



Yes, you can.®

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*Invacare*® **Veranda**™ Wheelchair

## User Manual

*This manual MUST be given to the user of the product.*

*BEFORE using this product, read this manual and save for future reference.*

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## I General

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### 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.

# I GENERAL

## I.2 Limited Warranty

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/user of our products.

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

Invacare warrants this product to be free from defects in materials and workmanship for a period of one year from date of purchase. If within such warranty period any such product shall be proven to be defective, such product 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 at the bottom of this page. Provide dealer's name, address, the product model number, 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.

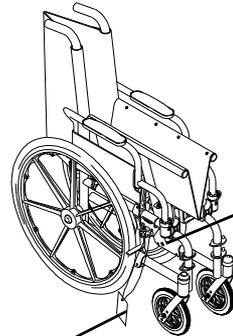
**LIMITATIONS AND EXCLUSIONS: THE FOREGOING WARRANTY SHALL NOT APPLY TO SERIAL NUMBERED PRODUCTS IF THE SERIAL NUMBER HAS BEEN REMOVED OR DEFACED, PRODUCTS SUBJECTED TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE OR STORAGE, PRODUCTS MODIFIED WITHOUT INVACARE'S EXPRESS WRITTEN CONSENT INCLUDING, 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 OR FAILURE TO ADHERE TO THESE INSTRUCTIONS.**

**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. INVACARE SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES WHATSOEVER.**

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

## 2 Overview

### 2.1 Label Locations



Serial Number Label  
Location is on crossbraces

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**IMPORTANT NOTICE**

The wheel locks on this wheelchair have been pre-set at the factory to comply with the Veterans Administration functional Standard 8320.01 of the Federal Register, paragraph 3.2.4.5.3. If these wheel locks do not meet your needs, follow instructions below.

**CAUTION**

Any wheel lock adjustments should embed wheel lock shoe at least 1/8" into tire when locked (3/16" on pneumatic tires).

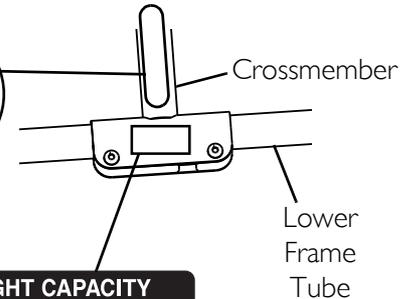
**INSTRUCTIONS FOR WHEEL LOCK ADJUSTMENTS**

1. Loosen wheel lock mounting fastener, which runs through mounting bracket and frame.
2. Slide clamp toward rear wheel until wheel lock shoe is embedded into tire material at least 1/8" when handle is engaged to the lock position (3/16" for pneumatic tires).
3. Tighten mounting fastener to secure mounting bracket in desired location and recheck lock shoe embedding.
4. Inspect for correct locking action BEFORE actual use.

00078021-0284

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.



**WEIGHT CAPACITY**  
**250 LBS. (114 kgs.)**  
REFER TO OWNER'S MANUAL  
P/N 1111013

## 2 OVERVIEW

### 2.2 Typical Product Parameters

VERANDA	VI6RFR	VI6RLR	VI8PFR	VI8PLR	VI8RFR	VI8RLR	V20RLR	V20RFR
<b>OVERALL WIDTH:</b>	23 <sup>1</sup> / <sub>2</sub>		25 inches				27 <sup>1</sup> / <sub>2</sub>	
<b>OVERALL DEPTH (W/O FRONT RIGGINGS):</b>	31 <sup>1</sup> / <sub>2</sub> inches							
<b>SEAT WIDTH:</b>	16 inches	16 inches	18 inches				20 inches	20 inches
<b>SEAT DEPTH:</b>	16 inches							
<b>SEAT-TO-FLOOR HEIGHT</b>	17 <sup>1</sup> / <sub>2</sub> and 19 <sup>1</sup> / <sub>2</sub> inches							
<b>BACK STYLE:</b>	Fixed							
<b>BACK HEIGHT:</b>	15 <sup>1</sup> / <sub>2</sub> inches		16 <sup>1</sup> / <sub>2</sub> inches		15 <sup>1</sup> / <sub>2</sub> inches		15 <sup>1</sup> / <sub>2</sub> inches	
<b>ARM STYLES:</b>	Removable Desk Length		Permanent Full Length		Removable Desk Length		Removable Desk Length	
<b>FRONT RIGGINGS:</b>	Hemi swingaway footrest	Hemi swingaway elevating legrests	Hemi swingaway footrest	Hemi swingaway elevating legrests	Hemi swingaway footrest	Hemi swingaway elevating legrests	Hemi swingaway elevating legrests	Hemi swingaway footrest
<b>REAR AXLE:</b>	Dual Axle							
<b>REAR WHEELS:</b>	24-inch composite wheel/solid rubber tire							
<b>HANDRIMS:</b>	Composite							
<b>WHEEL LOCKS:</b>	Push to lock							
<b>CASTER SIZE:</b>	8x1-inch solid rubber							
<b>UPHOLSTERY:</b>	Black nylon							
<b>FRAME FINISH</b>	Black							

VERANDA	VI6RFR	VI6RLR	VI8PFR	VI8PLR	VI8RFR	VI8RLR	V20RLR	V20RFR
<b>WEIGHT** (APPROX.):</b>	20.05 kg	21.70 kg	38.6 pounds	42.5 pounds	40.2 pounds	36.4 pounds	22.00 kg	20.35 kg
<b>SHIPPING WEIGHT** (APPROX.):</b>	22.45 kg	24.10 kg	43.5 pounds	47.3 pounds	45.1 pounds	41.2 pounds	24.40 kg	22.75 kg
<b>WEIGHT LIMITATION:</b>	250 lbs (114 kg)							



These heights can vary  $\pm \frac{1}{4}$  inch due to tire wear and manufacturing tolerances.

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### 3 Safety

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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 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.

A qualified technician **MUST** perform the initial set up of this wheelchair. also, a qualified technician must perform all procedures specifically indicated in the manual.



