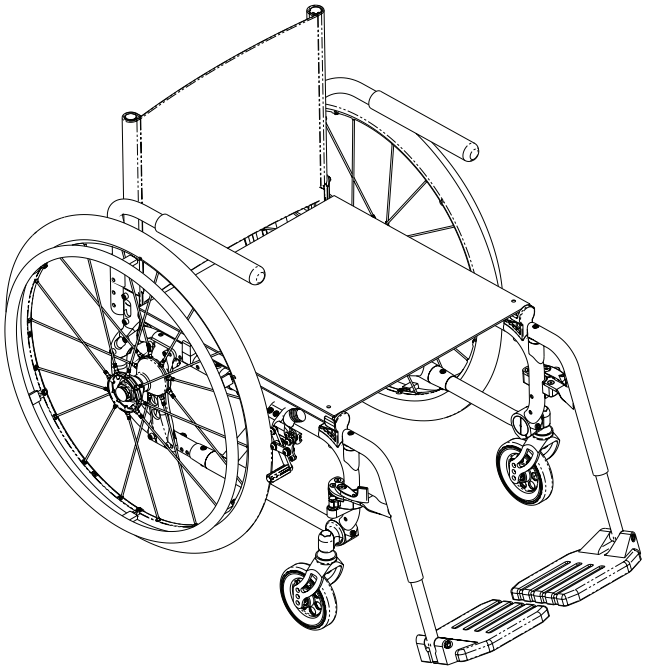
Owner's Operator and Maintenance Manual

ProSPIN™ X4™



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

INVACARE

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 (TRRO OR TRBKTS)

TRRO includes four factory-installed transport brackets and a wheelchair anchored pelvic belt. TRRO has been crash-tested in accordance with ANSI/RESNA WC Vol 1 Section 19 Frontal Impact Test requirements for wheelchairs with a 168 lb crash dummy, which corresponds to a person with a weight of 114 to 209 lbs.

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

As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type. It is Invacare's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare cannot and does not recommend any wheelchair transportation systems.

Refer to Transport Ready Option on page 95 for more information about transporting the wheelchair.

⚠ WARNING

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

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

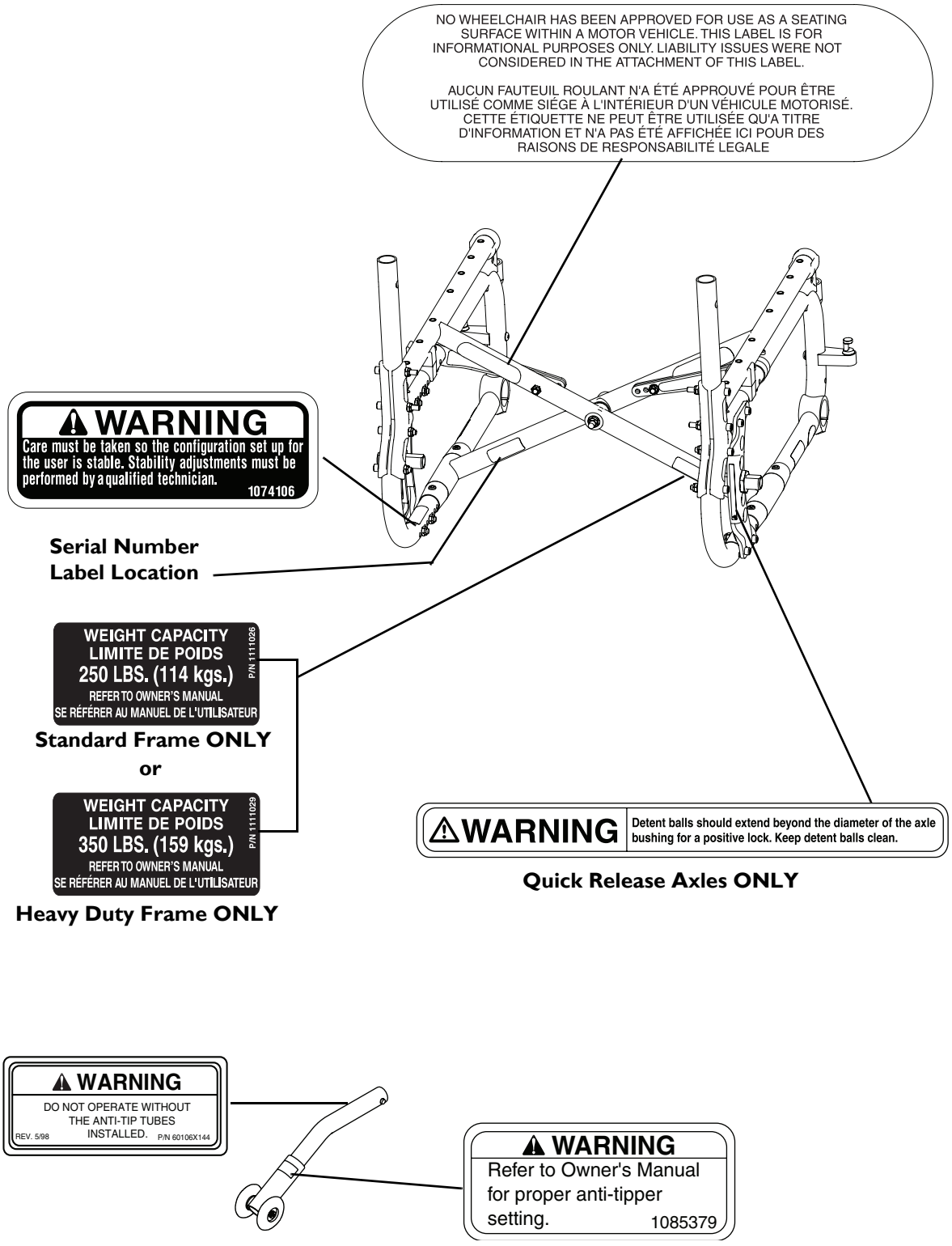
SEAT POSITIONING STRAP

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.

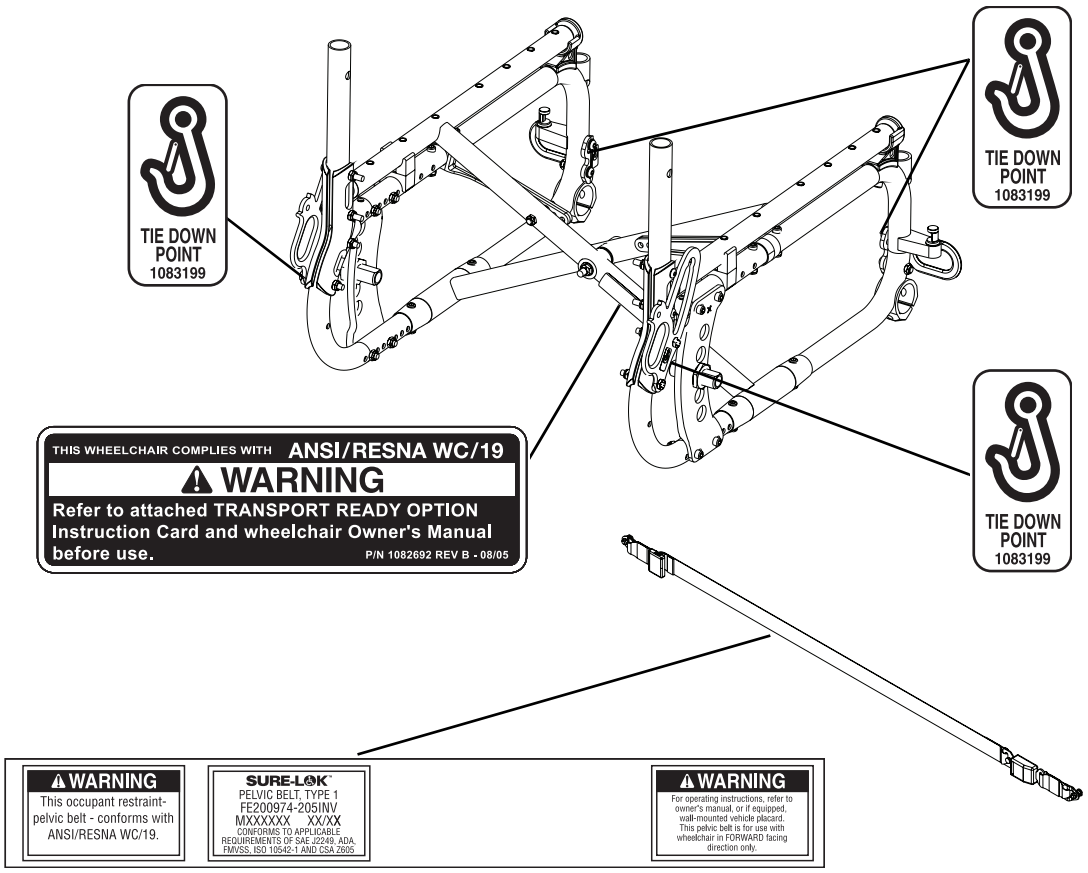
As regards restraints - seat/chest positioning straps - it is the obligation of the DME dealer, therapists and other healthcare professionals to determine if a seat/chest positioning strap is required to ensure the safe operation of this equipment by the user. SERIOUS INJURY CAN OCCUR IN THE EVENT OF A FALL FROM A WHEELCHAIR.

LABEL LOCATIONS

Standard Labels

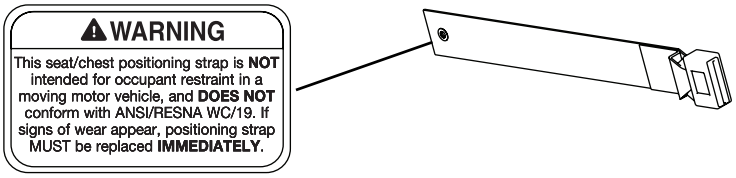


Wheelchairs with TRRO



Wheelchairs without TRRO

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



TYPICAL PRODUCT PARAMETERS

PROSPIN X4	
OVERALL WIDTH (W/ 0° CAMBER) OPEN: CLOSED:	 Seat width plus approximately 8½ inches Approximately 12 inches
OVERALL DEPTH:	Seat depth plus 14 inches (without front riggings)
SEAT WIDTH:	14 to 20 inches
SEAT DEPTH:	14 to 20 inches
REAR FRAME TYPE:	Curved
FRONT FRAME TYPES:	Swingaway, 70° Fixed, 80° Fixed
CROSSBRACE TYPE:	Conventional
SEAT-TO-FLOOR FRONT CASTER SIZES 3-inch: 6-inch: 5-inch: 6-inch: REAR WHEEL SIZES 20-inch: 22-inch: 24-inch: 25 or 26-inch:	 Range adjusts in ½-inch increments 15-½ to 20 inches 15-½ to 20-½ inches 16-½ to 21 inches 17-½ to 21-½ inches Range adjusts in ½-inch increments 13-½ to 18 inches 14-½ to 19 inches 15-½ to 20 inches 16 to 20½ inches
BACK HEIGHT (BY BACK STYLE) SPORTSTER - NO PUSH HANDLES: STRAIGHT- PUSH HANDLES: 10-INCH BEND PUSH HANDLES: ADJUSTABLE ANGLE:	 10 to 14, 12 to 16, 14 to18, 16 to 20 inches 12 to 16, 14 to 18, 16 to 20 inches 14 to 18, 16 to 20 inches 12 to 16, 17 to 20 inches
ADJUSTABLE ANGLE BACK ANGLE RANGE:	0° to 15° Posterior or anterior
ARM STYLES:	Conventional adjustable height, T-arm, swingaway padded
FOOTREST:	Swingaway front frame - 60°, 70°, 70° Tapered, Elevating Legrest
FOOTPLATES SWING AWAY FRONT FRAME: FIXED FRONT FRAME:	 Adjustable angle flip-up footplates, and composite footplates Angle Adjustable Rigid Footrest
REAR AXLE:	Quick-release, quad-release, permanent
AXLE MOUNTING PLATES:	Standard, Amputee
REAR WHEELS:	20, 22, 24-inch Composite 20, 22, 24, 26-inch spoke wheels 24, 26-inch high performance spoke wheels 24, 25, 26-inch Spinergy® spoke wheel Pneumatic, pneumatic flat free, urethane, KIK® -black, Primo
HANDRIMS:	Aluminum anodized, black plastic coated, titanium, spoke guards
WHEEL LOCKS:	Push-to-lock, pull-to-lock, hill holder, hideaway undermount
CASTER SIZE:	3,4,5 and 6-inch (urethane or pneumatic), precision sealed bearings, flat free inserts
SEAT CUSHION:	2 or 3-inch (optional)
BACK UPHOLSTERY:	Black nylon (standard), adjustable black upholstery (optional)
APPROXIMATE SHIPPING WEIGHT:	24-50 lbs (14-inch seat frame with complete Package)
WEIGHT LIMITATION	250 lbs (113.4 kg) 350 lbs (158.8 kg) with Heavy Duty Package

SECTION 1—GENERAL GUIDELINES

⚠ WARNING

SECTION 1 - 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

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	X	N/A	N/A	N/A
SEAT DEPTH	X	•	X	X	X	X	X	X	N/A	N/A	N/A
BACK ANGLE	X	X	•	X	X	X	X	X	N/A	N/A	N/A
SEATING SYSTEM/UPHOLSTERY	X	X	X	•	X	X	X	X	X	N/A	N/A
CASTER SIZE	X	N/A	X	N/A	•	X	X	X	N/A	X	X
CASTER POSITION	X	N/A	X	N/A	X	•	X	X	N/A	X	X
REAR WHEEL SIZE	X	N/A	X	N/A	X	X	•	X	N/A	X	X
REAR WHEEL POSITION	X	N/A	X	N/A	X	X	X	•	N/A	X	X
USER CONDITION	X	X	X	X	X	X	X	X	•	N/A	N/A

To maintain maximum stability, position the rear wheels in the most rearward position in the axle mounting plate. Moving the rear wheels to any of the other mounting positions causes the wheelchair to decrease in stability.

Always ensure stability before moving the rear wheels forward. Test wheelchair before it is occupied by the end user to ensure safety.

Repair and Service Information

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

Operating Information

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

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

DO NOT 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.

DO NOT stand on the frame of the wheelchair.

DO determine and establish your particular safety limits by practicing bending, reaching and transferring activities in the presence of a qualified healthcare professional before attempting active use of the wheelchair.

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

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 and/or seating system (if any) to tip over.

DO NOT shift your weight or sitting position toward the direction you are reaching as the wheelchair and/or seating system (if any) may tip over.

DO NOT tip the wheelchair without assistance.

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

DO NOT use footplates as a platform. When getting in or out of the wheelchair, make sure that the footplates are in the upward position or swing footrests towards the outside of the chair.

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 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.

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.

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.

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.

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 verify that hand grips on the rear cane are secure prior to use when an assistant is used to propel or lift the chair. Check for any signs of looseness or deterioration and if found, contact a qualified technician. DO NOT attempt to move the wheelchair by pulling on the hand grips if they are found to be unsecure or have deteriorated.

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.

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 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 and the warranty is void.

Weight Limitation

The Invacare ProSPIN X4 wheelchair has a weight limitation of 250 lbs (113.4 kg.). The weight limit includes both occupant and any add-on items (backpacks, etc.). For example, if the weight limitation is 250 lbs and there is a backpack containing 10 lbs and a seating system weighing 10 lbs, the user weight is limited to 230 lbs (250 lbs - 20 lbs).

SECTION 2—SAFETY INSPECTION

NOTE: Every six months and 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.

Inspection/Set-up Checklist

Initial adjustments should be made to suit your personal body structure needs and preference.

⚠ WARNING

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

CAUTION

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

- ❑ Ensure wheelchair rolls straight (no excessive drag or pull to one side).
- ❑ Ensure all hardware is tight.
- ❑ Inspect bent or protruding metal on clothing guards.
- ❑ Ensure all fasteners on clothing guards are secure.
- ❑ Ensure arms are secure but easy to release and adjustment levers engage properly.
- ❑ Ensure adjustable height arms operate and lock securely.
- ❑ Ensure armrest pad sits flush against arm tube.
- ❑ Inspect seat and/or back upholstery for rips.
- ❑ Ensure back mounting plate attaching hardware is securely tightened.
- ❑ Ensure hand grips are not loose.
- ❑ Ensure sealed bearings and axle nut tension is correct.
- ❑ Inspect for excessive side movement or binding when rear wheels are lifted and spun.
- ❑ Ensure quick/quad-release axles lock properly.
- ❑ Inspect handrims for signs of rough edges or peeling finish.
- ❑ Inspect for broken spokes.
- ❑ Ensure 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.
- ❑ Ensure wheel bearings are clean and free of moisture.
- ❑ Ensure all caster/wheel/fork/fork stem fasteners are secure.
- ❑ Ensure fork stem is 90° perpendicular to floor.
- ❑ Ensure wheel locks DO NOT interfere with tires when rolling.
- ❑ Ensure wheel lock pivot point are free of wear and looseness.
- ❑ Ensure wheel locks are easy to engage.
- ❑ Inspect tires/casters for flat spots and wear.
- ❑ Ensure the casters are free of debris.
- ❑ 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.
- ❑ Inspect seat positioning strap for any signs of wear. Ensure buckle latches. Verify hardware that attaches strap to frame is secure and undamaged. Replace if necessary.
- ❑ Check that all labels are present and legible. Replace if necessary.

SECTION 3—SAFETY/HANDLING OF WHEELCHAIRS

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 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 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.

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 to the wheelchair and surrounding property.

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

Coping with Everyday Obstacles

Coping with the irritation of everyday obstacles can be somewhat alleviated 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 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.

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 3.1 on page 22.

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.
3. Remove or flip back armrests.

4. Shift body weight into seat with transfer.

FIGURE 3.1 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, 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 FIGURE 3.2.

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.

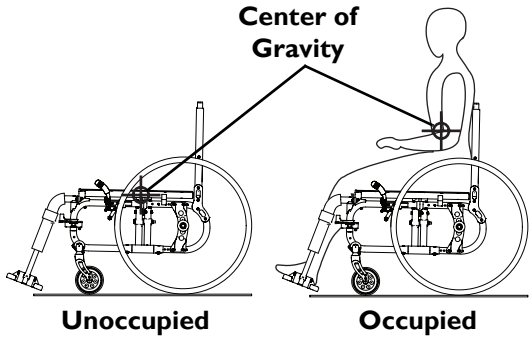


FIGURE 3.2 Percentage of Weight Distribution

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.

Adjusting the Wheelbase for Stability

NOTE: For this procedure, refer to FIGURE 3.3.

Lengthening the Wheelbase - will increase stability and maintain standard maneuverability of the wheelchair.

Shortening the Wheelbase - will increase maneuverability and distribute additional weight onto the rear wheels.

Centering the Wheelbase - gives you maneuverability and stability.

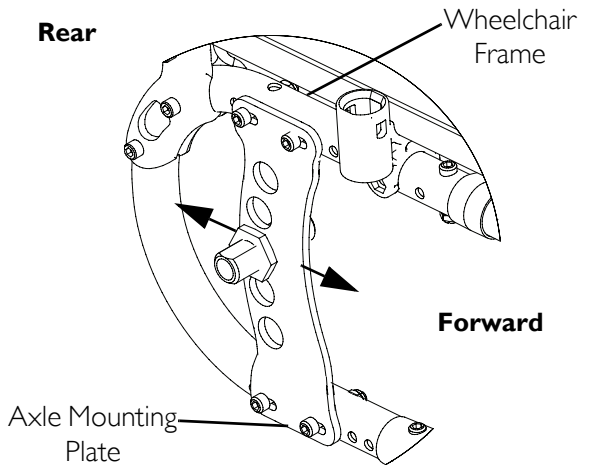


FIGURE 3.3 - Adjusting the Wheelbase for Stability

Reaching, Leaning and Bending - Forward

⚠ WARNING

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

NOTE: For this procedure, refer to FIGURE 3.4.

Position the casters so that they are extended away from the drive wheels and engage wheel locks.

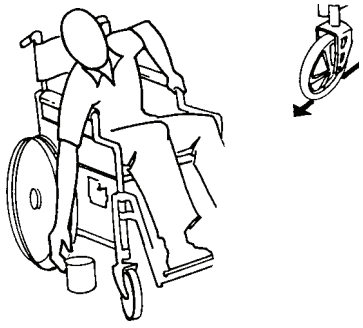


FIGURE 3.4 Reaching, Leaning and Bending - Forward

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 3.5 on page 24.

Position wheelchair as close as possible to the desired object. Position the casters so that they are extended away from the drive wheels to create the longest possible wheelbase. Reach back only as far as your arm will extend without changing your sitting position.

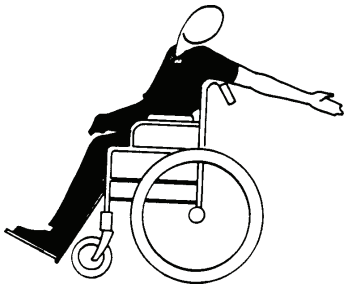


FIGURE 3.5 Reaching, Bending - Backward

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

NOTE: For this procedure, refer to FIGURE 3.6.

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

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

The second assistant should be positioned at the front of the wheelchair lifting upward on the nonremovable (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.

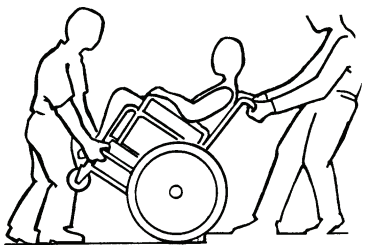


FIGURE 3.6 Tipping - Curbs

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.

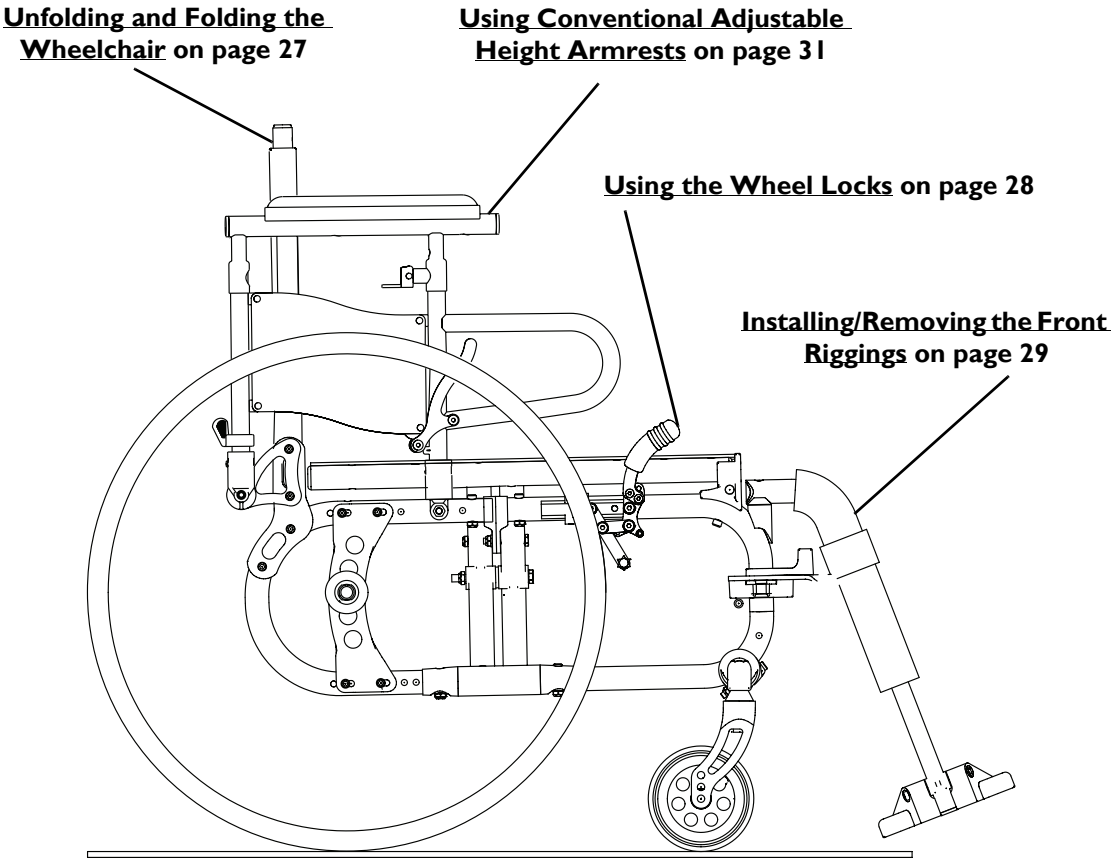
Follow this procedure for moving the wheelchair between floors when an elevator is NOT available:

1. After the wheelchair has been tipped 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.
2. 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.
3. The wheelchair should not be lowered until the last stair has been negotiated and the wheelchair has been rolled away from the stairway.

