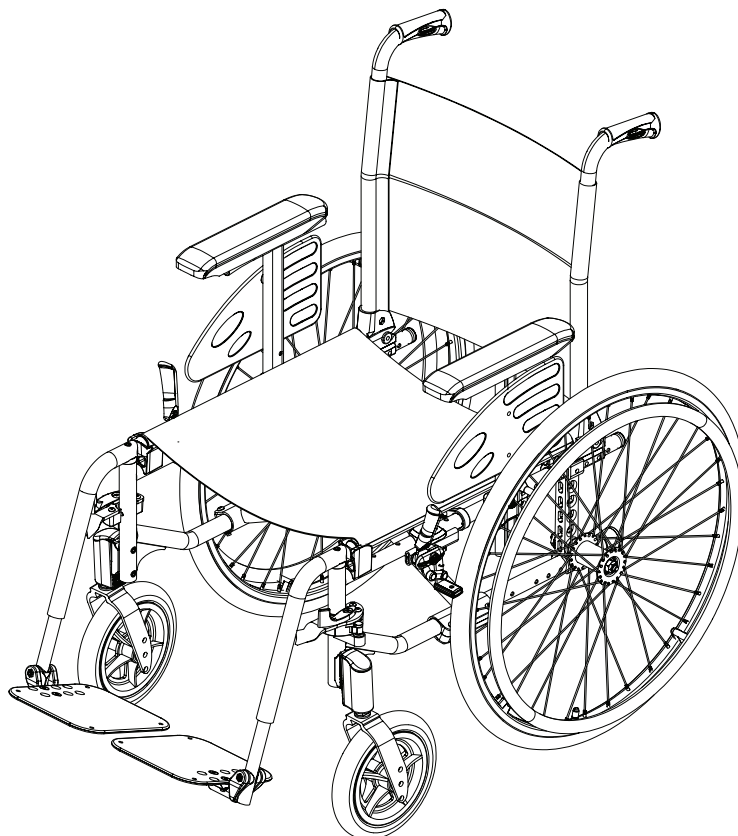


AX3™ Wheelchair



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 SPECIFICALLY INDICATED IN THE MANUAL.

WHEELCHAIR USERS: DO NOT SERVICE OR OPERATE THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING (1) THE OWNER'S OPERATOR AND MAINTENANCE MANUAL AND (2) THE SEATING SYSTEM'S MANUAL (IF APPLICABLE). IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS, AND INSTRUCTIONS, CONTACT INVACARE TECHNICAL SUPPORT BEFORE ATTEMPTING TO SERVICE OR OPERATE THIS EQUIPMENT - OTHERWISE INJURY OR DAMAGE MAY RESULT.

DEALERS AND QUALIFIED TECHNICIANS: DO NOT SERVICE OR OPERATE THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING (1) THE OWNER'S OPERATOR AND MAINTENANCE MANUAL, (2) THE SERVICE MANUAL (IF APPLICABLE) AND (3) THE SEATING SYSTEM'S MANUAL (IF APPLICABLE). IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS AND INSTRUCTIONS, CONTACT INVACARE TECHNICAL SUPPORT BEFORE ATTEMPTING TO SERVICE OR OPERATE THIS EQUIPMENT - OTHERWISE, INJURY OR DAMAGE MAY RESULT.

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

Invacare recommends that wheelchair users **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.

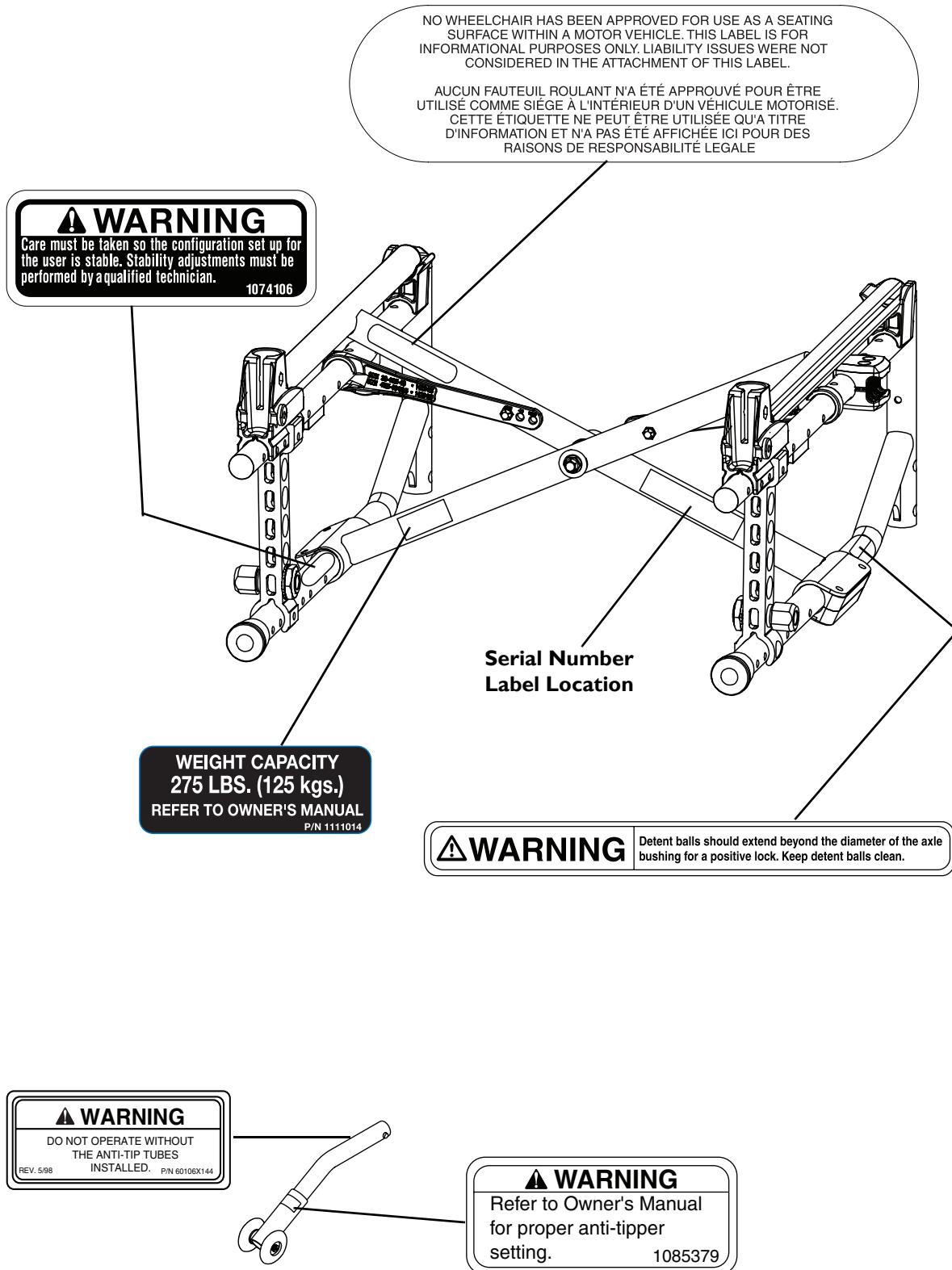
SEAT POSITIONING STRAP

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 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.

As regards restraints - 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.

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.

LABEL LOCATIONS



TYPICAL PRODUCT PARAMETERS

	AX3
OVERALL WIDTH OPEN CLOSED	Seat width plus approx. 8½ inches Approx. 13 inches
OVERALL DEPTH (WITH RIGGINGS)	Seat depth plus 15½ inches (without front riggings)
SEAT WIDTH:	16", 18", and 20"
SEAT DEPTH:	16" and 18"
SEAT-TO-FLOOR (ADULT/HEMI):	16" to 20" in 1" increments
BACK STYLE AND HEIGHT:	Fixed 0° (15.75" high) Fixed 7° (15.75" high) Fixed 7° (Adj. Height 15.75" - 20") Adj. Angle (Adj. Height 15.75" - 17.75")
ARM STYLES:	Adj. Height "T" Arm (Full or Desk Length) Swingaway and Removable Fixed Height (Full or Desk Length) Swingaway and Removable Adj. Height (Full or Desk Length)
FRONT RIGGINGS:	60° Swing-in/Swing-out 70° Swing-in/Swing-out Elevating Legrest, Swing-in/Swing-out
REAR AXLE:	Permanent Quick-Release
REAR WHEELS:	24-inch Composite Wheels (urethane or pneumatic tires) 22 or 24-inch spoke wheels (urethane or pneumatic tires)
HANDRIMS:	Anodized Aluminum Black Plastic Coated Steel
WHEEL LOCKS:	Push-to-lock
CASTER SIZE:	6x1¼ inch (urethane tire) 8x1¼ inch (urethane or pneumatic tires) 8x2 inch (urethane or pneumatic tires)
BACK UPHOLSTERY:	Black Padded Nylon Adjustable Tension Back
WEIGHT*:	29 lbs.
WEIGHT CAPACITY	275 lbs.
SHIPPING WEIGHT (APPROXIMATE):	35 lbs.

**NOTE: Based off of following configuration: 16x16 front seat-to-floor height = 18", arm type = adjustable height desk, fixed 7° back with 15¾" height and padded nylon sling upholstery, 6" urethane front wheels/forks, 22" spoked rear wheels with pneumatic tires, aluminum anodized handrims, nylon seat upholstery with hook and loop, without front rigging, quick-release axles, and push-to-lock wheel locks.*

SECTION I—GENERAL GUIDELINES

⚠ WARNING

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

Stability Warning

The seat height, seat depth, back angle, seating system/upholstery, size/position of the rear wheels, size/position of the front casters, as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of the nine may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician.

NOTE: When changes to the left hand column occur, follow across the chart and refer to the X procedure to maintain the proper stability, safety and handling of the wheelchair.	SEAT HEIGHT	SEAT DEPTH	BACK ANGLE	SEATING SYSTEM/UPHOLSTERY	CASTER SIZE	CASTER POSITION	REAR WHEEL SIZE	REAR WHEEL POSITION	USER CONDITION	WHEEL LOCKS	ANTI-TIPPERS
	SEAT HEIGHT	•	X	X	X	X	X	X	N/A	N/A	N/A
	SEAT DEPTH	X	•	X	X	X	X	X	N/A	N/A	N/A
	BACK ANGLE	X	X	•	X	X	X	X	N/A	N/A	N/A
	SEATING SYSTEM/UPHOLSTERY	X	X	X	•	X	X	X	X	N/A	N/A
	CASTER SIZE	X	N/A	X	N/A	•	X	X	N/A	X	X
	CASTER POSITION	X	N/A	X	N/A	X	•	X	N/A	X	X
	REAR WHEEL SIZE	X	N/A	X	N/A	X	X	•	N/A	X	X
	REAR WHEEL POSITION	X	N/A	X	N/A	X	X	X	•	N/A	X
	USER CONDITION	X	X	X	X	X	X	X	•	N/A	N/A

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

Repair and Service Information

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

Operating Information

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.

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 from behind as this may cause the wheelchair to tip over.

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

DO NOT tip the wheelchair without assistance.

DO NOT use an escalator to move a wheelchair between floors. Serious bodily injury may occur. 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 prevent the wheels from moving.

DO NOT operate on roads, streets or highways.

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

NEVER leave an unoccupied wheelchair on an incline.

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

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

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.

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.

ALWAYS engage both wheel locks and reduce the gap distance before transferring to and from the wheelchair. Turn all casters parallel to the object you are transferring onto.

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

Engaging the wheel locks may not prevent the wheelchair from moving on all floor surfaces including those that may be wet or slick. Always exercise caution when transferring into or out of your wheelchair

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.

NEVER try to lift or tip the wheelchair by cantilever arms or T- arms, serious injury can occur.

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

DO NOT stand on the frame of the wheelchair.

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

DO NOT sit or transfer into the wheelchair unless it is fully open and the seat frame rails are fully seated into the side frame H-blocks.

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.

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

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.

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

ALWAYS use the handrims for self-propulsion. Inasmuch as the handrims are an option on this wheelchair (you may order with or without the handrims), Invacare strongly recommends ordering the handrims as an additional safeguard for the wheelchair user.

DO NOT use the footplate as a platform when getting in or out of the wheelchair.

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 rails are fully seated into the side frame H-blocks.

Tire Pressure

DO NOT use your wheelchair unless it has the proper tire pressure (p.s.i.). 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.

Replacement of a pneumatic tire or tube MUST be performed by a qualified technician.

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 physical disability and the warranty will be void.

Weight Limitation

The wheelchair has a weight limitation of 275 lbs (125 kg).

SECTION 2—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. Inasmuch as the seat positioning belt is an option on this wheelchair (You may order with or without the seat restraint), Invacare strongly recommends ordering the seat restraint as an additional safeguard for the wheelchair user.

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.

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.

DO NOT leave elevating legrests in the fully extended position when proceeding down ramps or slopes.

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.

To assure stability and proper operation of your wheelchair, you must at all times wear your seat restraint and 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.

Virtually all activities which involve movement in the wheelchair have an effect on the center of gravity. Invacare recommends using seat 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.

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.

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 tilting 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.

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.

Tipping - Curbs

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

Method 1 - Wheelchair with Step Tubes

NOTE: For this procedure, refer to FIGURE 2.1.

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.

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

⚠ WARNING

DO NOT let the wheelchair drop the last few inches to the ground. This could result in injury to the occupant.

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

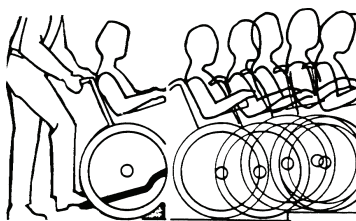


FIGURE 2.1 Method 1 - Wheelchair with Step Tubes

Method 2 - Wheelchair without Step Tubes

NOTE: For this procedure, refer to FIGURE 2.2.

Unless the first assistant has exceptional upper body strength, it is recommended that METHOD 2 use two assistants.

The second assistant should be positioned at the front of the wheelchair lifting upward on the removable (non-detachable) part of the wheelchair frame when lifting the wheelchair and stabilizing the wheelchair when the wheelchair is being lowered to the ground.

The first assistant should stand on the sidewalk and turn the wheelchair so that the rear wheels are against the curb. The wheelchair should be tilted back to the balance point and, in one continuous downward movement, the rear wheels should be pulled up and over the curb. **DO NOT** return the front casters to the ground until the wheelchair has been pulled backward far enough for the front casters to clear the edge of the curb.

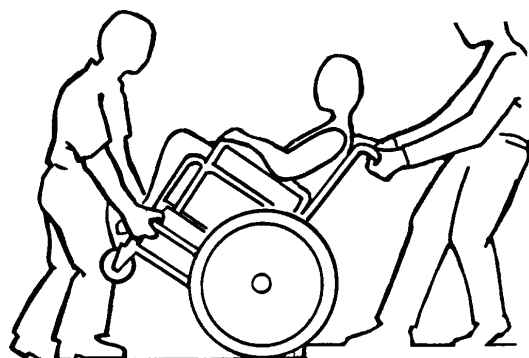


FIGURE 2.2 Method 2 - Wheelchair without Step Tubes

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 a wheelchair may result in injury to the user or damage to the wheelchair.

Extreme caution is advised when it is necessary to move an occupied wheelchair up or down the stairs. Invacare recommends using two assistants and making thorough preparations. Make sure to use only secure, non-detachable parts for hand-held supports.

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 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.