#### **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.



#### **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.



## **WARNING**

### **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 Positioning Strap**

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.

**ALWAYS** wear your seat positioning strap. Inasmuch as the seat positioning strap is an option on this wheelchair (you may order with or without the seat positioning strap), Invacare strongly recommends ordering the seat positioning strap as an additional safeguard for the wheelchair user. 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 belts. If signs of wear appear, strap **MUST** be replaced **IMMEDIATELY**.

With regards to seat/chest positioning straps - it is the obligation of the DME dealer, therapists and other healthcare professionals to determine if a seat/chest positioning strap is required to ensure the safe operation of this equipment by the user. Serious injury can occur in the event of a fall from a wheelchair.

## 3 SAFETY



### **WARNING**

Anti-tippers **MUST** be fully engaged and release buttons fully protruding out of adjustment holes.

Anti-tippers **MUST** be attached at all times. Inasmuch as the anti-tippers are an option on this wheelchair (you may order with or without the anti-tippers), Invacare strongly recommends ordering the anti-tippers as an additional safeguard for the wheelchair user.

**ALWAYS** use anti-tippers. When outdoors on wet, soft ground or on gravel surfaces, anti tippers may not provide the same level of protection against tipover. Extra caution **MUST** be observed when traversing such surfaces.

#### **Operating Information**

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

Unless otherwise noted, all service and adjustment should be performed while the wheelchair is unoccupied.

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.

When cleaning rear cane or hand grip areas use only a clean towel lightly dampened with cool water. Verify that grips are dry prior to use. Use of soap or ammonia based cleaning solutions will result in the hand grips sliding off the cane assembly. Failure to observe this warning may result in injury to the user or bystanders.

If the wheelchair is exposed to extreme temperature (above 100°F or below 32°F), high humidity and/or becomes wet, prior to use, ensure that the handgrips **DO NOT** twist on the handle. Otherwise, damage or injury may occur.

**DO NOT** sit or transfer into the wheelchair unless it is fully open and the seat frame rails are in lowest position.

Avoid storing or using the wheelchair near open flame or combustible products. Serious injury or damage to property may result. If equipped, **ALWAYS** use anti-tippers. When outdoors on wet, soft ground or on gravel surfaces, anti-tippers may not provide the same level of protection against tipover. Extra caution must be observed when traversing such surfaces.

**DO NOT** traverse, climb or go down ramps or slopes greater than 9°.

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



## WARNING

NEVER leave an unoccupied wheelchair on an incline.

DO NOT operate on roads, streets or highways.

DO NOT attempt to ride over curbs or obstacles. Doing so may cause your wheelchair to tip over and cause bodily harm to you or damage to the wheelchair.

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

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

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

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

DO NOT attempt to stop a moving wheelchair with wheel locks. Wheel locks are not brakes.

DO NOT tip the wheelchair without assistance.

Before attempting to transfer in or out of the wheelchair, every precaution should be taken to reduce the gap distance. Turn both casters parallel to the object you are transferring onto. When transferring to and from the wheelchair, ALWAYS engage both wheel locks.

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.

DO NOT stand on the frame of the wheelchair.

DO NOT stand on the footplates. 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.

ALWAYS use the handrims for self-propulsion. DO NOT grip the rear wheels themselves.

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

### 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 or damage to the wheelchair and the warranty is void.

### Weight Limitation

The Veranda wheelchair has a weight limitation of 250 lbs (114 kg).

## 4 SAFETY/HANDLING OF WHEELCHAIRS

### 4 Safety/Handling of Wheelchairs

#### 4.1 Safety/Handling of Wheelchairs

Safety and handling of the wheelchair require 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 heeded. Techniques in this manual are a starting point for the new wheelchair user and assistant with safety as the most important consideration for all.

#### 4.2 Stability and Balance



#### **WARNING**

DO NOT attempt to lift a wheelchair by lifting on 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 check hand grips for looseness before using the wheelchair. If loose and/or worn, replace **IMMEDIATELY**.

DO NOT climb, go up, or down ramps or traverse slopes greater than 9°.

Invacare strongly recommends proceeding down ramps or slopes slowly to avoid hard braking or sudden stops.

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 the wheelchair and surrounding property.

## 4 SAFETY/HANDLING OF WHEELCHAIRS

To assure stability and proper operation of your wheelchair, you **MUST** maintain proper balance at all times. 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.

Virtually all activities which involve movement in the wheelchair have an effect on the center of gravity. Invacare recommends using seat/chest positioning straps for additional safety while involved in activities that shift your weight.

**DO NOT** lean forward out of the wheelchair any further than the length of the armrests. Make sure the casters are pointing in the forward position whenever you lean forward. This can be achieved by advancing the wheelchair and then reversing it in a straight line

Many activities require the wheelchair owner to reach, bend and transfer in and out of the wheelchair. These movements will cause a change to the normal balance, the center of gravity, and the 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.

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

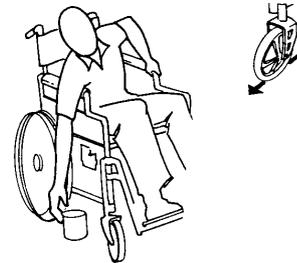
### Reaching, Leaning and Bending Forward



#### **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.

Position the front casters so that they are extended as far forward as possible and engage wheel locks.



**FIGURE I** Unfolding and Folding Wheelchair

## 4 SAFETY/HANDLING OF WHEELCHAIRS

### Reaching, Leaning Backwards



#### **WARNING**

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

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



**FIGURE 2** Unfolding and Folding Wheelchair Reaching, Leaning Backwards

### 4.3 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.

### 4.4 A Note to Wheelchair Assistants

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.

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

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

### 4.5 Tipping



#### **WARNING**

DO NOT tip the wheelchair without assistance.

When tipping the wheelchair, an assistant should grasp the back of the wheelchair on a non-removable (non-detachable) part. Inform the wheelchair occupant before tipping the wheelchair and remind him/her to lean back. Be sure the occupant's feet and hands are clear of all wheels and/or pinch points.

