WARNING
Keep fingers and clothing clear of drive wheel.
P/N 1125069 Rev A - 8/04

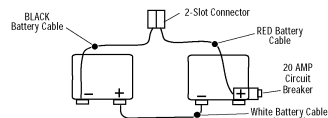
⚠ WARNING
Push handle all the way down to engage motors.
P/N 1125068 Rev A - 8/04

NOTE: Warning label 1125069 is also located on the opposite side.

NOTE: Warning label 1125068 is also located on the opposite side.

Serial Number Label is located on inside of the base frame tube.

⚠ WARNING
DO NOT REMOVE THIS LABEL
The POSITIVE (+) RED Battery Cable MUST connect to the POSITIVE (+) Battery Terminal(s)/ Post(s). The NEGATIVE (-) BLACK Battery Cable MUST connect to the NEGATIVE (-) Battery Terminal(s)/Post(s). DO NOT allow Battery Cable(s) to contact the opposite Battery Terminal(s)/Post(s). Replace cable(s) immediately if cable(s) insulation becomes damaged. Failure to observe these warnings may result in an electrical short with serious personal injury and/or damage to the electrical system. See Owner's Manual.
P/N 1125064



⚠ WARNING
Maintain tire pressure at 30 p.s.i.
P/N 1125070 Rev A - 8/04

TYPICAL PRODUCT PARAMETERS

PARAMETERS	At'm
SEAT WIDTH:	16, 18 inches
SEAT DEPTH:	14, 16 inches
BACK HEIGHT:	18, 21 inches
SEAT-TO-FLOOR:	20 inches
OVERALL WIDTH (EXCLUDING JOYSTICK):	25.5 inches
OVERALL HEIGHT FOR 16 INCHES WIDE: FOR 18 INCHES WIDE:	38 inches 41 inches
OVERALL LENGTH (INCLUDING ANTI-TIPPERS):	35.5 inches
WEIGHT BASE WITHOUT BATTERY PACK/BOX: SEAT: BATTERY PACK/BOX:	34 lbs 14 lbs 26 lbs
SHIPPING:	90 lbs
DRIVE WHEELS/TIRES:	12½ x 2¼ inches
CASTER WITH PRECISION SEALED BEARINGS:	6-inch solid
UPHOLSTERY:	Black Nylon
BATTERY SIZE (TWO [2] REQUIRED):	M17 - 12 SLISM gel cell
PERFORMANCE SPEED (M.P.H.): MAXIMUM RAMP/SLOPE CAPABILITY: *RANGE (VARIABLE): WEIGHT LIMITATION:	3¾ 6° Up to 12 miles 250 lbs

**NOTE: Values for range are calculated for maximum chair weight rating using largest batteries applicable (M17 - 12 SLISM gel cell/PE 12V 12SLA), per test procedures described in ANSI/RESNA WC/VOL2-1998 Section 4 and meet federal reimbursement requirements for this product. While considered typical, they are derived based on certain ideal conditions. Variances in battery condition, user weight, usage pattern or overall terrain conditions will result in actual values for range that differ from these stated values. Users should become accustomed to how their unique conditions impact their individual results. Users should become familiar with the battery discharge indicator on the joystick to determine the range of their wheelchair. Refer to Charging Batteries on page 39 for more information about the battery discharge indicator.*

SECTION I—GENERAL GUIDELINES

WARNING

SECTION I - GENERAL GUIDELINES contains important information for the safe operation and use of this product.

Controller Settings/Repair or Service

Set-up of the Electronics 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 if improperly set-up or adjusted. Reprogramming the controller reduces the stability/control of the wheelchair. Other program settings could cause the wheelchair to tip over resulting in serious injury to the user and/or damage to the surrounding property. If any individual other than a qualified technician performs any work on these units, the warranty is void.

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.

Tire Pressure

DO NOT use your wheelchair unless it has the proper tire pressure (P.S.I.) - otherwise the wheelchair may not drive correctly, stop correctly or may experience erratic performance.

Maintain tire pressure at a minimum of 30 p.s.i.

DO NOT overinflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm. The maximum inflation pressure is listed on the side wall of the tire.

Accessories Information

EXTREME care should be exercised when using oxygen in close proximity to electric circuits and other combustible materials. Contact your oxygen supplier for instruction in the use of oxygen.

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.

Operation Information

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.

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 chair and to surrounding property.

After the wheelchair has been set-up, 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.

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 tip the wheelchair without assistance.

Anti-tippers MUST be used at all times. When outdoors on wet, soft ground or gravel surfaces, anti-tippers may not provide the same level of protection against tip over. Extra caution MUST be observed when traversing such surfaces.

DO NOT shift your weight or sitting position toward the direction you are reaching as the wheelchair may tip over.

DO NOT make sharp turns in the forward or reverse direction at excessive speed. Failure to observe this warning can cause the wheelchair to tip over and may result in injury to users, bystanders and/or damage to product.

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

DO NOT lean over the top of the back upholstery to reach objects behind you, as this may cause the wheelchair to tip over.

ALWAYS keep hands and fingers clear of moving parts to avoid injury.

DO NOT engage or disengage the motor engagement handles until the power is in the Off position.

DO NOT attempt to transfer into or out of the wheelchair without the motor engagement handles in the engaged (horizontal) position.

DO NOT operate on roads, streets or highways.

DO NOT climb, go up or down ramps or traverse slopes greater than 6°.

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

NEVER leave an unoccupied wheelchair on an incline.

DO NOT attempt to drive over curbs or obstacles. Doing so may cause your wheelchair to turn over and cause bodily harm or damage to the chair.

DO NOT stand on the frame of the wheelchair.

DO NOT stand on the flip-up footboard, or front footrests, otherwise damage may occur. When getting in or out of the wheelchair, make sure that the flip-up footboard is in the upward position, or swing the footrests to the outside of the wheelchair.

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

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

The basket under the seat is designed for light items such as jackets and umbrellas. DO NOT overload the basket.

Ensure that the items stored in the basket are fully contained within the basket - otherwise they could become entangled with the friction drive and may cause injury to the user or damage the wheelchair.

Before performing any maintenance, adjustment or service verify that on/off switch on the joystick is in the off position.

DO NOT leave the power button in the On position when entering or exiting your wheelchair.

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

Batteries

The warranty and performance specifications contained in this manual are based on the use of deep cycle gel cell batteries. Invacare strongly recommends their use as the power source for this unit.

Carefully read battery/battery charger information prior to installing, servicing or operating your wheelchair.

ALWAYS transport the battery pack/box in an upright and secure manner. To prevent damage, do not transport the battery pack/box with other objects that could suddenly shift during transportation, unless they are secured or in a different vehicle area. DO NOT transport battery pack/box with gas cans or similar containers in the same vehicle area.

The use of rubber gloves is recommended when working with batteries.

Some battery manufacturers mold a carrying strap and/or hold down flanges directly into the battery case. Batteries that interfere with the battery box cannot be used for these applications. Attempting to “wedge” a battery into a battery box may damage the box, the battery and/or be a fire hazard, resulting in serious injury or further damage to property.

Charging Batteries

DANGER

When using an extension cord, use only a three wire extension cord having at least 16 AWG (American Wire Gauge) wire and the same or higher electrical rating as the device being connected. Use of improper extension cord could result in a risk of fire and electric shock.

Three prong to two prong adapters should not be used. Use of three prong adapters can result in improper grounding and present a shock hazard to the user.

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

DO NOT attempt to recharge the batteries and operate the wheelchair at the same time.

DO NOT attempt to recharge the batteries when the wheelchair has been exposed to ANY type of moisture.

DO NOT attempt to recharge the batteries when the wheelchair is outside.

DO NOT sit in the wheelchair while charging the batteries.

Read and carefully follow the manufacturer's instructions for each charger (supplied or purchased). If charging instructions are not supplied, consult a qualified technician for proper procedures.

Ensure the pins of the extension cord plug are the same number, size, and shape as those on the charger.

DO NOT under any circumstances cut or remove the round grounding plug from the charger AC cable plug or the extension cord plug.

Grounding Instructions

DO NOT, under any circumstances, cut or remove the round grounding prong from any plug used with or for Invacare products. Some devices are equipped with three-prong (grounding) plugs for protection against possible shock hazards and fire. Where a two-prong wall receptacle is encountered, it is the personal responsibility and obligation of the customer to contact a qualified electrician and have the two-prong receptacle replaced with a properly grounded three-prong wall receptacle in accordance with the National Electrical Code. If you must use an extension cord, use only a three-wire extension cord having the same or higher electrical rating as the device being connected. In addition, Invacare has placed RED/ORANGE warning tags on some equipment. DO NOT remove these tags.

Rain Test

Invacare has tested its power wheelchairs in accordance with ISO 7176 "Rain Test." This provides the end user or his/her assistant sufficient time to remove his/her power wheelchair from a rain storm and retain wheelchair operation.

DO NOT leave power wheelchair in a rain storm of any kind.

DO NOT use power wheelchair in a shower.

DO NOT store power wheelchair in a damp area for an extended period of time.

Direct exposure to excessive rain or dampness may cause the chair to malfunction electrically and mechanically, may cause the chair to prematurely rust or may damage the upholstery.

Check to ensure that the battery pack is securely fastened, that all electrical connections are secure at all times and joystick boot is not torn or cracked where water can enter.

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

Weight Training

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

The At'm wheelchairs have a weight limitation of 250 lbs.

SECTION 2—EMI INFORMATION

WARNING

CAUTION: IT IS VERY IMPORTANT THAT YOU READ THIS INFORMATION REGARDING THE POSSIBLE EFFECTS OF ELECTROMAGNETIC INTERFERENCE ON YOUR POWERED WHEELCHAIR.

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).

NOTE: 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.

NOTE: 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.

⚠ WARNING**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.

- 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 wheelchair as manufactured by Invacare may adversely affect the EMI immunity levels.