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

1. Turn the anti-tippers so they are facing up.
 2. After the wheelchair has been tilted back to the balance point, one assistant (in the rear) backs the wheelchair up against the first step, while securely grasping a non-removable (non-detachable) part of the wheelchair for leverage.
 3. The second assistant, with a firm hold on a non-detachable part of the framework, lifts the wheelchair up and over the stair and steadies the wheelchair as the first assistant places one foot on the next stair and repeats STEP 1.
 4. The wheelchair should not be lowered until the last stair has been negotiated and the wheelchair has been rolled away from the stairway.
 5. Turn the anti-tippers so they are facing down.
-

WARNING

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

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. Align both casters parallel with 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 prevent damaged upholstery and the possibility of the wheelchair tipping forward.

NOTE: For this procedure, refer to FIGURE 2.3.

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

1. Position the wheelchair as close as possible along side the seat to which you are transferring, with the front casters parallel to it.
2. Engage wheel locks and fold down the wheel lock handles.
3. Remove or flip back armrests.
4. Shift body weight into seat with transfer.

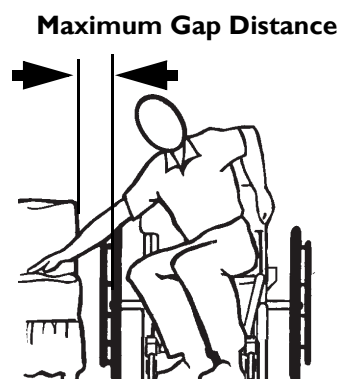


FIGURE 2.3 Transferring To and From Other Seats

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

Percentage of Weight Distribution

⚠ 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.

The seat height, seat depth, back angle, seat system/upholstery, caster size/position, rear wheel size, rear wheel position, correct anti-tipper as well as the end user's disability or end user's physical condition and capabilities directly relate to the stability of the wheelchair. Any change to one or any combination of the nine may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician.

NOTE: For this procedure, refer to FIGURE 2.4.

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 health professional before attempting active use of the wheelchair.

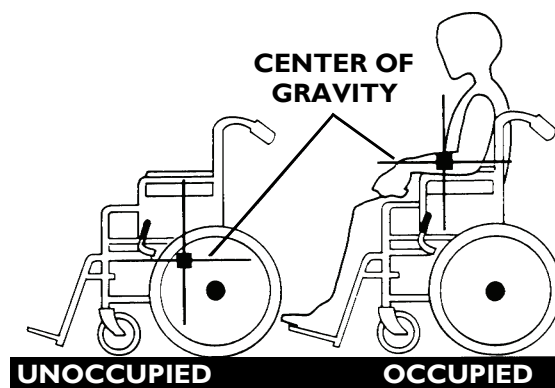


FIGURE 2.4 Percentage of Weight Distribution

Reaching, Leaning and Bending - Forward

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

NOTE: For this procedure, refer to FIGURE 2.5.

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

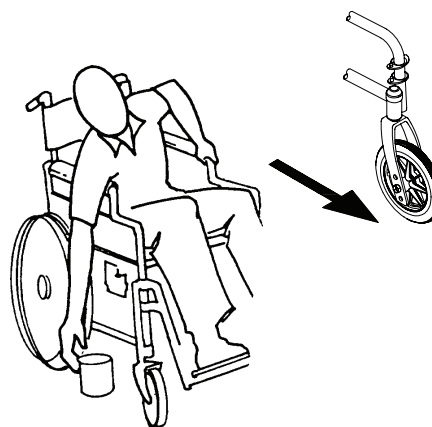


FIGURE 2.5 Reaching, Leaning and Bending - Forward

Reaching, Bending - Backward

⚠ WARNING

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

Keep hands and fingers clear of moving parts to avoid injury.

NOTE: For this procedure, refer to FIGURE 2.6.

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 2.6 Reaching, Bending - Backward

SECTION 3—SAFETY INSPECTION

NOTE: Twice a year, 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. Initially and at least every six months, follow these maintenance procedures:

Safety Inspection Checklists

Initial adjustments should be made to suit the personal body structure needs and preferences of the user. Thereafter follow these maintenance procedures:

Inspect/Adjust Initially

- ☐ Wheelchair rolls straight (no excessive drag or pull to one side).
- ☐ Ensure all hardware is tight.
- ☐ All fasteners on clothing guards are secure.
- ☐ Arms are secure but easy to release and adjustment levers engage properly.
- ☐ Adjustable height arms operate and lock securely.
- ☐ Armrest pad sits flush against arm tube.
- ☐ Seat and/or back upholstery have no rips.
- ☐ Inspect adjustable angle back attaching hardware is securely tightened.
- ☐ Ensure hand grips are not loose.
- ☐ Sealed bearings and axle nut tension are correct.
- ☐ No excessive side movement or binding when rear wheels are lifted and spun.
- ☐ Quick-release axles lock properly.
- ☐ Inspect handrims for signs of rough edges or peeling finish.
- ☐ Inspect for broken spokes.
- ☐ Wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.

CAUTION

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

- ☐ Loosen/tighten locknut if wheel wobbles noticeably or binds to a stop.
- ☐ Wheel bearings are clean and free of moisture.
- ☐ Ensure all caster/wheel/fork/headtube fasteners are secure.
- ☐ Wheel locks do not interfere with tires when rolling.

- ☐ Wheel lock pivot point are free of wear and looseness.
- ☐ Wheel locks are easy to engage.
- ☐ Inspect tires/casters for flat spots and wear.
- ☐ Check pneumatic tires for proper inflation (recommended tire pressure is listed on the side wall of the tire).

⚠ WARNING

DO NOT use WD-40®, 3-in-1 Oil®, or other penetrating lubricants on quick-release axles. Otherwise, binding and/or damage to the wheelchair may occur.

- ☐ Clean quick-release axles with a Teflon® lubricant.
- ☐ Ensure axles are free from dirt, lint, etc.
- ☐ Ensure roller bearings are free from dirt, lint, etc.
- ☐ Adjust wheel locks as tires wear.
- ☐ Clean and wax all parts.
- ☐ Clean upholstery and armrests.
- ☐ Ensure casters are free of debris.
- ☐ Check that all labels are present and legible. Replace if necessary.

Inspect/Adjust Weekly

- ☐ Wheelchair rolls straight (no excessive drag or pull to one side).
- ☐ Quick-release axles lock properly.
- ☐ Inspect for broken spokes.
- ☐ Wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- ☐ Inspect tires/casters for flat spots and wear.
- ☐ Check pneumatic tires for proper inflation (recommended tire pressure is listed on the side wall of the tire).
- ☐ Ensure casters are free of debris.

Inspect/Adjust Monthly

- ☐ 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.
- ☐ Loosen/tighten locknut if wheel wobbles noticeably or binds to a stop.
- ☐ Wheel bearings are clean and free of moisture.
- ☐ Wheel locks do not interfere with tires when rolling.
- ☐ Wheel lock pivot point are free of wear and looseness.
- ☐ Ensure all caster/wheel/fork/headtube fasteners are secure.

- ☐ Ensure all hardware is tight.
- ☐ Ensure hand grips are not loose.
- ☐ Ensure casters are free of debris.

Inspect/Adjust Periodically

- ☐ Wheelchair rolls straight (no excessive drag or pull to one side).
- ☐ Arms are secure but easy to release and adjustment levers engage properly.
- ☐ Adjustable height arms operate and lock securely.
- ☐ Armrest pad sits flush against arm tube.
- ☐ All fasteners on clothing guards are secure.
- ☐ Seat and/or back upholstery have no rips.
- ☐ Inspect adjustable angle back attaching hardware is securely tightened.
- ☐ No excessive side movement or binding when rear wheels are lifted and spun.
- ☐ Inspect handrims for signs of rough edges or peeling finish.
- ☐ Inspect tires/casters for flat spots and wear.
- ☐ Check pneumatic tires for proper inflation (recommended tire pressure is listed on the side wall of the tire).
- ☐ Wheel lock pivot point are free of wear and looseness.
- ☐ Clean upholstery and armrests.
- ☐ Sealed bearings and axle nut tension are correct.
- ☐ Wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- ☐ Loosen/tighten locknut if wheel wobbles noticeably or binds to a stop.
- ☐ Wheel bearings are clean and free of moisture.
- ☐ Wheel locks are easy to engage.
- ☐ Clean quick-release axles with a Teflon lubricant.
- ☐ Ensure axles are free from dirt, lint, etc.
- ☐ Ensure roller bearings are free from dirt, lint, etc.
- ☐ Adjust wheel locks as tires wear.
- ☐ Clean and wax all parts.
- ☐ Ensure casters are free of debris.
- ☐ Check that all labels are present and legible. Replace if necessary.

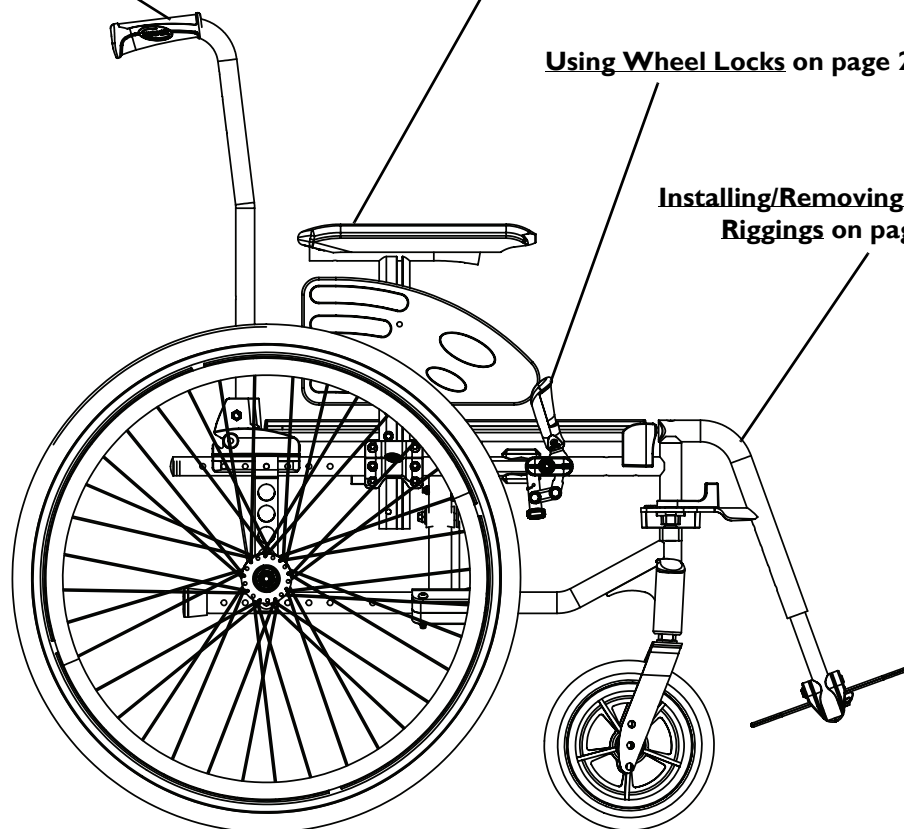
SECTION 4—WHEELCHAIR OPERATION

Unfolding and Folding Wheelchair
on page 25

Using Flipback Armrest on page 29

Using Wheel Locks on page 26

Installing/Removing the Front
Riggings on page 27



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 rails are fully seated into the side frame H-blocks.

Unfolding the Wheelchair

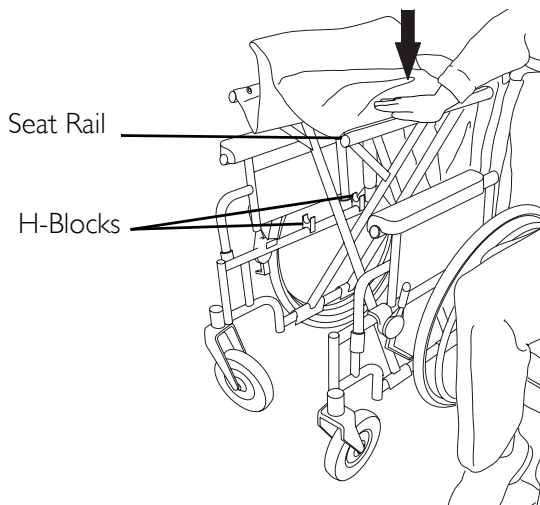
NOTE: For this procedure, refer to FIGURE 4.1.

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 fully seated in the H-blocks.

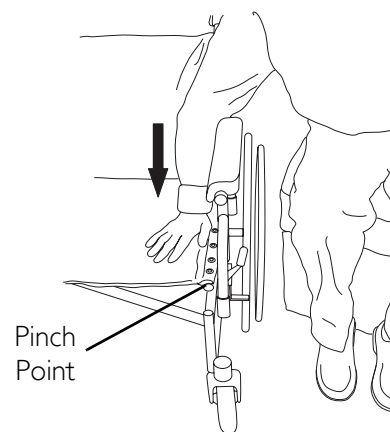
⚠ WARNING

Pinch point may occur at the point where the seat rail contacts the H-block.

5. Engage both wheel locks, open the footrest/legrest for clearance and transfer into the wheelchair.



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



NOTE: 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 4.1 Unfolding the Wheelchair

Folding the Wheelchair

NOTE: For this procedure, refer to FIGURE 4.2.

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.

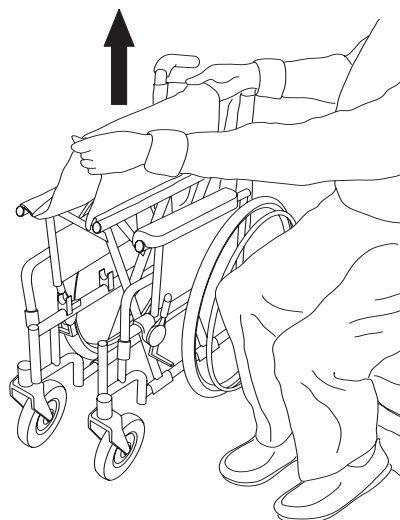


FIGURE 4.2 Folding the Wheelchair

Using Wheel Locks

⚠ WARNING

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

If wheel locks DO NOT hold the occupied wheelchair in place, contact a qualified technician - otherwise injury or damage may occur.

NOTE: For this procedure, refer to FIGURE 4.3.

1. Ensure wheelchair is not moving before engaging.
2. To engage, push the wheel lock handle forward until the wheel locks shoe contacts the wheel.
3. Disengage the wheel locks by reversing STEP 2.

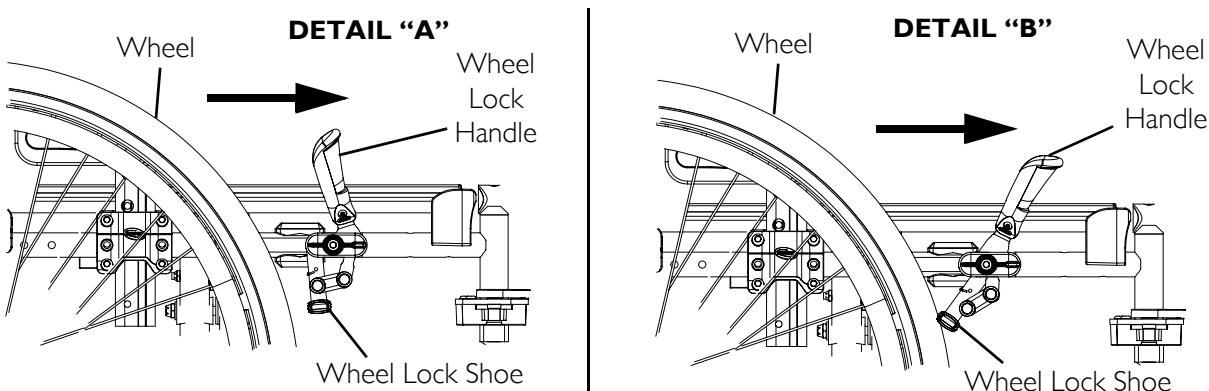


FIGURE 4.3 Using Wheel Locks

Folding Wheel Lock Handles

NOTE: For this procedure, refer to FIGURE 4.4.