⚠ WARNING

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

SECTION 4—WHEELCHAIR OPERATION



Unfolding and Folding the Wheelchair

⚠ WARNING

When unfolding the wheelchair, DO NOT position fingers or hands between the pivot links or under the conventional seat rails - otherwise injury or damage may occur.

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.

Unfolding

NOTE: For this procedure, refer to FIGURE 4.1.

1. Open the wheelchair by grasping the wheelchair armrest closest to you.
2. Tilt the wheelchair towards you (raising the opposite wheel and caster off the ground/floor).
3. Push downward on the top of the seat rail closest to you where the seat upholstery is attached until the wheelchair is fully open.
4. Engage both wheel locks, open the footrest/legrest for clearance and transfer into the wheelchair. Refer to Transferring to and from Other Seats on page 21.

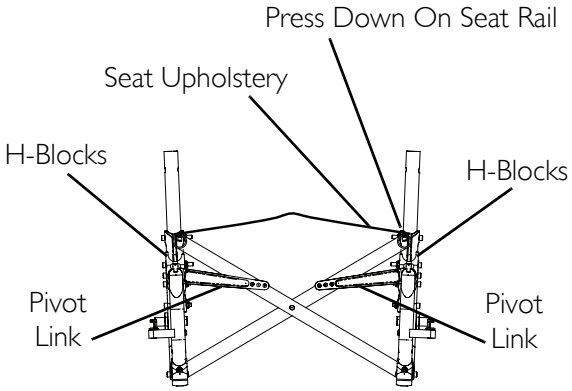


FIGURE 4.1 Unfolding

Folding

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.
4. Continue to close the wheelchair by grasping the armrest furthest from you and pulling the armest towards you.

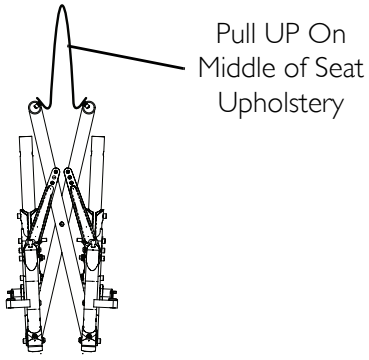


FIGURE 4.2 Folding

Using the Wheel Locks

⚠ WARNING

DO NOT attempt to stop a moving wheelchair with the wheel locks - otherwise injury or damage may occur. WHEEL LOCKS ARE NOT BRAKES.

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.

NOTE: For this procedure, refer to FIGURE 4.3.

NOTE: For maintenance and/or adjustment procedure, refer to Wheel Locks on page 37.

NOTE: Position wheelchair on a flat, level surface to perform this procedure.

NOTE: Hide-a-way wheel locks are push-to-lock ONLY (Detail "A").

1. Ensure the wheelchair is not moving before engaging the wheel locks.
2. To engage wheel locks, perform one of the following:
   - Push-to-Lock - Push the wheel lock handle towards front of wheelchair until the wheel lock engages the drive wheel and holds wheelchair in place.
   - Pull-to-Lock - Pull the wheel lock handle back towards rear of wheelchair until the wheel lock engages the rear wheel and holds wheelchair in place.
3. To disengage the wheel locks, perform one of the following:
   - Push-to-Lock - Pull the wheel lock handle back towards rear of wheelchair.
   - Pull-to-Lock - Push the wheel lock handle forward towards front of wheelchair.

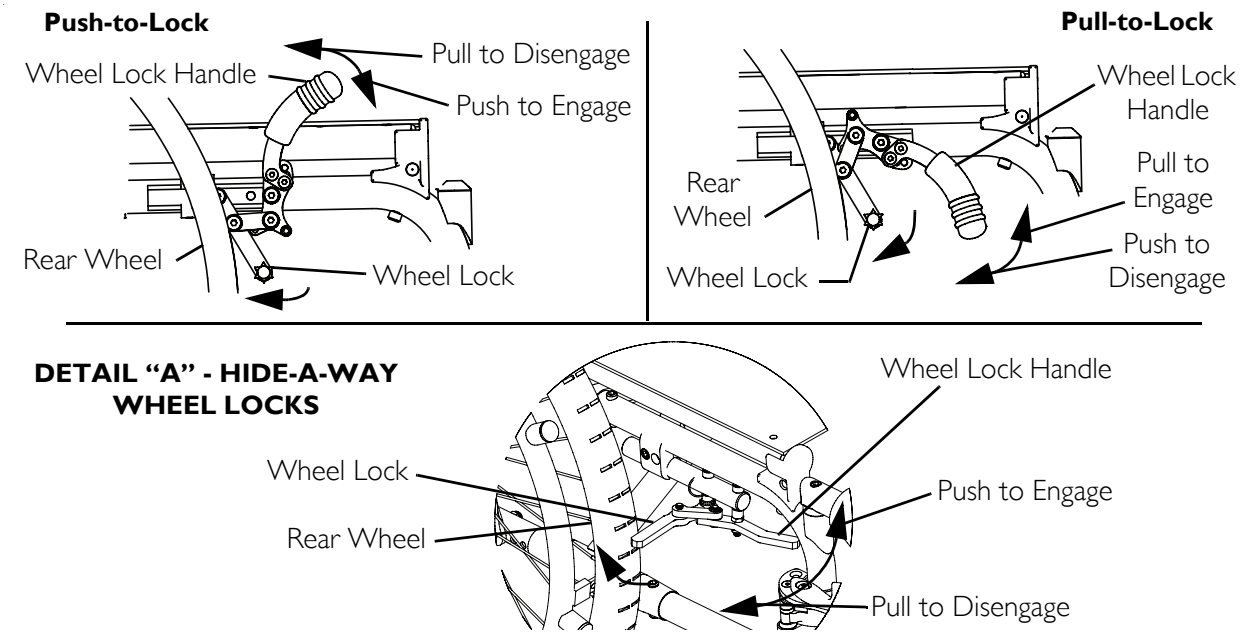


FIGURE 4.3 Using the Wheel Locks

Installing/Removing the Front Riggings

NOTE: For this procedure, refer to FIGURE 4.4.

NOTE: For maintenance and/or adjustment procedures refer to Front Riggings on page 40.

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.

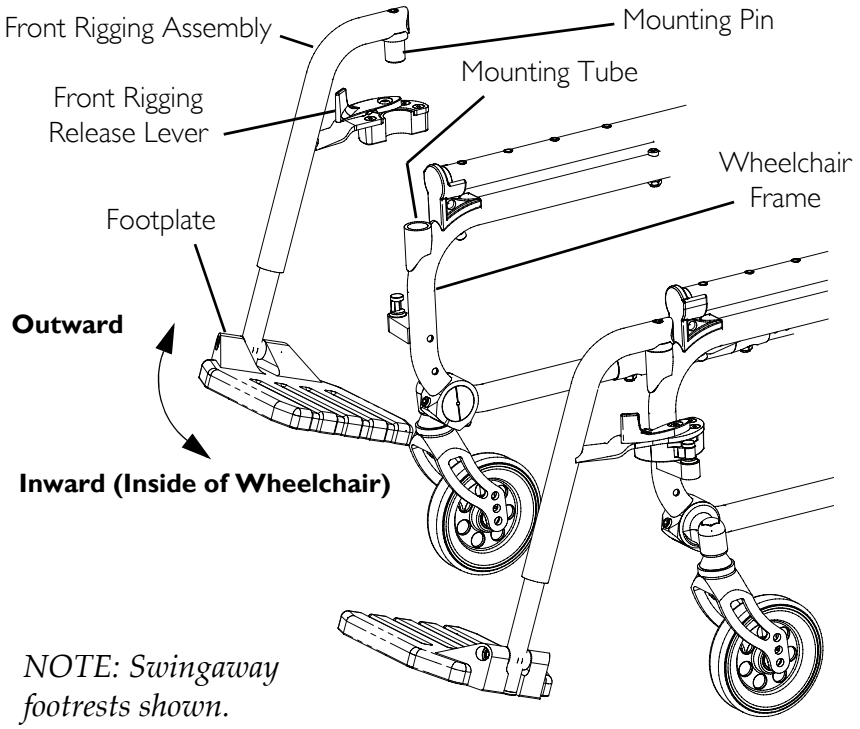


FIGURE 4.4 Installing/Removing the Front Riggings

Installing/Removing Elevating Legrests

NOTE: For this procedure, refer to FIGURE 4.5.

Installing

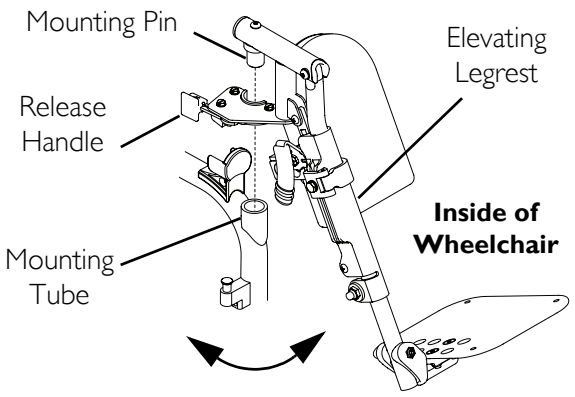
1. Place elevating legrest on the outside of the wheelchair and insert mounting pin into the mounting tube.
2. Rotate elevating legrest toward the inside of the wheelchair until it locks in place.

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 4.5 Installing/Removing Elevating Legrests

Raising/Lowering the Elevating Legrest

NOTE: For this procedure, refer to FIGURE 4.6.

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.

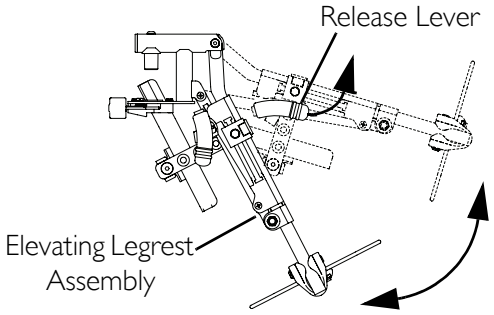


FIGURE 4.6 Raising/Lowering the Elevating Legrest

Using Conventional Adjustable Height Armrests

⚠ WARNING

DO NOT operate or replace flip-back armrest when wheelchair is folded - otherwise injury or damage may result.

Ensure armrest is securely locked into arm socket and armrest release button locks into place before using.

NOTE: For this procedure, refer to FIGURE 4.7.

NOTE: For maintenance and/or adjustment procedures, refer to Arms on page 47.

1. Push down on front of armrest to ensure it is fully seated in front socket.

NOTE: This step is needed to prevent the release button from hanging up on the front arm socket.

2. Pull the armrest release lever located on armrest front tube to disengage the release button from the front arm socket.
3. Rotate front of armrest up and out of front arm socket.

NOTE: Armrest can rotate back approximately 90°.

4. To prepare armrest for use, rotate armrest downward, making sure front tube of armrest inserts into arm socket.
5. Push armrest down until release button snaps into front arm socket.
6. Ensure armrest is securely locked into front arm socket and release button locks into place before using.

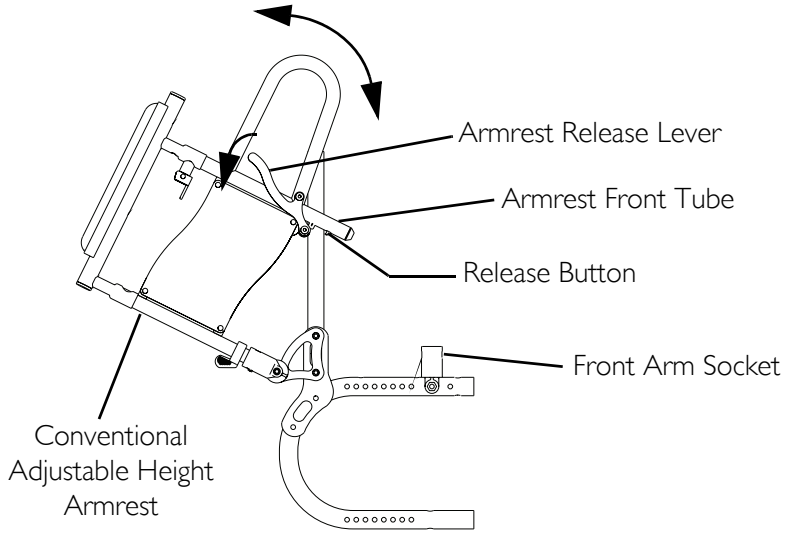
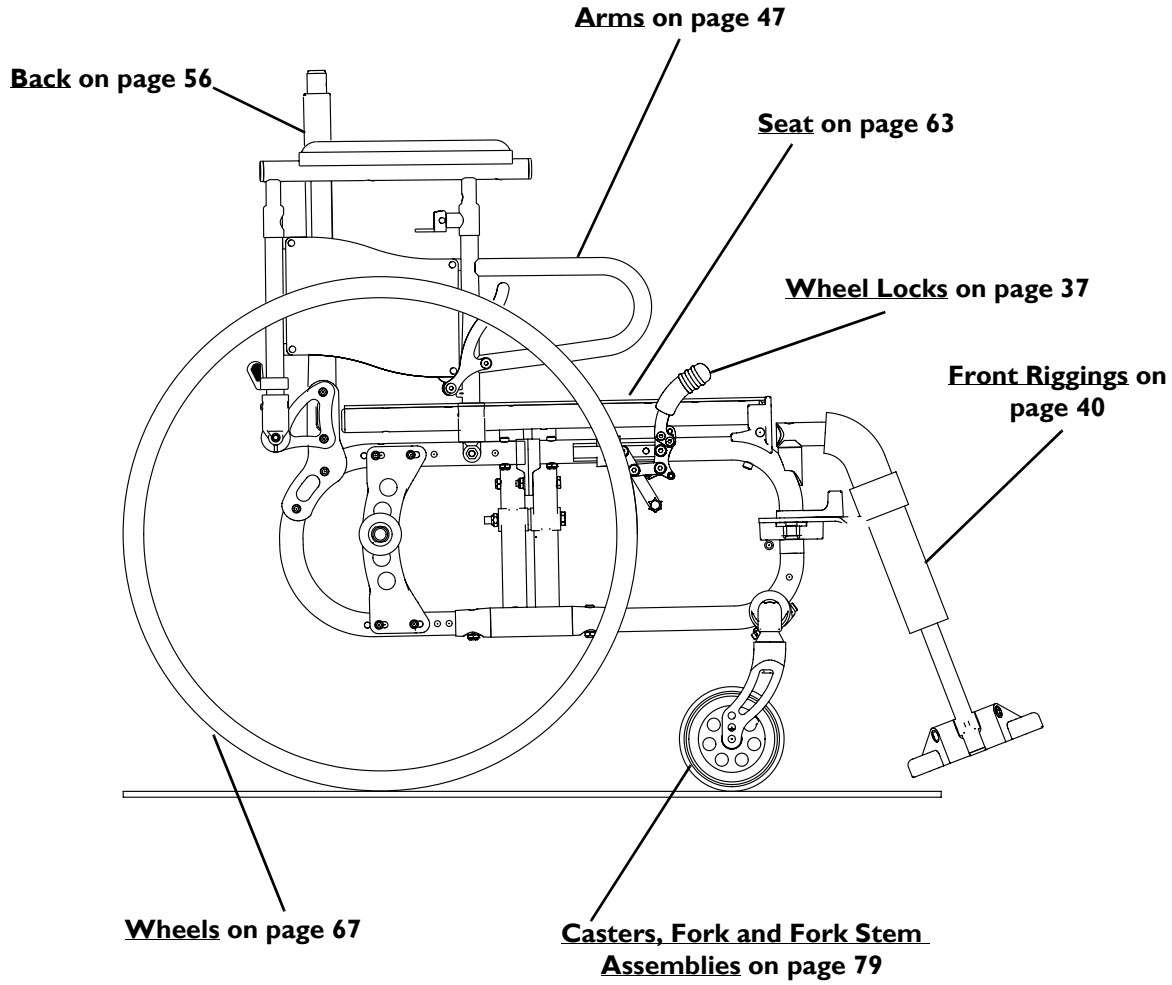


FIGURE 4.7 Using Conventional Adjustable Height Armrests

MAINTENANCE AND ADJUSTMENT SECTIONS



SECTION 5—MAINTENANCE INSPECTION/TROUBLESHOOTING

NOTE: Every six months or sooner, 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.

Maintenance

⚠ WARNING

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

CAUTION

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

Suggested Maintenance Procedures

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

⚠ 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.

2. Clean/oil quick-release axles once a week with a Teflon™ lubricant.
3. Periodically check the back fold down mechanisms to ensure that they lock the back securely in place. If the back does not lock properly, take the wheelchair to a qualified technician for disassembly, cleaning, or replacement of the locking mechanism.

⚠ WARNING

DO NOT use the 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.

4. If tires are pneumatic, recommended tire pressure is listed on the sidewall of the tire.

CAUTION

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

5. The rear wheels, casters, and tires should be checked periodically for cracks and wear, and should be replaced by a qualified technician if damaged.
6. Regularly check for loose spokes in the rear wheels. If loose, have them adjusted by a qualified technician.
7. Periodically check handrims to ensure they are secured to the rear wheels. If loose, have them tightened by a qualified technician.
8. Periodically adjust wheel locks in as tires wear. Refer to Replacing/Adjusting the Wheel Locks on page 37 of this manual.
9. Periodically check caster wheel bearings to make sure they are clean and free from moisture. Use a Teflon lubricant if necessary.
10. Check upholstery for sagging, rips or tears.

Maintenance/Safety Inspection Checklists

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

⚠ WARNING

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

CAUTION

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

Inspect/Adjust Weekly

- ❑ Ensure wheelchair rolls straight (no excessive drag or pull to one side).
- ❑ Ensure quick/quad-release axles lock properly.
- ❑ Inspect for broken spokes.
- ❑ Ensure wheel/fork assembly has proper tension when caster is spun. Caster should come to a gradual stop.
- ❑ Ensure fork stem is 90° perpendicular to floor.
- ❑ 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).

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.
- ❑ Ensure wheel bearings are clean and free of moisture.
- ❑ Ensure wheel locks DO NOT interfere with tires when rolling.
- ❑ Ensure wheel lock pivot point are free of wear and looseness.
- ❑ Ensure all caster/wheel/fork/fork stem fasteners are secure.
- ❑ Ensure all hardware is tight.
- ❑ Ensure hand grips are not loose.

Inspect/Adjust Periodically

- ❑ Ensure Wheelchair rolls straight (no excessive drag or pull to one side).
- ❑ Ensure arms are secure but easy to release and adjustment levers engage properly.
- ❑ Ensure adjustable height arms operate and lock securely.
- ❑ Ensure armrest pad sits flush against arm tube.
- ❑ Inspect for bent or protruding metal on clothing guards.
- ❑ inspect all fasteners on clothing guards are secure.
- ❑ Ensure seat and/or back upholstery have no rips.
- ❑ Inspect modular seat rail attaching hardware is securely tightened.
- ❑ Inspect back mounting plate attaching hardware is securely tightened.
- ❑ Inspect for 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).
- ❑ Ensure wheel lock pivot point are free of wear and looseness.
- ❑ Clean upholstery and armrests.
- ❑ Ensure sealed bearings and axle nut tension are correct.
- ❑ Ensure 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.
- ❑ Ensure wheel bearings are clean and free of moisture.
- ❑ Ensure 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.
- ❑ Check that all labels are present and legible. Replace if necessary.

Troubleshooting

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

SECTION 6—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.

NOTE: For operation procedures, refer to Using the Wheel Locks on page 28.

Replacing/Adjusting the Wheel Locks

⚠ WARNING

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 6.1 on page 38.

NOTE: Before adjusting or replacing wheel locks, ensure that the tires are inflated to the recommended psi on the sidewall of the tire.

Replacing the Wheel Lock

1. Remove the two mounting screws and remove the existing wheel lock from the wheelchair.
2. Using the two mounting screws, install the new wheel lock. Securely tighten.

Adjusting the Wheel Lock

1. Engage the wheel locks.

NOTE: Any wheel lock adjustment should embed the wheel lock shoe at least 3/16-inch into the pneumatic tire (1/8-inch for urethane wheels) when engaged.

2. If necessary, loosen the two mounting screws that secure the wheel locks to the wheelchair frame and adjust position of the wheel lock until the 3/16-inch (1/8-inch for urethane wheels) measurement is obtained for correct wheel lock adjustment.
3. Securely tighten the two mounting screw(s).
4. Engage the wheel locks and push against the wheelchair and determine if the wheel locks engage the wheel locks enough to hold the wheelchair.
5. Repeat the above procedures until the wheel locks hold the wheelchair.

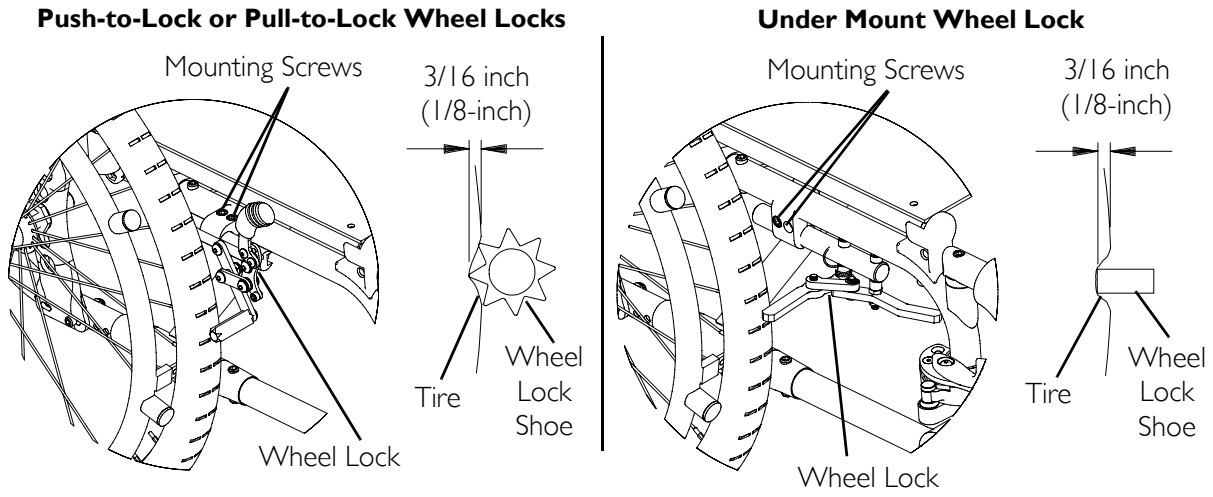


FIGURE 6.1 Replacing/Adjusting the Wheel Locks

Changing Wheel Lock Handle Position

NOTE: For this procedure, refer to FIGURE 6.2.

1. Loosen, but DO NOT remove, the rear handle mounting screw.
2. Remove the front handle mounting screw and locknut.
3. Align the front handle mounting hole with one of three desired mounting positions on the wheel lock.
4. Using the front handle mounting screw and locknut, secure the handle to the wheel lock.
5. Securely tighten the front and rear handle mounting screws and locknuts.
6. Repeat STEPS 1-5 on remaining wheel lock handle.