SECTION 3—SAFETY/HANDLING OF WHEELCHAIRS

“Safety and Handling” of the wheelchair requires the close attention of the wheelchair user as well as the assistant. This manual points out the most common procedures and techniques involved in the safe operation and maintenance of the wheelchair. It is important to practice and master these safe techniques until you are comfortable in maneuvering around the frequently encountered architectural barriers.

Use this information only as a “basic” guide. The techniques that are discussed on the following pages have been used successfully by many.

Individual wheelchair users often develop skills to deal with daily living activities that may differ from those described in this manual. Invacare recognizes and encourages each individual to try what works best for him/her in overcoming architectural obstacles that they may encounter, however ALL WARNINGS and CAUTIONS given in this manual **MUST** be followed. Techniques in this manual are a starting point for the new wheelchair user and assistant with “safety” as the most important consideration for all.

Stability and Balance

WARNING

ALWAYS wear your seat positioning strap.

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

Be aware that carrying heavy objects on your lap while occupying the wheelchair may adversely affect the stability of the wheelchair, resulting in serious bodily injury to the user, damage to the wheelchair and surrounding property.

This wheelchair has been designed to accommodate one individual. If more than one individual occupies the wheelchair this may adversely affect the stability of the wheelchair, resulting in serious bodily injury to the user and passenger and damage to the wheelchair and surrounding property.

To assure stability and proper operation of your wheelchair, you must at all times maintain proper balance. Your wheelchair has been designed to remain upright and stable during normal daily activities as long as you do not move beyond the center of gravity. **DO NOT** lean forward out of the wheelchair any further than the length of the armrests.

Coping With Everyday Obstacles

Coping with the irritation of everyday obstacles can be alleviated somewhat by learning how to manage your wheelchair. Keep in mind your center of gravity to maintain stability and balance.

WARNING

DO NOT attempt to reach objects if you have to move forward in the seat or pick them up from the floor by reaching down between your knees.

Proper positioning is essential for your safety. When reaching, leaning, bending or bending forward, it is important to use the casters as a tool to maintain stability and balance.

Many activities require the wheelchair user to reach, bend and transfer in and out of the wheelchair. These movements will cause a change to the normal balance, center of gravity, and weight distribution of the wheelchair. To determine and establish your particular safety limits, practice bending, reaching and transferring activities in several combinations in the presence of a qualified healthcare professional before attempting active use of the wheelchair.

A Note to Wheelchair Assistants

WARNING

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

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

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

Lifting/Stairways

WARNING

DO NOT attempt to move an occupied power wheelchair between floors using a stairway. Use an elevator to move an occupied power wheelchair between floors. If moving a power wheelchair between floors by means of a stairway, the occupant **MUST** be removed and transported independently of the power wheelchair.

Extreme caution is advised when it is necessary to move an unoccupied power wheelchair up or down the stairs. Invacare recommends using two assistants and making thorough preparations.

⚠ WARNING

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.

The weight of the wheelchair without the user is approximately 74 lbs. Use proper lifting techniques (lift with your legs) to avoid injury.

Follow this procedure for moving the wheelchair between floors when an elevator is not available or lifting the wheelchair is necessary:

NOTE: When using a stairway to move the wheelchair, seat and any accessories, move all wheelchair components away from the stairway prior to reassembly.

1. Remove the occupant from the wheelchair.
 2. Transfer the wheelchair to the desired location. Refer to Transporting the Wheelchair on page 49.
-

⚠ WARNING

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

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.

NOTE: For this procedure, refer to FIGURE 3.1.

Position the front casters so that they are extended as far forward as possible and engage motor release levers.

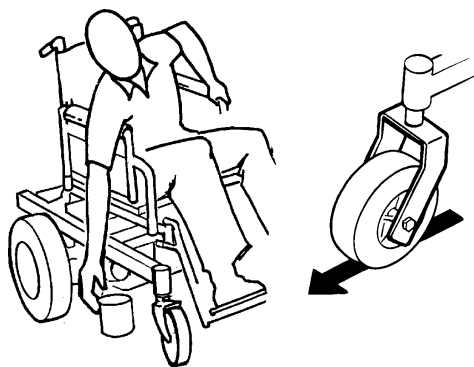


FIGURE 3.1 Reaching, Leaning and Bending - Forward

Reaching and 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.

NOTE: For this procedure, refer to FIGURE 3.2.

Position wheelchair as close as possible to the desired object. Point the front casters rearward to create the longest possible wheelbase. Reach back only as far as your arm will extend without changing your sitting position.



FIGURE 3.2 Reaching and Bending - Backward

SECTION 4—SAFETY INSPECTION/TROUBLESHOOTING

NOTE: Every six months or as necessary take your wheelchair to a qualified dealer for a thorough inspection and servicing. 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.

Safety Inspection Checklists

CAUTION

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

Initial adjustments should be made to suit your personal body structure needs and preference. Thereafter follow these maintenance procedures:

Inspect/Adjust Initially

- ☐ Check pneumatic tires for proper inflation.
- ☐ Ensure that the wheelchair rolls straight (no excessive drag or pull to one side).
- ☐ Ensure all clothing guard fasteners are secure.
- ☐ Clean seat upholstery and armrests.
- ☐ Ensure armrest pads sit flush against arm tubes.
- ☐ Ensure seat is secured to wheelchair frame.
- ☐ Ensure seat release latches are functional. Replace if necessary.
- ☐ Inspect seat upholstery for rips or sagging.
- ☐ Ensure no excessive side movement or binding occurs when drive wheels are lifted and spun when disengaged (freewheeling).
- ☐ Ensure caster assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- ☐ Loosen/tighten caster locknut if wheel wobbles noticeably or binds to a stop.
- ☐ Ensure all caster/wheel/fork/headtube fasteners are secure.
- ☐ Inspect tires for flat spots and wear.
- ☐ Check pneumatic tires for proper inflation.
- ☐ Ensure that casters are free of debris.

Inspect/Adjust Weekly

- ☐ Check pneumatic tires for proper inflation.
- ☐ Ensure all caster/wheel/fork/headtube fasteners are secure.
- ☐ Inspect tires for flat spots and wear.
- ☐ Ensure that casters are free of debris.

Inspect/Adjust Monthly

- ☐ Ensure no excessive side movement or binding occurs when drive wheels are lifted and spun when disengaged (freewheeling).
- ☐ Ensure caster assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- ☐ Loosen/tighten caster locknut if wheel wobbles noticeably or binds to a stop.
- ☐ Ensure all caster/wheel/fork/headtube fasteners are secure.
- ☐ Inspect for any loose hardware on the wheelchair.
- ☐ Ensure that casters are free of debris.
- ☐ Inspect seat positioning strap for any signs of wear. Ensure buckle latches. Verify hardware that attaches strap to frame is secure and undamaged. Replace if necessary.

Inspect/Adjust Periodically

- ☐ Ensure all clothing guard fasteners are secure.
- ☐ Clean seat upholstery and armrests.
- ☐ Ensure armrest pads sit flush against arm tubes.
- ☐ Ensure seat is secured to wheelchair frame.
- ☐ Ensure seat release latches are functional. Replace if necessary.
- ☐ Inspect seat upholstery for rips or sagging.
- ☐ Inspect charger AC power cord for damage. Replace if necessary.
- ☐ Inspect electrical components for signs of corrosion. Replace if necessary.
- ☐ Check that all labels are present and legible. Replace if necessary.
- ☐ Ensure that casters are free of debris.

Troubleshooting Guide

SYMPTOM	PROBABLE CAUSE	SOLUTIONS
Erratic performance of wheelchair (driving uphill, increase in braking distance).	Low tire pressure.	Inflate tires to the proper tire pressure.
Wheelchair will not drive.	Low tire pressure.	Inflate tires to the proper tire pressure.
	Motor engagement handles are disengaged.	Engage motor engagement handles.
	Batteries require charging.	Charge batteries. Make sure the setting on the charger is correct.
	Charger plugged in.	Unplug charger from wall outlet before operating the wheelchair.
	Circuit breaker tripped.	Press the reset button. Refer to <u>Resetting the Circuit Breaker</u> on page 27.
Batteries draw excessive current when charging.	Battery failure.	Have batteries checked for shorted cell. Replace if necessary.
	Electrical malfunction.	Contact Dealer/Invacare.
Battery indicator shows low charge level immediately after charging.	Batteries weak, won't hold charge.	Replace Batteries.
	Electrical malfunction.	Contact Dealer/Invacare.
	Charger malfunction.	Replace charger. Contact Dealer/Invacare.
Motor "chatters" or runs irregularly.	Electrical malfunction.	Contact Dealer/Invacare.
Only one drive wheel turns.	Electrical malfunction.	Contact Dealer/Invacare for service.
	One motor is disengaged.	Engage motor engagement handle.
Joystick erratic or does not respond as desired.	Electrical malfunction.	Contact Dealer/Invacare for service.
	Controller programmed improperly.	Reprogram controller (Refer to electronics manual supplied with wheelchair).
Wheelchair does not respond to commands.	Poor battery terminal connection.	Have terminals cleaned.
Power indicator off - even after recharging.	Electrical malfunction.	Contact Dealer/Invacare for service.

NOTE: For additional troubleshooting information and explanation of error codes, refer to the Electronics Manual supplied with each wheelchair.

SECTION 5—WHEELCHAIR OPERATION

⚠ 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.

DO NOT USE YOUR WHEELCHAIR UNLESS IT HAS THE PROPER TIRE PRESSURE (P.S.I.) - OTHERWISE THE WHEELCHAIR MAY NOT DRIVE CORRECTLY, STOP CORRECTLY OR MAY EXPERIENCE ERRATIC PERFORMANCE.

DO NOT overinflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm. The maximum inflation pressure is listed on the side wall of the tire.