1. Pull up and back on the wheel lock handle.

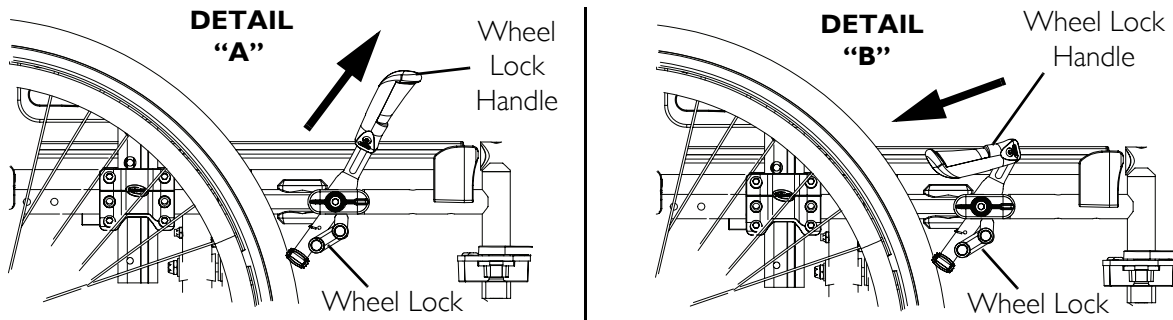


FIGURE 4.4 Folding Wheel Lock Handles

Installing/Removing the Front Riggings

NOTE: For this procedure, refer to FIGURE 4.5.

NOTE: For maintenance and/or adjustment procedures refer to Front Riggings on page 42.

NOTE: This procedure applies to the swingaway footrests and the elevating legrests.

Installing

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

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

4. Repeat this procedure for the other front rigging assembly.

Removing

1. Push the front rigging release lever inward.
2. Rotate swingaway front rigging assembly outward or inward.
3. Lift the swingaway front rigging assembly off of the mounting tube.

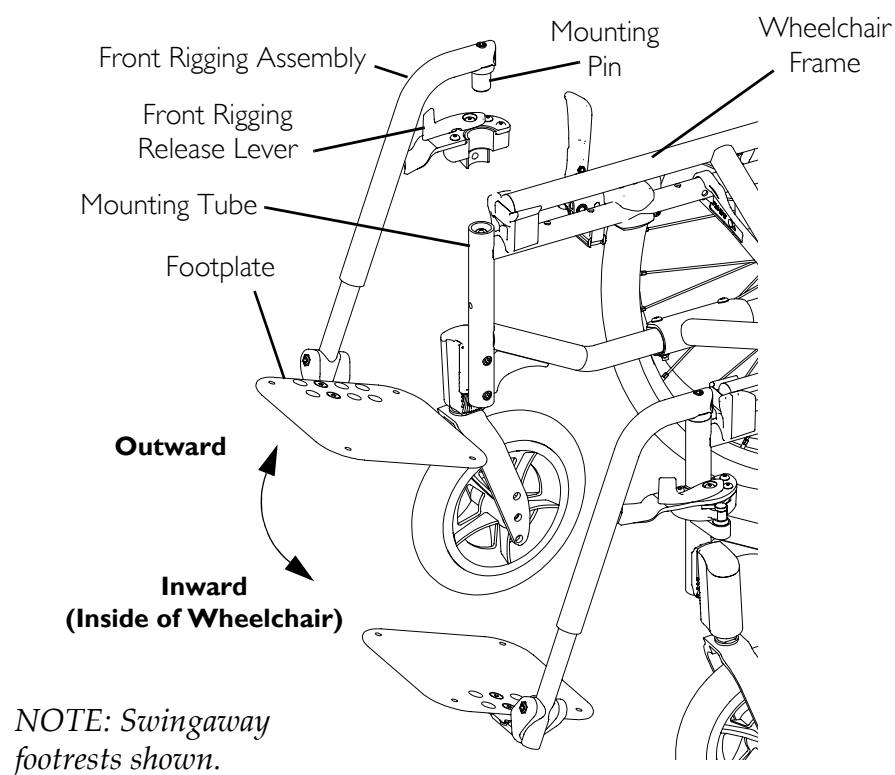


FIGURE 4.5 Installing/Removing the Front Riggings

Installing/Removing Elevating Legrests

NOTE: For this procedure, refer to FIGURE 4.6.

Installing

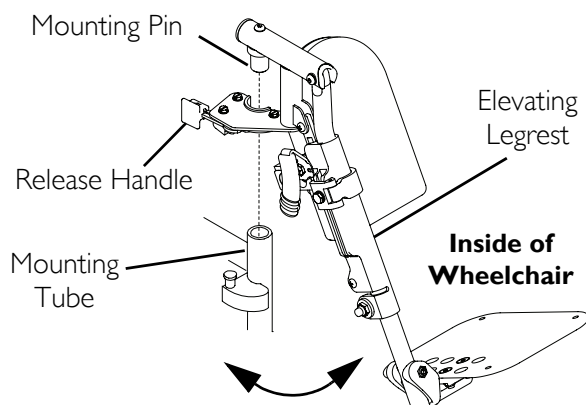
1. Place elevating legrest on the outside of the wheelchair and insert mounting pin into the mounting tube.
2. Rotate elevating legrest toward the inside of the wheelchair until it locks in place.

NOTE: The calfpad of the legrest will be on the inside of the wheelchair when locked in place.

3. Repeat STEPS 1-3 for the other elevating legrest assembly.

Removing

1. Push the legrest release handle inward while rotating the elevating legrest outward.
2. Lift the legrest assembly out of the mounting tube of the wheelchair frame.
3. Repeat STEPS 1-2 for opposite side, if necessary.



NOTE: The mounting tube will be part of the seat frame or wheelchair front frame depending on wheelchair model.

FIGURE 4.6 Installing/Removing Elevating Legrests

Raising/Lowering the Elevating Legrest

NOTE: For this procedure, refer to FIGURE 4.7.

1. Perform one of the following:
 - Raising: Lift legrest assembly up to desired height.
 - Lowering: Lift elevating legrest assembly up with one hand. While supporting the elevating legrest assembly (and user's leg), pull release lever up with other hand and lower legrest assembly to desired height.

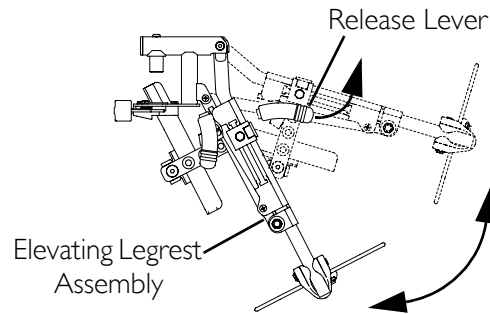


FIGURE 4.7 Raising/Lowering the Elevating Legrest

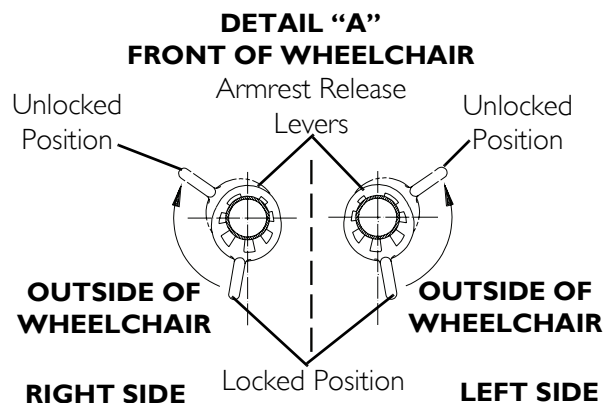
Using Flipback Armrest

⚠ WARNING

Make sure the armrest release lever is in the locked position before using the wheelchair.

NOTE: For this procedure, refer to FIGURE 4.8.

1. Unlock the flip back arms by rotating the armrest release lever towards the outside of the wheelchair (Detail "A").
2. Pull the front of the flip back arm straight up/out of the arm socket and towards the rear of the wheelchair.
3. To use the flip back arm, push the swing-back arm towards the front of the wheelchair and then downward into the arm socket.
4. Lock the flip back arms by rotating the armrest release lever towards the inside of the wheelchair.



NOTE: Detail "A" is a top view of the armrest release levers. Right side and left side are determined by sitting in the wheelchair.

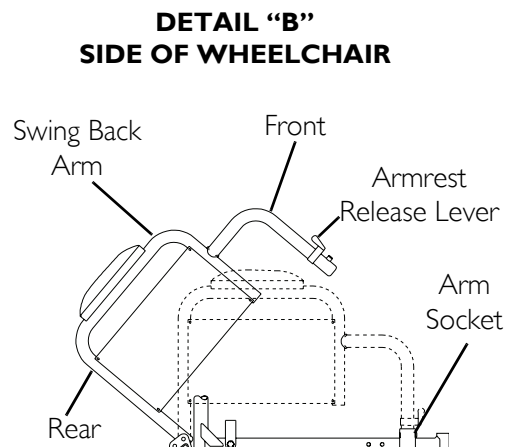
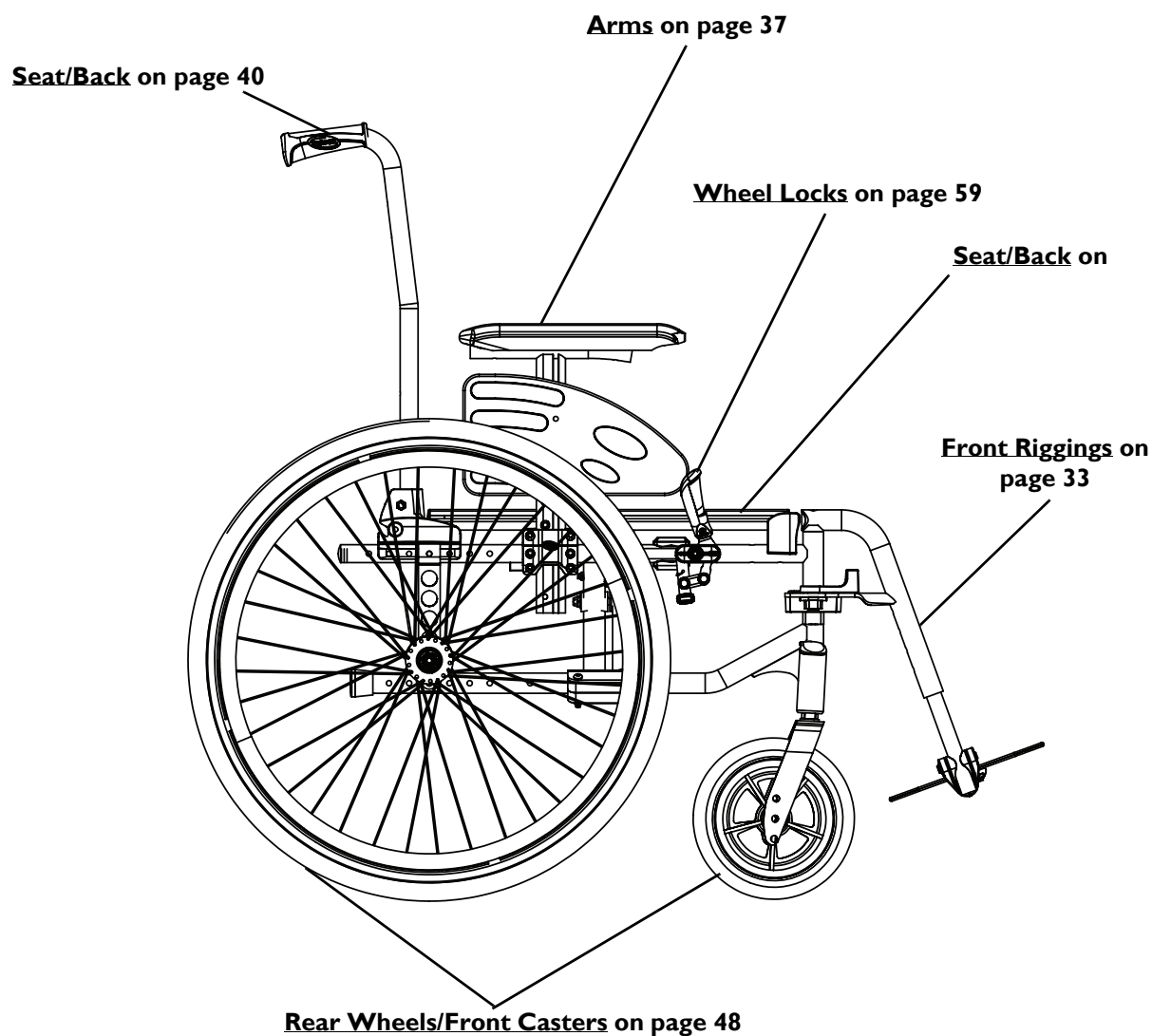


FIGURE 4.8 Using Flipback Armrest

MAINTENANCE AND ADJUSTMENT SECTIONS



SECTION 5—TROUBLESHOOTING AND MAINTENANCE

NOTE: Twice a year, 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. Initially and at least every six months, follow these maintenance procedures:

Troubleshooting

CHAIR VEERS LEFT/RIGHT	SLUGGISH TURN/PERFORMANCE	CASTERS FLUTTER	SQUEAKS AND RATTLES	LOOSENESS IN CHAIR	CHAIR 3 WHEELS	SOLUTIONS
X	X	X			X	If pneumatic tires, check for correct and equal pressure.
	X	X	X	X		Check for loose stem nuts/bolts.
X	X	X				Check caster angle adjustment.
X		X				Check that casters contact ground at the same time.

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 occur.

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. Check all parts for damage or wear and replace. Check all parts for proper adjustment.
2. Keep quick/quad-release axles free of dirt and lint to ensure positive locking and proper operation. Refer to [Adjusting Quick-Release Axles](#) on page 50.

⚠ WARNING

DO NOT use WD-40, 3-in-1 oil, or other penetrating lubricants on quick-release axles. Otherwise, binding and/or damage to the wheelchair may occur.

3. Clean quick-release axles once a week with a Teflon lubricant.
-

⚠ WARNING

DO NOT use your wheelchair unless it has the proper tire pressure (p.s.i.).

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 on the sidewall of the tire.

4. Recommended tire pressure is listed on the sidewall of the tire.
-

CAUTION

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

5. The wheels, casters and tires should be checked periodically for cracks and wear, and should be replaced when necessary. Contact a qualified technician or Invacare customer support at the telephone numbers on the back of this manual.
 6. Regularly check for loose spokes in the rear wheels. If loose, have them adjusted. Contact a qualified technician or Invacare customer support at the telephone numbers on the back of this manual.
 7. Periodically check handrims to ensure they are secured to the rear wheels. Refer to Replacing Handrims on page 50.
 8. Periodically check caster wheel bearings to make sure they are clean and free from moisture. Use a Teflon[®] lubricant if necessary.
 9. Check upholstery for sagging, rips or tears.
 10. Clean upholstery with mild soap and water.
-

Transporting the Wheelchair

1. Remove the seating system. Refer to the seating system Owner's Manual for installation and removal of the seating system.
 2. Remove the footrests. Refer to Adjusting Footrest Height on page 33.
 3. Remove the rear wheels. Refer to Removing/Installing Rear Wheels on page 48.
 4. Remove the armrests. Refer to Removing/Installing Flip Back Armrest on page 38.
-

SECTION 6—FRONT RIGGINGS

⚠ WARNING

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

Adjusting Footrest Height

NOTE: For this procedure, refer to FIGURE 6.1.