## 4 SAFETY/HANDLING OF WHEELCHAIRS

After mastering the techniques of tipping the wheelchair, use the following method to tackle curbs, short stairs, etc.

### Tipping - Curbs

Place foot on step tube and begin to tilt the wheelchair toward you. Apply a continuous downward motion until the balance point is achieved and the front casters clear the curb. At this point, the assistant will feel a difference in the weight distribution.

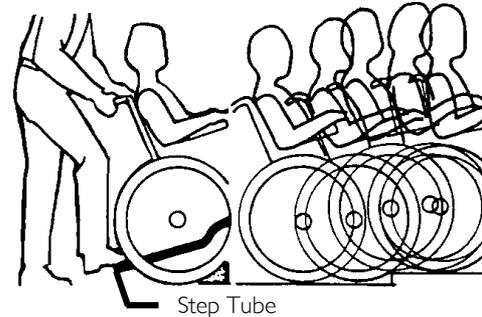


#### **WARNING**

When lowering the front casters of the wheelchair, **DO NOT** let the wheelchair drop the last few inches to the ground. This could result in injury to the occupant and/or damage to the wheelchair.

Roll the wheelchair forward and slowly lower the wheelchair in one continuous movement onto the sidewalk.

Push the wheelchair forward until the rear wheels roll up and over the curb.



**FIGURE 3** Tipping - Curbs

### 4.6 Stairways



#### **WARNING**

**DO NOT** attempt to lift a wheelchair by lifting on 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** check hand grips for looseness before using the wheelchair. If loose and/or worn, replace **IMMEDIATELY**.

Extreme caution is advised when it is necessary to move an occupied or unoccupied wheelchair up or down the stairs.

Invacare recommends that, if possible, the user be removed from the wheelchair prior to moving. Invacare recommends using two assistants and making thorough preparations. Make sure to use only secure, non-detachable parts for hand-held supports.

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

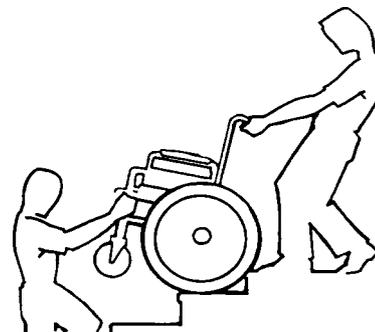
## 4 SAFETY/HANDLING OF WHEELCHAIRS

### Moving Up Stairs

1. If necessary, rotate the anti-tippers so the wheels are facing up.
2. One assistant (positioned behind the wheelchair), securely grasps a non-removable (non-detachable) part of the wheelchair for leverage and tilts the wheelchair back to the balance point.
3. After the wheelchair has been tilted back to the balance point, the assistant behind the wheelchair backs the wheelchair up against the first step.
4. The second assistant (positioned in the front of the wheelchair), with a firm hold on a non-detachable part of the framework, lifts the wheelchair up and on to the next stair above and steadies the wheelchair as the assistant behind the wheelchair places one foot on the next stair above and repeats process.
5. The wheelchair should not be lowered until the last stair has been negotiated and the wheelchair has been rolled away from the stairway.
6. If necessary, rotate the anti-tippers so the wheels are facing down.

### Moving Down Stairs

1. If necessary, rotate the anti-tippers so the wheels are facing up.
2. One assistant (positioned behind the wheelchair), securely grasps a non-removable (non-detachable) part of the wheelchair for leverage and tilts the wheelchair back to the balance point.
3. After the wheelchair has been tilted back to the balance point, the assistant behind the wheelchair rolls the wheelchair up to the edge of the first step.
4. The second assistant (positioned in the front of the wheelchair), with a firm hold on a non-detachable part of the framework, lowers the wheelchair down and on to the next stair below and steadies the wheelchair as the assistant in the rear places one foot on the next stair below and repeats process.
5. The wheelchair should not be lowered until the last stair has been negotiated and the wheelchair has been rolled away from the stairway.
6. If necessary, rotate the anti-tippers so the wheels are facing down.



**FIGURE 4** Unfolding and Folding Wheelchair

### 4.7 Escalators



#### **WARNING**

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

### 4.8 Transferring To and From Other Seats



#### **WARNING**

Before attempting to transfer in or out of the wheelchair, every precaution should be taken to reduce the gap distance. Turn both casters parallel to the object you are transferring onto. Also be certain the wheel locks are engaged to help prevent the wheels from moving.

#### **CAUTION**

When transferring, position yourself as far back as possible in the seat. This will help prevent damaged upholstery and the possibility of the wheelchair tipping forward.



This activity may be performed independently provided you have adequate mobility and upper body strength.

Position the wheelchair as close as possible alongside the seat to which you are transferring, with the front casters pointing parallel to it. Remove or flip up the armrest. Engage wheel locks. Swing away or remove front rigging. Shift body weight into seat with transfer.

During independent transfer, little or no seat platform will be beneath you. Use a transfer board if at all possible.



**FIGURE 5** Unfolding and Folding Wheelchair

## 4 SAFETY/HANDLING OF WHEELCHAIRS

### 4.9 Unfolding and Folding Wheelchair



#### **WARNING**

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

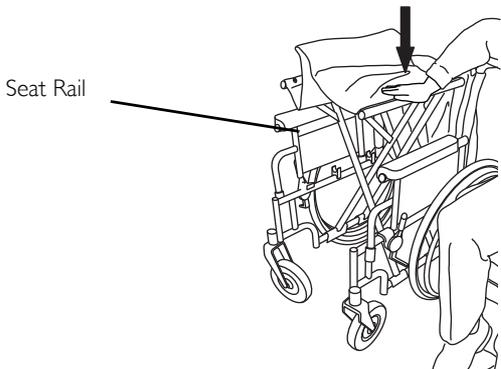
DO NOT place hand or fingers on the underside of the seat rail when opening or closing the wheelchair.

DO NOT sit or transfer into the wheelchair unless it is fully open and the seat frame rails are in lowest position.