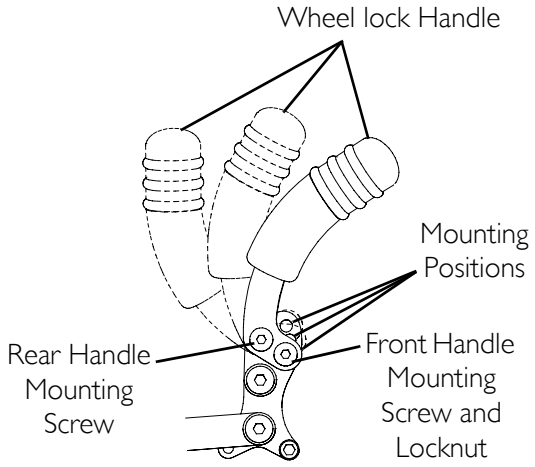


FIGURE 6.2 Changing Wheel Lock Handle Position

Converting Wheel Lock From Push-to-Lock to Pull-to-Lock or Pull-to-Lock to Push-to-Lock

NOTE: For this procedure, refer to FIGURE 6.3 on page 39.

Converting From Push-to-Lock to Pull-to-Lock

1. Remove set screw from the lower stop position (Detail "A").

NOTE: As the wheel lock handle is pushed downwards, the wheel lock will engage and then disengage the wheel.

2. Push wheel lock handle down to access the upper stop position (Detail "B").
3. Install set screw into upper stop position.
4. Pull wheel lock handle up to engage wheel lock. If wheel lock does not properly engage the wheel, refer to Adjusting the Wheel Lock on page 37.

Converting From Pull-to-Lock to Push-to-Lock

1. Remove set screw from the upper stop position (Detail "B").

NOTE: As the wheel lock handle is pulled upwards, the wheel lock will engage and then disengage the wheel.

2. Pull wheel lock handle up to access the lower stop position (Detail "A").
3. Install set screw into lower stop position.
4. Push wheel lock handle down to engage wheel lock. If wheel lock does not properly engage the wheel, refer to Adjusting the Wheel Lock on page 37.

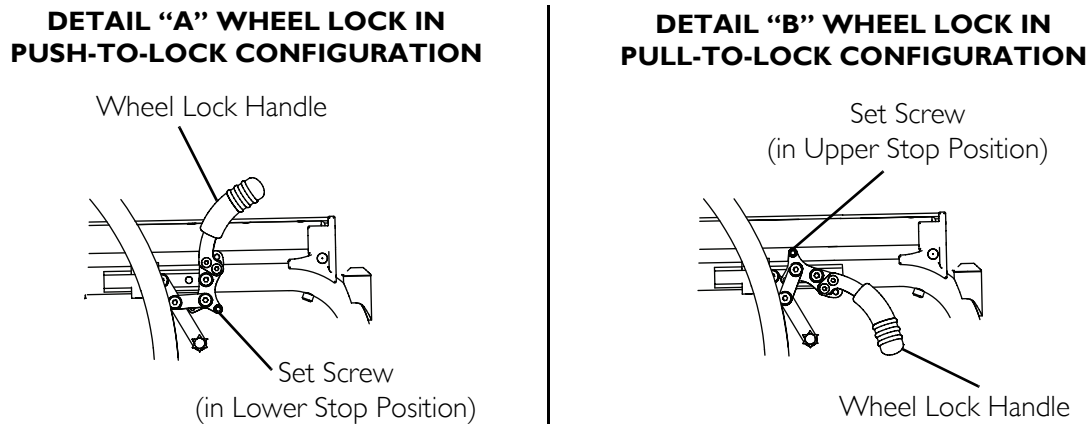


FIGURE 6.3 Converting Wheel Lock From Push-to-Lock to Pull-to-Lock or Pull-to-Lock to Push-to-Lock

SECTION 7—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.

NOTE: For operation procedures refer to Installing/Removing the Front Riggings on page 29.

Adjusting Footrest Height

NOTE: For this procedure, refer to FIGURE 7.1.

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.

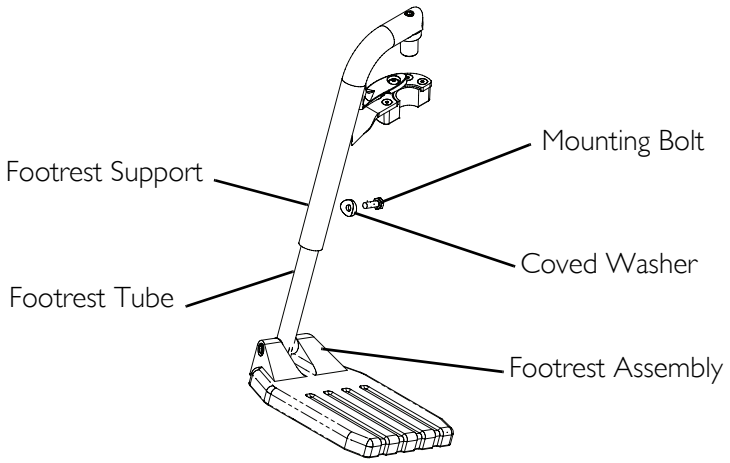


FIGURE 7.1 Adjusting Footrest Height

Installing Adjustable Angle Flip-up Footplate Hinge

NOTE: For this procedure, refer to FIGURE 7.2.

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.

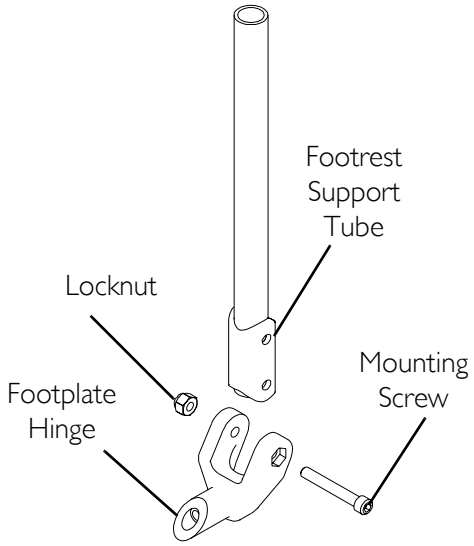


FIGURE 7.2 Installing Adjustable Angle Flip-up Footplate Hinge

Adjusting Adjustable Angle Flip-up Footplates

⚠ WARNING

When determining the angle of the footplates, make sure the rear of the footplates DO NOT interfere with the movement of the front casters. Otherwise, injury or damage may occur.

NOTE: For this procedure, refer to FIGURE 7.3.

Adjusting Depth

1. Remove the two flat screws and locknuts that secure footplate to the half clamp.

NOTE: Observe the angle of the footplate for reinstallation.

2. Move the footplate to one of four mounting positions.

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

3. Tighten the two flat screws and locknuts.

NOTE: The setting for positioning the footplate on the half clamp may vary for each footplate.

4. Repeat STEPS 1-3 for opposite footplate, if desired.

Adjusting Angle

1. Loosen, but DO NOT remove, the adjustment screw in the half clamp.
2. Position the footplate to the necessary angle to accommodate the user (Detail "A" of FIGURE 7.3).
3. Retighten the adjustment screw. Torque to over 90 in-lbs, but no more than 300 in-lbs.
4. Repeat STEPS 1-3 for opposite footplate, if desired.

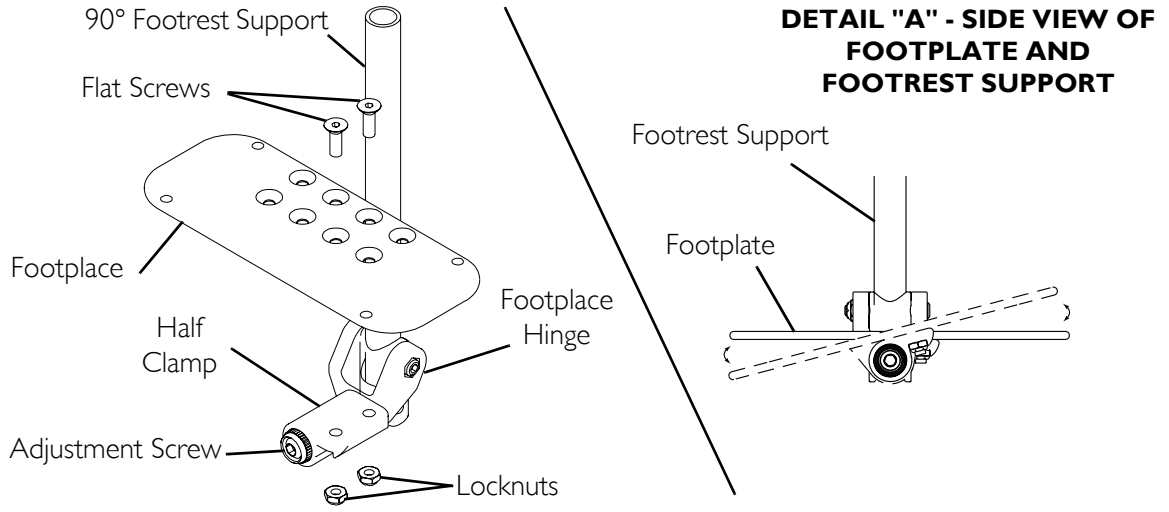


FIGURE 7.3 Adjusting Adjustable Angle Flip-up Footplates

Adjusting the Flip-Up Footrest

NOTE: This procedure is for fixed front frames ONLY.

Adjusting Footplate Angle

⚠ WARNING

When determining the angle of the footplate, make sure the rear of the footplate does not interfere with the movement of the front casters.

NOTE: For this procedure, refer to FIGURE 7.4.

1. Loosen, but DO NOT remove the flat screws, washers and locknuts that secure the footplate to the two footrest tubes.
2. Position the footplate to the necessary angle to accommodate the user.
3. Retighten the flat screws, washers and locknuts.

Adjusting Footplate Depth

NOTE: For this procedure, refer to FIGURE 7.4.

1. Remove the flip-up footrest from the wheelchair. Refer to Installing Adjustable Angle Flip-up Footplate Hinge on page 41.
2. Loosen, but DO NOT remove the flat screws, washers and locknuts that secure the footplate to the footrest tubes.

NOTE: Observe the angle of the footplate for reinstallation.

3. Move the footplate to one of two positions to accommodate the user. See Detail "A" of FIGURE 7.4
4. Retighten the flat screws, washers and locknuts.
5. Reinstall the flip-up footrest onto the wheelchair. Refer to Installing Adjustable Angle Flip-up Footplate Hinge on page 41.

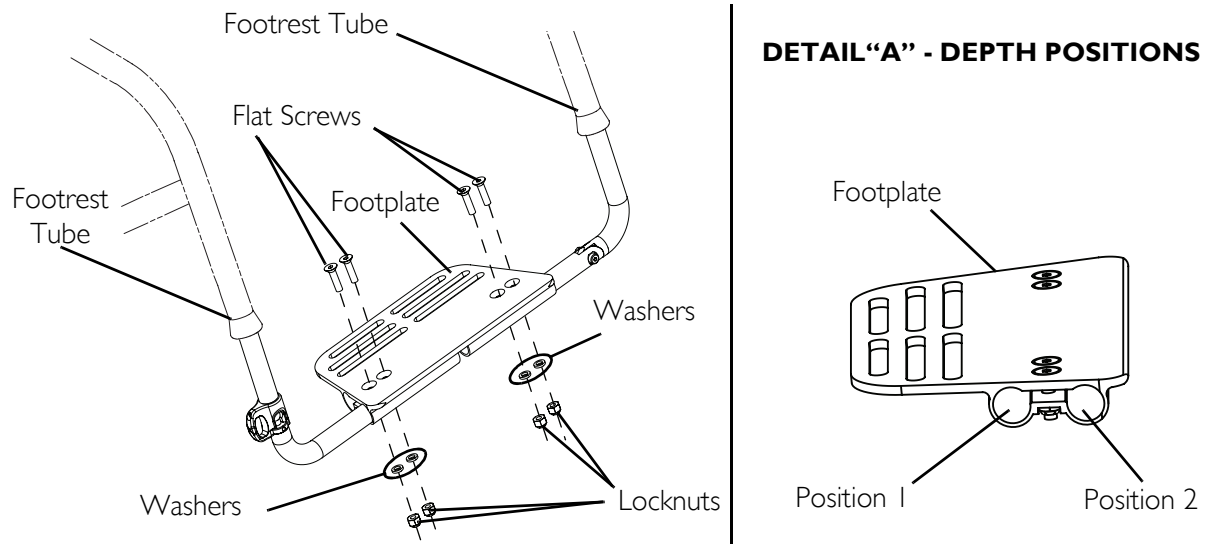


FIGURE 7.4 Adjusting Footplate Angle - Adjusting Footplate Depth

Adjusting Footplate Height

NOTE: For this procedure, refer to FIGURE 7.5.

1. Remove the two mounting screws, washers, and coved washers that secure the footrest to the footrest tubes.
2. Move the footplate to one of the nine height adjustment holes.
3. Install the two mounting screws, washers, and coved washers to secure the footplate to the footrest tubes.

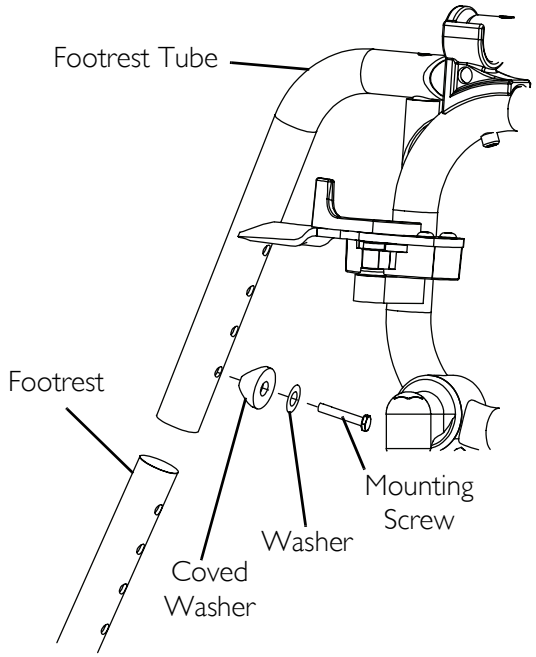


FIGURE 7.5 Adjusting Footplate Height

Using the Flip-Up Footrest

NOTE: For this procedure, refer to FIGURE 7.6.

NOTE: This procedure is for fixed front frames only.

NOTE: Follow the steps below to enter the wheelchair. Reverse STEPS 1-3 to exit the wheelchair.

1. Rotate the latch until the engagement knob is free.
2. Pull out the engagement knob from the extension tube.
3. Rotate the flip-up footrest out of the way.

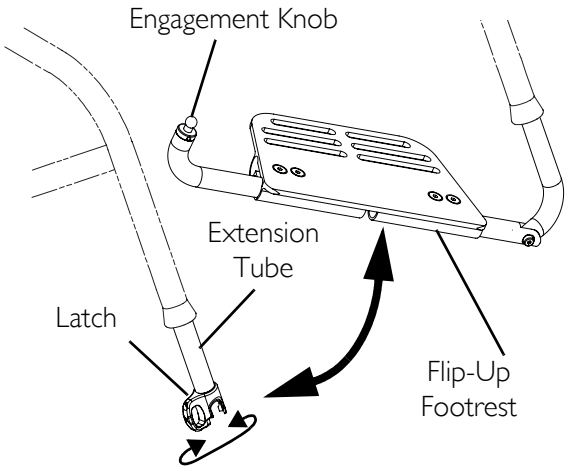


FIGURE 7.6 Using the Flip-Up Footrest

Adjusting Elevating Legrest Height and Calfpad Height/Depth

NOTE: For this procedure, refer to FIGURE 7.7.

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.

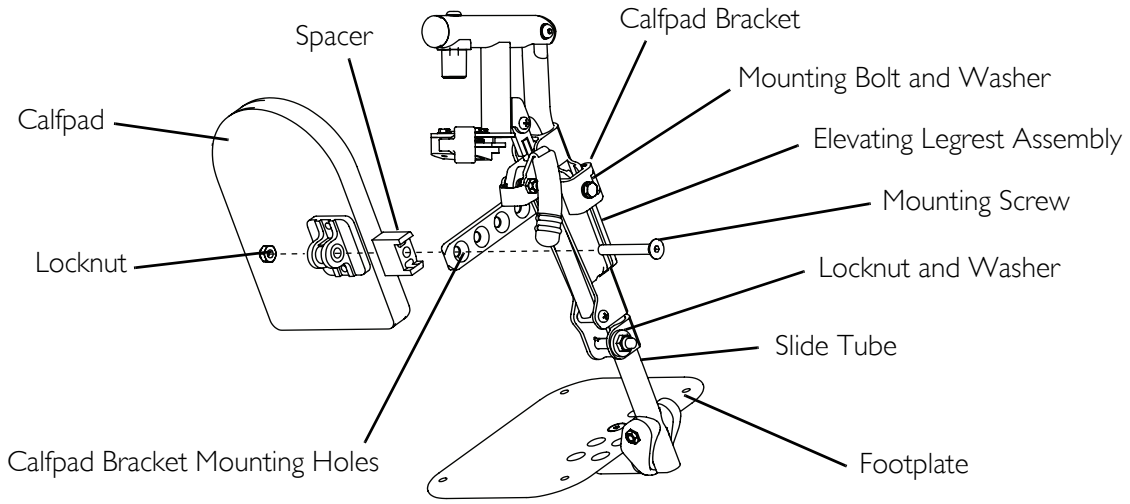


FIGURE 7.7 Adjusting Elevating Legrest Height and Calfpad Height/Depth

Replacing Heel Loop

NOTE: For this procedure, refer to FIGURE 7.8.

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.

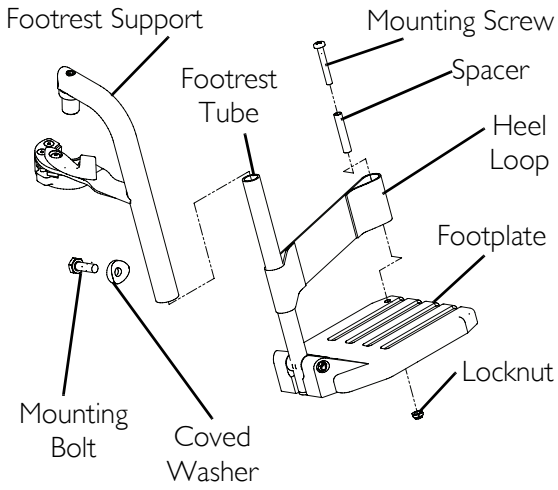


FIGURE 7.8 Replacing Heel Loop

Installing Impact Guards/Calf Strap

NOTE: For this procedure, refer to FIGURE 7.9.

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).

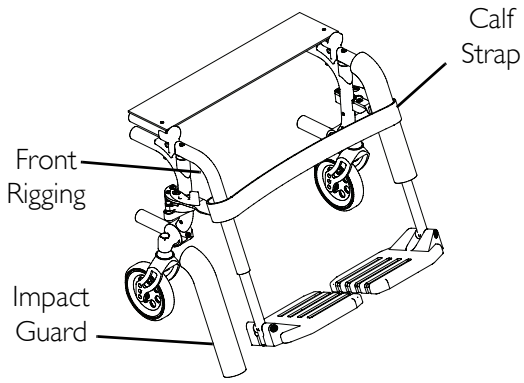


FIGURE 7.9 Installing Impact Guards/Calf Strap

SECTION 8—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.

DO NOT attempt to lift or tilt a wheelchair by using 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.

Removing/Installing/Adjusting Conventional Adjustable Height Armrests

⚠ WARNING

Make sure the locking mechanism is secured before using the wheelchair.

NOTE: For this procedure, refer to FIGURE 8.1 on page 48.

NOTE: For operation procedures, refer to Using Conventional Adjustable Height Armrests on page 31.

Removing Armrest

1. Turn the rear armrest release lever to the unlocked position.
2. Pull the front armrest release lever and lift up on the arm assembly to remove the armrest from the armrest sockets.
3. Repeat STEPS 1-2 for opposite side of wheelchair, if necessary.

Installing Armrests

NOTE: Rear armrest release lever MUST be in the unlocked position when placing armrest into the armrest sockets.

1. Insert armrest assembly into the two armrest sockets.
2. Turn rear armrest release lever to locked position to secure armrest assembly to armrest sockets (Detail "A" of FIGURE 8.1).
3. Pull up to ensure the armrest assembly is properly secured into the two armrest sockets.
4. Repeat STEPS 1-3 for opposite side of wheelchair, if necessary.
5. If necessary, adjust armrest height. Refer to Adjusting Armrest Height on page 48.

Adjusting Armrest Height

1. Lift the height adjustment lever up to the unlocked (vertical) position.
2. Adjust armrest to desired height.
3. Press the height adjustment lever down to the locked (horizontal) position.

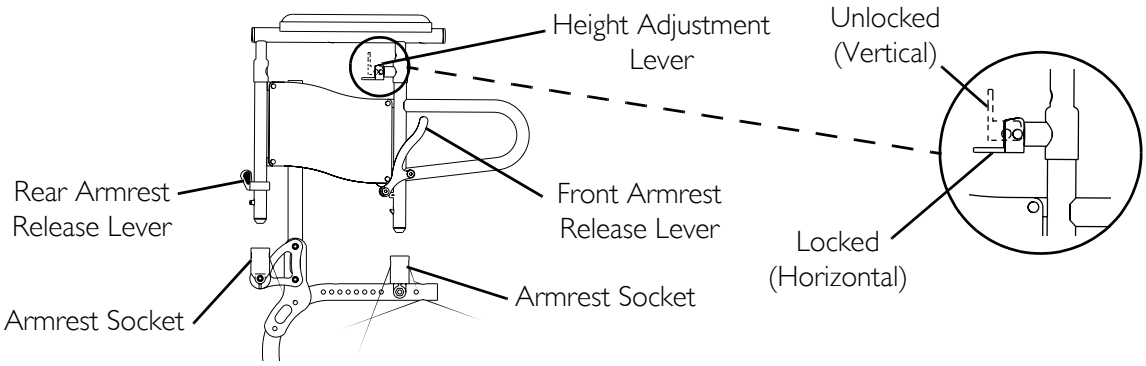


FIGURE 8.1 Removing/Installing/Adjusting Conventional Adjustable Height Armrests

Replacing Conventional Adjustable Height Armrest Arm Pad

NOTE: For this procedure, refer to FIGURE 8.2.

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.

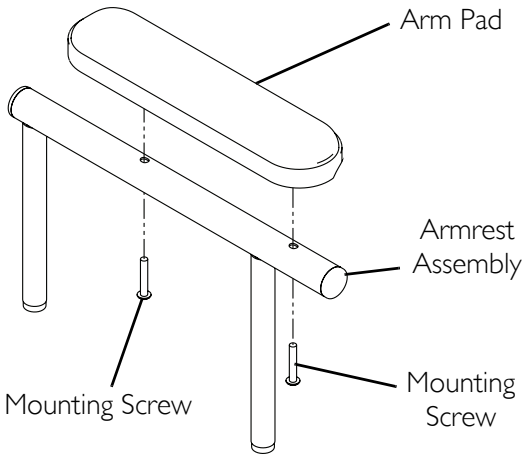


FIGURE 8.2 Replacing Conventional Adjustable Height Armrest Arm Pad

Installing/Removing T-Arms

NOTE: For this procedure, refer to FIGURE 8.3.

Installing T-Arms

1. Position the T-arm over the T-arm socket on the wheelchair frame.

NOTE: Make sure the locking lever is towards the front of the wheelchair.

2. Slide T-arm into T-arm socket until the locking lever is in the slot in the T-arm socket and an audible "click" is heard.
3. Pull up on T-arm to make sure T-arm is locked in place.

NOTE: If the T-arm does not slide in the T-arm socket as desired, adjust the T-arm socket. Refer to Adjusting T-Arm Sockets on page 52.

4. Adjust the T-arm for desired height, width and depth, if necessary. Refer to Adjusting The T-Arms on page 50.
5. Repeat STEPS 1-4 for opposite side of wheelchair.