1. Remove impact guards and/or calf strap, if so equipped.
2. Remove the mounting bolt and coved washer.
3. Position the footrest assembly to the desired height.
4. Align the desired footrest tube mounting hole with the footrest support mounting hole.
5. Using the coved washer and mounting bolt, secure the footrest tube to the footrest support. Securely tighten.
6. If necessary, repeat STEPS 2-4 to adjust remaining footrest.
7. Reinstall the impact guards and/or calf strap, if so equipped.

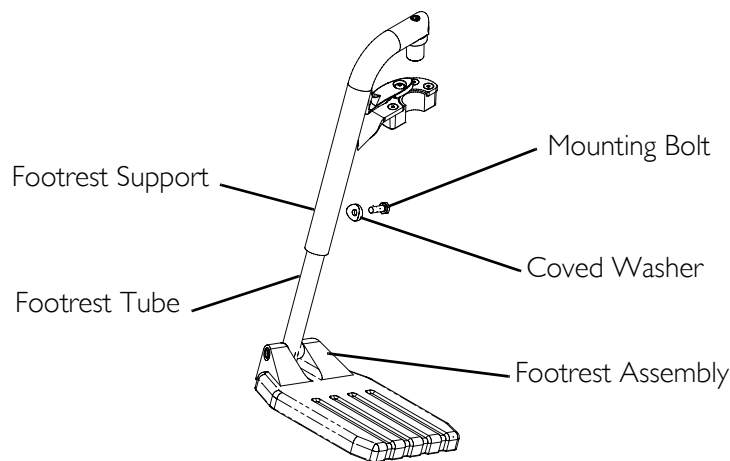


FIGURE 6.1 Adjusting Footrest Height

Replacing Heel Loop

NOTE: For this procedure, refer to FIGURE 6.2.

1. Remove the mounting bolt and coved washer that secure the footrest tube to the footrest support.
2. Remove the lower footrest assembly.
3. Remove the mounting screw, spacer and locknut that secure the heel loop to the footplate.
4. Slide heel loop over footrest tube.

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

5. Using the mounting screw, spacer and locknut, secure the heel loop to the footplate.
6. Using the mounting bolt and coved washer, secure the footrest tube to the footrest support.

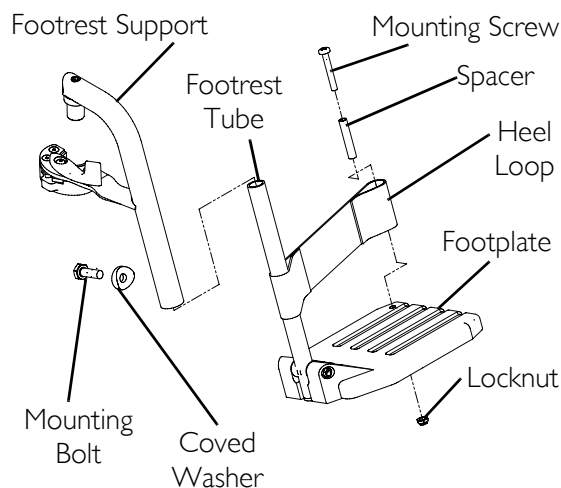


FIGURE 6.2 Adjusting Elevating Legrest Height and Calfpad Height/Depth

Installing Impact Guards/Calf Strap

NOTE: For this procedure, refer to FIGURE 6.3.

1. Remove impact guard/calf strap from packaged container if not already secured to the front rigging.
2. Secure the impact guards around the front rigging.
3. Secure the optional calf strap around the footrest frame (with the impact guards attached).

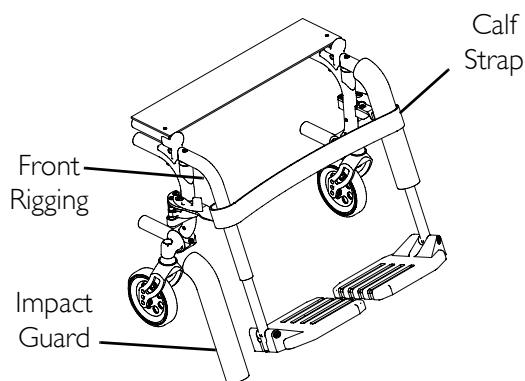


FIGURE 6.3 Installing Impact Guards/Calf Strap

Installing Adjustable Angle Flip-up Footplate Hinge

NOTE: For this procedure, refer to FIGURE 6.4.

NOTE: This procedure is for individual adjustable angle footrests only.

1. Position the adjustable angle flip-up footplate hinge on the footrest support tube at the desired height.
2. Using the mounting screw and locknut, loosely secure the adjustable angle flip-up foot plate hinge to the footrest support tube.
3. Flip the footplate hinge to the up position.

NOTE: The footplate hinge will fall to the down position.

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

NOTE: If the footplate's motion is too tight, loosen the socket screw and locknut approximately ¼-turn.

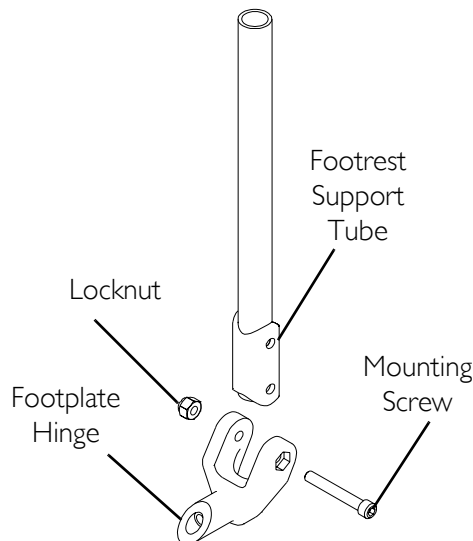


FIGURE 6.4 Installing Adjustable Angle Flip-up Footplate Hinge

Adjusting Elevating Legrest Height and Calfpad Height/Depth

NOTE: For this procedure, refer to FIGURE 6.5 on page 36.

Adjusting the Footplate Height

1. Loosen locknut and washer securing the slide tube to the elevating legrest.
2. Reposition footplate to desired height securely tighten locknut and washer.

3. If necessary, repeat STEPS 1-2 to adjust remaining footplate height.

Adjusting Calfpad Height

1. Loosen the mounting bolt and washer that secure the calfpad bracket to the elevating legrest assembly.
2. Slide the calfpad bracket up or down until the desired calfpad height is obtained.
3. Tighten the mounting bolt and washer securing the calfpad bracket to the elevating legrest assembly.
4. If necessary, repeat STEPS 1-3 to adjust remaining calfpad bracket.

Adjusting Calfpad Depth

1. Remove the mounting screw, spacer and locknut that secure the calfpad to the calfpad bracket.
2. Insert mounting screw through one of four calfpad bracket mounting holes.
3. Using the mounting screw spacer and locknut, secure the calfpad to the calfpad bracket.
4. If necessary, repeat STEPS 1-3 to adjust remaining calfpad assembly.

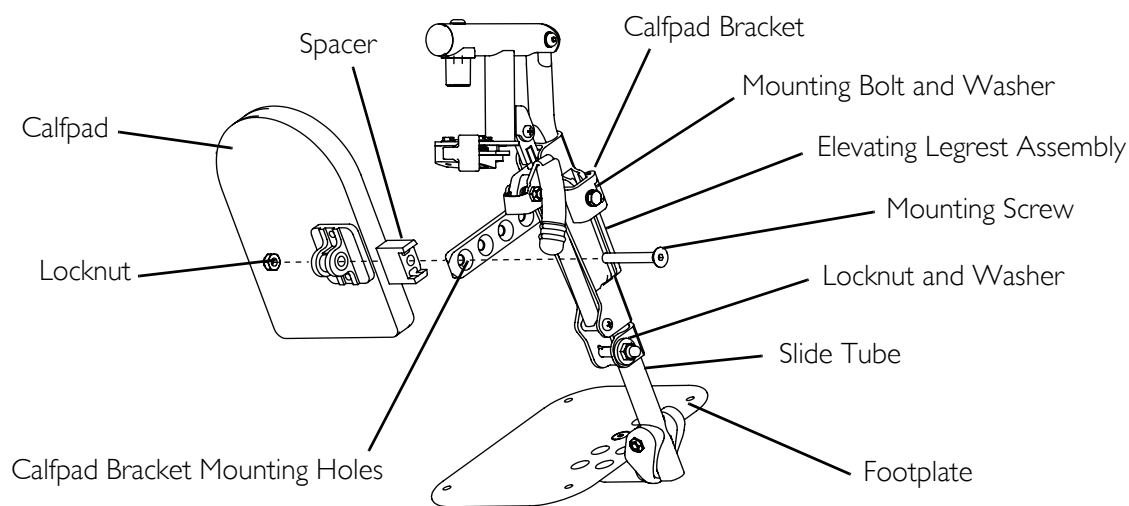


FIGURE 6.5 Adjusting Elevating Legrest Height and Calfpad Height/Depth

SECTION 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.

Removing/Installing and Adjusting T-Arms

NOTE: For this procedure, refer to FIGURE 7.1.

Removing/Installing T-Arms

NOTE: To remove the T-arm, reverse this procedure.

1. Align the T-arm with the socket in the T-arm bracket on the wheelchair frame.
2. Slide the T-arm into the T-arm bracket until the height adjustment screw rests on the top on the t-arm bracket.

Adjusting T-Arm Height

NOTE: For this procedure, refer to FIGURE 7.1.

1. Remove the T-arm. Refer to Removing/Installing T-Arms on page 37.
2. Remove the height adjustment screw and locknut from the height adjustment hole.
3. Reinstall the height adjustment screw and locknut in one of the three height adjustment holes on the t-arm of the armrest. Secure tightly.
4. Reinstall the T-arm. Refer to Removing/Installing T-Arms on page 37.

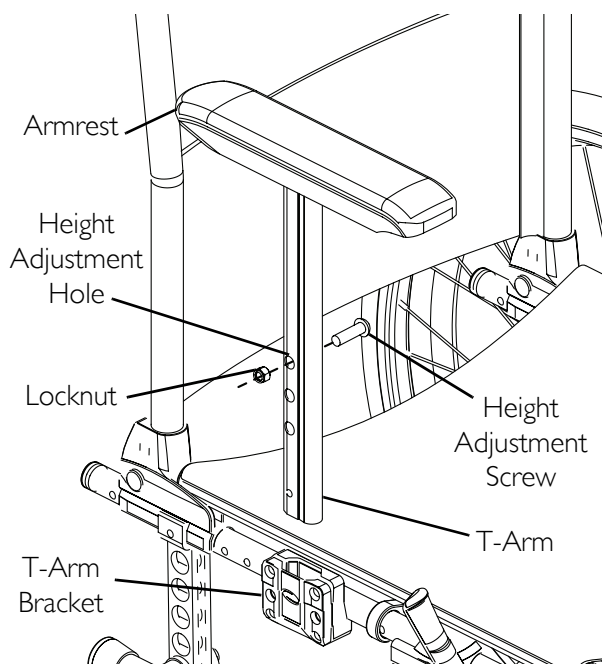


FIGURE 7.1 Adjusting T-Arm Height

Removing/Installing Flipback Armrests

Removing/Installing Flip Back Armrest

NOTE: For this procedure, refer to FIGURE 7.2.

Removing Flip Back Armrest

1. Unlock existing armrest assembly by flipping the arm assembly release levers located on the side rail to the up (horizontal) as shown in Detail "A".
2. Pull up on the existing armrest to remove from the arm socket.
3. Repeat STEPS 1-2 for opposite side of wheelchair, if necessary.
4. Install the new/existing armrest on to the wheelchair. Refer to in this procedure of the manual.

Installing Flip Back Armrest

1. If necessary, unlock new/existing armrest assembly by flipping the arm assembly release levers located on the side rail to the up (horizontal) position (Detail "A").
2. Install new/existing armrest assembly into the arm sockets.
3. Lock the armrest assembly by flipping the arm assembly release levers located on the side rail to the down (vertical) position (Detail "A").
4. Repeat STEPS 1-3 for opposite side, if necessary.

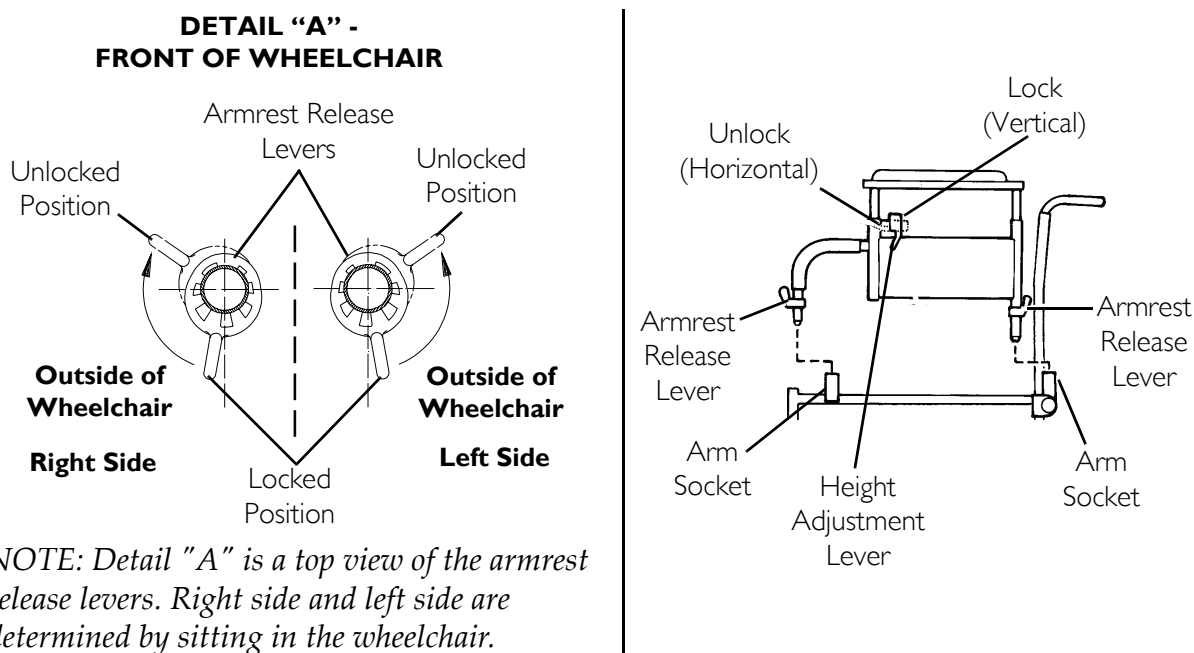
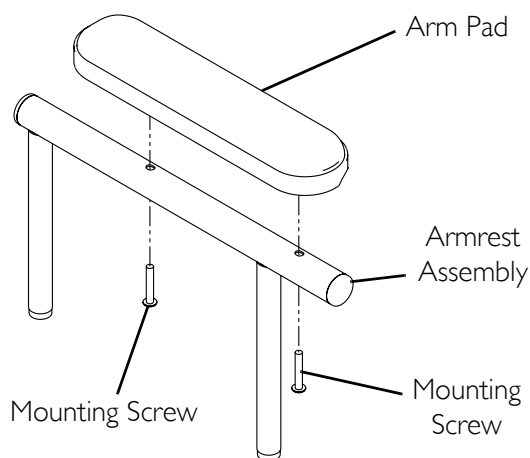


FIGURE 7.2 Removing/Installing Flip Back Armrest

Replacing Armrest Arm Pad

NOTE: For this procedure, refer to FIGURE 7.3.