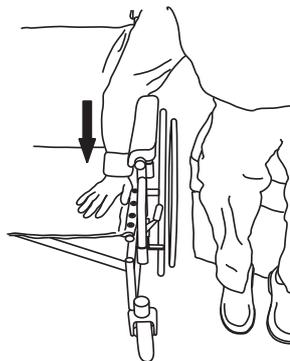
#### **Unfolding**

1. Tilt the wheelchair toward you (raising the opposite wheel and caster off the ground/floor).
2. Place your hand on the top of the seat rail closest to you where the seat upholstery is attached.
3. Point your fingers and thumb to the inside of the wheelchair.
4. Press downward on the top of the seat rail until the wheelchair is fully open and the seat rails are in lowest position.
5. Engage both wheel locks, refer to [Using The Wheel Locks](#) on page 40.
6. Open the footrest/legrest for clearance and transfer into the wheelchair. Refer to [Transferring To and From Other Seats](#) on page 19.

## 4 SAFETY/HANDLING OF WHEELCHAIRS



DO NOT wrap thumb or fingers under the seat rail. Point fingers and thumb to the inside of the wheelchair.



Press down on the seat rail and the seat upholstery with the entire hand. DO NOT place any part of the hand under the seat rail.

**FIGURE 6** Unfolding

### Folding Wheelchair

1. Swing footrest/legrest in locked position to the front of the wheelchair.
2. Pivot footplates upward to vertical position.
3. With both hands, grasp the middle of the seat upholstery at the front and back edge and lift up.

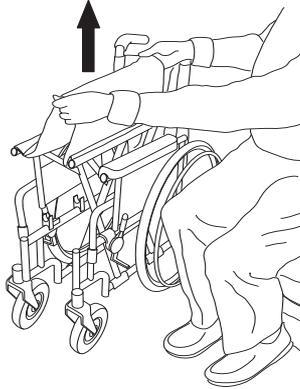


### CAUTION

DO NOT allow upholstery to hang between the cross braces.

4. Place excess seat upholstery over the armrest.

## 4 SAFETY/HANDLING OF WHEELCHAIRS



**FIGURE 7** Folding Wheelchair

## 5 Safety Inspection/Troubleshooting



Every six months or as necessary, take your wheelchair to a qualified technician 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.

### 5.1 Safety Inspection Checklist

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

#### Inspect/Adjust Initially

- Ensure that the wheelchair rolls straight (no excessive drag or pull to one side).
- Inspect for loose or missing hardware on frame and crossbraces.
- Inspect for bent frame or crossbraces.
- Check that the wheel locks do not interfere with tires when rolling.
- Check that the wheel lock pivot points are free of wear and looseness.
- Check that the wheel locks are easy to engage.
- Ensure that the wheel locks prevent the wheelchair from moving when engaged.
- Inspect the seat and back for rips and sagging.
- Inspect the seat and back for loose or broken hardware.
- Inspect the back cane hand grips for wear/looseness/deterioration.
- Inspect tires for flat spots and wear.



#### **CAUTION**

As with any vehicle, check the wheels and tires periodically for cracks and wear. Replace if damaged.

## 5 SAFETY INSPECTION/TROUBLESHOOTING

- Check that there is no excessive side movement or binding in the rear wheels when lifted and spun.
- Inspect rear wheels for cracks and wear (hub and rim).
- Inspect rear wheels for cracked, bent or broken spokes.
- Ensure all spokes are uniformly tight.
- Inspect handrims for signs of rough edges or peeling.
- Inspect axle assembly for proper tension by spinning caster. Caster should come to a gradual stop.
- Adjust front casters/forks bearing system if wheel wobbles noticeably or binds to a stop.
- Ensure wheel bearings are clean and free of moisture.
- Check headtube locknuts for tightness.
- Inspect casters for cracks and wear (hub and rim).
- Inspect front casters for cracked, bent or broken spokes.
- Clean upholstery and armrests.
- Check that all labels are present and legible. Replace if necessary.
- Ensure the casters are free of debris.

### **Inspect/Adjust Weekly**

- Ensure that the wheel locks prevent the wheelchair from moving when engaged.
- Inspect tires for flat spots and wear.
- Inspect rear wheels for cracked, bent or broken spokes.
- Inspect axle assembly for proper tension by spinning caster. Caster should come to a gradual stop.
- Inspect front caster for cracked, bent or broken spokes.
- Ensure the casters are free of debris.

### **Inspect/Adjust Monthly**

- Ensure that the wheelchair rolls straight (no excessive drag or pull to one side).

## 5 SAFETY INSPECTION/TROUBLESHOOTING

- Check that the wheel locks do not interfere with tires when rolling.
- Check that the wheel lock pivot points are free of wear and looseness.
- Inspect seat and back for loose or broken hardware.
- Inspect back cane hand grips for wear/looseness/deterioration.
- Adjust front casters/forks bearing system if wheel wobbles noticeably or binds to a stop.
- Ensure wheel bearings are clean and free of moisture.
- Check headtube locknuts for tightness.
- Ensure the casters are free of debris.

### **Inspect/Adjust Periodically**

- Ensure that the wheelchair rolls straight (no excessive drag or pull to one side).
- Inspect frame and crossbraces for loose or missing hardware.
- Inspect for bent frame or crossbraces.
- Check that wheel locks are easy to engage.
- Inspect seat and backs for rips and sagging.
- Check that there is no excessive side movement or binding in the rear wheels when lifted and spun.
- Inspect rear wheels for cracks and wear (hub and rim).
- Inspect handrims for signs of rough edges or peeling.
- Adjust front casters/forks bearing system if wheel wobbles noticeably or binds to a stop.
- Ensure wheel bearings are clean and free of moisture.
- Inspect casters for cracks and wear (hub and rim).
- Clean upholstery and armrests.
- Check that all labels are present and legible. Replace if necessary.
- Ensure the casters are free of debris.

## 5 SAFETY INSPECTION/TROUBLESHOOTING

### 5.2 Troubleshooting

Chair Veers Right/Left	Chair 3 Wheels	Sluggish Turn or Performance	Casters Flutter	Squeaks and Rattles	Looseness in Chair	Solutions
		X	X	X	X	Check for loose nuts and bolts.
X	X					Check that rear wheels are equally spaced away from seat frame.