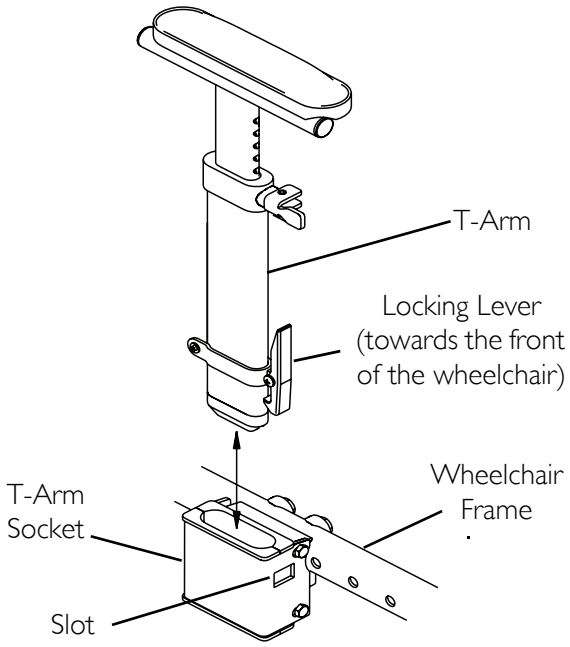


FIGURE 8.3 Installing/Removing T-Arms

Removing T-Arms

1. Press the locking lever in and lift the T-arm straight up and out of the T-arm socket.

NOTE: If the T-arm does not slide up and down in the T-arm socket as desired, adjust the T-arm socket. Refer to Adjusting T-Arm Sockets on page 52.

2. Repeat STEP 1 for opposite side of the wheelchair.

Adjusting The T-Arms

Adjusting T-Arm Height

NOTE: For this procedure, refer to FIGURE 8.4.

1. Unlock the T-arm by flipping the T-arm release lever towards the inside of the wheelchair.

NOTE: If necessary, pull the T-arm release lever out and rotate 180° so it can be flipped towards the outside of the wheelchair.

2. Slide the T-arm to one of the following height positions:
   - Low Height T-arms - Nine positions.
   - High Height T-arms - Seven positions.

NOTE: If the inside T-arm post does not slide up and down in the outside T-arm post as desired, perform one of the following:

- *Tighten - Tightening the set screws on the outside T-arm post will make it more difficult to move the inside T-arm post up and down.*
- *Loosen - Loosening the set screws on the outside T-arm post will make it easier to move the inside T-arm post up and down.*

3. Lock the T-arm by flipping the T-arm release lever towards the front of the wheelchair.

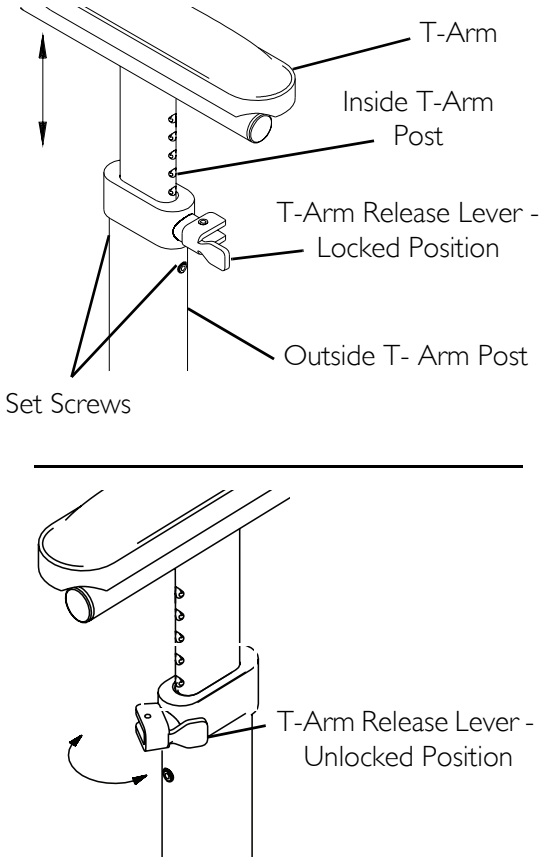


FIGURE 8.4 Adjusting T-Arm Height

Adjusting T-Arm Width

NOTE: For this procedure, refer to FIGURE 8.5.

1. Remove the two mounting screws that secure the arm pad to the arm tube.
2. Turn the arm pad around and reposition the arm pad on the arm tube.
3. Re-secure the arm pad to the arm tube with the two mounting screws. Tighten securely.
4. Repeat for the opposite side, if necessary.

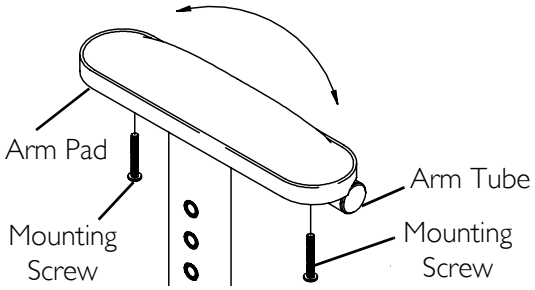


FIGURE 8.5 Adjusting T-Arm Width

Adjusting T-Arm Depth

NOTE: For this procedure, refer to FIGURE 8.6.

1. Remove the two mounting screws that secure the arm pad to the arm tube.
2. Remove the two short mounting screws that secure the arm tube to the T-arm post.
3. Reposition the arm tube on the T-arm post to one of the following positions:
   - Desk Length Arms - to one of three positions depending on the desired arm pad depth.
   - Full Length Arms - to one of five positions depending on the desired arm pad depth.

NOTE: Two additional positions are obtainable by turning the arm tube 180°.

4. Re-secure the arm tube to the T-arm post with the two socket screws. Torque to 60-70 in.-lbs.
5. Reattach the arm pad to the arm tube with the two mounting screws. Tighten securely.
6. Repeat for the opposite side, if necessary.

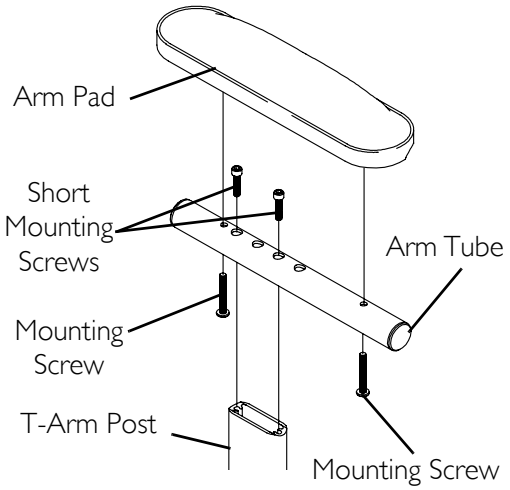


FIGURE 8.6 Adjusting T-Arm Depth

Adjusting T-Arm Sockets

NOTE: For this procedure, refer to FIGURE 8.7.

NOTE: Perform this procedure if the T-arm is too loose in the socket or does not easily slide up and down in the socket.

1. Remove the rear wheels from the wheelchair, if necessary. Refer to Removing/Installing Rear Wheels on page 67.
2. Loosen, but DO NOT remove the four hex screws and washers that secure T-arm socket to T-arm clamp.

NOTE: The T-arm socket will disassemble if the four hex screws and washers are removed.

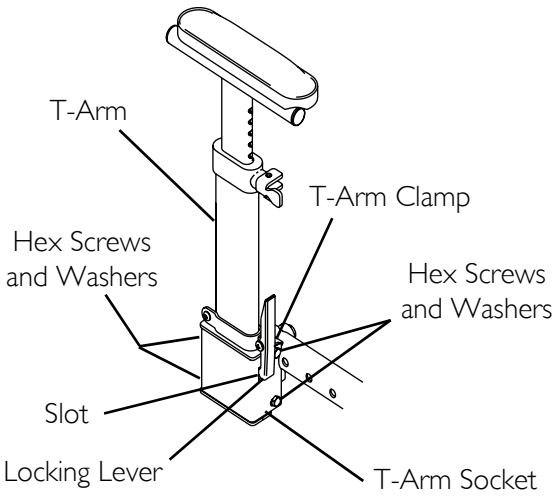


FIGURE 8.7 Adjusting T-Arm Sockets

3. Slide the T-arm into the T-arm socket until the locking lever is in the slot in the T-arm socket and an audible "click" is heard.
4. Squeeze the T-arm socket and the T-arm clamp together until the socket is flush with the T-arm.
5. While holding the T-arm socket and the T-arm clamp together, tighten the four hex screws and washers. Tighten securely.
6. Press in on the locking lever and lift the T-arm straight up and out of the T-arm socket.
7. Repeat STEPS 3-6, if necessary until the T-arm slides in the T-arm socket as desired.
8. If necessary, install rear wheels. Refer to Removing/Installing Rear Wheels on page 67.

Adjusting T-Arm Transfer Assists and/or Side Guards

NOTE: For this procedure, refer to FIGURE 8.8.

1. Remove the T-arm from the wheelchair. Refer to Installing/Removing T-Arms on page 49.
2. Remove the two mounting screws that secure the side guard to the bottom clamp.

NOTE: Adjusting the side guards will directly affect the position of the transfer assist.

3. Perform one of the following:
   - Small Side Guards - Move the bottom clamp up to one of two mounting positions in the side guard.
   - Large Side Guards - Move the bottom clamp up to one of three mounting positions in the side guard.
4. Secure the side guard to the bottom clamp with the two mounting screws.
5. Install the T-arm onto the wheelchair. Refer to Installing/Removing T-Arms on page 49.

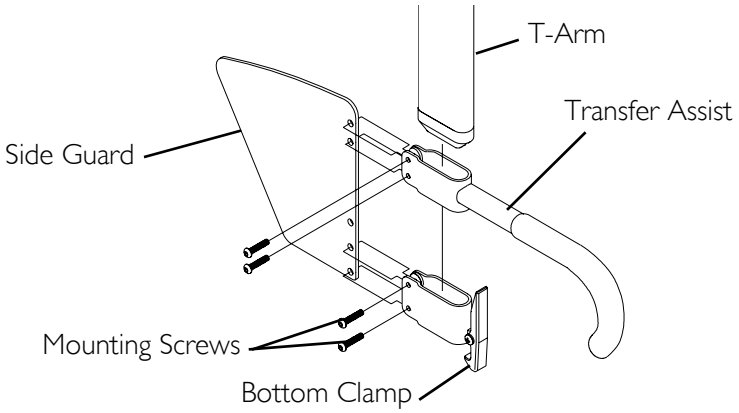


FIGURE 8.8 Adjusting T-Arm Transfer Assists and/or Side Guards

Installing the Swingaway Padded Armrest Arm Sockets

NOTE: For this procedure, refer to FIGURE 8.9.

1. Remove the two existing locknuts and mounting screws that secure back cane mounting bracket to the back cane.

NOTE: Position arm socket towards outside of the wheelchair frame.

NOTE: When installing the arm socket, two, new, longer mounting bolts are used.

2. Using two new, long mounting screws and locknuts, secure the arm socket to the back cane mounting bracket and back cane. Securely tighten.
3. Repeat STEPS 1-2 for the opposite arm socket.

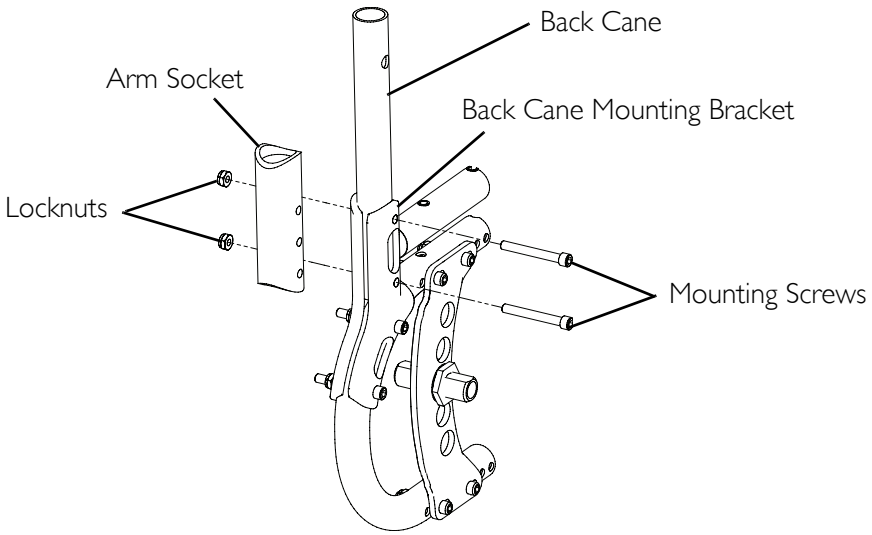


FIGURE 8.9 Installing the Swingaway Padded Armrest Arm Sockets

Adjusting Swingaway Padded Armrest Height

NOTE: For this procedure, refer to FIGURE 8.10.

1. Remove the half arm from the arm socket.
2. Remove the mounting bolt, two washers and locknut mounted in the arm socket that determine the swingaway padded armrest height.
3. Reposition mounting bolt and one washer to one of three positions in the arm socket depending on the desired height.
4. Retighten the mounting bolt and washer to the arm socket with the remaining washer and locknut.
5. Reinstall the half arm into the arm socket.
6. Repeat STEPS 1-5 for the opposite side, if necessary.

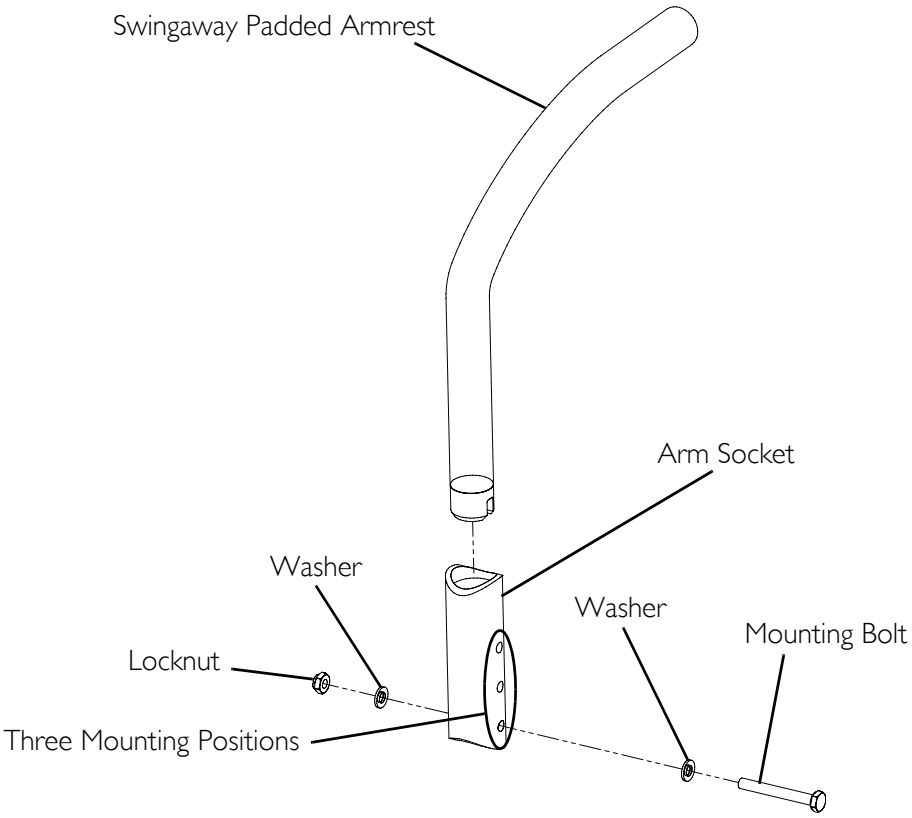


FIGURE 8.10 Adjusting Swingaway Padded Armrest Height

SECTION 9—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.

Removing/Installing the Back Canes

NOTE: For this procedure, refer to FIGURE 9.1.

Removing the Back Cane

NOTE: Reverse this procedure to install the back canes.

1. Remove the back upholstery or back/seating system from the wheelchair. Refer to Removing/Installing the Standard Back Upholstery on page 59, Adjustable Back Upholstery on page 60 or the owner's manual shipped with the back/seating system.
2. Remove the arms from the wheelchair. Refer to Arms on page 47.
3. Remove the two mounting screws and locknuts that secure the bottom of the back cane to the back cane mounting bracket.
4. Lift up and remove the back cane from the wheelchair.
5. If necessary, repeat STEPS 3-4 to remove the remaining back cane.
6. Reverse STEPS 1-5 to install the new back cane.

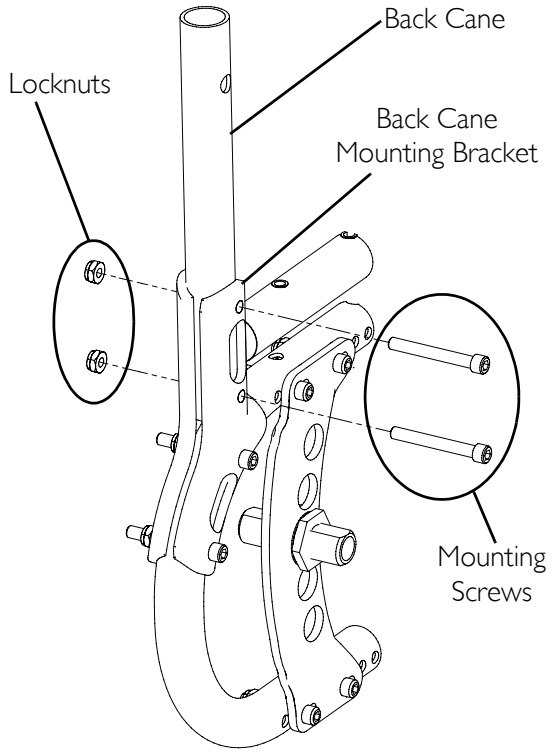


FIGURE 9.1 Removing/Installing the Back Canes

Adjusting the Back Height

NOTE: For this procedure, refer to FIGURE 9.2.

1. Remove the two back height adjustment screws and locknuts that secure the two back canes to the wheelchair frame.
2. Reposition the back canes to one of five height adjustment holes.

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

3. Reinstall the two back height adjustment screws and locknuts that secure the back canes to the wheelchair frame.

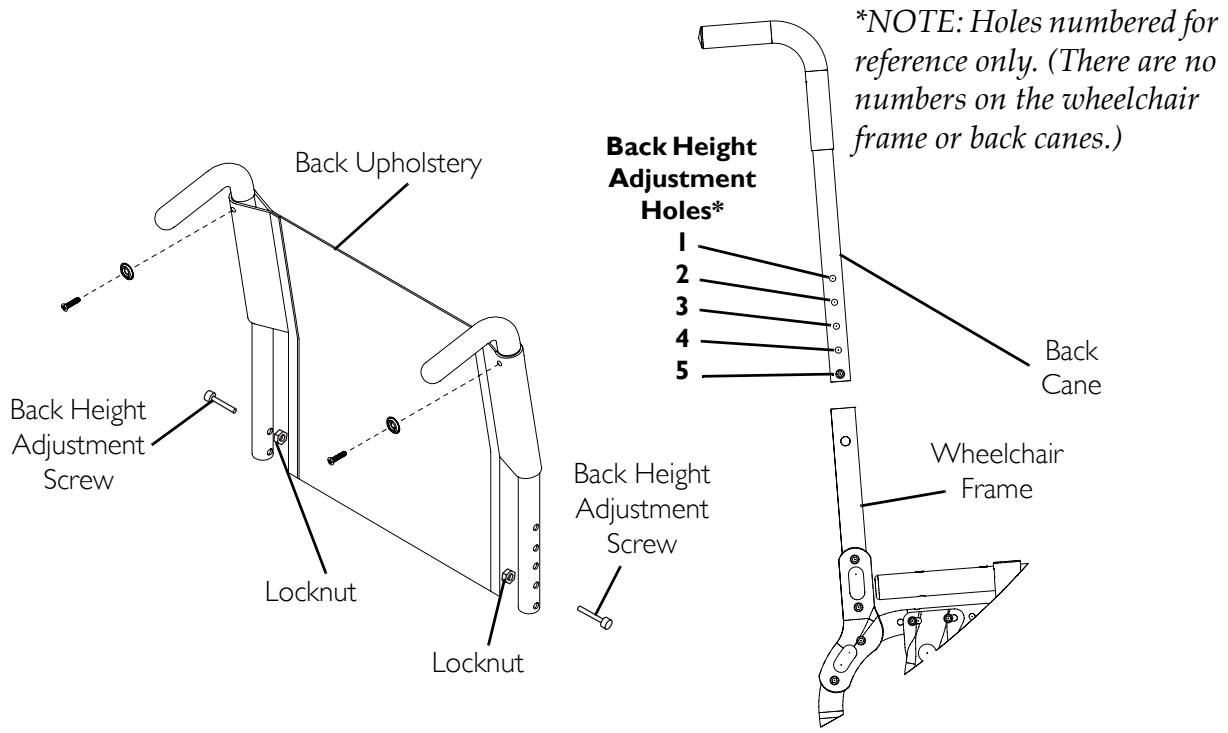


FIGURE 9.2 Adjusting the Back Height

Adjusting the Back Angle

NOTE: For this procedure, refer to FIGURE 9.3 on page 58.

NOTE: This procedure applies to adjustable angle backs only.

NOTE: The back adjusts to four positions in five degree increments from 0° to 15°.

1. Remove the two back angle adjustment screws and locknuts.
2. Reposition the back to the desired angle.
3. Ensure the upper back angle mounting hole is aligned with one of the four upper angle adjustment holes.
4. Install one of the back angle adjustment screws through the upper back angle mounting hole and the desired upper angle adjustment hole.

5. Install the remaining back angle adjustment screw through the lower back angle mounting hole and the desired lower angle adjustment hole.
6. Secure each back angle adjustment screw with a locknut. Torque locknut to 80-100 in/lbs.

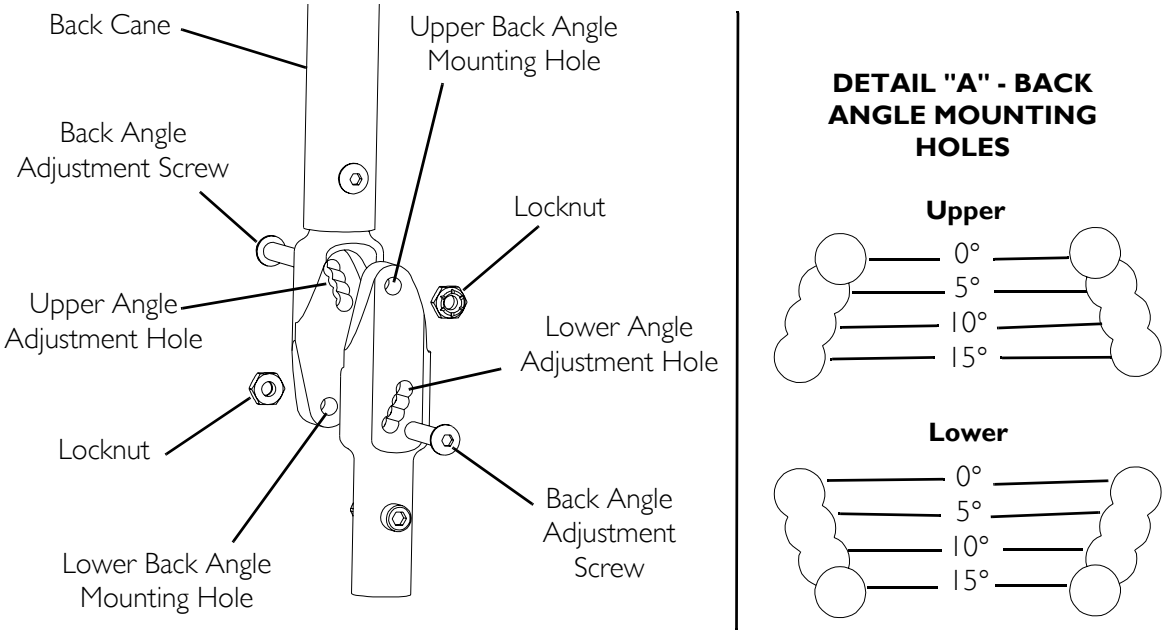


FIGURE 9.3 Adjusting the Back Angle

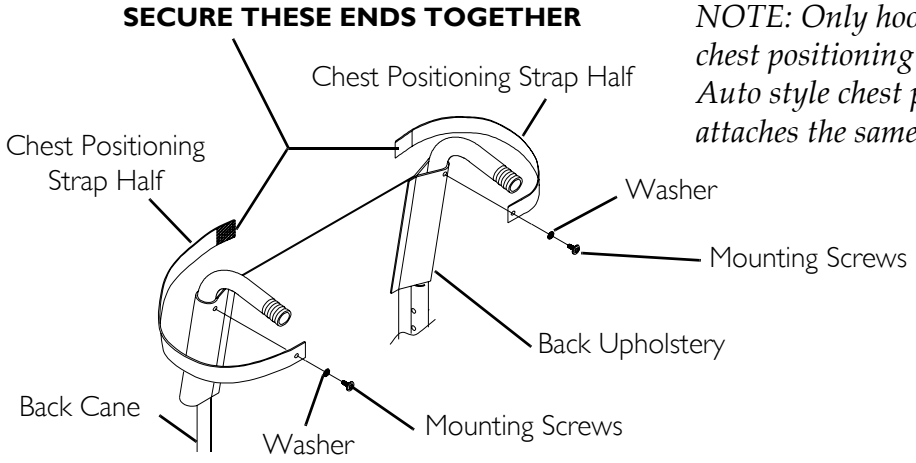
Installing/Removing the Chest Positioning Strap

NOTE: For this procedure, refer to FIGURE 9.4 on page 59.