1. Remove the mounting screws that secure the arm pad to the armrest assembly.
2. Replace arm pad and securely tighten with the existing mounting screws.
3. Repeat STEPS 1-2 for the opposite side if necessary.



*NOTE: Flipback
armrest shown. T-Arm
operates similarly.*

FIGURE 7.3 Replacing Armrest Arm Pad

SECTION 8—SEAT/BACK

⚠ WARNING

The seat height, seat depth, back angle, seating system, size/position of the rear wheels, size/position of the front casters, as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of the nine may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician.

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

Removing Back Canes

NOTE: For this procedure, refer to FIGURE 8.1.

1. Remove the mounting screw and locknut that secures the back cane to the back cane bracket.
2. Repeat STEP 1 for the other back cane.
3. Remove the back canes out of the back cane brackets.

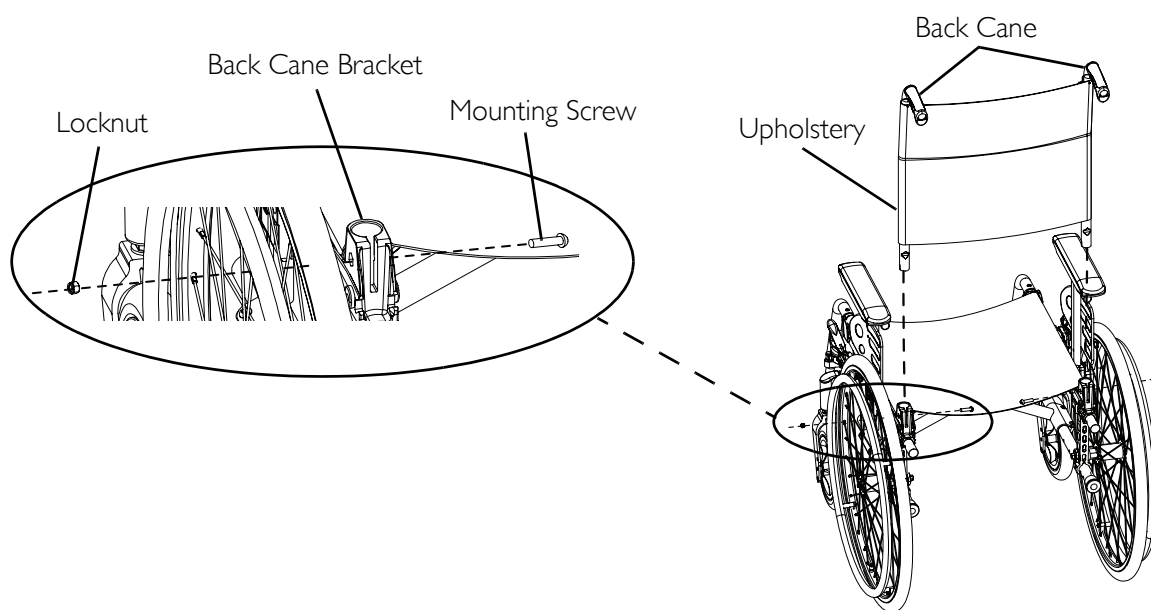


FIGURE 8.1 Removing Back Canes

Removing/Installing Seat Upholstery

NOTE: For this procedure, refer to FIGURE 8.2 on page 41.

Removing Seat Upholstery

NOTE: To install the seat upholstery, reverse this procedure.

1. Fold the wheelchair.
2. Remove the mounting screws that secures the seat upholstery to the front and back seat rails.
3. Remove the endcaps from the front of the seat rails.
4. Slide the seat upholstery out of the seat rails.

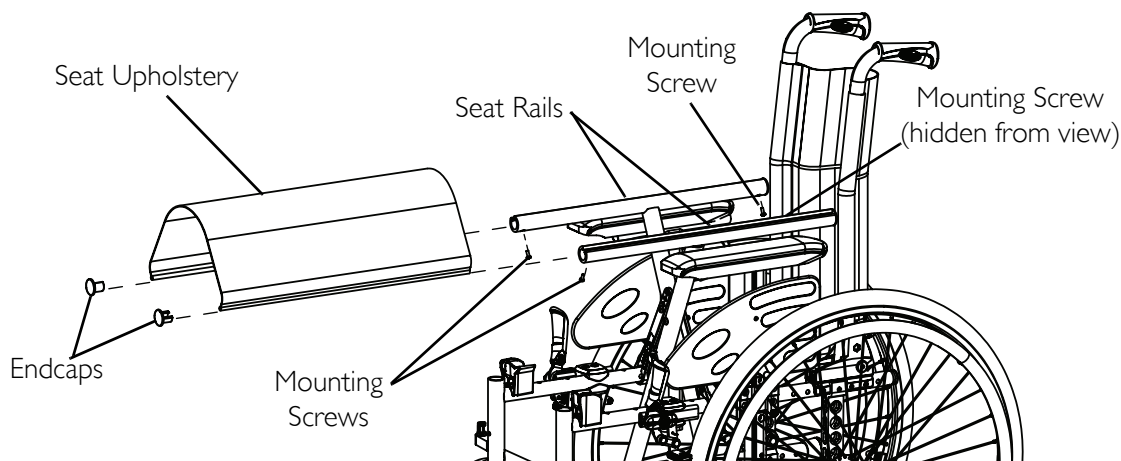


FIGURE 8.2 Removing/Installing Seat Upholstery

Removing/Installing Standard Back Upholstery

NOTE: For this procedure, refer to FIGURE 8.3.

Removing Back Upholstery

NOTE: To Install the Back Upholstery, reverse this procedure.

1. Remove the back canes. Refer to [Removing Back Canes](#) on page 40.
2. Remove the mounting screw that secures the back upholstery to the back canes. Refer to Detail "A".
3. Remove the back upholstery from the back canes. Refer to Detail "B".

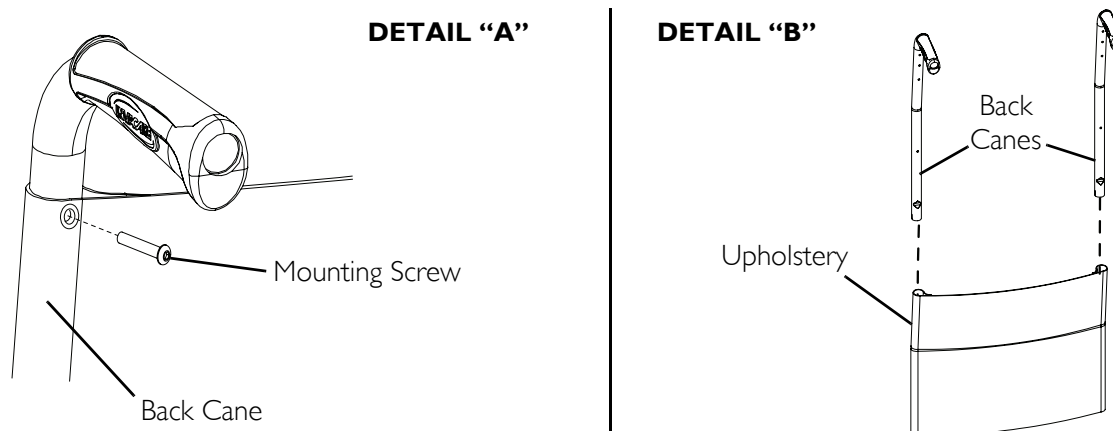


FIGURE 8.3 Removing/Installing Standard Back Upholstery

Adjustable Back Upholstery

Adjustable Tension Straps

The adjuster straps can be adjusted at various levels of tension to accommodate individual end-users. In a typical scenario, the bottom two straps can be adjusted tightly to support and/or assist the extensor muscles.

Back Upholstery Cover

The back upholstery cover is designed for three reasons:

1. The first is as a modesty cover.
2. The second is to keep the cushion from sliding out of the back of the wheelchair.
3. The third is a sacral support depending upon how far or tight the seat portion of the back upholstery is pulled under the seat cushion.

Installing/Replacing Adjustable Back Upholstery

NOTE: For this procedure, refer to FIGURE 8.4 on page 43.

Installing

1. Remove the existing back upholstery from the wheelchair. Refer to Removing/Installing Standard Back Upholstery on page 41.
2. Slide each section (anchor loop/adjuster strap) of the adjustable back upholstery with the grommet hole facing the rear of the wheelchair.
3. Secure the adjustable back upholstery to the back canes with the two mounting screws.

NOTE: Clean the upholstery with warm water and mild detergent to remove superficial soil.

⚠ WARNING

After the adjustable back upholstery has been positioned to the end-user's individual needs, the fastening straps *MUST* be securely fastened before applying the back upholstery cover. The adjustable back should be checked whenever entering the wheelchair to ensure that the fastening straps are securely fastened.

4. Slip adjuster straps through corresponding anchor loops and adjust the back upholstery. Secure with the fastening straps.
5. Secure the back upholstery cover (fastening strap) to the back of the adjustable back upholstery (fastening strap).
6. Flip the back upholstery cover over the adjustable back upholstery and secure the fastening straps to the front of the adjustable back upholstery.
7. Lay the front portion of the back upholstery cover on the seat upholstery.
8. Adjust the slack in the back upholstery cover and then secure to the seat upholstery.

Replacing

1. Lift up on the existing back upholstery cover and remove the cover from the wheelchair.
2. Remove the two mounting screws and washers that secure the existing adjustable back upholstery to the back canes.
3. Slide each section (anchor loop/adjuster strap) of the existing adjustable back upholstery off of the back canes.
4. Slide each section (anchor loop/adjuster strap) of the new adjustable back upholstery with the grommet hole facing the rear of the wheelchair.
5. Secure new adjustable back upholstery to the back canes with the two mounting screws and washers.

⚠ WARNING

After the adjustable back upholstery has been positioned to the end-users individual needs, the fastening straps **MUST be securely fastened before applying the back upholstery cover. The adjustable back should be checked whenever entering the wheelchair to ensure that the fastening straps are securely fastened.**

6. Slip adjuster straps through corresponding anchor loops and adjust the back upholstery. Secure with the fastening straps.
7. Secure the new back upholstery cover (fastening strap) to the back of the new adjustable back upholstery (fastening strap).
8. Flip the new back upholstery cover over the new adjustable back upholstery and secure the fastening straps to the front of the new adjustable back upholstery.
9. Lay the front portion of the new back upholstery cover on the seat upholstery.
10. Adjust the slack in the new back upholstery cover and then secure to the seat upholstery.

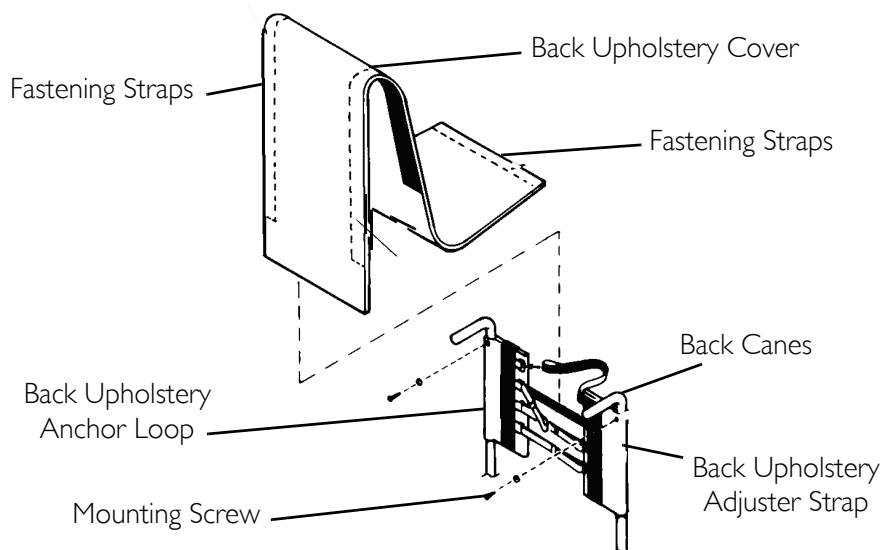


FIGURE 8.4 Installing/Replacing Adjustable Back Upholstery

Adjusting the Height Adjustable Back

NOTE: For this procedure, refer to FIGURE 8.5.

1. Loosen, but DO NOT remove, the height adjustment knobs.
2. Reposition the back canes to the desired height.

NOTE: Both back canes should be adjusted to the same height.

3. Tighten the height adjustment knobs.

NOTE: To prevent accidental removal of a back cane, the spring button lock will engage at the full extension of the back cane. To disengage the button, press the button located below the height adjustment, under the upholstery, on the back cane (Detail "A").

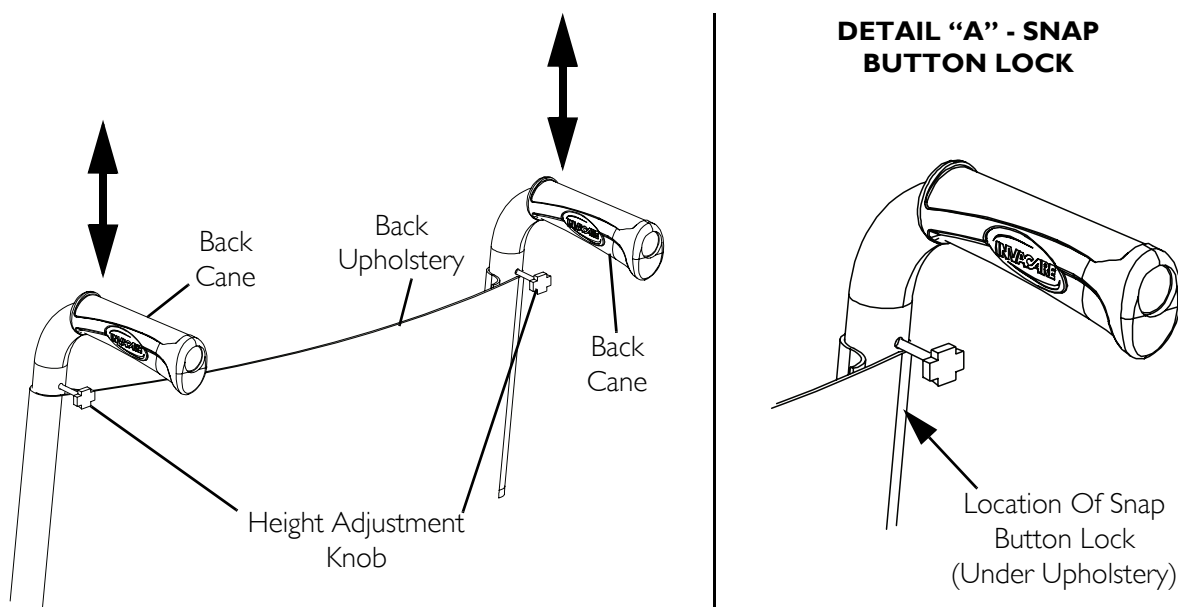


FIGURE 8.5 Adjusting the Height Adjustable Back

Adjusting the Back Angle

NOTE: For this procedure, refer to FIGURE 8.6 on page 45.