### 5.3 Maintenance

#### Maintenance Safety Precautions



#### **WARNING**

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

Replace any labels that are missing, worn, or torn. Refer to [Label Locations](#) on page 7 for a listing of the labels and their locations.

#### **CAUTION**

DO NOT overtighten hardware attaching to the frame. This could cause damage to the frame tubing.

#### **Suggested Maintenance Procedures**

1. Before using your wheelchair, make sure all nuts and bolts are tight.
2. Check all parts for damage or wear and replace.
3. Check all parts for proper adjustment.



### CAUTION

As with any vehicle, check the wheels and tires periodically for cracks and wear. Replace if damaged.

- Periodically adjust wheel locks in correlation to tire wear. Refer to [Adjusting Wheel Locks](#) on page 41.



Tire wear is excessive if:

- Pneumatic Tires - there is missing tread or the tires are bald.
- Urethane Tires - there are cuts, surface defects or the tires are loose on the rims.
- Rubber Tires - 30% or more of the tire has worn away.

Invacare recommends that rear wheel tire/tube and caster tire/tube be replaced every five years.

- Periodically check handrims to ensure they are secured to the rear wheels. If loose, have them tightened by a qualified technician.
- Periodically check caster wheel bearings to make sure they are clean and free from moisture. Use a Teflon™ lubricant if necessary.



### WARNING

When cleaning rear cane or hand grip areas use only a clean towel lightly dampened with cool water. Verify that grips are dry prior to use. Use of soap or ammonia based cleaning solutions will result in the hand grips sliding off the cane assembly. Failure to observe this warning may result in injury to the user or bystanders.

- Hand grips should be checked monthly for wear/looseness/deterioration. Clean if desired. Replace if looseness or deterioration is found.
- Check upholstery for sagging, rips or tears.

### Replacing/Repairing Rear Wheel Tire/Tube



### WARNING

Replacement of solid rubber tires is not recommended. If the solid rubber tire needs repaired, Invacare recommends replacing the complete wheel assembly.

## 5 SAFETY INSPECTION/TROUBLESHOOTING

### Replacing/Repairing Caster Tire/Tube



#### **WARNING**

Replacement of solid rubber tires is not recommended. If the solid rubber tires need replaced, Invacare recommends replacing complete caster assembly.

## 6 Front Rigging



### WARNING

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

### 6.1 Installing/Removing Front Riggings

#### Installing

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

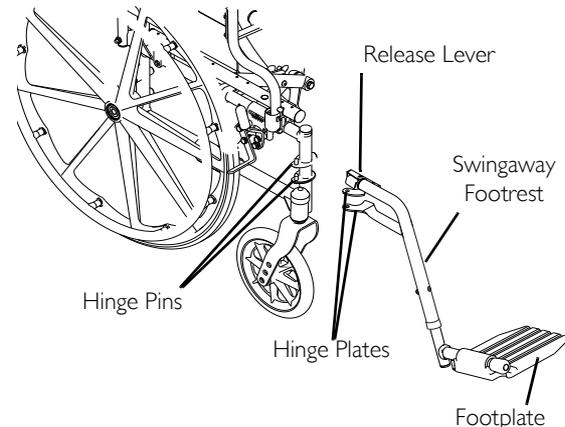


The footplate will be on the inside of the wheelchair when locked in place.

4. Repeat STEPS 1-3 for the opposite side of the wheelchair.
5. To release the front rigging, push the footrest release lever inward, rotate footrest outward.

#### Removing

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

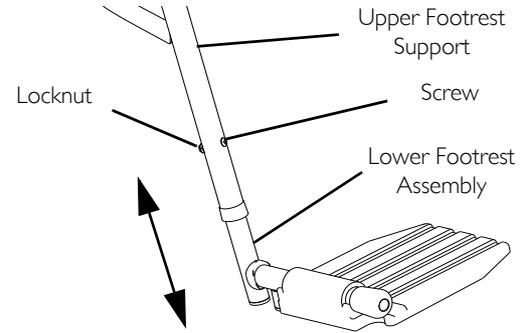


**FIGURE 1** Installing/Removing Front Riggings

## 6 FRONT RIGGING

### 6.2 Adjusting Footrest Height

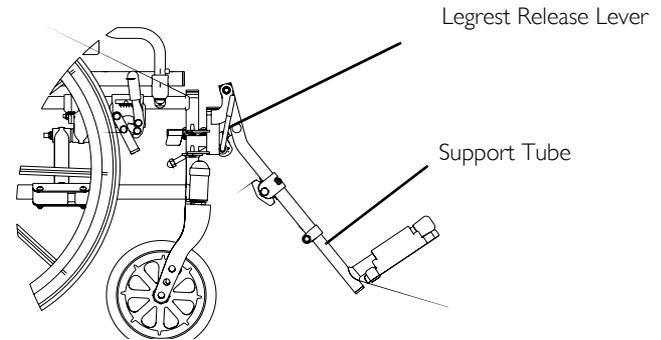
1. Loosen, but **DO NOT** remove, the screw and locknut that secures the lower footrest assembly to the upper footrest support.
2. Reposition the lower footrest assembly to the desired height.
3. Securely tighten the screw and locknut that secures the lower footrest assembly to the upper footrest support.
4. If necessary, repeat STEP 1-3 for the opposite side of the wheelchair.



**FIGURE 2** Adjusting Footrest Height

### 6.3 Raising/Lowering Elevating Legrest Assembly

1. To raise the elevating legrest, the assistant or user should hold the support tube and raise the elevating legrests until the desired height is obtained.
2. To lower the elevating legrest, perform the following:
  - A. Support the user leg with one hand.
  - B. Push legrest release lever down with other hand.
  - C. Gently lower user leg down and rest it against the legrest.