Set-up/programming of the Electronic Control Unit is to be performed only by a qualified technician. The fine tuning adjustments of the controller may affect other activities of the wheelchair. Damage to the equipment could occur under these circumstances. If unqualified individuals perform any work on these units, the warranty is void.

Operating the Wheelchair

NOTE: For this procedure, refer to FIGURE 5.1.

Turning the Power On/Off

1. To turn the power on, press the on/off button.

NOTE: After turning power on, all indicators will light briefly and the display gauge will indicate one of the following:

- A. *The Current Battery Charge - Information gauge shows all LED's lit or partial LED's lit. Refer to the table on page 26.*
 - B. *Out Of Neutral At Power Up - Information Gauge shows all LED's flashing slowly. This occurs when the power is turned on when the joystick is out of neutral. This feature prevents sudden and unexpected movements of the power chair.*
2. To turn the power off, press the on/off button again.

Using the Joystick to Drive the Chair

The joystick is located at the front of the joystick housing and provides smooth control of speed and direction. It is equipped with 360 degrees of mobility for ease of operation. The joystick is spring-loaded, and automatically returns to the upright (neutral) position when released. Pushing the joystick in a given direction causes the chair to move in that direction.

The joystick has proportional drive control, meaning that the further it is pushed from the upright (neutral) position, the faster the wheelchair moves. The maximum speed, however, is limited by the setting of the speed-control knob.

To slow the wheelchair to a stop, simply release the joystick. The wheelchair has automatic speed and direction compensation to minimize corrections.

When first learning to drive, select a slow speed and try to drive the wheelchair as slowly as possible by pushing the joystick slightly forward. This exercise will help you learn to utilize the full potential of the proportional control and allow you to start and stop smoothly.

To drive the wheelchair, perform the following:

1. Adjust speed control switch to the appropriate setting.
2. Turn the power on. Refer to [Turning the Power On/Off](#) on page 23.
3. Move the joystick in the following manner:

MOVEMENT	ACTION
FORWARD	Push forward on the joystick.
REVERSE	Pull back on the joystick.
Turn RIGHT	Move the joystick RIGHT.
Turn LEFT	Move the joystick LEFT.
STOP	Release the joystick and the wheelchair will quickly slow down.

Using the Horn

NOTE: For this procedure, refer to FIGURE 5.1.

1. Press the horn button located on the joystick housing.

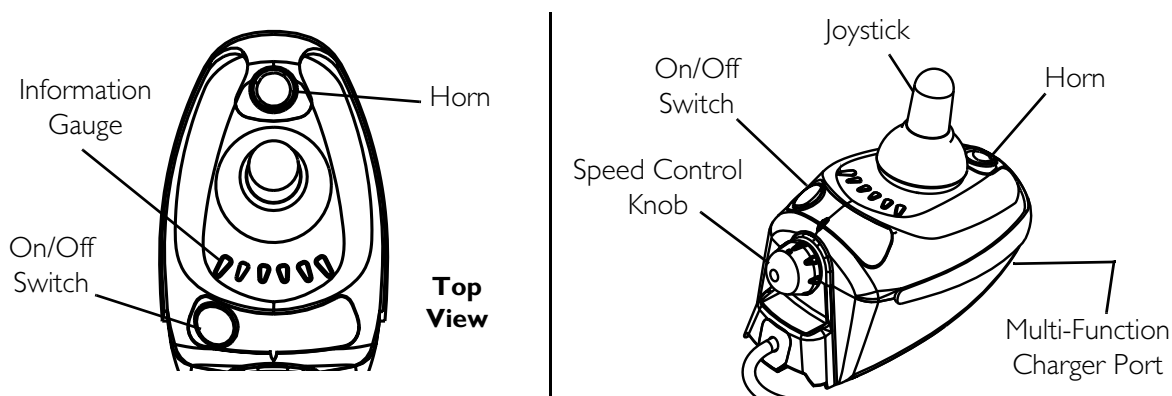


FIGURE 5.1 Operating the Wheelchair

Joystick Switches and Indicators

NOTE: For the following information, refer to FIGURE 5.1.

On/Off Button

This button is located on the joystick housing.

Speed Control Knob

The speed control knob is located on the back of the joystick housing. This rotary knob is used for controlling the speed and acceleration of the wheelchair.

1. Turn the knob clockwise to increase the speed of the wheelchair.
2. Turn the knob counter-clockwise to decrease the speed of the wheelchair.

Joystick

The joystick has proportional drive control, meaning that further the wheelchair is pushed from the upright (neutral) position, the faster it moves. Your top speed, however, is limited by the setting of the speed control knob and programmed settings.

To slow the wheelchair to a stop, simply release the joystick. The wheelchair has automatic speed and direction compensation to minimize corrections.

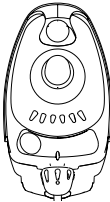
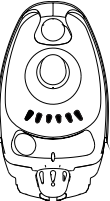
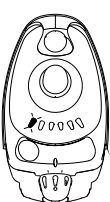
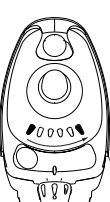
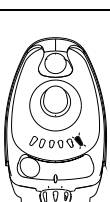
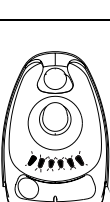
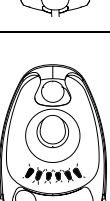
Information Gauge Display

The Information Gauge Display is located on the joystick housing. It provides the following information to the user on the status of the wheelchair -

1. Power is on.
2. True state-of-battery-charge, including notification of when the battery requires charging:
 - A. GREEN LED is lit, indicating well charged batteries.
 - B. Only AMBER LEDs are lit, indicating batteries are moderately charged. Recharge batteries before taking a long trip.
 - C. Only RED LED is lit, indicating batteries are running out of charge. Recharge batteries as soon as possible.
3. Program, inhibit or charge modes.
4. Fault indication (Flash Codes).

The Information Gauge display also serves as a system diagnostic device when a fault is detected by the control module. A specific number of flashes of the LEDs indicate the type of fault detected. Refer to the following table of the diagnostic indications of the wheelchair status.

NOTE: The joystick must be in the neutral position for an accurate reading of battery charge.

DISPLAY	DESCRIPTION	DEFINITION	COMMENTS
	All LEDs are off.	Power is Off.	
	All LEDs are on.	Power is On.	Fewer than three LEDs on implies reduced battery charge.
	Left RED LED is flashing.	Battery charge is low.	The batteries should be charged as soon as possible.
	Left to Right “chase” alternating with steady display.	Joystick is in programming, inhibit and/or charging mode.	The steady LEDs indicate the current state of the battery charge.
	Right GREEN LED is flashing.	Joystick is in Speed Limit mode.	The current state of battery charge will be displayed at the same time.
	All LEDs are flashing slowly.	Joystick has detected Out-of-Neutral-at-Power-Up mode.	Release the joystick back to Neutral.
	All LEDs are flashing quickly.	Joystick has detected a fault.	Joystick uses Flash codes to indicate faults. Refer to the electronics manual (Part Number 1110532).

Multi Function Charger Port

⚠ WARNING

Set-up/programming 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. If unqualified individuals perform any work on these units, the warranty is void.

Front View of Joystick

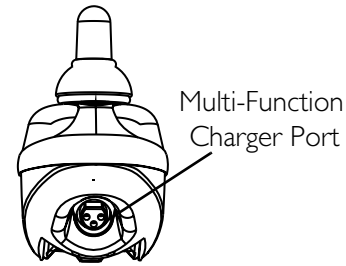


FIGURE 5.2 Multi Function Charger Port

NOTE: For this procedure, refer to FIGURE 5.2.

The multi function charger port is located at the front of the joystick housing. This provides easy access for charging the wheelchair batteries. This port also serves as the Remote Programmer Communication connection.

Resetting the Circuit Breaker

⚠ WARNING

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

NOTE: For this procedure, refer to FIGURE 5.3.

1. Remove the battery pack from the wheelchair base. Refer to Removing/Installing the Battery Pack on page 36.
2. Open the battery pack by performing the following -
 - A. Grasp the side flaps and pull up.
 - B. Grasp the front flap and pull up.
3. To reset - press the circuit breaker reset button located inside the protector ring on top of circuit breaker.
4. Close the battery pack by performing the following -
 - A. Fold down the front flap and press to engage the hook and loop straps.
 - B. Fold down the side flaps and press to engage the hook and loop straps.

NOTE: Ensure that the hook and loop straps are securely fastened before lifting the battery pack.

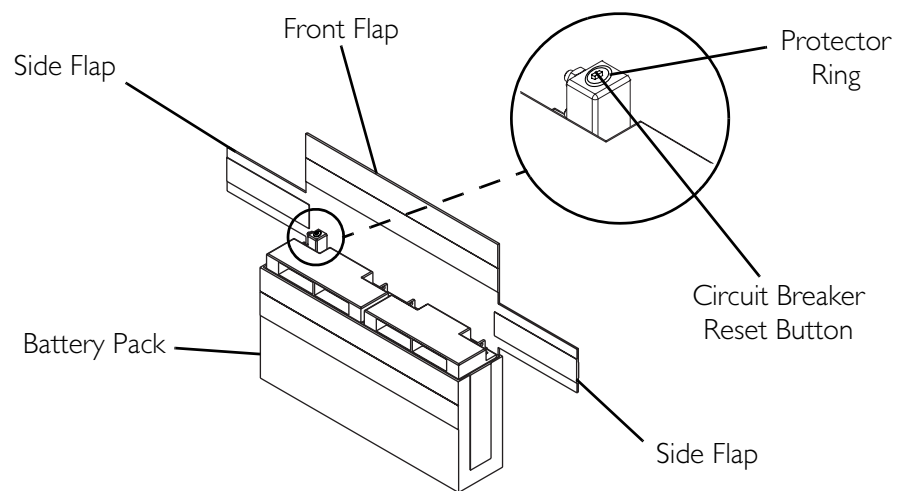


FIGURE 5.3 Resetting the Circuit Breaker

SECTION 6—SEAT

⚠ WARNING

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

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the Off position.