1. Remove the two mounting screws and washers securing the back upholstery to the back cane.
2. Do one of the following:
   - To install the chest positioning strap, proceed to STEP 3.
   - Remove the two existing chest positioning strap halves from the back upholstery.
3. Secure the two halves of the new chest positioning strap together.
4. Align the mounting hole on one end of the new chest positioning strap with the mounting hole on the back upholstery and back cane.
5. Secure the new chest positioning strap and back upholstery to the back cane with one mounting screw and washer. Torque to 20-25 in/lbs.

NOTE: Ensure strap is oriented properly and not twisted when installing.

6. Repeat STEPS 4-5 for opposite side of new chest positioning strap.



NOTE: Only hook and loop style chest positioning strap shown. Auto style chest positioning strap attaches the same way.

FIGURE 9.4 Installing/Removing the Chest Positioning Strap

Removing/Installing the Standard Back Upholstery

NOTE: For this procedure, refer to FIGURE 9.5 on page 60.

Removing

1. Cut the tie-wraps that secure the bottom of the existing back upholstery to the wheelchair frame.
2. Remove the two mounting screws and washers that secure the existing back upholstery to the back canes.
3. Remove the back height adjustment screw and locknut that secure one back cane to the wheelchair frame.

NOTE: It may be necessary to pull the back upholstery up to reveal the back height adjustment screw securing the back cane to the wheelchair frame.

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

4. Pull the loose back cane out of the existing back upholstery.
5. Pull the existing back upholstery up and over the mounted back cane.

Installing

1. Install the new back upholstery over mounted back cane.
2. Slide the loose back cane through the new back upholstery.
3. Using the mounted back cane as a guide, reinstall the loose back cane to the wheelchair frame with the existing back height adjustment screw and locknut.

NOTE: For proper installation of the back upholstery, the back canes MUST be mounted in the same height adjustment hole.

4. Secure the new back upholstery to the back canes with the two mounting screws and washers. Torque to 20-25 in-lbs.
5. Secure the bottom of the new back upholstery to the wheelchair frame with tie-wraps.

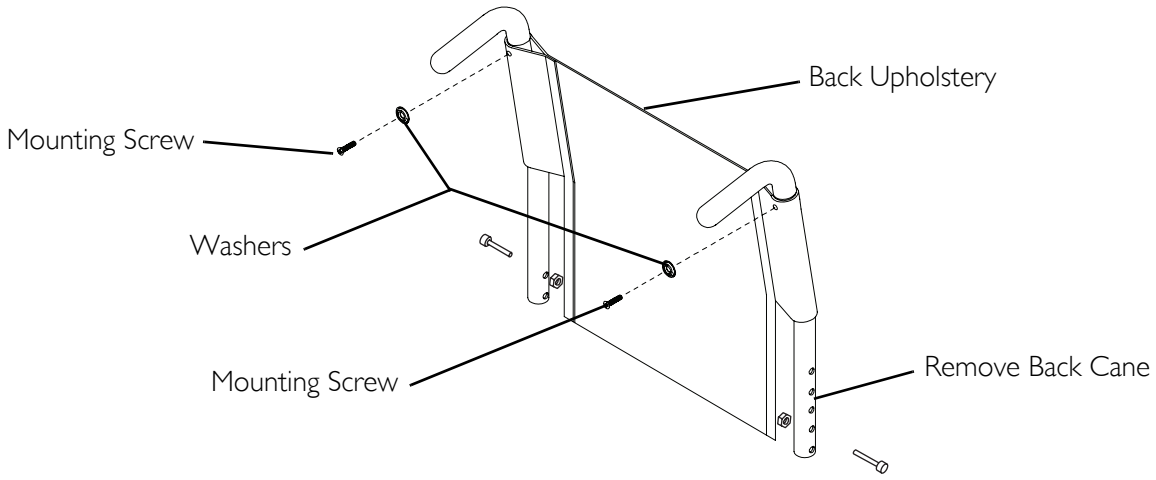


FIGURE 9.5 Removing/Installing the Standard Back Upholstery

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 keeps 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 9.6 on page 62.

Installing

1. Remove the existing back upholstery from the wheelchair. Refer to Removing/ Installing the Standard Back Upholstery on page 59.
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-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.

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.

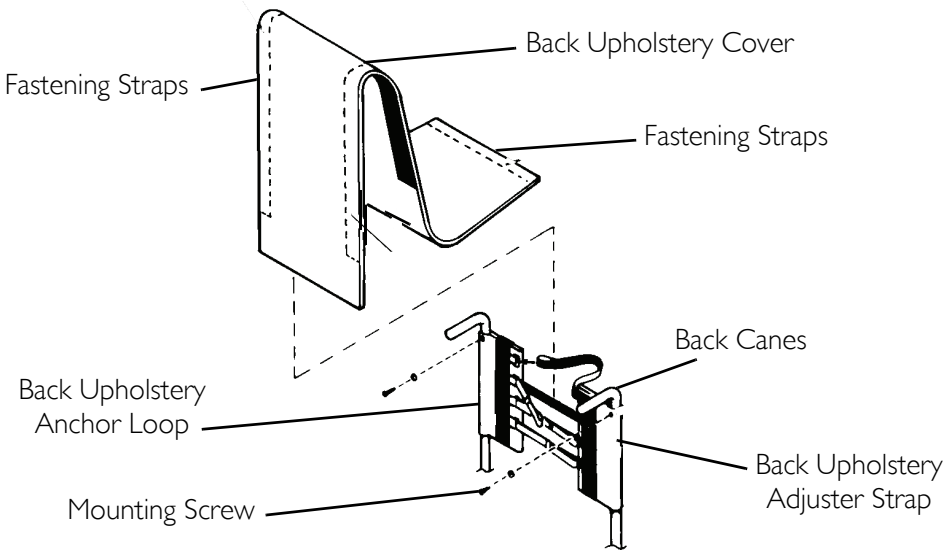


FIGURE 9.6 Installing/Replacing Adjustable Back Upholstery

Installing and Removing a Back System

⚠ WARNING

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

1. Ensure that the back system is compatible with this wheelchair.
2. Refer to the back system owner's manual for installation and removal.

SECTION 10—SEAT

⚠ WARNING

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

Replacing Seat Upholstery

NOTE: For this procedure, refer to FIGURE 10.1.

1. Remove the seat cushion, if necessary, from the wheelchair.

NOTE: Number of mounting screws will vary depending on seat depth.

2. Remove the mounting screws that secure the existing seat upholstery to the seat frame.
3. Remove the existing seat upholstery.
4. Install the new seat upholstery by reversing STEPS 1-3.
5. If necessary, reinstall the seat cushion onto the wheelchair.

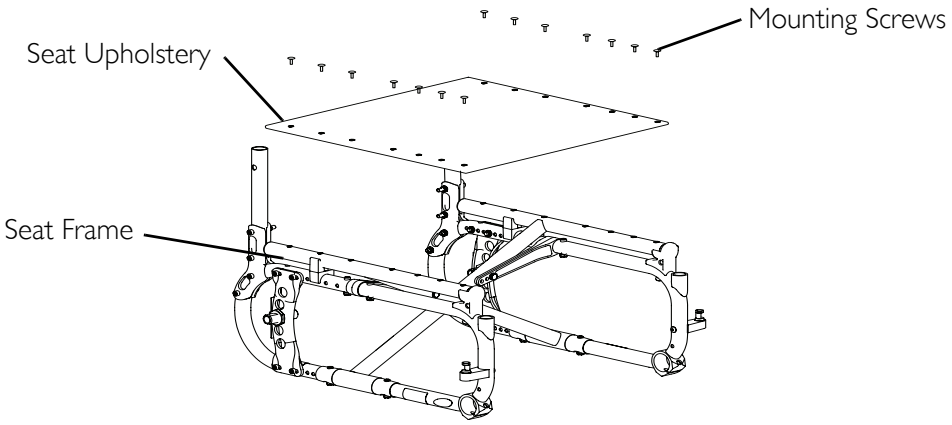


FIGURE 10.1 Replacing Seat Upholstery

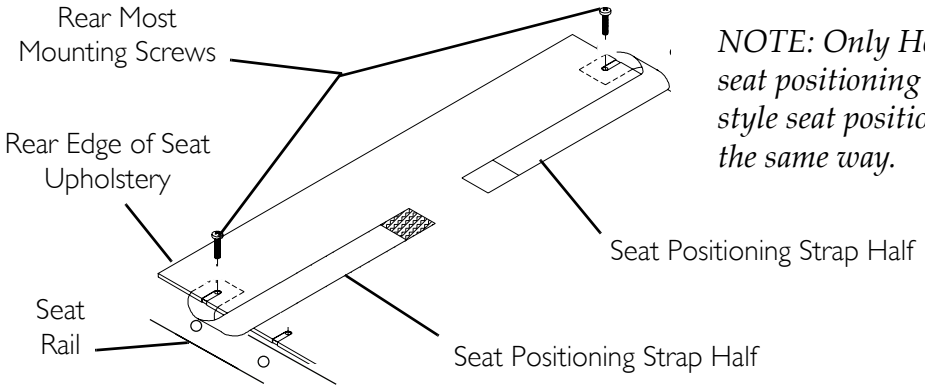
Installing/Removing Seat Positioning Strap

NOTE: For this procedure, refer to FIGURE 10.2.

1. Remove seat cushion from wheelchair, if necessary.
2. Remove the rear most mounting screws that secure the seat upholstery to the seat rail.
3. Grasp the rear edge of the seat upholstery and lift up to expose the rear most mounting holes in seat rail.
4. Perform one of the following:
   - To install the seat positioning strap, proceed to STEP 5.
   - Remove the existing seat positioning strap from the wheelchair.
5. Secure the two halves of the new seat positioning strap together.
6. Position one end of the new seat positioning strap between the seat upholstery and the seat rail.
7. Align the mounting holes on the seat upholstery, seat rail, and one end of the new seat positioning strap.
8. Secure the new seat positioning straps and seat upholstery to the seat rail with the two mounting screws. Torque to 25-30 in-lbs.

NOTE: Ensure strap is oriented properly and not twisted when installing.

9. Repeat STEPS 6-8 for opposite side of the seat positioning strap.
10. Reinstall seat cushion onto wheelchair, if necessary.



NOTE: Only Hook and Loop style seat positioning strap shown. Auto style seat positioning strap attaches the same way.

FIGURE 10.2 Installing/Removing Seat Positioning Strap

Installing Fabric Clothing Guards

NOTE: For this procedure, refer to FIGURE 10.3.

1. Remove the seat cushion, if necessary.
2. Secure the fastening straps of the fabric clothing guards to the fastening straps on the seat upholstery.
3. Reinstall the seat cushion, if necessary.
4. Remove the two mounting screws that secure the back upholstery to the back canes.
5. Position the D-rings on the mounting holes in the back canes.
6. Reinstall the two mounting screws. Torque to 20-25 in-lbs.
7. Run the nylon cord evenly through the two D-rings.
8. Run the nylon cord through the cord lock.
9. Push star wheel into cord lock to hold the nylon cord in place.
10. Tie a knot in the nylon cord and cut the excess, if desired.

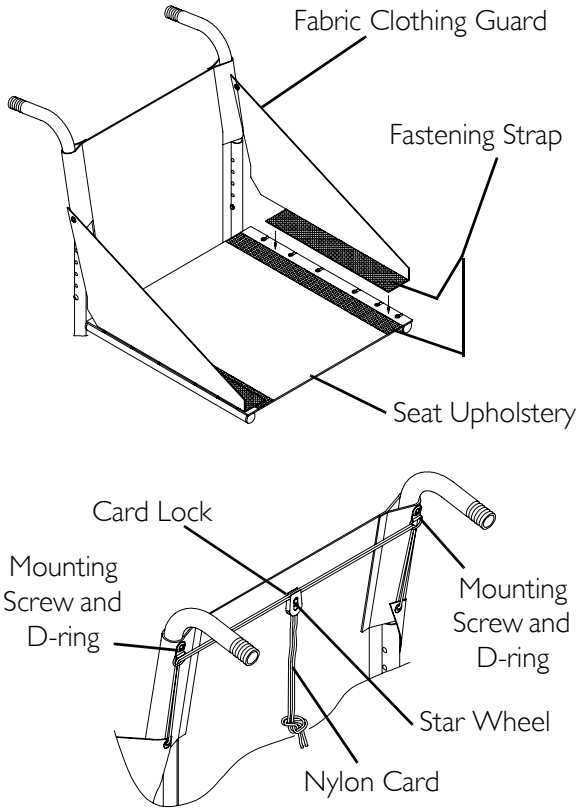


FIGURE 10.3 Installing Fabric Clothing Guards

Installing Clothing Guards

NOTE: For this procedure, refer to FIGURE 10.4.

1. Position the threaded half clamp on the outside of the wheelchair frame.
2. Position the unthreaded half clamp on the inside of the wheelchair frame.
3. Loosely install the washer and socket screw into the unthreaded and threaded half clamps.
4. Determine the desired rigid clothing guard position and securely tighten the two half clamps together with the socket screw.
5. Insert the rigid clothing guard into the slot on the threaded half clamp as shown in FIGURE 10.4.
6. Repeat STEPS 1-4 for the opposite rigid side guard.

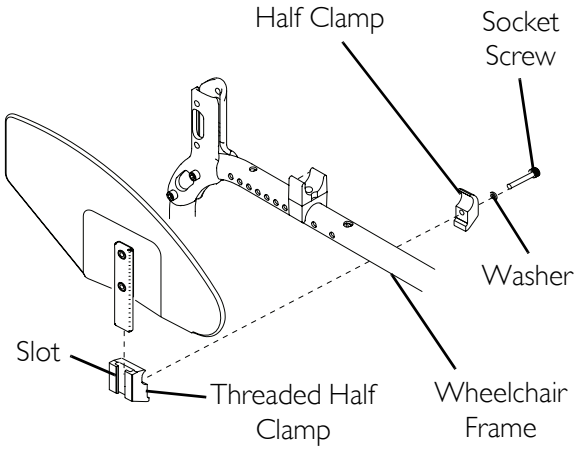


FIGURE 10.4 Installing Clothing Guards

Installing and Removing a Seating System

⚠ WARNING

Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.

1. Ensure that the seating system is compatible with this wheelchair.
2. Refer to the seating system Owner's Manual for installation and removal.

SECTION 11—WHEELS

⚠ 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.

Mounting rear wheels towards the front of the wheelchair will reduce the stability of the wheelchair. Try various rear wheel positions to find the safest rear wheel position appropriate for the users particular needs.

Anti-tippers, if equipped, MUST be repositioned before using the wheelchair.

Wheel locks MUST be adjusted before using the wheelchair.

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

NOTE: For this procedure, refer to FIGURE 11.1 on page 68.

Quick-Release Axles

1. Push in the tip of the quick-release axle and pull the axle (with wheel) out of the axle bushing.
2. Push in the tip of the quick-release axle again and pull the axle out of the rear wheel.
3. Repeat STEPS 1-2 for the opposite rear wheel.
4. To reinstall the rear wheel onto the axle mounting plate, reverse STEPS 1-3.

⚠ WARNING

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

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

Keep locking pins clean.

5. 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, refer to Adjusting Quick-Release Axles on page 68 or Adjusting Quad-Release Handles on page 69.

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

Permanent Axles

1. Remove the mounting bolt and locknut that secure the rear wheel to the axle bushing.
2. Remove the rear wheel.
3. Repeat STEP 1-2 for the opposite rear wheel.
4. To reinstall the rear wheel onto the axle bushing, reverse STEPS 1-3.

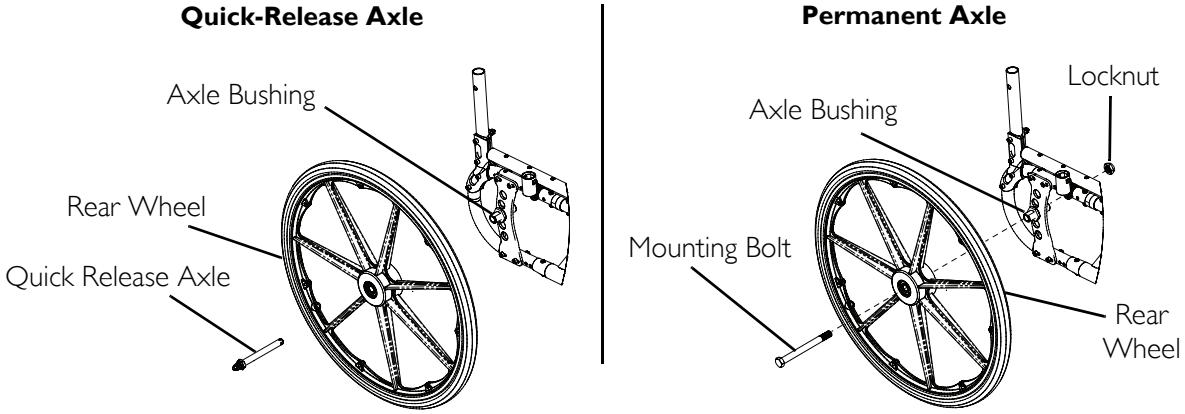


FIGURE 11.1 Removing/Installing Rear Wheels

Adjusting Quick-Release Axles

NOTE: For this procedure, refer to FIGURE 11.2.

1. Remove rear wheel and quick/quad-release axle from the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
2. Depress detent pin in the quick-release axle and slide axle through the wheel hub.
3. Release detent pin ensuring 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 and locking pins of the quick-release axle are fully released before operating wheelchair.

Keep locking pins clean.

5. Reinstall rear wheel onto the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.

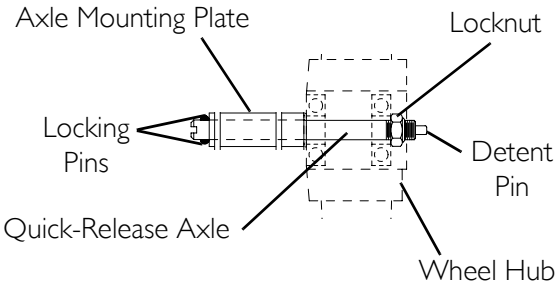


FIGURE 11.2 Adjusting Quick-Release Axles

Installing Quad-Release Axles

NOTE: For this procedure, refer to FIGURE 11.3.

1. Remove rear wheel and the existing quick-release axle from the axle bushing. Refer to Removing/Installing Rear Wheels on page 67
2. Remove the existing quick-release axle from the rear wheel hub.
3. Insert the new quad-release axle through the rear wheel hub.
4. Slide the locking collar onto the quad-release axle until it is snug against the rear wheel and tighten securely with the allen screw.
5. Reinstall rear wheel and the quad-release axle in to the axle bushing.

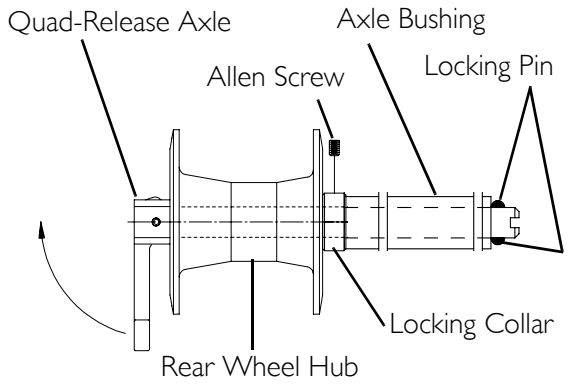


FIGURE 11.3 Installing Quad-Release Axles

⚠ WARNING

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

Keep locking pins clean.

6. Flip the handle of the quad-release axle down to release the detent pin ensuring that the locking pins are fully released.
7. If detent pin does not fully release, proceed to Adjusting Quad-Release Handles on page 69.
8. Repeat STEPS 1-7 for the opposite rear wheel.

Adjusting Quad-Release Handles

NOTE: For this procedure, refer to FIGURE 11.4 on page 70.

In and/or Out

1. Remove rear wheel and the quad-release axle from the axle bushing.
2. Loosen the locking screw.

3. Make the following adjustments:
   - If the quad-release handle is not releasing the locking pins completely, rotate the quad-release handle approximately one-quarter turn clockwise.
   - If the quad-release handle hits the spokes of the rear wheel when assembled, rotate the quad-release handle approximately one-quarter turn counterclockwise.
4. Tighten the locking screw.
5. Reinstall the rear wheel and quad-release axle onto the axle bushing.

⚠ WARNING

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

Keep locking pins clean.

6. Flip the handle of the quad-release axle down to release the detent pin ensuring that the locking pins are fully released.
7. Repeat the above procedures until the quad-release axle locks correctly.

Removing the Play From the Rear Wheels

1. With the rear wheel and quad-release axle still mounted onto the wheelchair, tighten the length adjusting screw until there is no in and out movement of the quad-release axle and rear wheel.

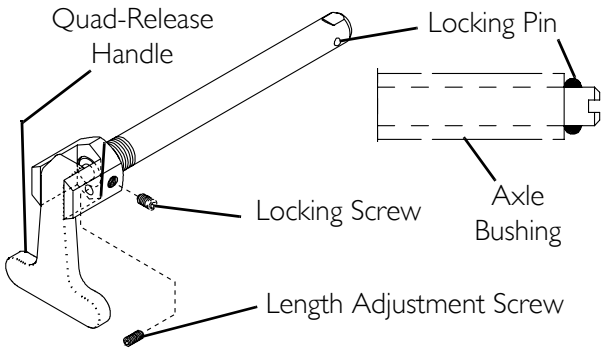


FIGURE 11.4 Adjusting Quad-Release Handles

Adjusting the Rear Wheel Camber

CAUTION

DO NOT overtighten mounting screws that secure the axle mounting plates to the wheelchair frame. Damage to the wheelchair frame can occur.

The maximum degree of camber the wheelchair will allow is 6°, or three additional camber spacers. Using more than three total camber spacers may cause damage to the wheelchair.

NOTE: For this procedure, refer to FIGURE 11.5 on page 71.

1. Remove the rear wheel from the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
2. Loosen, but DO NOT remove the two top mounting screws that secure the axle mounting plate to the wheelchair.