**FIGURE 3** Raising/Lowering Elevating Legrest Assembly

## 7 Arms



### WARNING

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

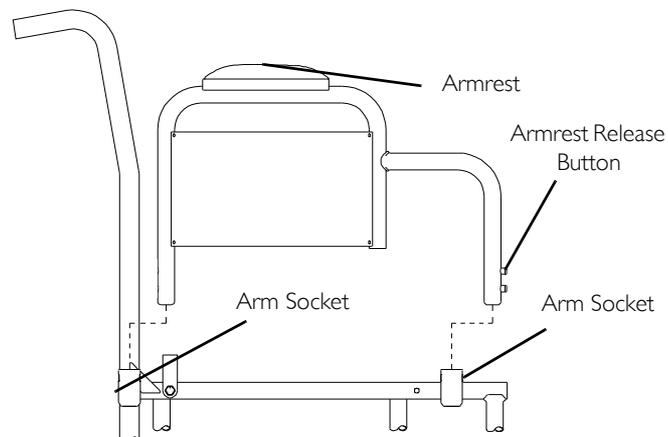
### 7.1 Removing/Installing Armrests (Removable Armrests Only)

#### Removing

1. Press and hold the armrest release button at the front of the armrest.
2. Remove armrest from armrest sockets by pulling straight up on the armrest.
3. Repeat STEPS 1 and 2 for the other armrest.

#### Installing

1. Position armrest over front and rear armrest sockets.
2. Push the armrest down and evenly at both ends until the front release button snaps into arm socket hole.
3. Repeat STEPS 1 and 2 for the other armrest.



**FIGURE 1** Removing/Installing Armrests (Removable Armrests Only)

### 8 Back



#### **WARNING**

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

Remove the back for unoccupied transportation purposes only. Securely install the back onto the wheelchair before use.

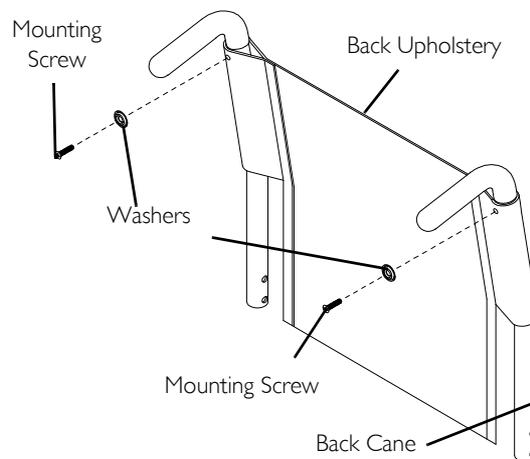
#### **8.1 Replacing Standard Back Upholstery**

1. Remove the two mounting screws and washers that secure the existing back upholstery to the back canes.
2. Remove the hex screw and locknut that secure one back cane to the wheelchair frame.



It is necessary to remove only one back cane to replace the back upholstery.

3. Pull the loose back cane out of the existing back upholstery.
4. Pull the existing back upholstery up and over the mounted back cane.
5. Install the new back upholstery over the mounted back cane.
6. Slide the loose back cane through the new back upholstery.
7. Secure the back cane to the wheelchair frame with the hex screw and locknut.
8. Secure the new back upholstery to the back canes with the existing mounting screws and washers.



**FIGURE 1** Replacing Standard Back Upholstery

---

## 9 Seat to floor

---



### WARNING

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

Remove the back for unoccupied transportation purposes only. Securely install the back onto the wheelchair before use.

### 9.1 Changing Seat-to-Floor Height



### WARNING

The size/position of the front casters, size/position of the rear wheels, use of anti-tipper model, as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of the six may cause the wheelchair to decrease in stability. These adjustments must be performed by a qualified technician.

Seat-to-floor heights have specific positions depending on rear wheel size, rear wheel position, front caster size and front caster position. These adjustments must be performed by a qualified technician.

If changing the seat-to-floor height, a 1 1/2 to 2 inch ground clearance must be maintained. Refer to [Adjusting the Anti-Tippers](#), on page 39.

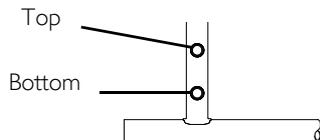
1. Refer to the following chart in FIGURE 1 to determine mounting positions for front casters/forks and rear wheels for the desired obtainable seat-to-floor height:
2. Remove the rear wheels from the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 35.
3. If necessary, replace the front casters and forks with the casters and forks indicated in the chart. Refer to [Removing/Installing Front Casters](#) on page 37 and [Removing/Installing Eight Inch Forks](#) on page 36.
4. Reinstall the rear wheels onto the wheelchair in the mounting position indicated in the chart. Refer to [Removing/Installing Rear Wheels](#) on page 35.
5. Adjust anti-tippers according to new seat-to-floor height. Refer to [Installing/Adjusting Anti-tippers](#) on page 38.

## 9 SEAT TO FLOOR

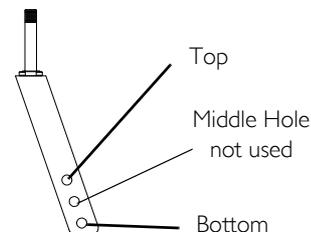
### CASTER AND REAR WHEEL MOUNTING LOCATIONS FOR DESIRED SEAT TO FLOOR HEIGHT

SEAT-TO-FLOOR HEIGHT	CASTER MOUNTING POSITION	REAR WHEEL SIZE	REAR WHEEL MOUNTING POSITION
17 1/2 INCHES	Top mounting hole on fork	24 inch	Top mounting hole on frame
19 1/2 INCHES	Bottom mounting hole on fork	24 inch	Bottom mounting hole on frame

#### DETAIL "A" - REAR WHEEL MOUNTING POSITIONS- ADULT/HEMI FRAME STYLE



#### DETAIL "B" - 8 INCH CASTER MOUNTING POSITIONS



**FIGURE I** Changing Seat-to-Floor Height

## 10 Rear Wheels



### 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/Installing Rear Wheels

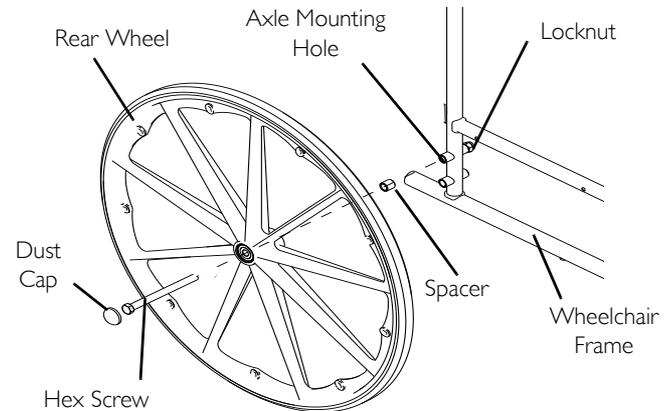


### WARNING

Only a qualified technician may change the size of the rear wheel or the seat-to-floor height.