Removing/Installing the Seat

NOTE: For this procedure, refer to FIGURE 6.1.

Removing

1. Disconnect the joystick. Refer to Disconnecting/Connecting the Joystick on page 32.
2. Remove the battery pack or battery box. Refer to Removing/Installing the Battery Pack on page 36.
3. Pull up the front seat release loop and tilt the seat back. Refer to Detail “A” of FIGURE 6.1.
4. Pull up the rear seat release cord with the other hand and lift the seat assembly off and away from the wheelchair base. Refer to Detail “B” of FIGURE 6.1.
5. Fold the seat assembly. Refer to Detail “C” of FIGURE 6.1.

Installing

1. Lower the rear latches onto the rear crossbrace.

NOTE: An audible click is heard as the rear latches lock into place.

NOTE: Ensure both latches sit flush against the rear crossbrace. If not flush, lift the rear seat release cord, remove the seat and repeat STEP 1.

2. Tilt back seat assembly.
3. Unfold the seat assembly.
4. Lower the front latch onto the front cross brace until it locks in place.

NOTE: An audible click is heard as the front latch locks into place.

5. Lift the seat assembly to ensure that the seat is secured to the wheelchair base.
6. Reinstall the battery pack or battery box. Refer to Removing/Installing the Battery Pack on page 36.
7. Reconnect the joystick. Refer to Disconnecting/Connecting the Joystick on page 32.

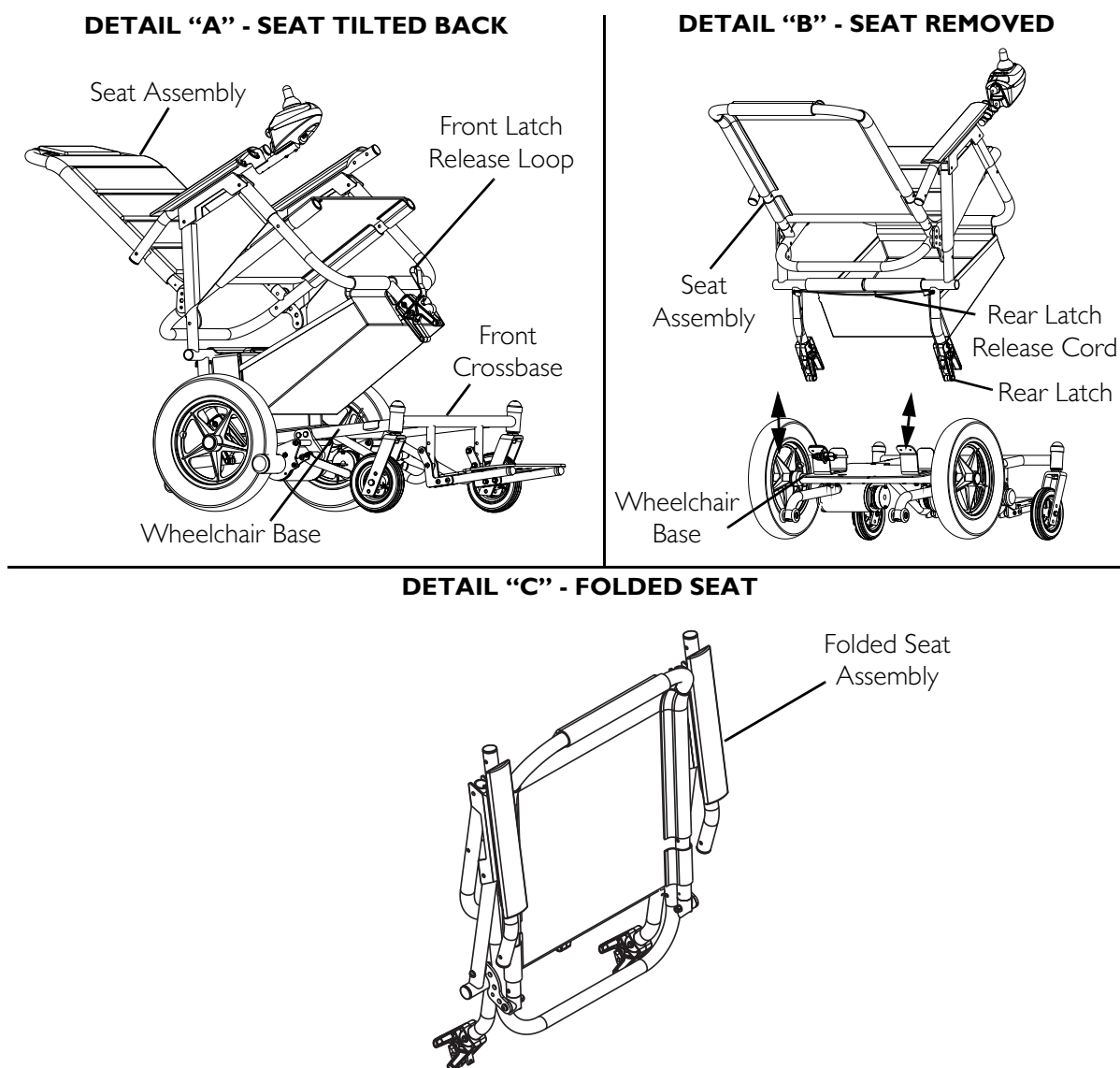


FIGURE 6.1 Removing/Installing the Seat

Replacing Seat Positioning Strap

⚠ WARNING

ALWAYS wear your seat positioning strap.

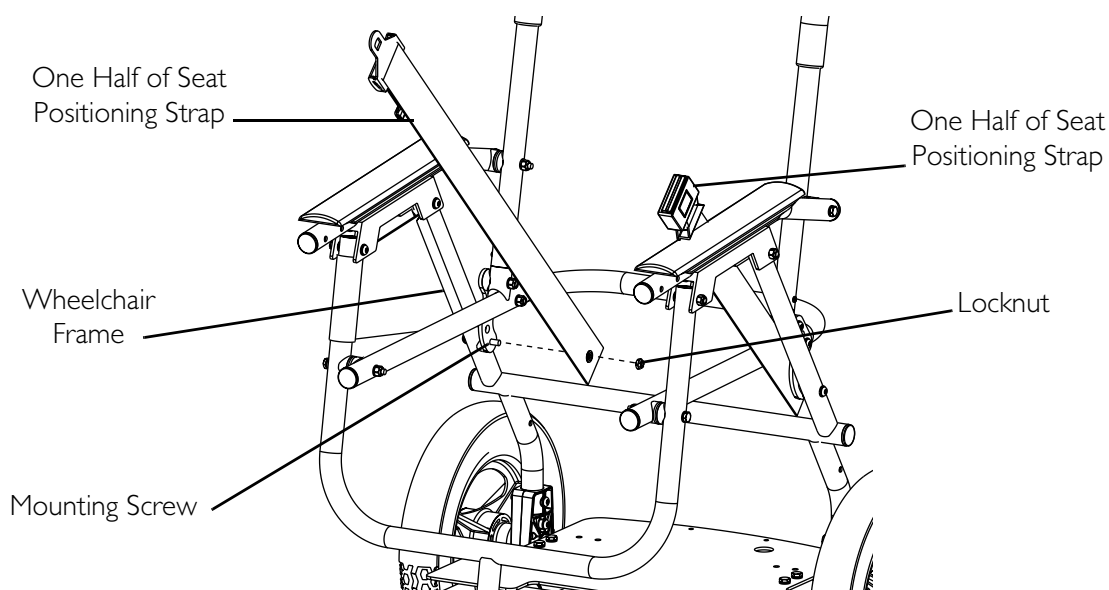
The seat positioning strap is a positioning belt only. It is not designed for use as a safety device withstanding high stress loads such as auto or aircraft safety belts. If signs of wear appear, belt **MUST** be replaced immediately.

NOTE: For this procedure, refer to FIGURE 6.2.

1. Remove the locknut that secures one half of the seat positioning strap to the wheelchair frame.
2. Slide the seat positioning strap half from the wheelchair frame.

NOTE: DO NOT remove the mounting screw.

3. Position one new seat positioning strap half on the mounting screw.
4. Reinstall the locknut that secures the seat positioning strap half to the wheelchair frame.
5. Repeat STEPS 1- 4 for the other half of the seat positioning strap.



NOTE: DO NOT remove the mounting screw.

NOTE: Seat upholstery not shown for clarity.

FIGURE 6.2 Replacing Seat Positioning Strap

SECTION 7—JOYSTICK

⚠ WARNING

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

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the Off position.

Disconnecting/Connecting the Joystick

NOTE: For this procedure, refer to FIGURE 7.1.

Disconnecting

1. Pull the light GREY collar portion of the joystick connector and disengage it from the controller connector on the wheelchair.

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 align it with the controller connector on the wheelchair.
2. Lightly push to engage the joystick connector and the controller connector.