3. Remove the bottom mounting screw, locknut, two washers, camber spacer(s) (if present) and locknuts that secure the axle mounting plate and anti-tipper bracket (if present) to the wheelchair frame.
4. Install or remove the number of camber spacers to achieve the desired camber angle:

CAMBER ADJUSTMENT

CAMBER ANGLES	0°	3°	6°
NUMBER OF CAMBER SPACERS:	0	1	2
BOTTOM MOUNTING SCREW LENGTH			
W/O ANTI-TIPPERS			
Upper Mounting Screws:	1½ inches	1½ inches	1¾ inches
Lower Mounting Screws:	1½ inches	2 inches	2¼ inches
W/ ANTI-TIPPERS			
Upper Mounting Screws:	1½ inches	1¾ inches	1¾ inches
Lower Mounting Screws:	1¾ inches	2¼ inches	2½ inches

NOTE: Size of the bottom mounting screws will change according to number of camber spacers present and if anti-tippers are used.

5. Install the two bottom mounting screws, washers, camber spacer(s) and locknuts, that secure the axle mounting plate and anti-tipper bracket (if present) to the wheelchair frame.
6. Securely tighten the two top mounting screws and locknuts that secure the axle mounting plate to the wheelchair frame.
7. Reinstall the rear wheel onto the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
8. Repeat STEPS 1-7 for the opposite side of the wheelchair.

NOTE: Make sure the number of camber washers is the same for both rear wheels. This will help avoid a "3-wheeling" situation.

9. Roll the rear wheels. If rear wheels rub the wheelchair at any point, adjust the wheelbase width. Refer to Adjusting Wheelbase Width on page 74.

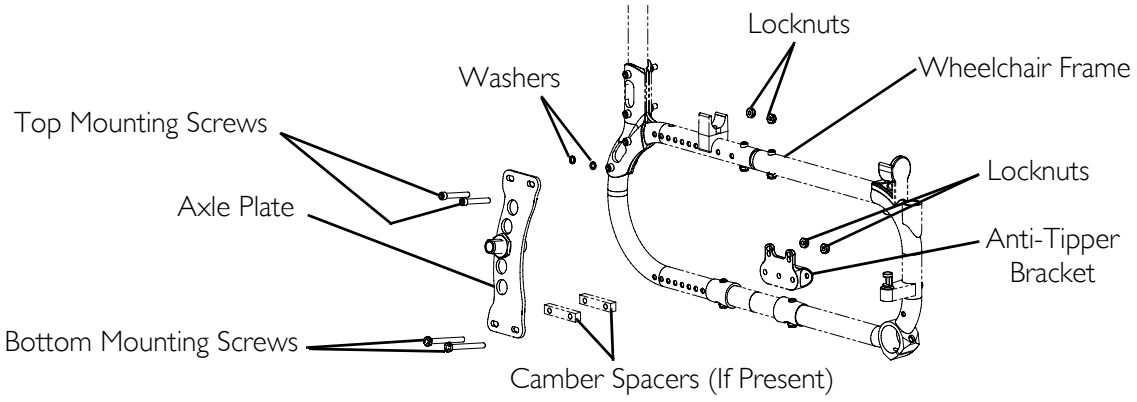


FIGURE 11.5 Adjusting the Rear Wheel Camber

Adjusting Axle Height

NOTE: In order to obtain the desired axle height (rear seat to floor height), refer to Removing/Installing/Repositioning the Axle Bushing and/or Axle Plate on page 72.

Removing/Installing/Repositioning the Axle Bushing and/or Axle Plate

NOTE: For this procedure, refer to FIGURE 11.6 on page 73.

NOTE: In order to obtain the desired axle height (rear seat to floor height) perform one or both of the following:

- *Change the axle bushing location to one of ten positions depending on orientation of the axle mounting plate.*
- *Reposition the axle mounting plate. There are five axle bushing mounting positions offset from one end of the axle plate. Repositioning the axle plate will provide five additional axle busing mounting positions.*

NOTE: Repositioning the axle bushing and/or axle plate will change the seat dump. Refer to Seat Dump on page 91 for more information.

NOTE: Refer to Changing Rear Seat-to-Floor Height on page 94 for available rear seat-to-floor heights.

NOTE: Both axle bushings must be installed at the same height before use.

Removing/Repositioning the Axle Bushing and/or Axle Plate

NOTE: If removing the axle bushing only, follow STEPS 1-2.

1. Remove the rear wheel from the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
2. Remove the two jam nuts and large washer that secure the axle bushing to the axle mounting plate.

   NOTE: The bottom mounting screws are also used to mount any camber spacers and/or the anti-tipper brackets present to the wheelchair frame. Note position and orientation of hardware for reinstallation.
3. Remove the two bottom mounting screws and locknuts securing the axle plate to the wheelchair frame
4. Remove the top two mounting screws securing the axle plate to the wheelchair frame.
5. Perform one of the following:
   - Removing/Repositioning the Axle Bushing - Repeat STEPS 1-2 to remove the remaining axle bushing.
   - Removing/Repositioning the Axle Plate - Repeat STEPS 1-4 to remove remaining axle plate.

Installing/Repositioning the Axle Bushing and/or the Axle Plate

NOTE: If installing/repositioning the axle bushing only, follow STEPS 4-8.

NOTE: If repositioning the axle plate, move the right axle plate to the left side of the wheelchair and the left axle plate to the right side of the wheelchair.

NOTE: A "X" shaped axle plate orientation mark is located on one end of the axle plate next to the axle bushing mounting holes to indicate axle plate orientation ("X" at top of axle plate indicates the up position, "X" at bottom of axle plate indicates the down position) (Detail "A").

1. Using the two top mounting screws and locknuts, secure the top of the axle plate to the wheelchair frame so that the axle plate curves towards the rear of the wheelchair. Loosely tighten mounting screws and locknuts.
2. Using the two bottom mounting screws, secure the bottom of the axle plate and any camber spacers and/or anti-tipper bracket present to the wheelchair frame.
3. Securely tighten all four mounting screws and locknuts.
4. Insert the axle bushing into the desired axle bushing mounting position.

NOTE: When installing the axle bushing ensure the number of threads showing beyond the outside jam nut is the SAME for both rear wheels. This will help avoid a "3-wheeling" situation.

5. Using the two jam nuts and large washer, secure the axle bushing to the axle mounting plate. Torque jam nuts to 40-45 ft-lbs.
6. Perform one of the following:
   - Removing/Repositioning the Axle Plate - Repeat STEPS 1-3 to install the remaining axle plate.
   - Removing/Repositioning the Axle Bushing - Repeat STEPS 4-5 to install the remaining axle bushing.
7. Reinstall the rear wheel(s) onto the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
8. If wheels come into contact with the wheelchair frame or arms adjust the wheel base width. Refer to Adjusting Wheelbase Width on page 74.

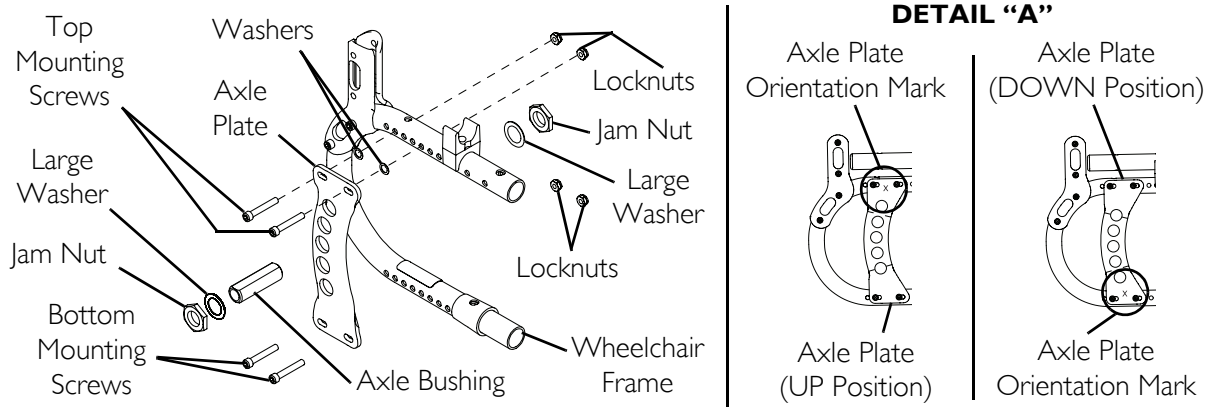


FIGURE 11.6 Removing/Installing/Repositioning the Axle Bushing and/or Axle Plate

Installing the Amputee Bracket

NOTE: For this procedure, refer to FIGURE 11.7.

1. Remove the two existing mounting screws and locknuts securing the back cane mounting bracket to the wheelchair frame.
2. Using the new three long mounting bolts, the washer and coved washer, and the three locknuts, secure the amputee bracket and the back cane mounting bracket to the wheelchair frame.
3. Repeat STEPS 1-2 to install the remaining amputee bracket on the opposite side of the wheelchair.

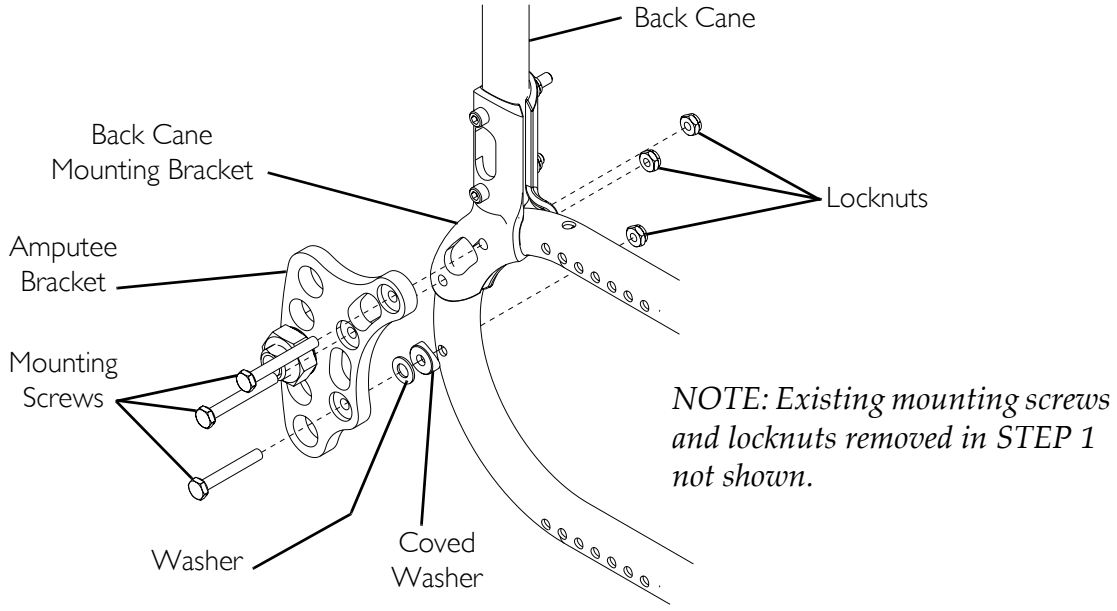


FIGURE 11.7 Installing the Amputee Bracket

Adjusting Wheelbase Width

NOTE: For this procedure, refer to FIGURE 11.8 on page 75.

NOTE: Increasing the wheelbase width may prevent the wheelchair from passing through smaller door jams and other tight places. Consider access to daily activities before increasing wheelbase width.

1. Remove the rear wheel from the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
2. Loosen the two jam nuts that secure the axle bushing to the axle mounting plate.

NOTE: Ensure the number of threads showing beyond the outside jam nut is the SAME for both rear wheels. This will help avoid a "3-wheeling" situation.

3. Move the axle bushing in or out to the desired position.
4. Torque the jam nuts to 40-45 ft-lbs to secure the axle bushing to the axle mounting plate.
5. Reinstall the rear wheel onto the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
6. Repeat STEPS 1-5 for the opposite side of the wheelchair.

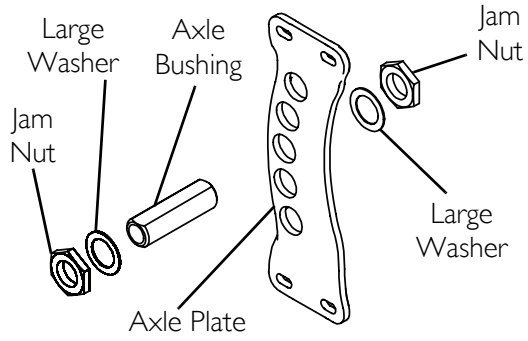


FIGURE 11.8 Adjusting Wheelbase Width

Adjusting Wheelbase Length

NOTE: For this procedure, refer to FIGURE 11.9 on page 76.

NOTE: The wheelbase can be adjusted in ¼ inch increments.

NOTE: Lengthening the wheelbase will increase stability and maintain standard maneuverability of the wheelchair.

NOTE: Shortening the wheelbase will decrease the stability, increase maneuverability and distribute additional weight onto the rear wheels.

1. Remove the rear wheel from the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
2. Remove the two top mounting screws, washers and locknuts securing the axle mounting plate to the wheelchair frame.
3. Remove the two bottom mounting screws washers camber spacers (if present) and locknuts securing the axle mounting plate to the wheelchair frame.

NOTE: Frame mounting positions are spaced ½ inch apart.

4. Align the axle mounting plate mounting holes with the desired frame mounting holes.
5. Using the two top mounting screws, washers and locknuts, loosely secure the axle mounting plate to the wheelchair frame.
6. Using the two bottom mounting screws washers camber spacers (if present) and locknuts, loosely secure the axle mounting plate to the wheelchair frame.

NOTE: The axle mounting plate mounting holes are oblong and can be used to fine tune the wheelbase measurement by ¼ inch.

7. Position the axle mounting plate towards the front or rear of wheelchair to obtain the desired wheelbase measurement.
8. Securely tighten mounting hardware.

9. Reinstall the rear wheel onto the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
10. Repeat STEPS 1-9 for the opposite side of the wheelchair.

NOTE: Make sure the axle mounting plates are mounted in the same position. This will help avoid a "3-wheeling" situation.

11. Adjust the wheel locks. Refer to Replacing/Adjusting the Wheel Locks on page 37.
12. If wheelchair is equipped with anti-tippers, adjust to maintain proper clearance. Refer to Installing/Removing the Anti-tippers on page 87.

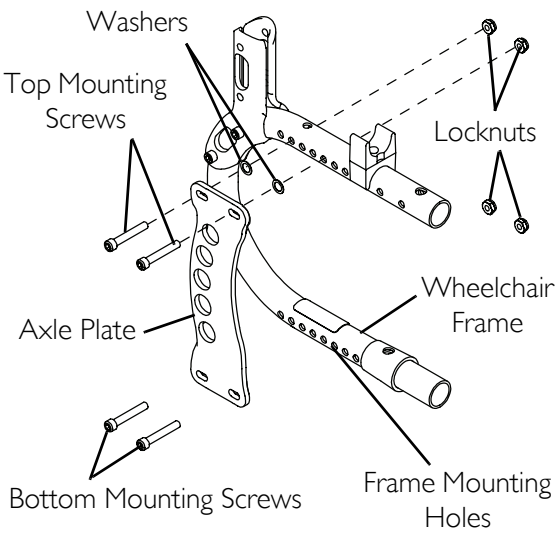


FIGURE 11.9 Adjusting Wheelbase Length

Replacing/Adjusting the Handrims - Spoke Rear Wheels

NOTE: For this procedure, refer to FIGURE 11.10 on page 77.

NOTE: If replacing the handrim, perform STEP 5 using a new handrim.

NOTE: The following procedure is for projection or non-projection handrims.

NOTE: Handrims for composite rear wheels cannot be adjusted.

1. Remove the rear wheel from the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.

⚠ WARNING

Tire MUST be deflated before any disassembly procedures are performed.

2. Remove all air from rear wheel by pressing down on center pin of the valve stem.
3. While carefully holding the tire and rim strip to one side, remove the mounting screws and locknuts that secure the handrim to the rear wheel.

NOTE: Note the position of the existing handrim before removing from the rim.

4. Remove the handrim from the rim.
5. Align rim mounting holes with one of two handrim mounting positions:
   - In - Moving both handrims to the inside mounting hole on the mounting tabs will reduce the overall width of the wheelchair by ¾-inch.
   - Out - Moving both handrims to the outside mounting hole on the mounting tabs will increase the overall width of the wheelchair by ¾-inch.

6. Install one of the mounting screws through the mounting holes in the rim and mounting tab.
7. While carefully holding the tire and rim strip to one side, hold the mounting screw and securely tighten the locknut that secure the handrim to the rim.
8. Repeat STEPS 6-7 for the remaining mounting screws and locknuts.

⚠ WARNING

DO NOT inflate tire until handrim is completely assembled.

9. Inflate the tire to the correct psi rating on the sidewall of the tire.
10. Reinstall the rear wheel onto the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
11. Repeat STEPS 1-10 for the opposite rear wheel if necessary.

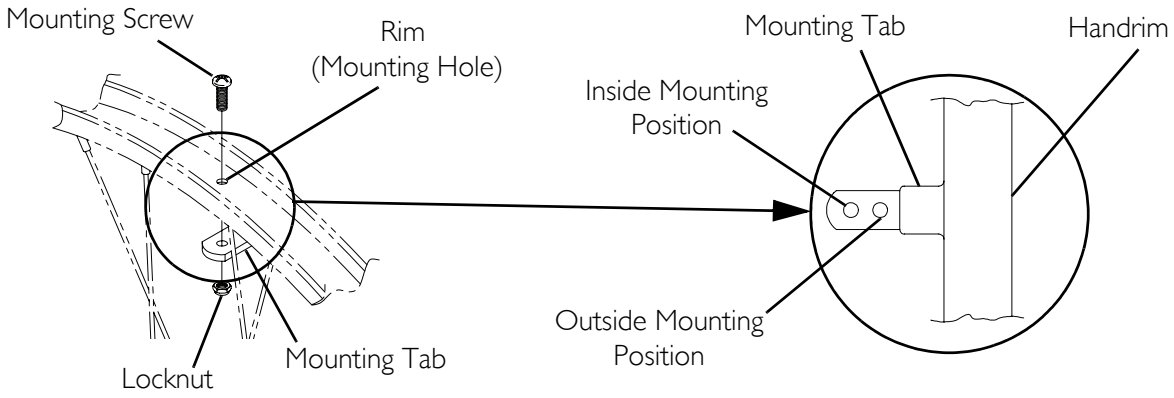


FIGURE 11.10 Replacing/Adjusting the Handrims - Spoke Rear Wheels

Replacing Non-Projection Handrims - Composite Rear Wheels

NOTE: For this procedure, refer to FIGURE 11.11.

1. Remove the rear wheel from the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
2. Remove the button screws and washers that secure the handrim to the rear wheel.
3. Remove the existing handrim from the rear wheel.
4. Install the new handrim by reversing the above procedures.

⚠ WARNING

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

5. Reinstall rear wheel to the wheelchair. Refer to Removing/Installing Rear Wheels on page 67.
6. Repeat the procedure for the opposite rear wheel if necessary.

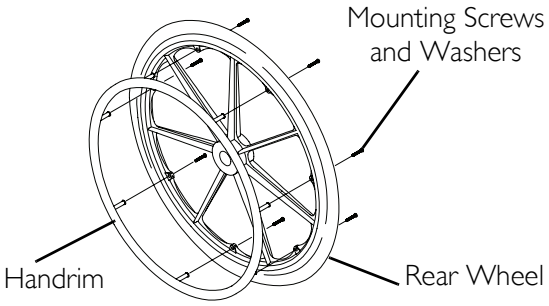


FIGURE 11.11 Replacing Non-Projection Handrims - Composite Rear Wheels

Repairing/Replacing Pneumatic Tire/Tube

⚠ WARNING

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

CAUTION

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

SECTION 12—CASTERS, FORK AND FORK STEM ASSEMBLIES

⚠ 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/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 93 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.

Standard Forks

NOTE: For this procedure, refer to FIGURE 12.1.

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 90° perpendicular to the flat surface. Refer to Checking/Adjusting Fork Stem Angle on page 85.

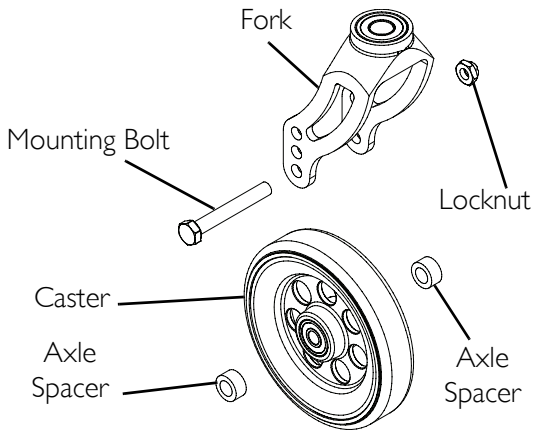


FIGURE 12.1 Removing/Installing/Repositioning the Caster Assemblies - Standard Forks

Suspension Forks

NOTE: For this procedure, refer to FIGURE 12.2.

Removing the Caster

NOTE: One mounting screw will not turn.

1. Using two allen wrenches, turn mounting screws in opposite directions and remove one mounting screw from fork.
2. Remove the threaded bushing with mounting screw and two spacers securing the caster to the fork. DO NOT use excessive force.
3. Remove the caster from the fork.

Installing the Caster

1. Align the caster with the desired mounting holes in the fork.
2. Insert the threaded bushing with mounting screw, through the two axle spacers and caster. DO NOT use excessive force.

⚠ WARNING

Use Loctite™ 242 when reinstalling the mounting screw into the threaded bushing. Otherwise the fork can become disassembled. Possible injury or damage could result.

3. Apply Loctite 242 to the mounting screw.
4. Reinstall the mounting screw into the threaded bushing and tighten securely.

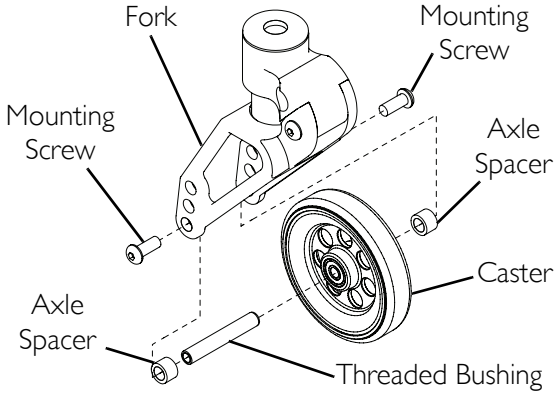


FIGURE 12.2 Removing/Installing/Repositioning the Caster Assemblies - Suspension Forks

Adjusting Fork Tension

NOTE: For this procedure, refer to FIGURE 12.3.

1. To properly tighten forks and guard against flutter, perform the following check on both forks:
   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 (wheels should swing once to one-side, then immediately rest in a straight downward position).
2. If necessary, perform one of the following to adjust the fork tension:
   - Standard Forks - Adjust locknut according to freedom of caster swing (Detail "A").
   - Suspension Fork (Detail "B") -
     a. Refer to Removing the Elastomer on page 86 to remove the elastomer and suspension fork bottom to access the locknut.
     b. Adjust locknut according to freedom of caster swing.
     c. Refer to Installing the Elastomer on page 86 to secure the suspension fork top to the elastomer and suspension fork bottom.
3. Test wheelchair for maneuverability.
4. If necessary, repeat STEPS 1-2 to adjust locknuts until tension is correct for both forks.