NOTE: This procedure applies to adjustable angle backs only.

NOTE: The back adjusts to four positions in five degree increments from -6° to 24°.

1. Remove the back angle adjustment screw and locknut.
2. Reposition the back to the desired angle. Refer to Detail "A" of FIGURE 8.6.
3. Ensure the upper back angle mounting hole is aligned with one of the five angle adjustment holes.
4. Install the back angle adjustment screw through the back angle mounting hole and the desired angle adjustment hole.
5. Secure the angle adjustment screw with a locknut. Torque locknut to 80-100 in/lbs.

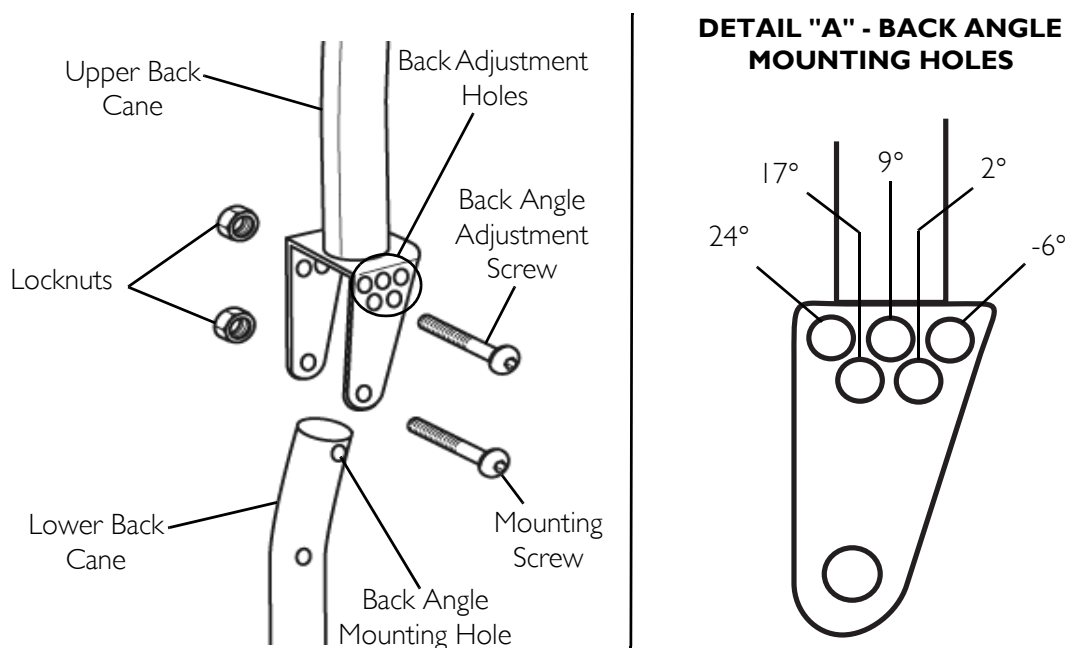


FIGURE 8.6 Adjusting the Back Angle

Removing/Installing/Adjusting the Back Cane Bracket

NOTE: For this procedure, refer to FIGURE 8.7.

NOTE: To install the back cane bracket, reverse this procedure.

1. Remove the back canes. Refer to Removing Back Canes on page 40.
2. Pull up on the seat upholstery.
3. Remove the two mounting screws and locknuts that secure the back cane bracket to the wheelchair frame.
4. Do one of the following:
 - **To Remove:** the back cane bracket by sliding it off the back of the wheelchair frame.
 - **To Adjust:** slide the back cane bracket to one of the four adjustment holes on the bracket.

NOTE: Both back canes should be set to the same adjustment hole.

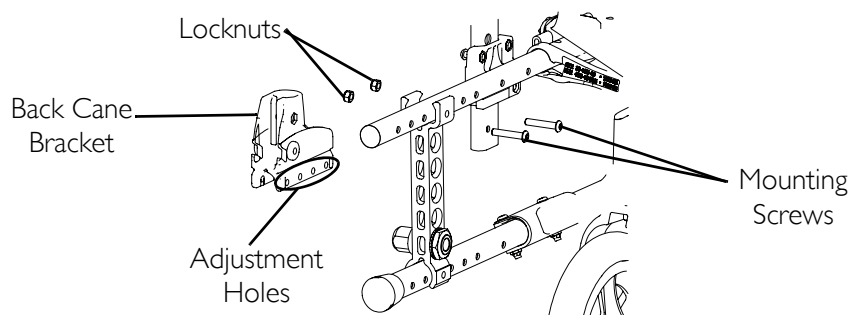
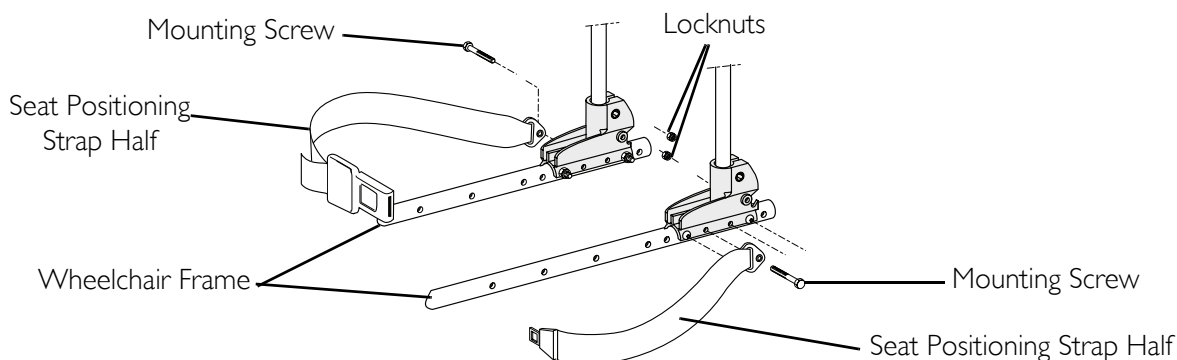


FIGURE 8.7 Removing/Installing/Adjusting the Back Cane Bracket

Installing/Removing Seat Positioning Strap

NOTE: For this procedure, refer to FIGURE 8.8.

1. Remove seat cushion from wheelchair, if necessary.
2. Remove the mounting screw and locknut that secures the seat positioning belt half to the wheelchair frame.
3. Repeat STEP 2 for opposite side, if necessary.
4. Do one of the following:
 - To install the seat positioning strap, proceed to STEP 6.
 - Remove the existing seat positioning strap from the wheelchair.
5. Engage the two halves of the new seat positioning strap.
6. Align the mounting holes on the wheelchair frame and one end of the new seat positioning strap.
7. Secure the new seat positioning strap to the wheelchair frame with one mounting screw and washer. Tighten securely.
8. Repeat STEPS 6 and 7 for the opposite side of the seat positioning strap.
9. Reinstall seat cushion onto wheelchair, if necessary.



NOTE: Seat upholstery removed for clarity.

FIGURE 8.8 Installing/Removing Seat Positioning Strap

Installing/Removing the Spreader Bar

NOTE: For this procedure, refer to FIGURE 8.9 on page 47.

NOTE: To remove the spreader bar, reverse this procedure.

1. Remove the end caps from the back canes.
2. Remove the handles from the back canes.
3. Install the inserts into the back canes.
4. Secure the insterts with mounting screws.

5. Install the handles on the back canes.
6. Align the spreader bar ends with the handles of the back canes.
7. Secure the spreader bar to the back canes with the mounting bolts.

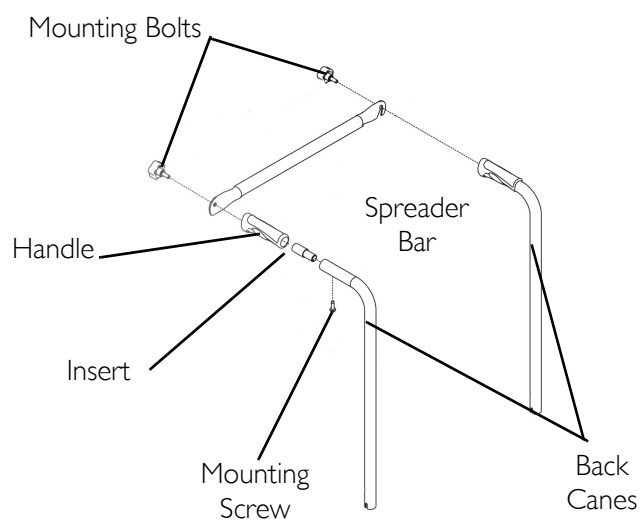


FIGURE 8.9 Installing/Removing the Spreader Bar

SECTION 9—REAR WHEELS/FRONT CASTERS

⚠ WARNING

The seat height, seat depth, back angle, seating system, size/position of the rear wheels, size/position of the front casters, as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of the nine may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician.

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

If changing the size of the rear wheel or the seat-to-floor height, this procedure must be performed by a qualified technician.

Permanent Axles

NOTE: For this procedure, refer to FIGURE 9.1.

Removing

1. Remove the dust cap, permanent axle, washer and locknut that secure rear wheel to the axle bracket.
2. Remove existing rear wheel from the wheelchair.
3. Install new/existing rear wheel onto wheelchair. Refer to Removing/Installing Rear Wheels on page 48.

Installing

1. Install permanent axle through washer, new/existing rear wheel and axle bracket.
2. Securely tighten with the existing locknut. Torque to 20-40 ft/lbs.
3. Reinstall the dust cap onto the permanent axle.
4. If necessary, repeat STEPS 1-3 for opposite rear wheel.

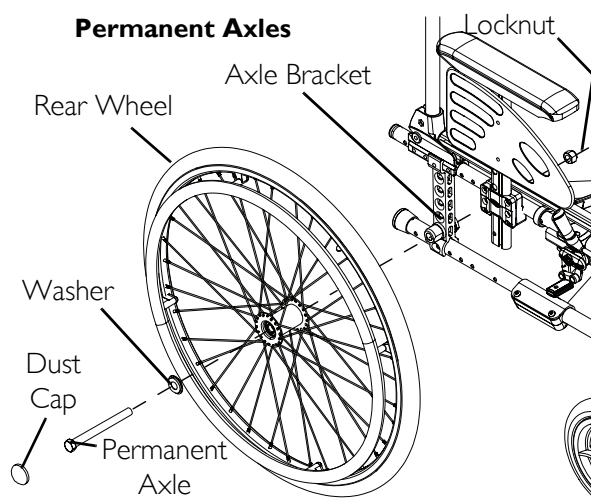


FIGURE 9.1 Removing/Installing Rear Wheels

Quick-Release Axles

NOTE: For this procedure, refer to FIGURE 9.2.

Removing

1. Hold the center of the rear wheel and push in the tip of the quick-release axle.
2. Pull the quick-release axle and rear wheel out of the axle bracket on the wheelchair frame.
3. Push in the tip of the quick-release axle again and pull the quick-release axle out of the existing rear wheel.
4. Install new/existing rear wheel onto wheelchair. Refer to Removing/Installing Rear Wheels on page 48.

Installing

⚠ WARNING

Make sure the detent pin and locking pins of the quick-release axle are fully released before operating the wheelchair.

The locking pins *MUST* be protruding past the inside of rear wheel hub for a positive lock.

Keep locking pins clean.

Invacare recommends inserting quick-release axles with the head end to the inside of the wheelchair to prevent accidental release during contact activities.

1. Install the existing quick-release axle through the new/existing rear wheel.
2. Install the new/existing rear wheel and quick-release axle into the axle bracket on the wheelchair frame.
3. Refer to Adjusting Quick-Release Axles on page 50 if the locking pins are not protruding past the inside of the axle bushing or there is too much movement of the rear wheel assembly in a back and forth position.

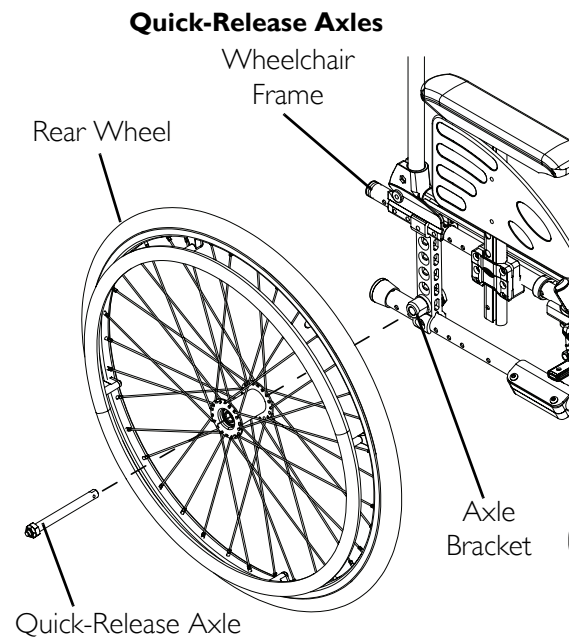


FIGURE 9.2 Removing/Installing Rear Wheels

Adjusting Quick-Release Axles

NOTE: For this procedure, refer to FIGURE 9.3.

1. Remove rear wheel and quick-release axle from the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 48.
2. Depress detent pin in the quick-release axle and slide the quick-release axle through the rear wheel hub.
3. Release detent pin to ensure that the locking pins are fully released.
4. Increase or decrease end play by adjusting the locknut on the end of the quick-release axle.

⚠ WARNING

Make sure the detent pin of the quick release axle is fully released BEFORE operating the wheelchair.

Keep locking pins clean.

5. Reinstall rear wheel onto the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 48.
6. Repeat STEPS 4-5 until the quick release axle detent pins are fully released past the wheelchair frame.

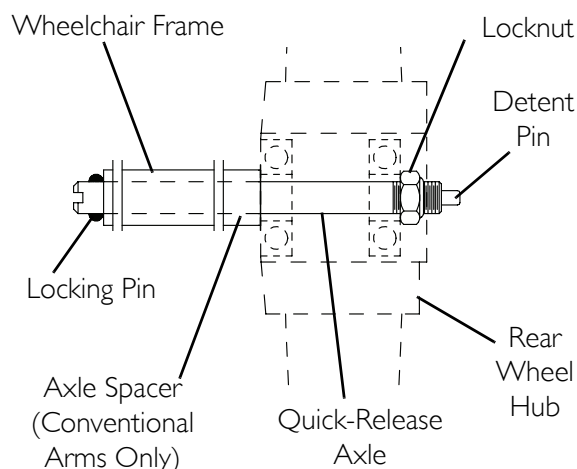


FIGURE 9.3 Adjusting Quick-Release Axles

Replacing Handrims

NOTE: for this procedure, refer to FIGURE 9.4.

1. Remove the rear wheel from the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 48.
2. Remove the mounting screws that secure the existing handrim to the rear wheel.
3. Remove the existing handrim.
4. Install the new handrim and secure to the rear wheel with the existing mounting screws.
5. Reinstall the rear wheel to the wheelchair. Refer to [Removing/Installing Rear Wheels](#) on page 48.
6. Repeat STEPS 1-5 for opposite wheel, if necessary.