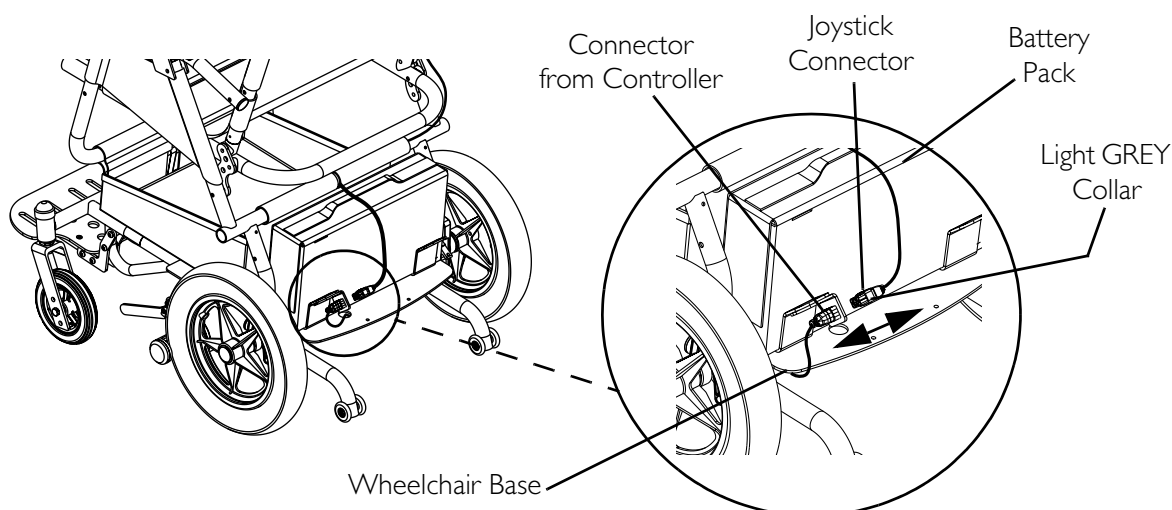


FIGURE 7.1 Disconnecting/Connecting the Joystick

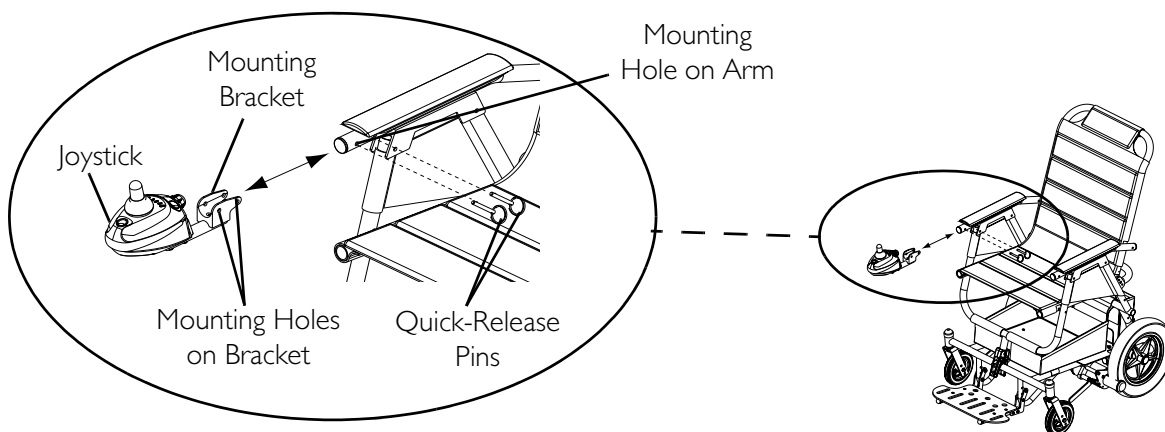
Repositioning the Joystick

NOTE: For this procedure, refer to FIGURE 7.2.

1. Disconnect the joystick. Refer to Disconnecting/Connecting the Joystick on page 32.
2. Cut the tie-wraps that secure the joystick cable to the wheelchair arm and frame. Refer to Detail “A”.
3. Pull the hook and loop strap to open the basket upholstery flap.
4. Cut the tie wraps that secure the joystick cable to the wheelchair frame.
5. Remove the two quick-release pins that mount the joystick to the arm.
6. Remove the joystick and mounting bracket assembly.
7. Reposition the joystick and mounting bracket assembly on the opposite arm.
8. Align the mounting holes on the mounting bracket with the mounting holes on the arm.
9. Insert the two quick-release pins through the mounting holes to secure the joystick to the arm.
10. Tie wrap the joystick cable to the wheelchair arm and frame as shown in Detail “A”.

NOTE: Route the joystick cable under the basket upholstery flap to prevent it from interfering with wheelchair motion.

11. Connect the joystick. Refer to Disconnecting/Connecting the Joystick on page 32.



DETAIL "A"

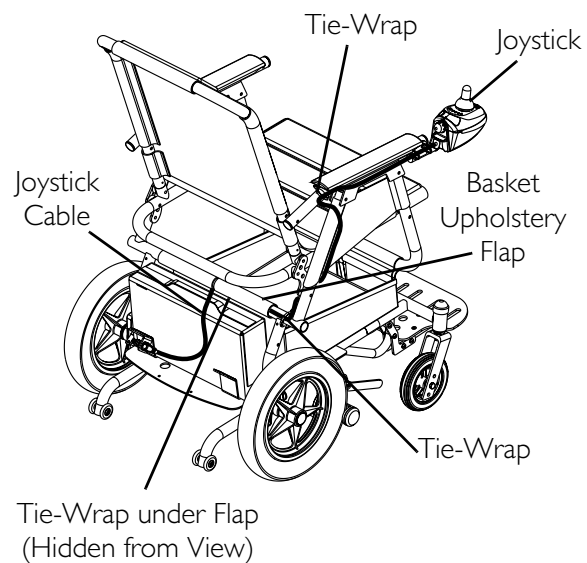


FIGURE 7.2 Repositioning the Joystick

SECTION 8—BATTERIES

Warnings For Handling and Replacing Batteries

WARNING

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

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the Off position.

Most batteries are not sold with instructions. However, warnings are frequently noted on the cell caps. Read them carefully, otherwise serious injury or damage may occur.

The use of rubber gloves is recommended when working with batteries.

Invacare strongly recommends that battery installation and battery replacement **ALWAYS** be done by a qualified technician.

ALWAYS transport the battery pack/box in an upright and secure manner. To prevent damage, do not transport the battery pack/box with other objects that could suddenly shift during transportation, unless they are secured or in a different vehicle area. **DO NOT** transport battery pack/box with gas cans or similar containers in the same vehicle area.

DO NOT tip the batteries. Keep the batteries in an upright position.

NEVER allow any of your tools and/or battery cable(s) to contact both battery posts at the same time. An electrical short may occur and serious personal injury or damage may occur.

The **POSITIVE (+) RED** battery cable must connect to the **POSITIVE (+)** battery terminal, otherwise serious damage will occur to the electrical system.

NOTE: If there is battery acid in the bottom of the battery tray or on the sides of the battery(ies), apply baking soda to these areas to neutralize the battery acid. Before reinstalling the existing or new battery(ies), clean the baking soda from the battery tray or battery(ies) being sure to avoid contact with skin and eyes. Determine source of contamination. Never install/reinstall a battery with a cracked or otherwise damaged case.

Recommended Battery Type

CAUTION

Failure to use the correct battery size and/or voltage may cause damage to the wheelchair and give unsatisfactory performance.

NOTE: For this procedure, refer to FIGURE 8.1.

At'm uses two M17-12 SLSM type batteries.

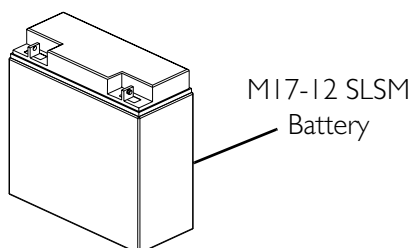


FIGURE 8.1 Recommended Battery Type

NOTE: Recommended battery type is spill proof and requires no maintenance except routine charging.

NOTE: Charge batteries daily. DO NOT allow batteries to completely discharge. To charge batteries, refer to Charging Batteries on page 39.

NOTE: Invacare recommends that both batteries be replaced if one battery is defective.

Removing/Installing the Battery Pack

⚠ WARNING

NEVER unplug the battery cables by pulling on the wires. Unplug the battery cables by pulling on the connector **ONLY**. Otherwise injury or damage may result.

NOTE: For this procedure, refer to FIGURE 8.2.

NOTE: If there is battery acid in the bottom of the battery pack, tray or on the sides of the battery(ies), apply baking soda to these areas to neutralize the battery acid. Before reinstalling the existing or new battery(ies), clean the baking soda from the battery tray or battery(ies) being sure to avoid contact with skin and eyes. Determine source of contamination. Never install/reinstall a battery with a cracked or otherwise damaged case.

Removing

1. Verify the joystick on/off button is in the off position and disconnect the joystick. Refer to Disconnecting/Connecting the Joystick on page 32.
2. Disconnect the battery connector from the wheelchair (RED and BLACK connector).
3. Using the battery handle, lift the battery pack up and away from the wheelchair base.

Installing

1. Verify the joystick on/off button is in the off position and disconnect the joystick. Refer to Disconnecting/Connecting the Joystick on page 32.
2. Position the battery pack into brackets located on the rear of the wheelchair.
3. Connect the battery connector to the connector on the rear of the wheelchair (RED and BLACK connector).

4. Connect the joystick. Refer to Disconnecting/Connecting the Joystick on page 32.

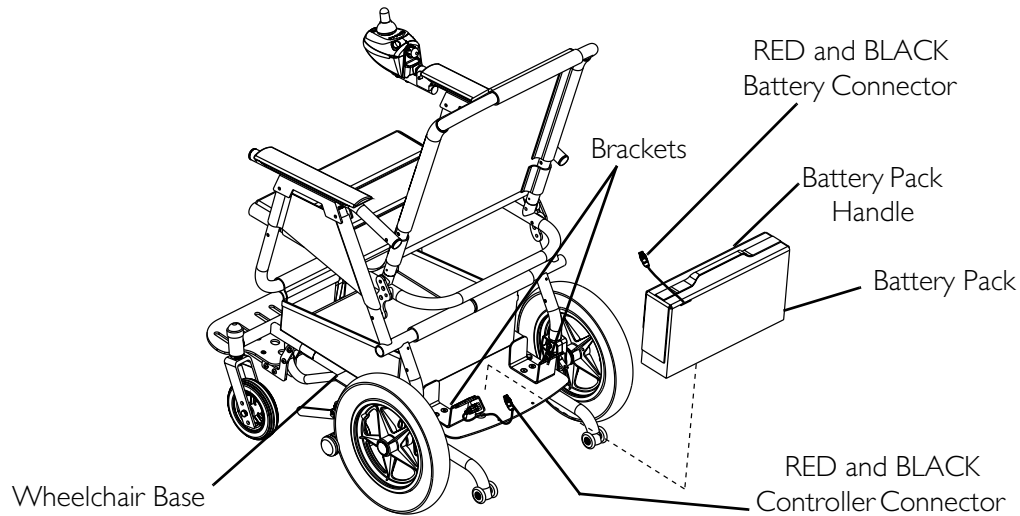


FIGURE 8.2 Removing/Installing the Battery Pack

Removing/Installing the Batteries From/Into the Battery Pack

NOTE: For this procedure, refer to FIGURE 8.3.