Make sure both rear wheels are the same size and are installed into the same respective mounting hole before using the wheelchair. Otherwise, injury may occur.

1. Remove the dust cap, hex screw, spacer and locknut that secure the rear wheel to the wheelchair frame.
2. Repeat STEP 1 for the opposite rear wheel.
3. To reinstall the rear wheel(s) onto the wheelchair, reverse STEPS 1-2.
4. Torque the locknut to 40 ft-lbs.
5. Adjust the wheel locks. Refer to [Adjusting the Anti-Tippers](#) on page 39.



**FIGURE 1** Removing/Installing Rear Wheels

## 11 FRONT CASTERS/FORKS

### 11 Front Casters/Forks



#### **WARNING**

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

Make sure both fork/caster assemblies are the same size before using the wheelchair, otherwise injury may occur.

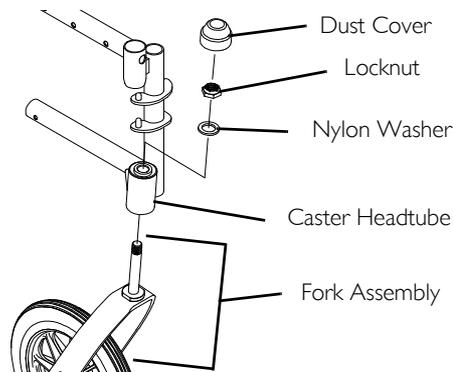
#### **Removing/Installing Eight Inch Forks**

##### **Removing**

1. Remove the dust cover.
2. Remove the locknut and nylon washer that secures the fork to the caster headtube.
3. Drop the fork assembly out of the caster headtube.

##### **Installing**

1. Slide the new fork assembly into the caster headtube.
2. Secure the fork to the caster headtube with the locknut and nylon washer. Tighten securely.
3. Adjust the forks. Refer to [Adjusting Forks](#) on page 36.



**FIGURE 1** Removing/Installing Eight Inch Forks

#### **11.1 Adjusting Forks**

1. To properly tighten caster journal system and guard against flutter, perform the following check:
  - A. Tip back of wheelchair to floor.
  - B. Pivot both forks and casters to top of their arc simultaneously.
  - C. Let casters drop to bottom of arc (wheels should swing once to one-side, then IMMEDIATELY rest in a straight downward position).

- D. Adjust locknuts according to freedom of caster swing.
  - E. Repeat STEPS C-D until wheels swing once to one-side, then IMMEDIATELY rest in a downward position.
2. Test wheelchair for maneuverability.
  3. Readjust locknuts if necessary, and repeat STEPS 1-2 until correct.
  4. Snap dust cover over the locknut and stem.

### 11.2 Removing/Installing Front Casters



#### WARNING

Make sure both front casters are the same size and are installed into the same respective mounting hole before using the wheelchair, otherwise injury may occur.

#### Removing

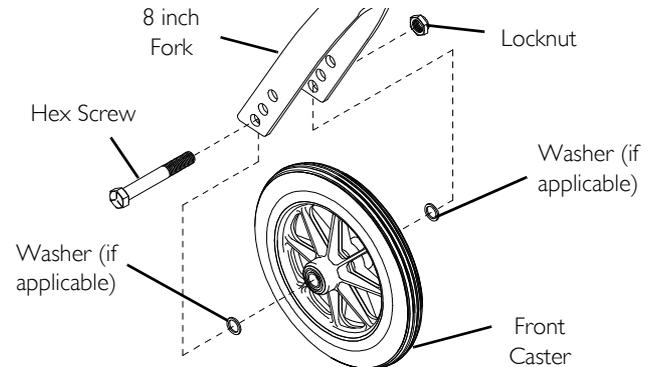
1. Remove the hex screw, washers and locknut that secure the front caster to the fork.
2. Remove the front caster from the fork.



Washers are only used with 8 inch casters with precision bearings.

#### Installing

1. Refer to the chart in [Seat to floor height](#) for proper installation of new caster. Refer to [Caster And Rear Wheel Mounting Locations For Desired Seat To Floor Height](#) on page 34.
2. Secure the front caster to the fork in the mounting position determined in STEP 1 with hex screw, washers and locknut. Tighten securely.



**FIGURE 2** Removing/Installing Front Casters

# 12 Anti-tippers/Wheel Locks

### 12.1 Installing/Adjusting Anti-tippers



#### **WARNING**

If so equipped, anti-tippers **MUST** be attached at all times. Inasmuch as the anti-tippers are an option on this wheelchair (You may order with or without the anti-tippers), Invacare strongly recommends ordering the anti-tippers as a safeguard for the wheelchair user.

Anti-tippers **MUST** be fully engaged and release buttons fully protruding out of adjustment holes.

**ALWAYS** use anti-tippers. When outdoors on wet, soft ground or on gravel surfaces, anti tippers may not provide the same level of protection against tipover. Extra caution **MUST** be observed when traversing such surfaces.

Ensure both anti-tippers are adjusted to the same mounting hole.

If changing the seat-to-floor height, a 1 1/2 to 2 inch ground clearance must be maintained.