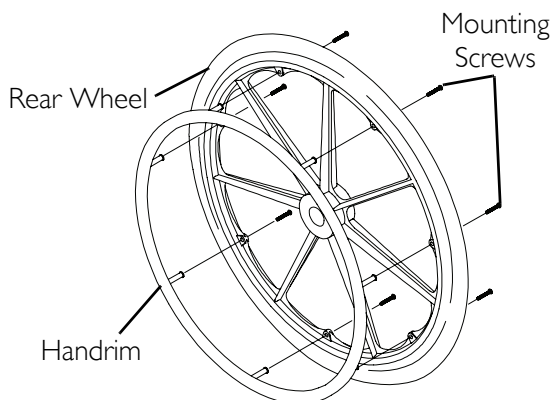


FIGURE 9.4 Replacing Handrims

Adjusting the Wheelbase Length

NOTE: For this procedure, refer to FIGURE 9.5.

1. Remove the wheel. Refer to Removing/Installing Rear Wheels on page 48.
2. Remove the two mounting screws that secure the top and bottom of the axle plate to the wheelchair frame.

CAUTION

The top of the axle plate must remain on the plastic seat bracket. Otherwise, scratching and slight frame damage may occur.

3. Align the axle plate with one of four adjustment holes.

⚠ WARNING

The two mounting screws need to be two adjustment holes apart to maintain frame integrity.

NOTE: When using the last adjustment position, the existing mounting screw needs to be switched to the front of the back cane bracket.

4. Repeat STEPS 1 to 3 for the other axle plate.

NOTE: Both axle plates should be set at the same position.

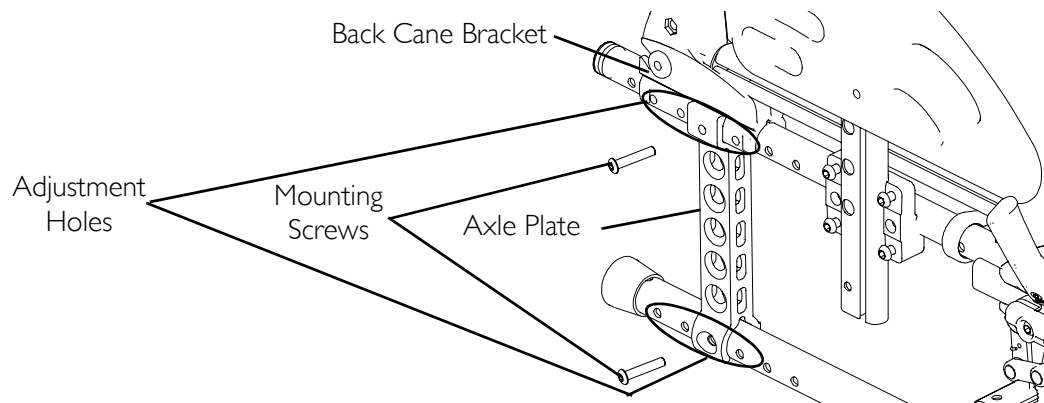


FIGURE 9.5 Adjusting the Wheelbase Length

Adjusting Rear Wheel Height

NOTE: For this procedure, refer to FIGURE 9.6 on page 52.

1. Remove the rear wheel. Refer to Removing/Installing Rear Wheels on page 48
2. Remove the locknut and washer that secures the axle bracket to the axle plate
3. Align the axle bracket with one of the five adjustment holes on the axle plate.
4. Secure the axle bracket to the axle plate, at the desired height, with the locknut and washer.
5. Install the rear wheel. Refer to Removing/Installing Rear Wheels on page 48

6. Repeat STEPS 1 to 5 for the other rear wheel.

NOTE: Both rear wheels should be set at the same position.

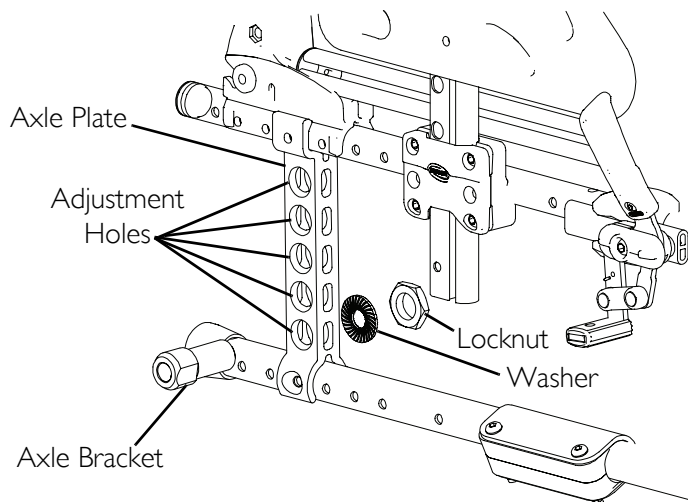


FIGURE 9.6 Adjusting Rear Wheel Height

Replacing/Repairing Rear Wheel Tire/Tube

⚠ WARNING

Replacement of rear wheel tire or tube **MUST** be performed by a qualified technician.

Replacing/Repairing Front Caster Tire/Tube

⚠ WARNING

Replacement of front caster tire or tube **MUST** be performed by a qualified technician.

CAUTION

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

Removing/Installing Sector Block

NOTE: For this procedure, refer to FIGURE 9.7.

NOTE: To install the sector block, reverse this procedure.

1. Remove the mounting screw securing the sector block to the wheel chair frame.
2. Remove the sector block from the wheelchair frame.

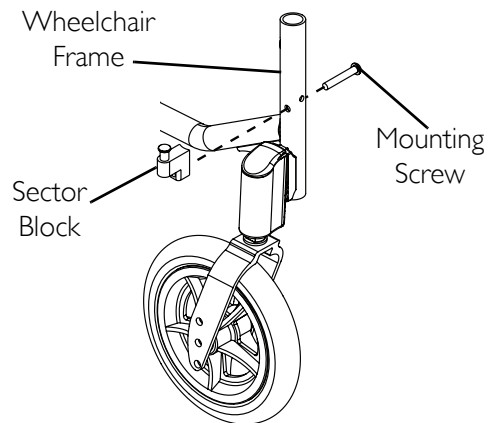


FIGURE 9.7 Removing/Installing Sector Block

Adjusting Forks

NOTE: For this procedure, refer to FIGURE 9.8.

1. Remove the dust cover from the caster headtube.

NOTE: The sector block may need to be removed in order to remove the dust cover. Refer to Removing/Installing Sector Block on page 53.

2. To properly tighten caster journal system and guard against flutter, perform the following check:
 - A. Tip back the wheelchair to floor.
 - B. Pivot both forks and casters to top of their arc simultaneously.
 - C. Let casters drop to bottom of arc.
 - D. Adjust locknuts according to freedom of caster swing.
3. Repeat STEPS C-D until the wheels swing once to one-side, then immediately rest in a straight downward position.
4. Test wheelchair for maneuverability.
5. Snap dust cover into the caster headtube.

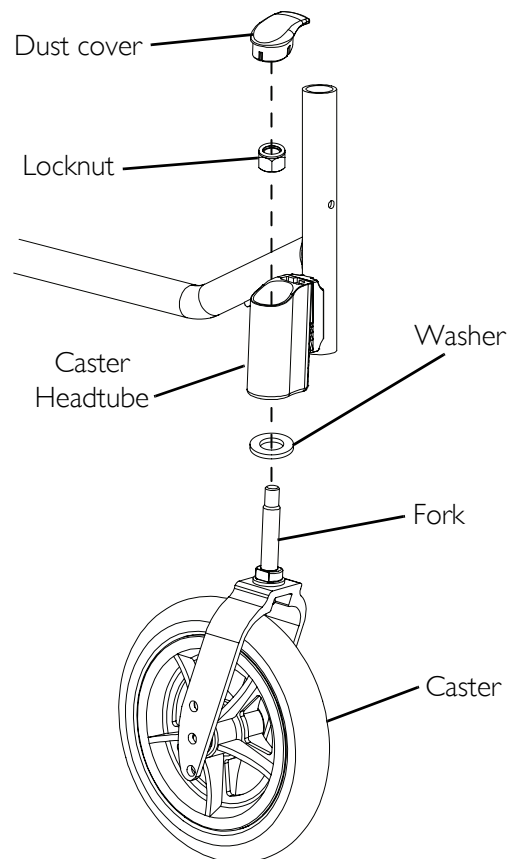


FIGURE 9.8 Adjusting Forks

Removing/Installing/Repositioning the Caster Assemblies

NOTE: If replacing a front caster note the mounting position of the existing front caster for installation of the new front caster.

NOTE: If repositioning front casters or replacing the existing front caster with a caster of a different size, refer to [Changing Front Seat-to-Floor Height](#) on page 96 to determine the front caster position needed for the required front seat-to-floor height.

NOTE: Both front casters MUST be the same size and adjusted to the same height.

NOTE: For this procedure, refer to FIGURE 9.9.

Removing Front Caster

1. Remove the mounting bolt, axle spacers and locknut that secure the front caster to the fork.
2. Remove the caster from the fork.

Installing Front Caster

1. Using the mounting bolt, axle spacers and locknut, secure the caster to the desired caster mounting position.
2. Ensure fork stem is perpendicular to the flat surface. Refer to [Adjusting Caster Angle](#) on page 54.

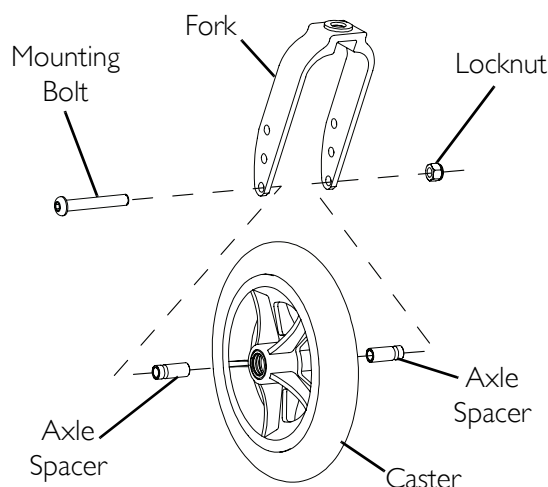


FIGURE 9.9 Removing/Installing/Repositioning the Caster Assemblies

Adjusting Caster Angle

NOTE: For this procedure, refer to FIGURE 9.10.

1. Loosen the two mounting screws that secure the caster assembly to the wheelchair frame.

NOTE: It is not necessary to remove the mounting screws.

2. Rotate the caster assembly to the desired angle.

NOTE: Both casters should be set at the same angle.

3. Tighten the mounting screws that secure the caster assembly to the wheelchair frame.

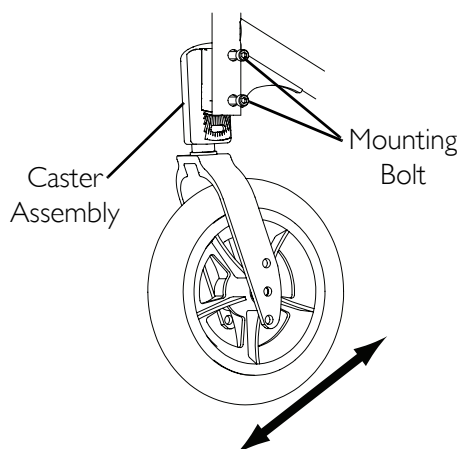


FIGURE 9.10 Adjusting Caster Angle

Adjusting Caster Assembly Position

NOTE: For this procedure, refer to FIGURE 9.11.

NOTE: The sector block may need to be removed in order to remove the dust cover. Refer to Removing/Installing Sector Block on page 53.

1. Remove the two mounting screws that secure the caster assembly to wheelchair frame.
2. Move the caster assembly to one of two positions. Refer to Detail “A” of FIGURE 9.11.
3. Secure the caster assembly to the wheelchair frame.
4. Repeat STEPS 1 to 3 for the other caster assembly.

NOTE: Both caster assemblies should be set at the same angle.

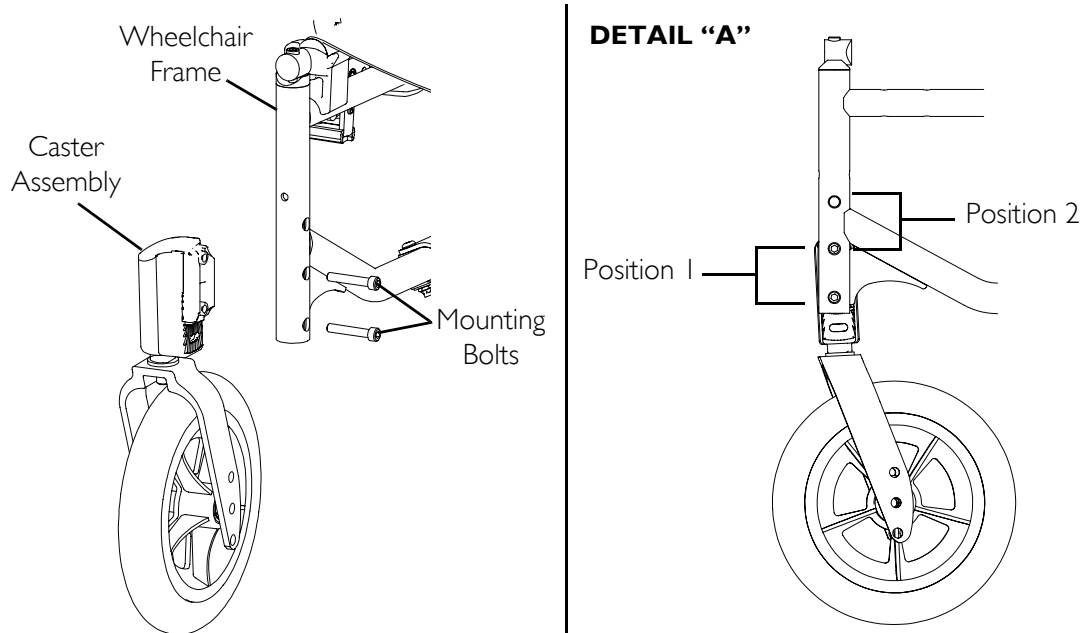


FIGURE 9.11 Adjusting Caster Assembly Position

SECTION 10—SEAT-TO-FLOOR HEIGHT

⚠ WARNING

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

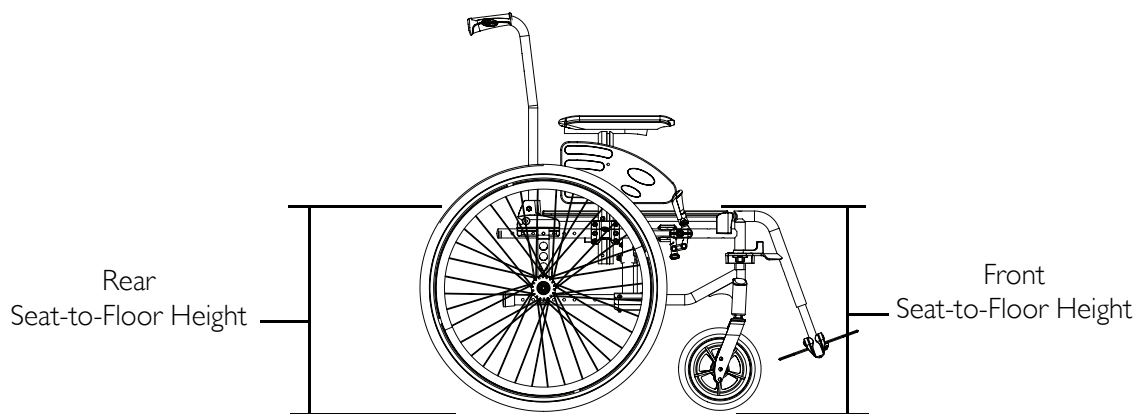
Seat Dump

NOTE: For this procedure, refer to FIGURE 10.1.