Removing

1. Remove the battery pack from the wheelchair. Refer to Removing/Installing the Battery Pack on page 36.
2. Open the battery pack by performing the following -
 - A. Grasp the side flaps and pull up.
 - B. Grasp the front flap and pull up.
3. Disconnect the wiring harness from the batteries in the following order -
 - A. NEGATIVE (-) BLACK battery cable from the NEGATIVE (-) battery terminal on the left battery.
 - B. POSITIVE (+) RED battery cable from POSITIVE (+) battery terminal/post on the right battery.
 - C. WHITE battery cable (jumper) from the POSITIVE (+) battery terminal/post on the left battery and the NEGATIVE (-) battery terminal/post on the right battery.
4. Remove the batteries from the battery pack.

Installing

1. Install the batteries into the battery pack in the orientation shown in FIGURE 8.3.
 2. Connect the wiring harness to the batteries in the following order -
 - A. NEGATIVE (-) BLACK battery cable to the NEGATIVE (-) battery terminal on the left battery.
 - B. POSITIVE (+) RED battery cable to POSITIVE (+) battery terminal/post on the right battery.
 - C. WHITE battery cable (jumper) to the POSITIVE (+) battery terminal/post on the left battery and the NEGATIVE (-) battery terminal/post on the right battery.
 3. Slide the red and black battery connector out of the battery pack in the slit provided on the front flap.
 4. Close the battery pack by performing the following -
 - A. Fold down the front flap and press to engage the hook and loop straps.
 - B. Fold down the side flaps and press to engage the hook and loop straps.
- NOTE: Ensure that the hook and loop straps are securely fastened before lifting the battery pack.*
5. Install the battery pack on the wheelchair. Refer to Removing/Installing the Battery Pack on page 36.

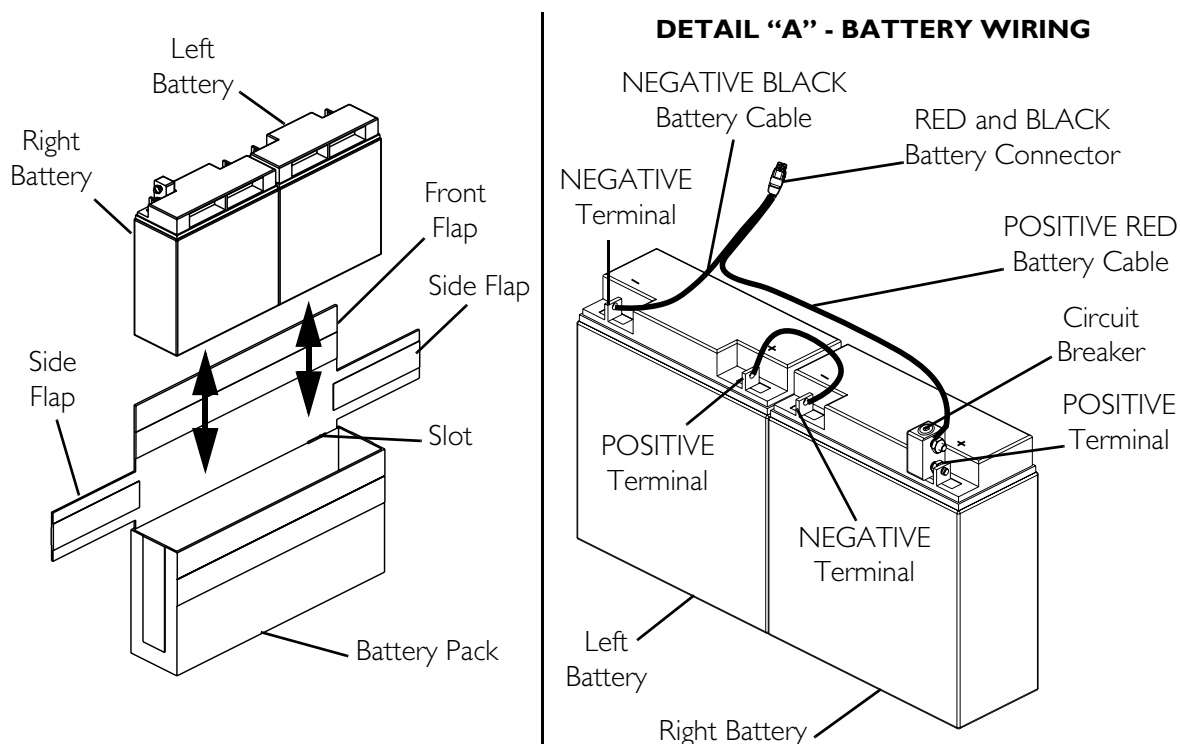


FIGURE 8.3 Removing/Installing the Batteries From/Into the Battery Pack

Charging Batteries

⚠ WARNING

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

DO NOT attempt to recharge the batteries and operate the wheelchair at the same time.

DO NOT attempt to recharge the batteries when the wheelchair has been exposed to any type of moisture.

DO NOT attempt to recharge the batteries when the wheelchair is outside.

DO NOT sit in the wheelchair while recharging the batteries.

CAUTION

New batteries **MUST** be fully charged prior to initial use of the wheelchair.

ALWAYS charge new batteries before initial use or battery life will be reduced.

As a general rule, you should recharge your batteries as frequently as possible to assure the longest possible life and to minimize required charging time. Plan to recharge them when you do not anticipate using the wheelchair.

Basic concepts which will help you understand this automatic process are:

The amount of electrical current drawn within a given time to charge a battery is called “charge rate”. If, due to usage, the charge stored in the battery is low, the charge rate is high. As a charge builds up, the charge rate is reduced, and the battery charger rate decreases to a “trickle charge”.

NOTE: If the batteries need to be charged more often or take longer to charge than normal, they may need to be replaced. Contact a qualified technician.

Charging Using an Independent Charger

⚠ WARNING

Read and carefully follow the individual instructions for each charger (supplied or purchased). If charging instructions are not supplied, consult a qualified technician for proper procedures.

CAUTION

Only use a charger approved by Invacare when charging through the joystick on this wheelchair model.

DO NOT use an independent charger with an output rating of over 8A (Amps). Otherwise, damage may occur.

Charger Plugged Into the Joystick

NOTE: For this procedure, refer to FIGURE 8.4.

NOTE: The charger port located on the front of the joystick requires the use of an independent charger. The independent charger is supplied with the wheelchair.

1. Attach the battery charger connector to the charger port on the front of the joystick.
2. Plug the charger's AC power cord or extension into the grounded 110-volt wall outlet.
3. When charging is complete, turn charger off.
4. Disconnect output cable from charger port.

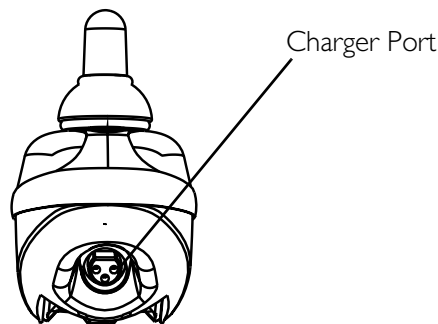


FIGURE 8.4 Charging Using an Independent Charger - Charger Plugged Into the Joystick

Charger Plugged Directly to Batteries

NOTE: For this procedure, refer to FIGURE 8.5.

1. Disconnect the RED and BLACK connector from the wheelchair harness.
2. Connect 3-pin charger connector to the female 3-pin connector on the charger jumper cable (supplied).
3. Connect RED and BLACK connector on the charger jumper cable to the RED and BLACK connector on the battery pack.
4. Plug the charger's AC power cord into the grounded 110-volt wall outlet.
5. When charging is complete, turn charger off.
6. Disconnect the charger jumper cable from the battery pack.
7. Reconnect the RED and BLACK connector from the battery pack to the wheelchair harness.

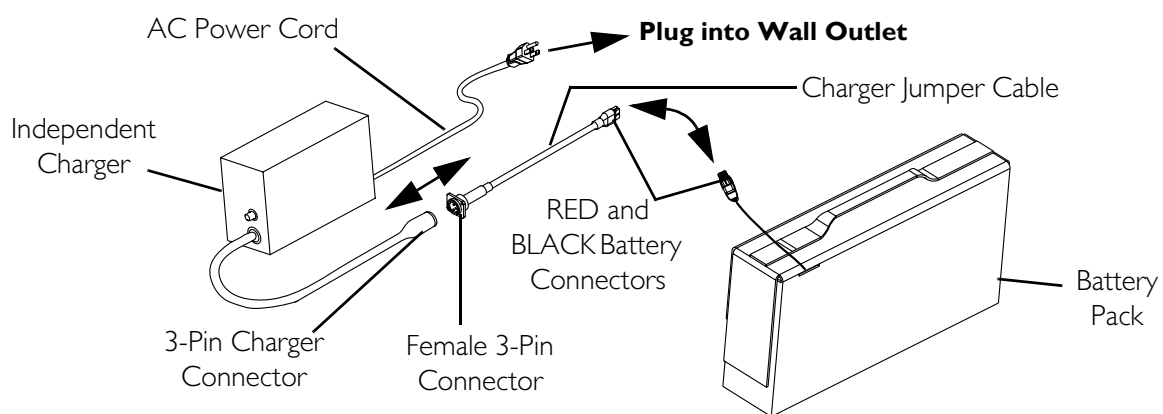


FIGURE 8.5 Charging Using an Independent Charger - Charger Plugged Directly to Batteries

SECTION 9—MOTORS

⚠ WARNING

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

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the Off position.