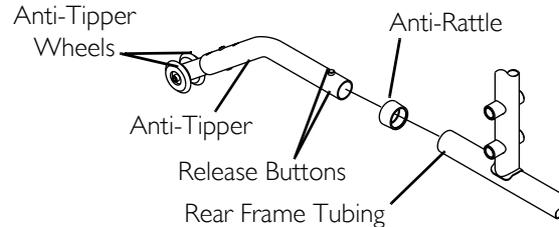
#### **Installing Anti-Tipper**

1. Press the release buttons and insert the anti-tippers with the anti-tipper wheels pointing toward the ground/floor into the wheelchair frame tubing.
2. Ensure that the release button of the anti-tipper fully protrudes out of the hole in the bottom of the wheelchair frame tubing.
3. Place the wheelchair on a flat surface.
4. Measure the distance between the bottom of the anti-tipper wheels and the ground/floor.



A 1 1/2 to 2 inch clearance between the bottom of the anti-tipper wheels and the ground/floor **MUST** be maintained at all times.

5. If the distance between the bottom of anti-tipper wheels and the ground/floor is not 1 1/2 to 2 inches, adjust anti-tippers. Refer to [Adjusting the Anti-Tippers](#). on page 39.

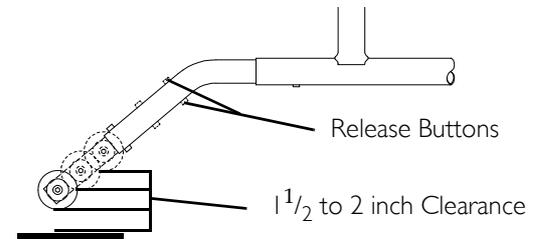


**FIGURE 1** Installing Anti-Tipper

### Adjusting the Anti-Tippers.

**i** A  $1\frac{1}{2}$  to 2 inch clearance between the bottom of the anti-tipper wheels and the ground/floor **MUST** be maintained at all times.

1. Place the wheelchair on a flat surface.
2. Press the release buttons on the wheeled portion of the anti-tipper and slide it up or down to the desired adjustment hole.
3. Check to make sure that the release buttons are fully engaged in adjustment holes.
4. Ensure both anti-tippers are adjusted to the same height.
5. Measure the distance between the bottom of the anti-tipper wheels and the ground/floor.
6. If the distance between the bottom of anti-tipper wheels and the ground/floor is not  $1\frac{1}{2}$  to 2 inches, repeat STEPS 2-5 until the distance is  $1\frac{1}{2}$  to 2 inches.
7. If the  $1\frac{1}{2}$  to 2 inch distance cannot be achieved with the anti-tippers, a different model may be required. Contact an Invacare dealer or qualified technician.



**FIGURE 2** Adjusting the Anti-Tippers.

## 12 ANTI-TIPPERS/WHEEL LOCKS

### 12.2 Using/Adjusting The Wheel Locks

#### Using The Wheel Locks



#### **WARNING**

DO NOT attempt to stop a moving wheelchair with wheel locks. Wheel locks are not brakes.



Position wheelchair on a flat, level surface to perform this procedure. Ensure the wheelchair is not moving before engaging the wheel locks.

1. See FIGURE 1 for instructions on using the wheel locks.

#### **Detail “A” - Locked Position**



Push wheel lock handle forward away from the tire to engage wheel lock

Pull wheel lock handle toward the tire to disengage wheel lock

Wheel Lock Handle

Tire

Wheel Lock

#### **Detail “B” - Unlocked Position**



Tire

Wheel Lock

Wheel Lock Handle

**FIGURE 3** Using The Wheel Locks

## Adjusting Wheel Locks



### WARNING

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

**DO NOT attempt to stop a moving wheelchair with the wheel locks. WHEEL LOCKS ARE NOT BRAKES.**

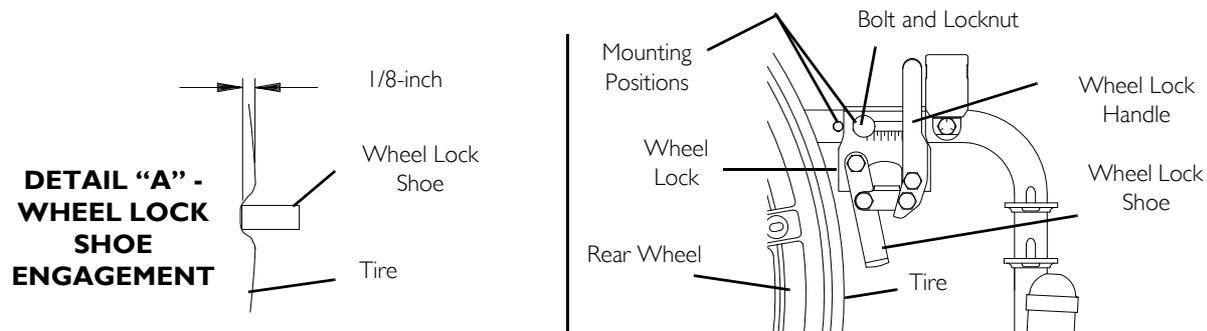
1. Ensure the wheel lock is in the open (unlocked position).
2. Loosen the bolt and locknut that secure the wheel lock assembly to the wheelchair frame.
3. Reposition the wheel lock so that when engaged, the wheel lock shoe embeds the tire 1/8-inch and holds the wheelchair.
4. Securely tighten the bolt and locknut securing the wheel lock to the wheelchair frame.
5. Engage the wheel lock.
6. Measure the distance the wheel lock is embedded into the tire as shown in detail "A" of FIGURE 4.



Any wheel lock adjustment should embed the wheel lock shoe at least 1/8-inch into the tire when engaged.

7. Repeat the STEPS 1-6 until the wheel lock shoe embeds the tire 1/8-inch and holds the wheelchair.
8. Repeat STEPS 1-7 for the opposite wheel lock.
9. If the measurement of 1/8-inch cannot be achieved, remove the bolt and locknut that secure the wheel lock to the wheelchair frame and mount the wheel lock in one of two mounting positions.
10. Repeat STEPS 1-9 until the wheel lock holds the wheelchair. If the correct measurement still cannot be achieved, contact a qualified technician.

## 12 ANTI-TIPPERS/WHEEL LOCKS



**NOTES**



Yes, you can.®

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