NOTE: Refer to Measuring Seat-to-Floor Height on page 57 for measuring instructions.

NOTE: Invacare recommends that the rear seat-to-floor height be AT LEAST 3/8-inch shorter than the front seat-to-floor height. Otherwise a forward seat dump can occur.

Subtract the rear seat-to-floor height measurement from the front seat-to-floor height measurement to determine the amount of seat dump as shown in the example in FIGURE 10.1.



Example:

20 inches	Front Seat-to-Floor Height
- 19 inches	Minus Rear Seat-to-Floor Height
3 degrees	Equals Seat Dump

FIGURE 10.1 Seat Dump

Measuring Seat-to-Floor Height

NOTE: For this procedure, refer to FIGURE 10.2.

NOTE: All measurements are in inches. The front and rear seat-to-floor heights are approximate to $\pm 1/4$ -inch due to tire wear and air pressure.

Measuring Front Seat-to-Floor Height

Front Seat-to-Floor Height: Measure the distance between the front of the seat upholstery and the ground/floor.

Measuring Rear Seat-to-Floor Height

NOTE: The rear seat-to-floor heights are based on pneumatic tires and pneumatic tires with flat free inserts. If wheelchair is equipped with urethane tires, subtract 1/4-inch from the measurement.

Rear Seat-to-Floor Height: Measure distance between the rear of the seat upholstery and the ground/floor.

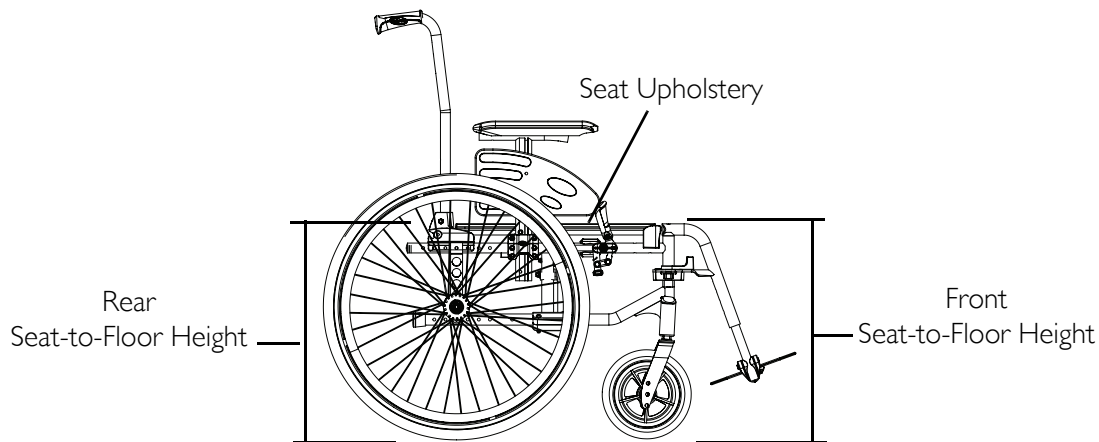


FIGURE 10.2 Seat Dump

Changing Seat-to-Floor Height

⚠ WARNING

The seat height, seat depth, back angle, seating system, size/position of the rear wheels, size/position of the front casters, as well as the user condition directly relate to the stability of the wheelchair. Any change to one or any combination of the nine may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician.

NOTE: For this procedure, refer to the table to determine adjustment(s) necessary to achieve desired front seat to floor height.

NOTE: In order to obtain the desired front seat to floor height, it will be necessary to perform one or both of the following:

- Changing the caster size and/or mounting position on the fork. Refer to Removing/Installing/Repositioning the Caster Assemblies on page 54.
- Changing the fork size or adding/removing height adjustment spacers. Refer to Adjusting Forks on page 53.
- Changing the rear wheel size. Refer to Removing/Installing Rear Wheels on page 48.
- Changing the rear height positioning. Refer to Adjusting Rear Wheel Height on page 51.

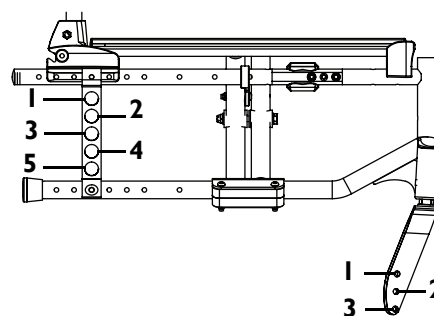
CHANGING SEAT-TO-FLOOR HEIGHT

SEAT DUMP 0°	REAR WHEEL		FRONT CASTER			
	SEAT HEIGHT		Position 1		Position 2	
	22"	24"	6"	8"	6"	8"
16	3	2	1	N/A	N/A	N/A
17	4	3	2	N/A	1	N/A
18	5	4	3	2	2	N/A
19	N/A	5	N/A	3	3	2
20	N/A	N/A	N/A	N/A	N/A	3

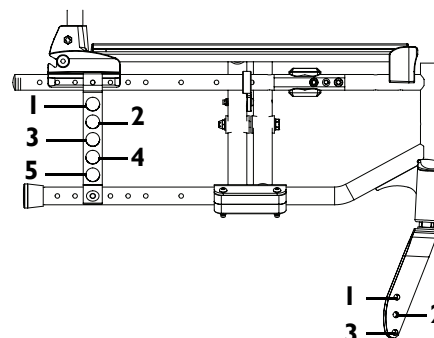
SEAT DUMP 3°	REAR WHEEL		FRONT CASTER			
	SEAT HEIGHT		Position 1		Position 2	
	22"	24"	6"	8"	6"	8"
16	2	1	1	N/A	N/A	N/A
17	3	2	2	N/A	1	N/A
18	4	3	3	2	2	N/A
19	5	4	N/A	3	3	2
20	N/A	5	N/A	N/A	N/A	3

SEAT DUMP 6°	REAR WHEEL		FRONT CASTER			
	SEAT HEIGHT		Position 1		Position 2	
	22"	24"	6"	8"	6"	8"
16	1	N/A	1	N/A	N/A	N/A
17	2	1	2	N/A	1	N/A
18	3	2	3	2	2	N/A
19	4	3	N/A	3	3	2
20	5	4	N/A	N/A	N/A	3

Front Caster Position 1



Front Caster Position 2



SECTION 11—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.

Adjusting Wheel Locks

NOTE: When changing the position of the rear wheels, the wheel locks MUST be repositioned.

NOTE: Before adjusting or replacing the wheel lock assemblies, ensure that the tires are inflated to the recommended p.s.i on the side wall of the tire.

NOTE: If wheel locks need replacement, installation must be performed by a qualified technician.

Adjusting Wheel Lock Position

NOTE: For this procedure, refer to FIGURE 11.1.

1. Remove the two mounting screws that secures the wheel lock assembly to the wheelchair frame.
2. Remove the wheel lock assembly from the clamp assembly.
3. Move the clamp assembly to the other wheel lock position on the wheelchair frame.
4. Install the wheel lock assembly into the clamp assembly.
5. Secure the wheel lock assembly to the wheelchair frame with the two mounting screws.
6. Repeat STEPS 1 to 6 for the other wheel lock assembly.

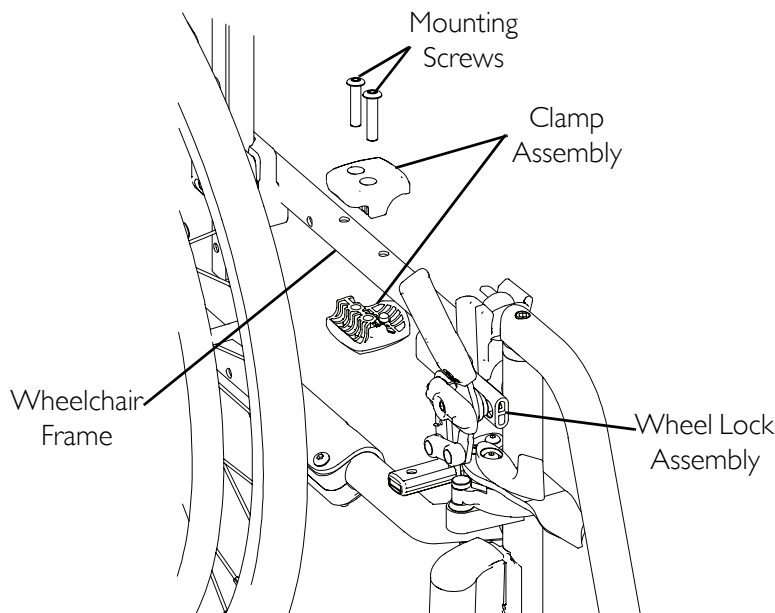


FIGURE 11.1 Adjusting Wheel Locks - Adjusting Wheel Lock Position

Adjusting Wheel Lock Tension

NOTE: For this procedure, refer to FIGURE 11.2.

1. Loosen, but DO NOT remove the two set screws (Detail "A") that secure the wheel lock assembly to the wheelchair frame.
2. Measure the distance between the wheel lock shoe and the rear wheel.
3. Slide the wheel lock along the wheelchair frame until the measurement is between 5/32 and 5/16-inches.
4. Securely tighten the two set screws (Detail "A").
5. Repeat STEPS 1-4 for the opposite wheel lock.
6. Engage the wheel locks and push against the wheelchair to determine if the wheel locks engage the rear wheels enough to hold the occupied wheelchair.
7. Repeat STEPS 1-6 until the wheel locks engage the rear wheels enough to hold the occupied wheelchair.

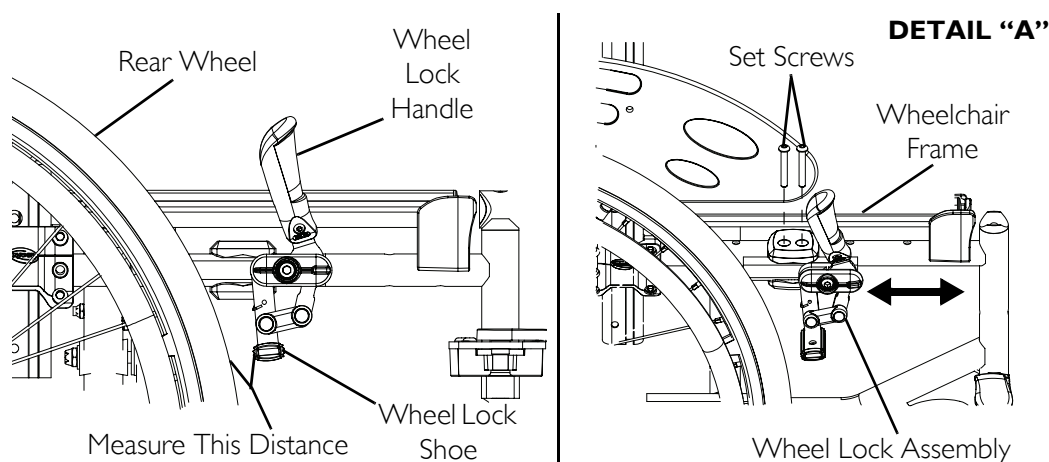


FIGURE 11.2 Adjusting Wheel Locks- Adjusting Wheel Lock Tension

Replacing Wheel Lock Handle

NOTE: For this procedure, refer to FIGURE 11.3.

1. Remove the mounting screw and locknut that secures the wheel lock handle to the wheel lock assembly.
2. Remove the wheel lock handle and discard.
3. Align the new wheel lock handle with the wheel lock assembly.
4. Secure the new wheel lock handle with the mounting screw and locknut.
5. If necessary, repeat STEPS 1 to 4 for the other wheel lock.

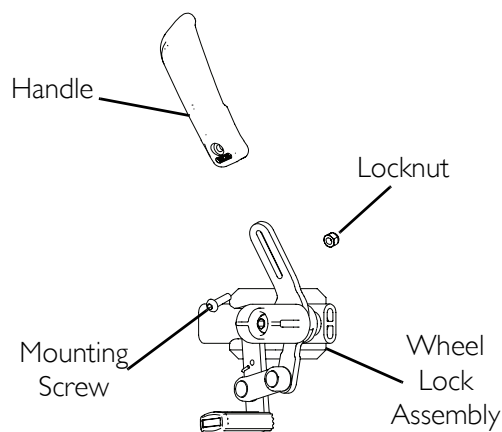


FIGURE 11.3 Replacing Wheel Lock Handle

SECTION 12—ANTI-TIPPERS

⚠ WARNING

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

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

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

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

Installing/Adjusting Anti-Tippers

Installing Anti-Tippers

NOTE: For this procedure, refer to FIGURE 12.1.

1. Press release buttons in and insert anti-tippers with the anti-tipper wheels pointing toward ground/floor into the rear frame tubing until bottom release button locks in place.
2. Measure the distance between the bottom of the anti-tipper wheels and the ground/floor.

NOTE: 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.

3. If the distance between the bottom of anti-tipper wheels and the ground/floor is not 1½ to 2-inches, adjust anti-tippers.

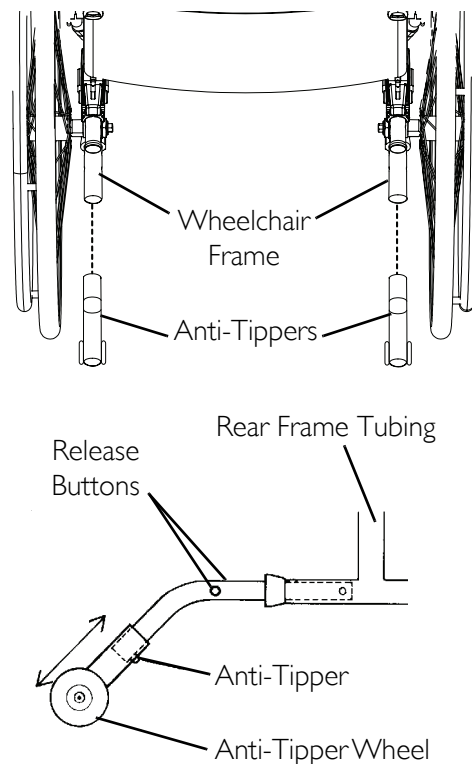


FIGURE 12.1 Installing Anti-Tippers

Adjusting Anti-Tippers

NOTE: For this procedure, refer to FIGURE 12.2.

⚠ WARNING

When anti-tippers are used, anti-tippers *MUST* be adjusted to maintain a 1-1/2 to 2-inch clearance between the bottom of the anti-tipper wheels and the ground/floor. This spacing should always be checked whenever adjustments/changes are made to the wheelchair. Failure to maintain proper spacing may result in the chair tipping over backward causing serious injury or property damage.

1. Press the release buttons on the wheeled portion of the anti-tipper and slide it up or down to achieve the 1½ to 2-inch clearance.
2. Check to make sure that the release buttons are fully engaged in adjustment holes.

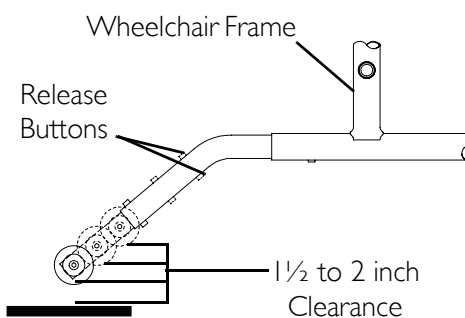


FIGURE 12.2 Adjusting Anti-Tippers

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 its product to be free from defects in materials and workmanship for a period of one year from date of purchase. The side frames and crossmembers are warranted for the lifetime of the original purchaser/users. 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 on the back cover. 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.

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



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