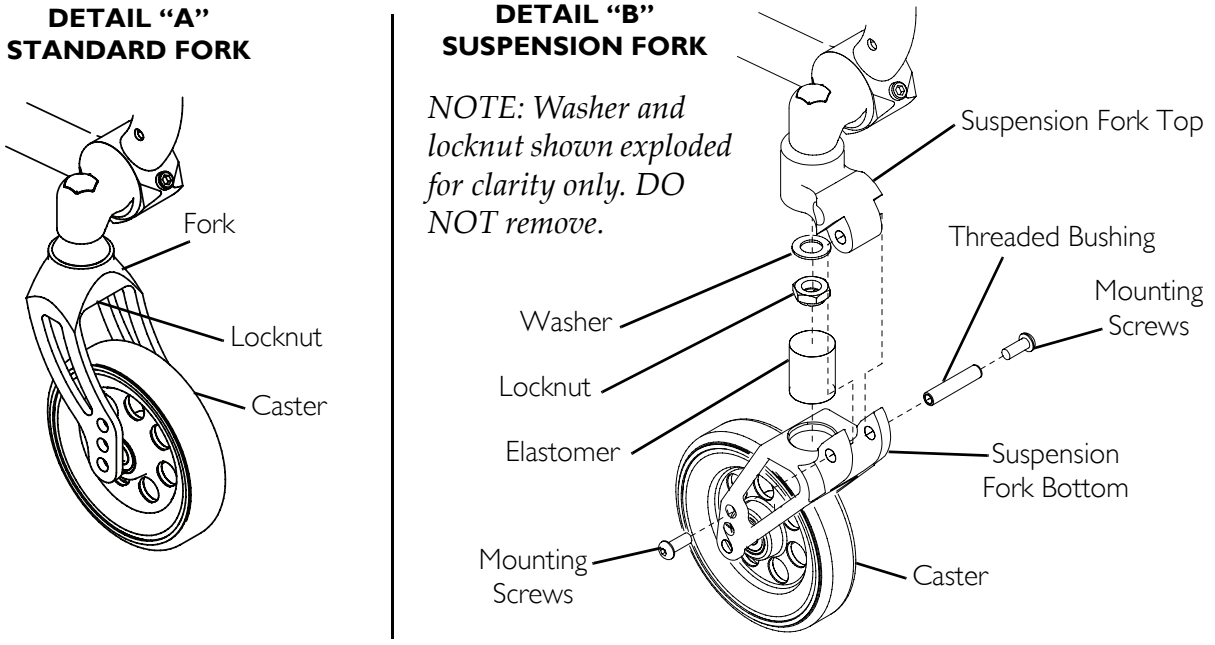


FIGURE 12.3 Adjusting Fork Tension

Adding/Removing or Changing Height Adjustment Spacers

NOTE: Height adjustment spacers are part of the fork assembly. To perform this procedure, refer to Removing/Installing the Fork Assembly on page 82.

Removing/Installing the Fork Assembly

NOTE: For this procedure, refer to FIGURE 12.4 on page 83.

NOTE: Both the standard and suspension forks remove/install in the same way.

NOTE: 2-inch spacers are not used with suspension style forks.

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

NOTE: If changing the fork size and/or adding/removing or changing height adjustment spacers, refer to Changing Front Seat-to-Floor Height on page 93 to determine the hardware needed for the required front seat-to-floor height.

NOTE: Both forks MUST be the same size.

Removing Fork Assembly/Height Adjustment Spacers

1. Remove the front caster from the fork. Refer to Removing Front Caster on page 79.
2. Perform one of the following:
   - Standard Forks - Remove locknut and washer securing the fork, spacer and height adjustment spacer (if present) from the stem bolt (Detail "A").
   - Suspension Fork (Detail "B") -
     a. Refer to Removing the Elastomer on page 86 to remove the elastomer and suspension fork bottom to access the locknut and washer.
     b. Remove locknut and washer securing the suspension fork top, spacer and height adjustment spacer (if present) from the stem bolt.
3. Remove stem bolt from fork stem.

Installing Fork Assembly/Height Adjustment Spacers

NOTE: Stem bolt length based on set-to-floor height, refer to Changing Front Seat-to-Floor Height on page 93 to ensure proper stem bolt length before installing the fork assembly.

1. Insert stem bolt through fork stem.
2. Perform one of the following:
   - Standard Forks - Using a locknut and washer, secure the height adjustment spacer (if needed), spacer and fork to the stem bolt (Detail "A").
   - Suspension Fork (Detail "B") -
     a. Using a locknut and washer, secure the height adjustment spacer (if needed), spacer and suspension fork top to the stem bolt
     b. Refer to Installing the Elastomer on page 86 secure the suspension fork top to the elastomer and suspension fork bottom.
3. Install the front caster. Refer to Installing Front Caster on page 79.

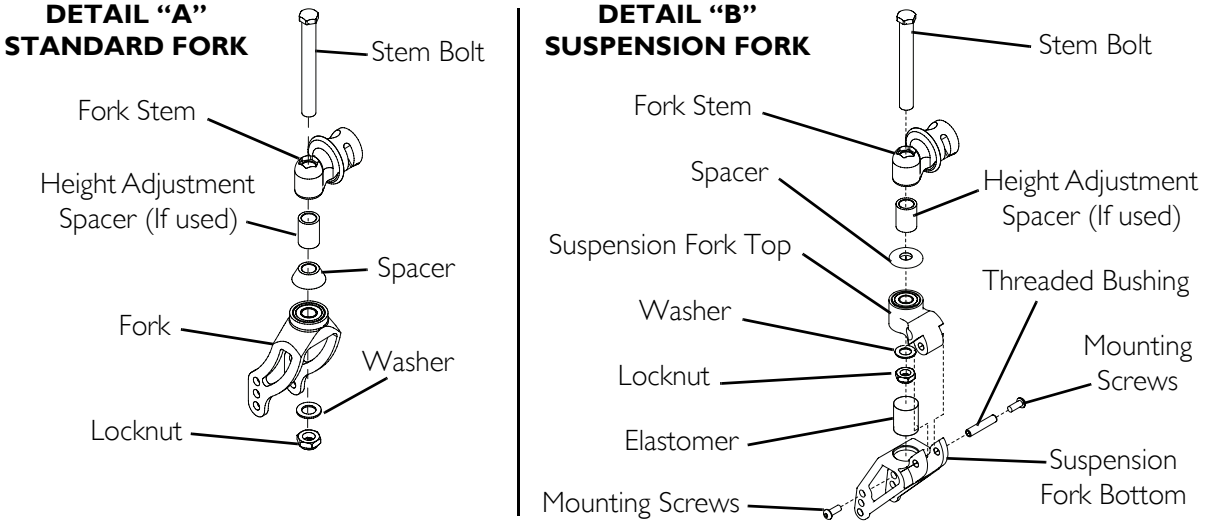


FIGURE 12.4 Removing/Installing the Fork Assembly

Removing/Installing the Fork Stem Assembly

NOTE: For this procedure, refer to FIGURE 12.5.

Removing Fork Stem Assembly

1. Remove the front caster from the fork. Refer to Removing Front Caster on page 79.
2. Remove the fork assembly. Refer to Removing Fork Assembly/Height Adjustment Spacers on page 82.

NOTE: As the angle adjustment screw is removed, the fork stem will rotate towards rear of wheelchair.

3. Remove the angle adjustment screw and locknut securing the fork stem to the wheelchair frame.

NOTE: The guide insert will be loose inside the fork stem channel and may fall out when removing the fork stem from the wheelchair frame.

4. Remove the fork stem and guide insert from the wheelchair frame.

Installing Fork Stem Assembly

1. Position the guide insert into the fork stem channel.
2. Insert the fork stem assembly into the wheelchair frame.

NOTE: The angle adjustment screw must pass through the guide insert when securing the fork stem to the wheelchair frame. The guide insert is threaded and will cause the fork stem to turn towards the front of the wheel chair as the angle adjustment screw is threaded through.

3. Insert angle adjustment screw through the wheelchair frame, fork stem channel and guide insert.
4. Using a locknut, secure the angle adjustment screw and fork stem assembly to the wheelchair frame.
5. Install the fork assembly. Refer to Removing/Installing the Fork Assembly on page 82.
6. Install the front caster. Refer to Installing Front Caster on page 79.
7. Ensure fork stem is 90° perpendicular to the flat surface. Refer to Checking/Adjusting Fork Stem Angle on page 85.

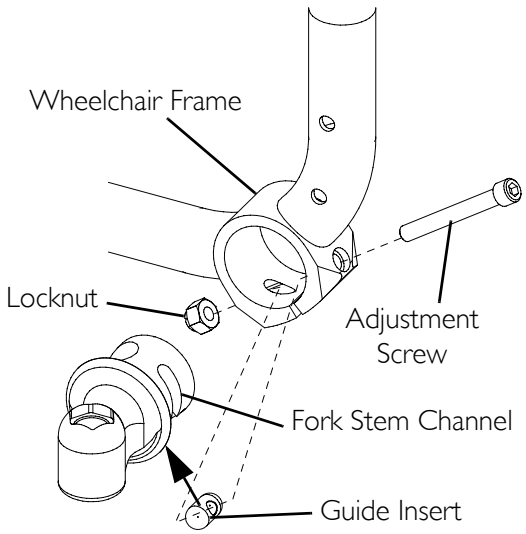


FIGURE 12.5 Removing/Installing the Fork Stem Assembly

Checking/Adjusting Fork Stem Angle

NOTE: For this procedure, refer to FIGURE 12.6.

NOTE: Whenever the seat height is raised or lowered by changing the caster size, fork stem length, rear wheel size or axle mounting plate adjustments, the caster angle needs to be checked to maintain a 90° angle between the caster fork stem and the ground/floor. Caster fork stems that are perpendicular to the floor will roll better, track straighter and minimize any "3-wheeling" of the wheelchair

NOTE: Check/adjust the fork stem angle in the same way for both standard and suspension style forks.

Checking Fork Stem Angle

1. Place the wheelchair on a flat surface.
2. Position a large right triangle or "L" square on the flat surface and against the fork. The fork must be aligned to the "L" square (90° to flat surface) (FIGURE 12.6).
3. Perform one of the following:
   - Fork is at 90°: Check remaining fork stem for correct alignment.
   - Fork is not 90°: Adjust fork stem angle. Refer to Adjusting Fork Stem Angle on page 85.

Adjusting Fork Stem Angle

1. Loosen, but DO NOT remove, the angle adjustment screw and locknut that secure the fork stem to the wheelchair frame.
2. Position a large right triangle or "L" square on the flat surface and against flat on the fork.
3. Tighten/loosen the angle adjustment screw until the indexing mark is aligned with the "L" square (90° to flat surface) (FIGURE 12.6).

NOTE: Once the fork stem is in the 90° position, DO NOT allow the angle adjustment screw to turn while tightening the locknut. Doing so will move the fork stem out of alignment.

4. Reinstall the locknut onto the angle adjustment screw and securely tighten.
5. Check remaining fork stem for correct alignment. Refer to Checking/ Adjusting Fork Stem Angle on page 85.

NOTE: Standard fork shown.

NOTE: Locknut and angle adjustment screw shown removed for clarity ONLY,

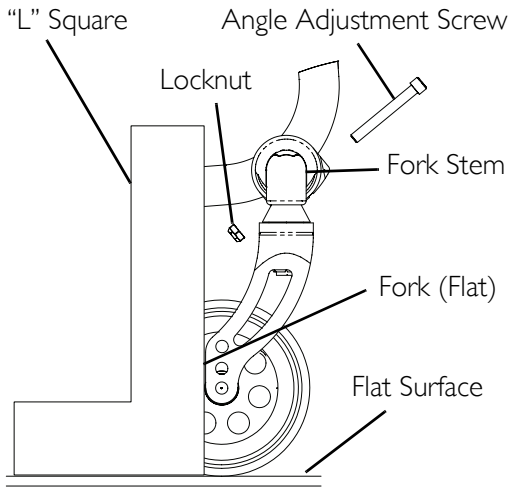


FIGURE 12.6 Checking/Adjusting Fork Stem Angle

Removing/Installing the Elastomers (Suspension Forks Only)

CAUTION

DO NOT use excessive force when removing/installing the threaded sleeve from/ onto the fork. Damage to the threaded sleeve may occur.

NOTE: For this procedure, refer to FIGURE 12.7.

Removing the Elastomer

NOTE: One mounting screw will not turn.

1. Using two allen wrenches, turn mounting screws in opposite directions and remove one mounting screw from fork.
2. Remove the threaded bushing and mounting screw securing the suspension fork top to the elastomer and the suspension fork bottom. DO NOT use excessive force.
3. If replacing the elastomer, discard the existing elastomer.

Installing the Elastomer

NOTE: Make sure the elastomer sits in the two recessed areas on the fork.

1. Position the new elastomer between the suspension fork top and suspension fork bottom.
2. Align the mounting holes in the suspension fork top and suspension fork bottom.
3. Using the threaded bushing and mounting screw, secure the suspension fork top and suspension fork bottom. DO NOT use excessive force.

⚠ WARNING

Use Loctite 242 when reinstalling the mounting screw into the threaded bushing. Otherwise the fork can become disassembled. Possible injury or damage could result.

4. Apply Loctite 242 to the mounting screw.
5. Reinstall the mounting screw into the threaded bushing and tighten securely.

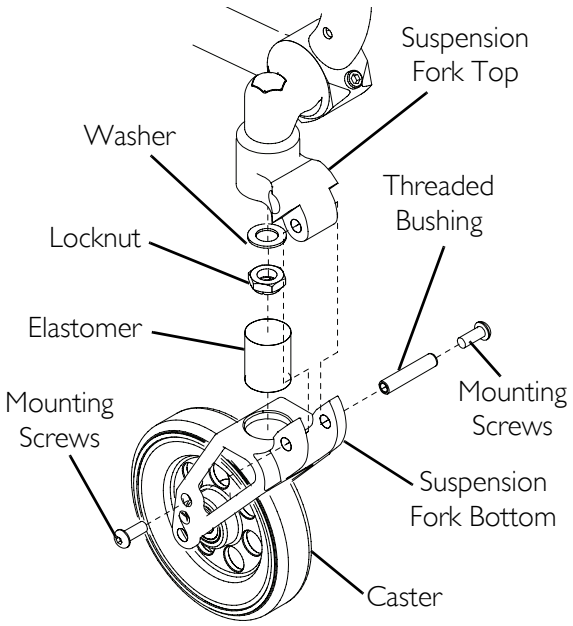


FIGURE 12.7 Removing/Installing the Elastomers (Suspension Forks Only)

SECTION 13—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.

Installing/Removing the Anti-tippers

⚠ WARNING

Anti-tippers MUST be fully engaged and release buttons fully protruding out of release button holes before using wheelchair.

Make sure the anti-tipper wheels are pointing towards the ground/floor before using the wheelchair.

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

NOTE: For this procedure, refer to FIGURE 13.1.

NOTE: Reverse STEPS 2-3 to remove the anti-tippers.

1. If necessary install the anti-tipper bracket. Refer to Installing/Removing the Anti-Tipper Bracket on page 88.
2. Press the release button in and insert the anti-tippers with the anti-tipper wheels pointing toward the ground/floor into the anti-tipper bracket until the stop screw meets the anti-tipper bracket.
3. Ensure the snap button is secured in the anti-tipper mounting holes.

NOTE: A 1-½ to 2-inch clearance between the bottom of the anti-tipper wheels and the ground/floor MUST be maintained.

4. Adjust the anti-tipper height. Refer to Adjusting the Anti-tipper Height on page 89.

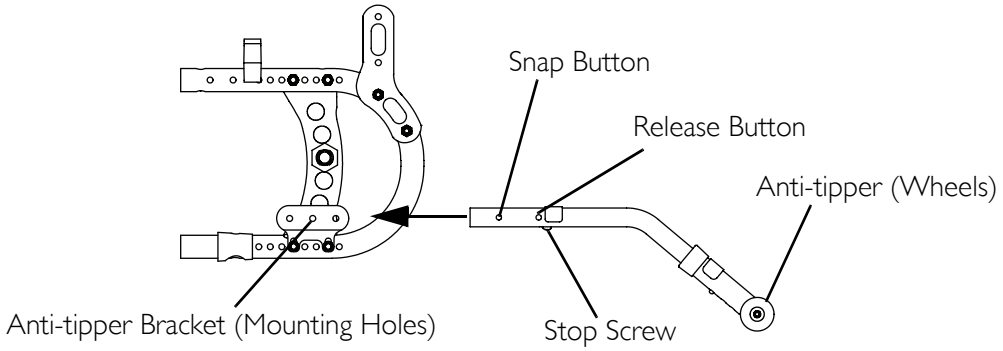


FIGURE 13.1 Installing/Removing the Anti-tippers

Installing/Removing the Anti-Tipper Bracket

NOTE: For this procedure, refer to FIGURE 13.2.

NOTE: Reverse this procedure to remove the anti-tipper bracket.

NOTE: The anti-tipper bracket is secured to the wheelchair frame with the same mounting screws used to mount the axle plate and any camber spacers present. Installing or removing the anti-tipper bracket may require a different length mounting screw. Refer to Adjusting the Rear Wheel Camber on page 70 to ensure proper mounting screw length.

1. Remove the rear wheels. Refer to Removing/Installing Rear Wheels on page 67.
2. Remove the two existing bottom mounting screws and locknuts that secure the axle plate and any camber spacers present to the wheelchair frame.
3. Insert two new bottom mounting screws through the axle plate and any camber spacers present.
4. Position anti-tipper bracket onto bottom mounting screws and tightly secure using two locknuts.
5. Repeat STEPS 2-4 to install remaining anti-tipper mounting bracket.
6. Install rear wheels. Refer to Removing/Installing Rear Wheels on page 67.

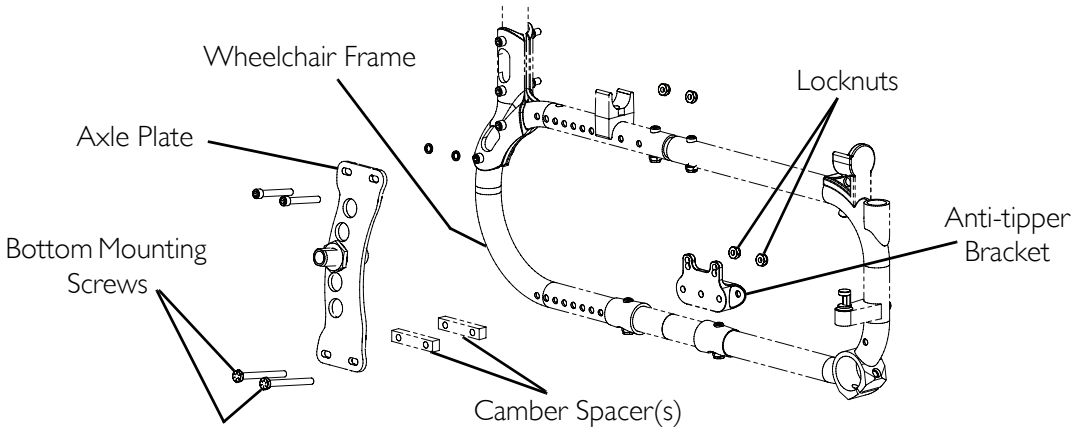


FIGURE 13.2 Installing/Removing the Anti-Tipper Bracket

Adjusting the Anti-tipper Height

The anti-tipper height can be adjusted two ways:

Adjusting the Anti-tipper - Positioning the wheeled portion of the anti-tipper up or down to meet the 1½ to 2-inch clearance. Refer to Adjusting the Anti-tipper on page 89.

Adjusting the Anti-tipper Bracket - Changing the anti-tipper bracket mounting position and/or angle to meet the 1½ to 2-inch clearance. Refer to Adjusting the Anti-tipper Bracket on page 90.

Although both adjustments may be necessary to meet the 1½ to 2-inch clearance requirement, it is recommended to adjust the anti-tipper first before adjusting the anti-tipper bracket.

Adjusting the Anti-tipper

NOTE: For this procedure, refer to FIGURE 13.3.

1. Press the spring button on the wheeled portion of the anti-tipper and slide it up or down to achieve a 1-½ to 2-inch clearance.
2. Check to make sure that the spring buttons are fully engaged in adjustment holes.
3. If 1½ to 2-inch clearance cannot be achieved adjust the anti-tipper bracket. Refer to Adjusting the Anti-tipper Bracket on page 90.

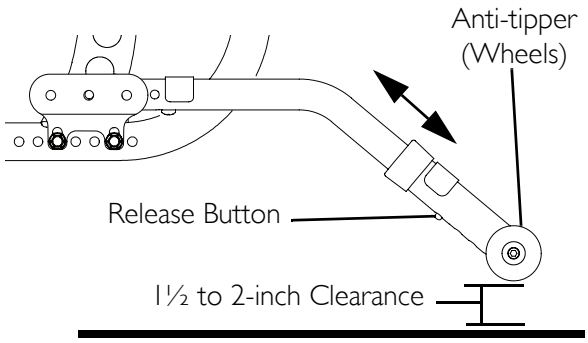


FIGURE 13.3 Adjusting the Anti-tipper

Adjusting the Anti-tipper Bracket

NOTE: The anti-tipper bracket is secured to the wheelchair frame with the same mounting screws used to mount the axle plate and any camber spacers present. DO NOT remove the mounting screws.

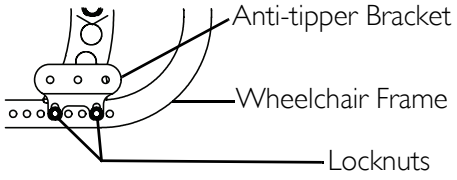
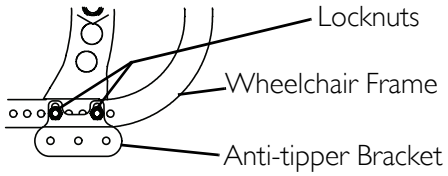
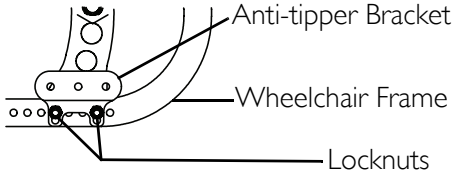
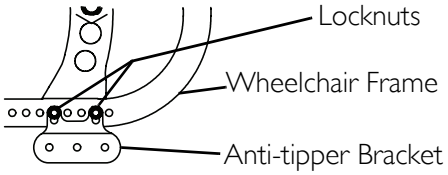
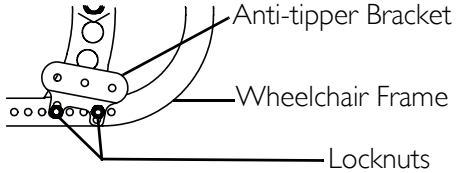
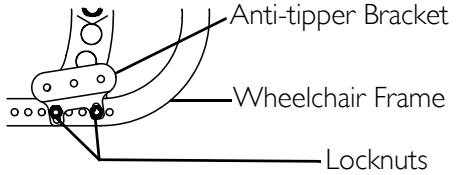
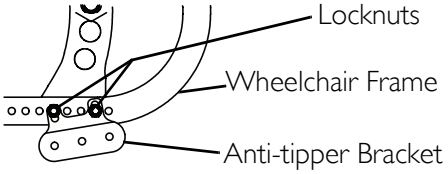
1. Remove the two locknuts securing the anti-tipper bracket to the wheelchair frame and mounting screws.
2. Reposition the anti-tipper bracket in one or more of the following ways:

   NOTE: Refer to Anti-Tipper Bracket Mounting Positions in .

   NOTE: Height and angle adjustment use the same mounting holes.

   - Height or Angle Adjustment:
     - Adjust Height - Position anti-tipper bracket in one of two positions.
     - Adjust Angle - Change angle of anti-tipper bracket up or down from the floor.
   - Reposition - Installing the anti-tipper bracket so that the mounting tube is above or below the wheelchair frame.

ANTI-TIPPER BRACKET MOUNTING POSITIONS

MOUNTING POSITION	ABOVE WHEELCHAIR FRAME	BELOW WHEELCHAIR FRAME
UP MOUNTING POSITION		
DOWN MOUNTING POSITION		
ANGLED DOWN		
ANGLED UP		

SECTION 14—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.