Engaging/Disengaging the Motors

⚠ WARNING

DO NOT attempt to transfer into or out off the wheelchair without the motor engagement handles in the engaged (horizontal) position.

DO NOT engage or disengage the motors until the power is off.

Push the motor engagement handles all the way down to engage the motors.

Engaging/Disengaging the motor allows free-wheeling the wheelchair or operating it by a joystick. Free-wheeling allows an attendant to maneuver the wheelchair without power.

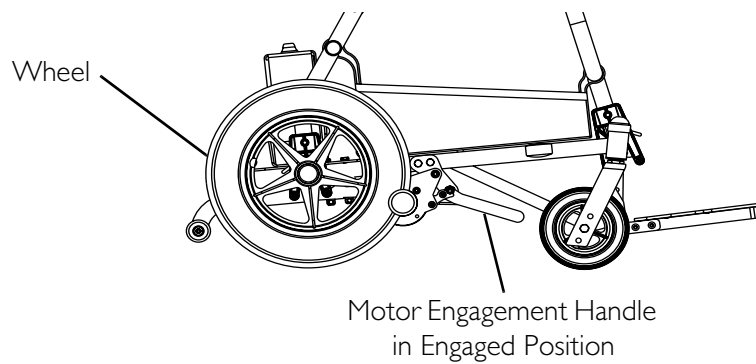
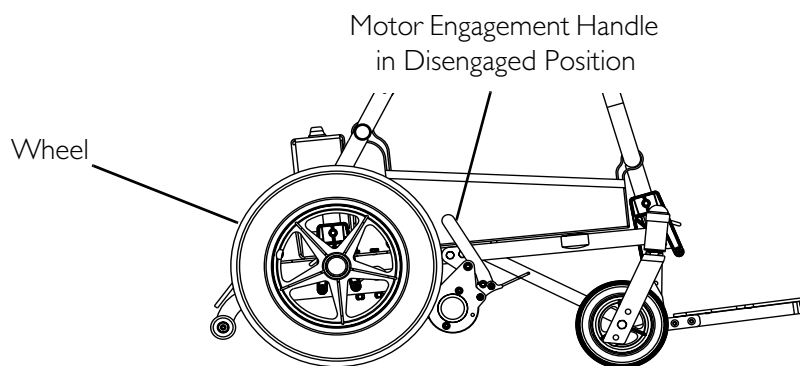
NOTE: For this procedure, refer to FIGURE 9.1.

1. Locate the motor engagement handle on one motor.
-

CAUTION

If the motor engagement handles are forced to engage in the wrong direction, the motors will be damaged and will need to be replaced.

2. Perform one of the following:
 - To Engage - Push the motor engagement handle all the way down (to the horizontal position) towards the front of the wheelchair.
 - To Disengage - Pull up the motor engagement handle (to the vertical position).
3. Repeat STEPS 1-2 for to engage/disengage the other motor.

DETAIL “A” - MOTOR ENGAGED**DETAIL “B” - MOTOR DISENGAGED****FIGURE 9.1** Engaging/Disengaging the Motors

SECTION 10—FRONT RIGGINGS

⚠ 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 two 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.**

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the Off position.

Installing/Removing the Front Rigging Assembly

NOTE: For this procedure, refer to FIGURE 10.1.

Installing

1. Turn the front rigging assembly to the side (open footrest is perpendicular to the wheelchair).
2. Insert the mounting pin on the front rigging assembly into the front rigging support bracket.
3. Rotate the front rigging assembly towards the inside of the wheelchair until it locks into place.

NOTE: The footplate will be facing the inside of the wheelchair when locked in place.

4. Repeat STEPS 1-3 for the other front rigging assembly.
5. If necessary, adjust the footrest height. Refer to Adjusting Footrest Height on page 45.

Removing

1. Push the front rigging release lever inward while rotating the front rigging assembly outward.
2. Lift the front rigging assembly out of the front rigging support bracket.
3. Repeat STEPS 1-2 for the other front rigging assembly, if necessary.

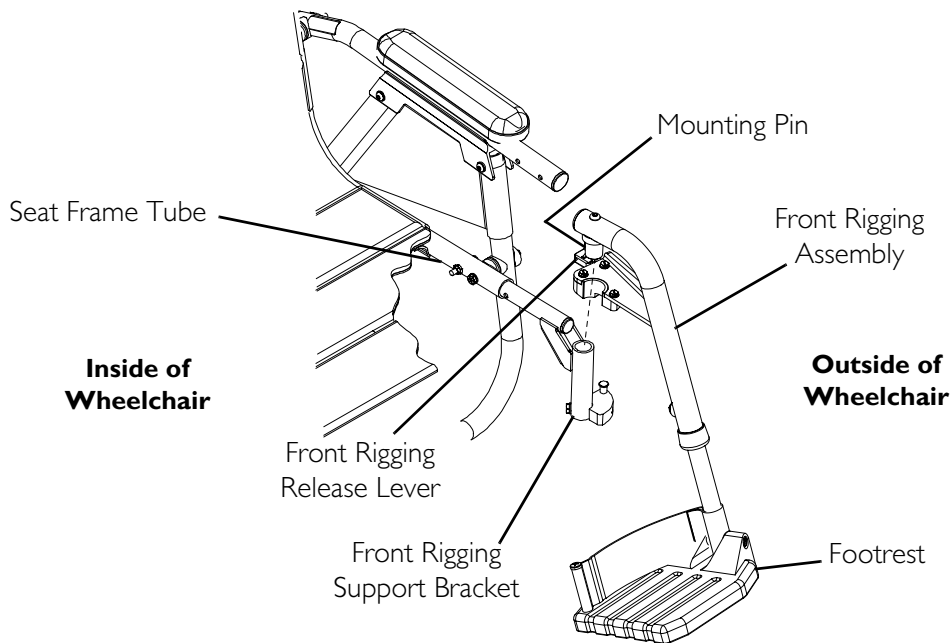


FIGURE 10.1 Installing/Removing the Front Rigging Assembly

Adjusting Footrest Height

NOTE: For this procedure, refer to FIGURE 10.2.

1. Remove the front rigging assembly. Refer to Installing/Removing the Front Rigging Assembly on page 44.
2. Remove the hex screw and coved spacer.
3. Move the footrest with slide tube up or down on its mounting tube until the desired footrest height is achieved.
4. Install the hex screw and coved spacer through the front rigging upper support and the slide tube. Securely tighten.
5. Install the front rigging assembly. Refer to Installing/Removing the Front Rigging Assembly on page 44.
6. Repeat STEPS 1-5 for the other side, if necessary.

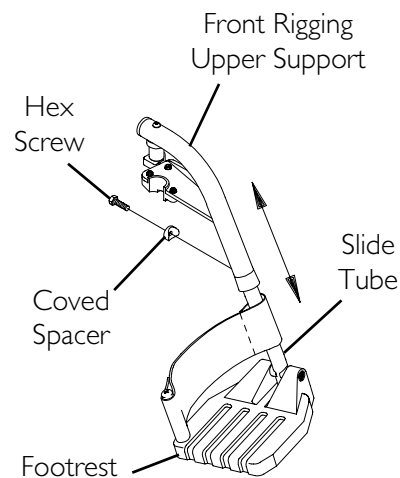


FIGURE 10.2 Adjusting Footrest Height

SECTION 11—WHEELS AND CASTERS

⚠ WARNING

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

Before performing any maintenance, adjustment or service verify that On/Off switch on the joystick is in the Off position.

DO NOT USE YOUR WHEELCHAIR UNLESS IT HAS THE PROPER TIRE PRESSURE (P.S.I.) - OTHERWISE THE WHEELCHAIR MAY NOT DRIVE CORRECTLY, STOP CORRECTLY OR MAY EXPERIENCE ERRATIC PERFORMANCE.

DO NOT overinflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm. The recommended tire pressure is listed on the side wall of the tire.

Keep fingers and clothing clear of drive wheels.

CAUTION

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

Replacing Front Casters

NOTE: For this procedure, refer to FIGURE 11.1.

1. Remove the mounting bolt, two spacers and locknut that secures the caster to the fork.
2. Remove the caster and discard.
3. Secure new caster to fork with the existing mounting bolt, two spacers and locknut. Securely tighten.
4. Repeat STEPS 1-3 for the other caster.

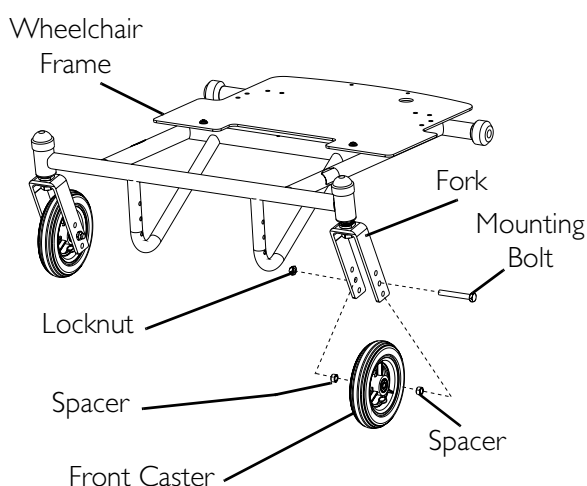


FIGURE 11.1 Replacing Front Casters

Adjusting Forks

NOTE: For this procedure, refer to FIGURE 11.2.