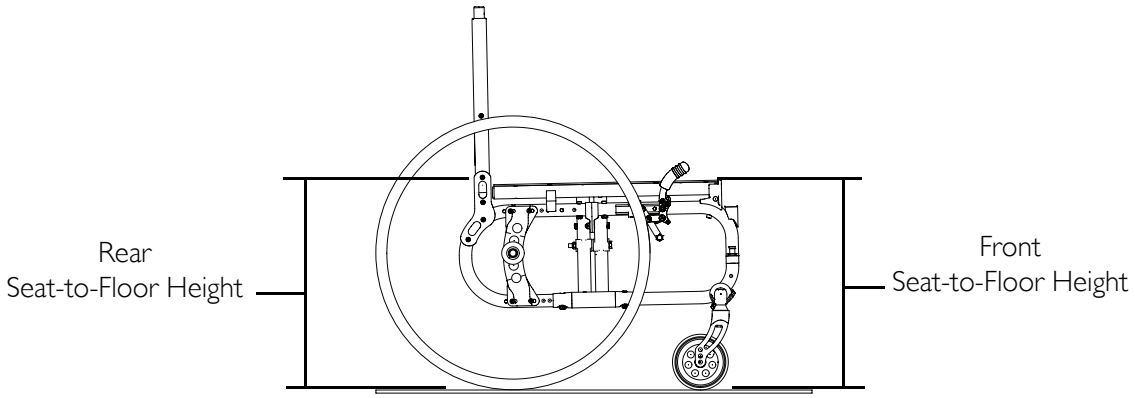
Seat Dump

NOTE: For this procedure, refer to FIGURE 14.1.

NOTE: Refer to Measuring Seat-to-Floor Height on page 92 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 14.1.



Example:

18¾ inches	Front Seat-to-Floor Height
- 17 inches	Minus Rear Seat-to-Floor Height
1¾ inches	Equals Seat Dump

FIGURE 14.1 Seat Dump

Measuring Seat-to-Floor Height

NOTE: For this procedure, refer to FIGURE 14.2.

NOTE: All measurements are in inches. The front and rear seat-to-floor heights are approximate to ±¼-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.

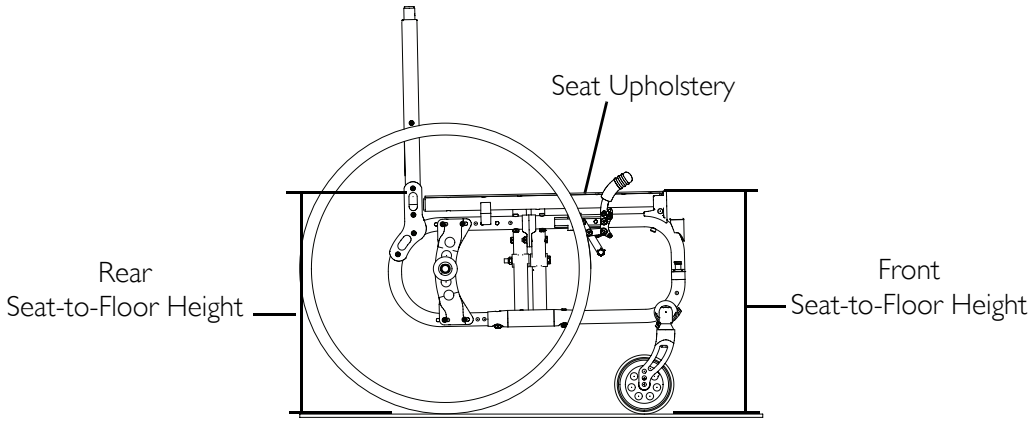


FIGURE 14.2 Seat Dump

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.

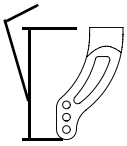
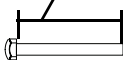
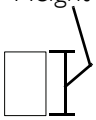
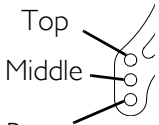
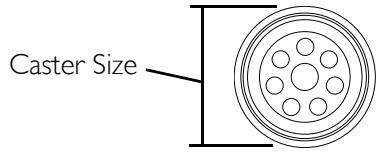
Changing Front Seat-to-Floor Height

NOTE: For this procedure, refer to table Front Seat-to-Floor Height 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 79.
- Changing the fork size or adding/removing height adjustment spacers. Refer to Removing/Installing the Fork Assembly on page 82.

FRONT SEAT-TO-FLOOR HEIGHT

FORK SIZE 	STEM BOLT LENGTH 	SPACER 	CASTER POSITION 	CASTER SIZE/SEAT-TO-FLOOR HEIGHT* 			
				3-INCH	4-INCH	5-INCH	6-INCH
STANDARD STYLE FORKS							
4.5-INCH FORK (BRG1)	**1-7/8-INCH**	**NONE**	TOP MIDDLE BOTTOM	N/A 15.5 16.0	15.5 16.0 16.5	N/A 16.5 17.0	N/A N/A 17.5
	2-7/8-INCH	**1-INCH**	TOP MIDDLE BOTTOM	N/A 16.5 17.0	16.5 17.0 17.5	N/A 17.5 18.0	N/A N/A 18.5
	3-7/8-INCH	**2-INCH**	TOP MIDDLE BOTTOM	N/A 17.5 18.0	17.5 18.0 18.5	N/A 18.5 19.0	N/A N/A 19.5
6.5-INCH FORK (BRG2)	**1-7/8-INCH**	**NONE**	TOP MIDDLE BOTTOM	N/A 17.5 18.0	17.5 18.0 18.5	18.0 18.5 19.0	18.5 19.0 19.5
	2-7/8-INCH	**1-INCH**	TOP MIDDLE BOTTOM	N/A 18.5 19.0	18.5 19.0 19.5	19.0 19.5 20.0	19.5 20.0 20.5
	3-7/8-INCH	**2-INCH**	TOP MIDDLE BOTTOM	N/A 19.5 20.0	19.5 20.0 20.5	20.0 20.5 21.0	20.5 21.0 21.5
SUSPENSION STYLE FORKS							
3.5-INCH FORK (SOFR-F)	**1-1/8-INCH**	**NONE**	TOP MIDDLE BOTTOM	N/A 16.5 17.0	16.5 17.0 17.5	N/A 17.5 18.0	N/A N/A 18.5
	3-1/8-INCH	**1-INCH**	TOP MIDDLE BOTTOM	N/A 17.5 18.0	17.5 18.0 18.5	N/A 18.5 19.0	N/A N/A 19.5
	N/A	**N/A**	N/A				

**NOTE: Seat-to-floor heights are shown in inches.*

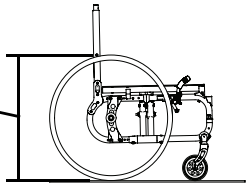
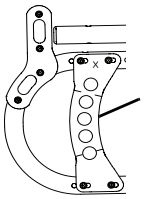
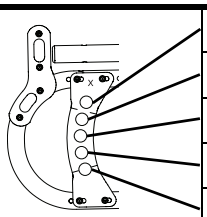
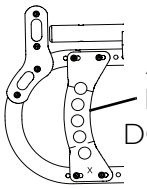
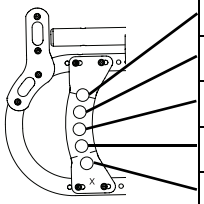
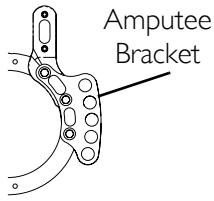
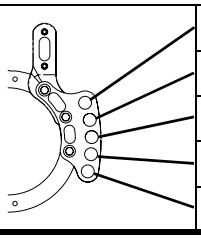
Changing Rear Seat-to-Floor Height

NOTE: For this procedure, refer to table Rear Seat-to-Floor Height to determine adjustment(s) necessary to achieve desired rear seat to floor height.

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

- Changing the rear wheel size and/or mounting position on the fork. Refer to Removing/Installing Rear Wheels on page 67.
- Changing the axle bushing and/or the axle plate position. Refer to Removing/Installing/Repositioning the Axle Bushing and/or Axle Plate on page 72.

REAR SEAT-TO-FLOOR HEIGHT

AXLE PLATE POSITION	AXLE BUSHING LOCATION		REAR WHEEL SIZE/SEAT-TO-FLOOR HEIGHT* 				
			20-INCH	22-INCH	24-INCH	25-INCH	26-INCH
		1	13.5	14.5	15.5	16	16
		2	14.5	15.5	16.5	17	17
		3	15.5	16.5	17.5	18	18
		4	16.5	17.5	18.5	19	19
		5	17.5	18.5	19.5	20	20
		6	14	15	16	16.5	16.5
		7	15	16	17	17.5	17.5
		8	16	17	18	18.5	18.5
		9	17	18	19	19.5	19.5
		10	18	19	20	20.5	20.5
AMPUTE BRACKET	AXLE BUSHING LOCATION		REAR WHEEL SIZE/SEAT-TO-FLOOR HEIGHT WITH AMPUTEE BRACKET*				
		1	13.5	14.5	15.5	16	16
		2	14.5	15.5	16.5	17	17
		3	15.5	16.5	17.5	18	18
		4	16.5	17.5	18.5	19	19
		5	17.5	18.5	19.5	20	20

**NOTE: Seat-to-floor heights are shown in inches.*

SECTION 15—TRANSPORT READY OPTION

⚠ WARNING

Contact Invacare Corporation (800-333-6900) with any questions about using this wheelchair for seating in a motor vehicle.

When feasible, wheelchair occupants should transfer into the vehicle seat and use the OEM (Original Equipment Manufacturer) vehicle-installed restraint system.

This wheelchair has been dynamically tested in a forward-facing mode with the specified crash test dummy restrained by both pelvic and upper-torso belt(s) (shoulder belts), and that BOTH pelvic and upper torso belt(s) should be used to reduce the possibility of head and chest impacts with vehicle components.

Use ONLY Wheelchair Tie-down and Occupant Restraint Systems (WTORS) which meet the requirements of the SAE (Society of Automotive Engineers) J2249 Recommended Practice during travel in a motor vehicle.

This wheelchair MUST be in a forward facing position during travel in a motor vehicle.

This wheelchair is equipped, and has been dynamically tested to rely on wheelchair-anchored pelvic belts. if desired, vehicle-anchored pelvic belts may be used.

it is strongly recommended that both pelvic and upper-torso belt(s) be used to reduce the risk of injury.

To reduce the potential of injury to vehicle occupants, wheelchair-mounted accessories, including but not limited to IV poles, trays, respiratory equipment, backpacks, and other personal items should be removed and secured separately.

Postural supports, positioning devices, and/or strap(s) should not be relied on for occupant restraint. These items may be used in addition to the wheelchair-anchored or vehicle-anchored belts.

DO NOT alter or substitute wheelchair frame parts, components, or seating systems.

A sudden stop and/or collision may structurally damage your wheelchair. Wheelchairs involved in such incidents should be replaced.

Transport ready packages are not retrofittable to existing models and are not field serviceable.

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

About Transport Ready Packages

TRRO includes four factory-installed transport brackets and a wheelchair anchored pelvic belt. TRRO has been crash-tested in accordance with ANSI/RESNA WC Vol 1 Section 19 Frontal Impact Test requirements for wheelchairs with a 168 lb crash dummy, which corresponds to a person with a weight of 114 to 209 lbs.

TRBKTS includes four factory-installed wheelchair transport brackets. TRBKTS has not been crash-tested in accordance with WC 19. Invacare recommends that these transport brackets be used only to secure an unoccupied wheelchair during transport.

As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type. It is Invacare's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare cannot and does not recommend any wheelchair transportation system.

Compliance Information

This wheelchair conforms with the requirements of the ANSI/RESNA WC/Vol. 1 - Section 19 (Frontal Impact Test)

NOTE: ANSI = American National Standards Institute, RESNA= Rehabilitation Engineering and Assistive Technology Society of North America.

This wheelchair has been dynamically tested in a forward-facing mode with the specified crash test dummy, which corresponds to a person with a weight of 114-209 pounds, restrained by BOTH pelvic and shoulder belts in accordance with ANSI/RESNA WC Vol 1 Section 19. BOTH pelvic and upper torso belts should be used to reduce the possibility of head and chest impacts with vehicle components.

Specifications

Only wheelchairs which fit in the following size ranges should be occupied in a motor vehicle:

- 12-inches to 22-inches wide
- 12-inches to 22-inches deep

Weight Limit

MODEL	WHEELCHAIR WEIGHT LIMIT
ProSPIN X4	Up to 250 pounds

Securing the Wheelchair to the Vehicle

Positioning the Wheelchair in the Vehicle

⚠ WARNING

This wheelchair must be in a forward facing position during travel in a motor vehicle.

The recommended clear zones for wheelchair seated occupants restrained by both pelvic and upper torso belt(s) and only by a pelvic belt are shown in the diagrams and described below.

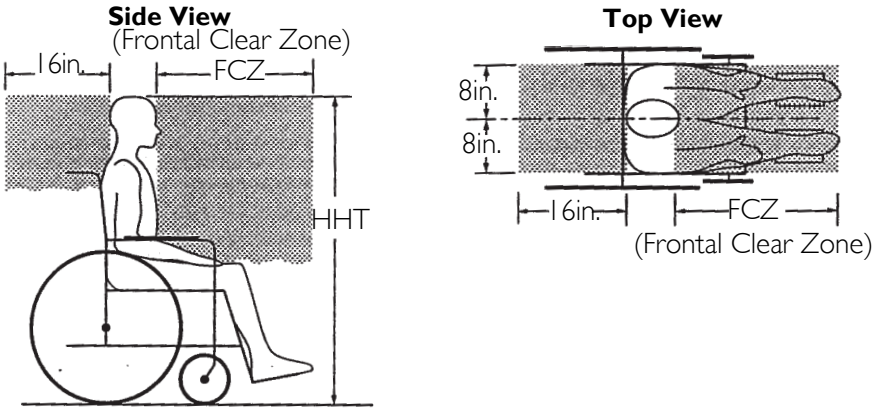
Frontal Clear Zones (FCZ) need to be larger when upper torso belt(s) are not used.

The rear clear zone of 16-inches is measured from the rearmost point on an occupant's head.

The frontal clear zone is measured from the frontmost point on an occupant's head and is 26-inches with pelvic and upper-torso belt(s) and 37-inches with only a pelvic belt.

The frontal clear zone may not be achievable for wheelchair-seated drivers.

The estimated seated height (HHT) from the ground or floor to the top of the wheelchair-seated occupant's head ranges from approximately 47-inches for a small adult female to about 61-inches for a tall adult male.



Securement Points

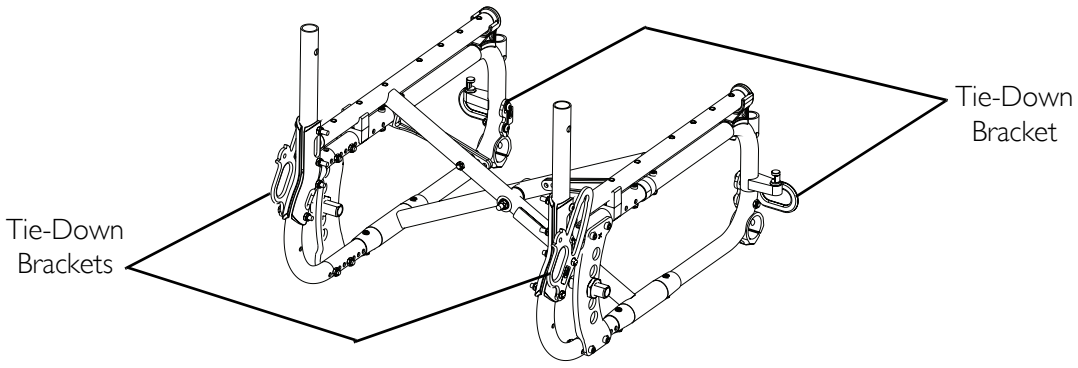


FIGURE 15.1 Securement Points

Securing the Wheelchair

This wheelchair is to be used only with Wheelchair Tie-down and Occupant Restraint Systems (WTORS) that have been installed in accordance with the manufacturer's instructions and SAE J2249.

NOTE: A copy of SAE J2249 Wheelchair Tie-down and Occupant Restraint Systems (WTORS) for use in Motor Vehicles can be obtained from: SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, (877) 606-7232 or (724) 776-4970.

Attach WTORS to the tie-down brackets in accordance with the manufacturer's instructions and SAE J2249.

Securing the Occupant

Wheelchair-Anchored Belts

⚠ WARNING

The pelvic belt that is provided by Invacare has been tested for use in a motor vehicle on this wheelchair only. DO NOT replace the pelvic belt with a different style pelvic belt.

NOTE: For this procedure, refer to FIGURE 15.2.

The wheelchair has been provided with a pelvic belt which meets the requirements of ANSI/RESNA WC/19.

The pelvic belt provided by Invacare has been designed to accommodate use on either side of the vehicle. If necessary, follow the instructions below to reverse the orientation of the pelvic belt to accommodate the vehicle-anchored upper torso belt.

1. Install the pelvic belt pin (Detail "A" of FIGURE 15.2) into slot in the pelvic belt bracket. Pull upwards until it snaps into place.

NOTE: Note the position of the male end of the belt when installing the pelvic belt onto the pelvic belt brackets. The male end of the pelvic belt (Detail "A" of FIGURE 15.2) has a pin which is used to secure the vehicle-anchored upper torso belt.

2. Repeat STEP 1 for the opposite pelvic belt bracket.
3. Install the vehicle-anchored upper torso belt onto the pin on the male end of the pelvic belt.

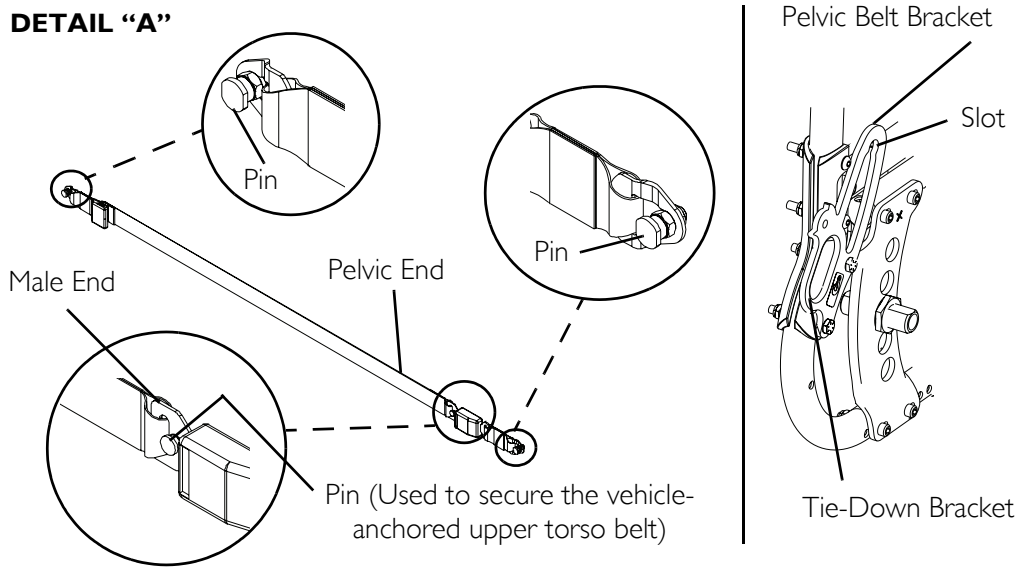


FIGURE 15.2 Wheelchair-Anchored Belts

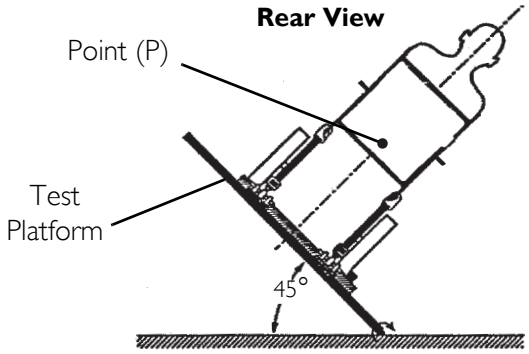
Vehicle-Anchored Belts

NOTE: For this procedure, refer to FIGURE 15.3.

This wheelchair has an overall rating of "B" with regard to accommodating the use and fit of vehicle-anchored belts. This rating is scored as follows:

RATING	DESCRIPTION
A	Excellent
B	Good
C	Fair
D	Poor

The test for Lateral Stability Displacement for Point (P) is shown in FIGURE 15.3. The average test result for point (P) is 0.77-inches (19.6 mm).



NOTE: Rear view of wheelchair and human surrogate secured on test platform and tilted to 45 degrees.

FIGURE 15.3 Vehicle-Anchored Belts

Seating System

⚠ WARNING

This wheelchair has been tested for seating in a motor vehicle with the factory installed seating system only.

When feasible, wheelchair occupants should transfer into the vehicle seat and use the OEM (Original Equipment Manufacturer) vehicle-installed restraint system.

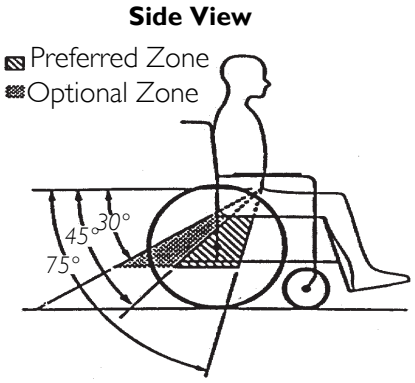
Ensure that the factory installed seating system is secured to the wheelchair frame before operation. Refer to the seating system owner's manual.

Positioning Belts

⚠ WARNING

The angle of the pelvic belt should be within the preferred zone of 45 to 75 degrees to the horizontal or within the optional zone of 30 to 45 degrees to the horizontal.

Steeper side-view pelvic belt angles are especially important if the pelvic belt is intended to be used for postural support in addition to occupant restraint in a frontal crash. Steeper angles will reduce the tendency for a vertical gap to develop between the user and the belt due to compliance of seat cushions and belt movement, thereby reducing the tendency for the user to slip under the belt and for the belt to ride up on the soft abdomen during normal use.

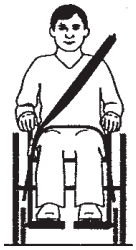


Steeper belt angles also reduce the tendency for upper-torso belts to pull the pelvic belt onto the abdomen during frontal impact loading.

NOTE: For this procedure, refer to FIGURE 15.4.

1. The pelvic belt should be worn low across the front of the pelvis.
2. Position the upper torso belt(s) over the shoulders.
3. The belt(s) should not be held away from the body by wheelchair components or parts, including but not limited to wheelchair armrests or wheels. Refer to FIGURE 15.4 for proper and improper positioning of the belts.
4. Ensure the belt(s) are not be twisted.
5. Adjust belts as firmly as possible, being mindful of user comfort.

DO position belts INSIDE of armrests, wheels, etc.



DO NOT position belts OUTSIDE of armrests, wheels, etc.

FIGURE 15.4 Positioning Belts

NOTES

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 at the bottom of the back cover. Provide dealer's name, address, date of purchase, indicate nature of the defect and, if the product is serialized, indicate the serial number. DO NOT return products to our factory without our prior consent.

LIMITATIONS AND EXCLUSIONS: THE FOREGOING WARRANTY SHALL NOT APPLY TO SERIAL NUMBERED PRODUCTS IF THE SERIAL NUMBER HAS BEEN REMOVED OR DEFACED, PRODUCTS SUBJECTED TO NEGLIGENCE, ACCIDENT, IMPROPER OPERATION, MAINTENANCE OR STORAGE, COMMERCIAL OR INSTITUTIONAL USE, PRODUCTS MODIFIED WITHOUT INVACARE'S EXPRESS WRITTEN CONSENT INCLUDING, BUT NOT LIMITED TO, MODIFICATION THROUGH THE USE OF UNAUTHORIZED PARTS OR ATTACHMENTS; PRODUCTS DAMAGED BY REASON OF REPAIRS MADE TO ANY COMPONENT WITHOUT THE SPECIFIC CONSENT OF INVACARE, OR TO A PRODUCT DAMAGED BY CIRCUMSTANCES BEYOND INVACARE'S CONTROL, AND SUCH EVALUATION WILL BE SOLELY DETERMINED BY INVACARE. THE WARRANTY SHALL NOT APPLY TO PROBLEMS ARISING FROM NORMAL WEAR 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.

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