1. Remove the dust covers from the caster headtubes.
2. To properly tighten the caster journal system and guard against flutter, perform the following check:
 - A. Remove battery pack or battery box. Refer to Removing/Installing the Battery Pack on page 36.
 - B. Tip back the wheelchair to floor.
 - C. Pivot both forks and casters to top of their arc simultaneously.
 - D. Let casters drop to bottom of arc (wheels should swing once to one-side, then immediately rest in a straight downward position).
 - E. Adjust locknuts according to freedom of caster swing.
 - F. Bring wheelchair back to driving position.
 - G. Install the battery pack or battery box. Refer to Removing/Installing the Battery Pack on page 36.
3. Test wheelchair for maneuverability.
4. Readjust locknuts if necessary, and repeat STEPS 1-3 until correct.
5. Snap dust covers into the caster headtubes.

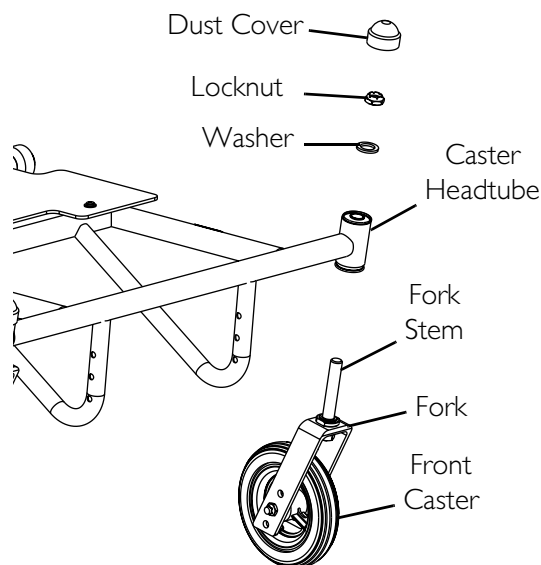


FIGURE 11.2 fAdjusting Forks

Removing/Installing the Drive Wheels

⚠ WARNING

Maintain tire pressure at a minimum of 30 p.s.i.

NOTE: For this procedure, refer to FIGURE 11.3.

Removing

1. Disengage the motors. Refer to Engaging/Disengaging the Motors on page 42.
2. Push and hold the quick-release button on the drive wheel and pull the drive wheel out of the wheelchair frame.
3. Repeat STEPS 1-2 for the other drive wheel.

Installing

1. Align drive wheel axle with the wheelchair frame.
2. Push and hold the quick-release button on the drive wheel and push the drive wheel into the wheelchair frame.
3. Engage the motor. Refer to Engaging/Disengaging the Motors on page 42.
4. Repeat STEPS 1-3 for the other drive wheel.

⚠ WARNING

Pull the drive wheel to ensure that the drive wheel is locked in place before operating the wheelchair - otherwise serious injury or damage may occur.

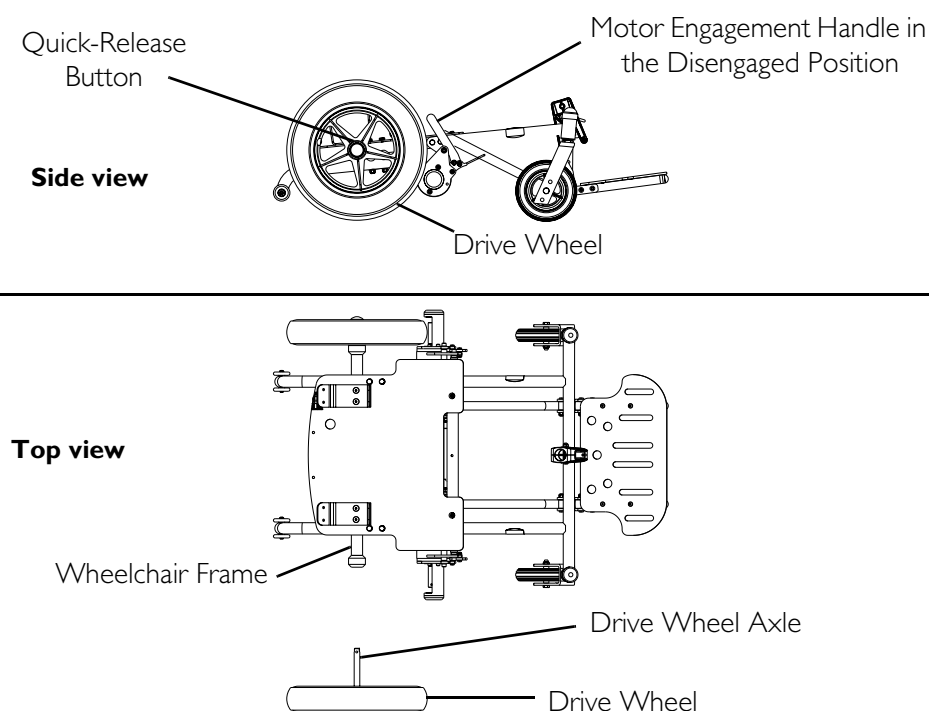


FIGURE 11.3 Removing/Installing the Drive Wheels

Replacing the Flat Free Tires on the Wheel Rim

⚠ WARNING

DO NOT attempt to replace flat free tires. This procedure MUST be performed by a qualified technician.

NOTE: During initial use of the wheelchair, the user may experience flat spots on the wheels. Flat spots will vanish with continued use of the wheelchair.

SECTION 12—TRANSPORTING THE WHEELCHAIR

⚠ WARNING

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

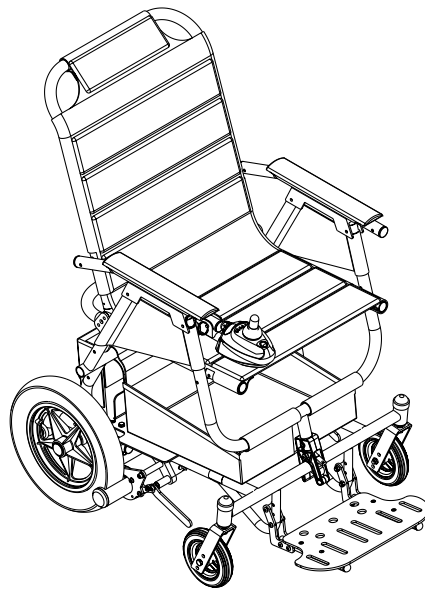
ALWAYS transport the battery pack/box in an upright and secure manner. To prevent damage, do not transport the battery pack/box with other objects that could suddenly shift during transportation, unless they are secured or in a different vehicle area. **DO NOT** transport battery pack/box with gas cans or similar containers in the same vehicle area.

The weight of the wheelchair without the user and batteries is approximately 74 lbs. Use proper lifting techniques (lift with your legs) to avoid injury. Extreme caution is advised when it is necessary to move an unoccupied power wheelchair. Invacare recommends using two assistants and making thorough preparations. Make sure to use only secure, non-detachable parts for hand-hold supports.

NOTE: For this procedure, refer to FIGURE 12.1.

1. Remove the occupant from the wheelchair.
2. Remove the battery pack or battery box. Refer to Removing/Installing the Battery Pack on page 36.
3. Remove the seat. Refer to Removing/Installing the Seat on page 29.
4. Remove any accessories on the wheelchair.
5. Bend your knees and keep your back straight.
6. Using non-removable (nondetachable) parts, transfer the seat, battery pack or battery box, wheelchair base and any accessories to the desired location.
7. Reinstall any accessories that were removed in STEP 3.
8. Reinstall the seat. Refer to Removing/Installing the Seat on page 29.
9. Reinstall the battery pack or battery box. Refer to Removing/Installing the Battery Pack on page 36.

Fully Assembled Chair



DETAIL “A” - READY FOR TRANSPORTATION

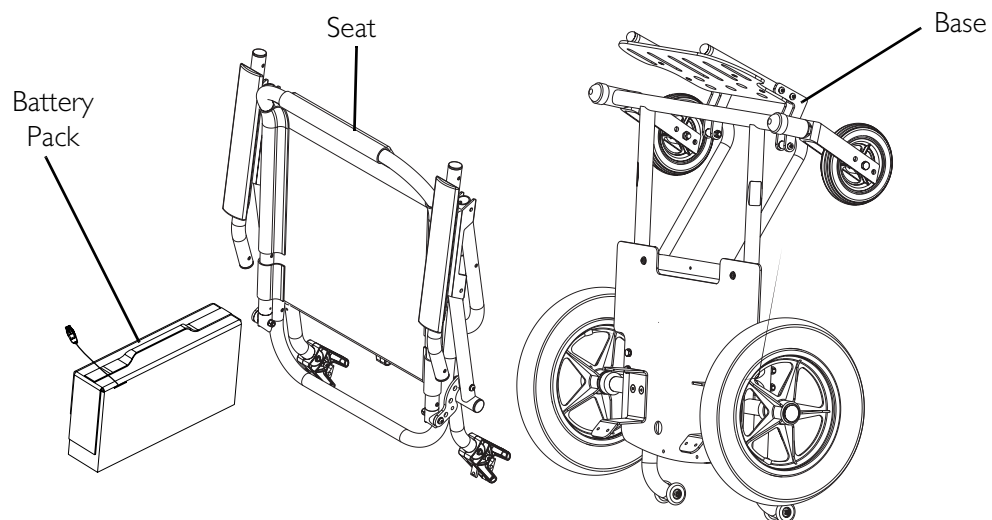


FIGURE 12.1 Transporting the Wheelchair

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 base 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 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), motors and gearboxes 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 batteries to be free from defects in materials and workmanship for a period of six (6) months 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, padded materials, tires and wheels) 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.

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

CANADA LIMITED WARRANTY

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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 base 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 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), motors and gearboxes 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 batteries to be free from defects in materials and workmanship for a period of six (6) months 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, padded materials, tires and wheels) 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.

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