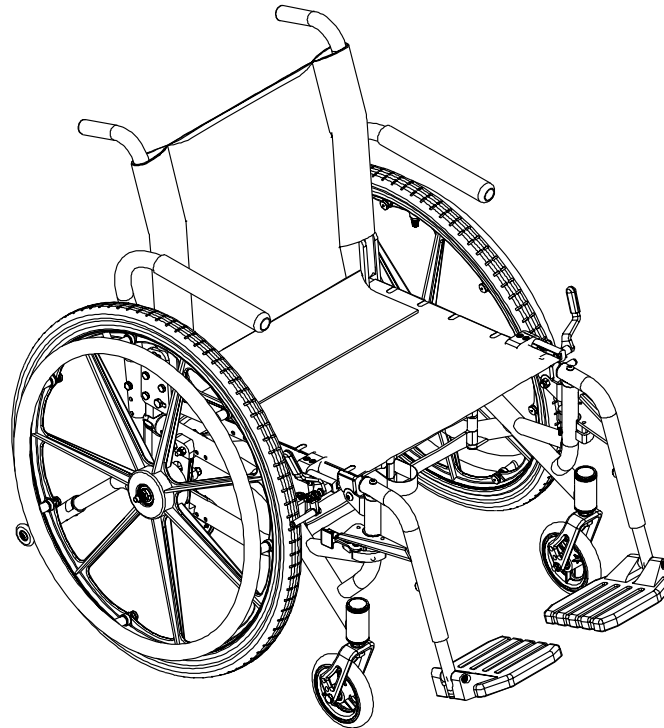


Owner's Operator And Maintenance Manual

SPYDER™



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.

**A French Canadian Literature Kit, part number 1101100, is shipped with each Canadian wheelchair order. The French Canadian Literature Kit contains the translated Owner's Manual, part number 1098330, Label Placement Instruction Sheet, part number 1098348, and a Warning Label Sheet, part number 1098318. If any part of the French Canadian Literature Kit is missing, call Invacare Canada at (800) 668-5324 or in Quebec (800) 363-0317.*



Yes, you can.®

WARNING

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WARNING

DO NOT OPERATE THIS EQUIPMENT WITHOUT FIRST READING AND UNDERSTANDING THIS MANUAL. IF YOU ARE UNABLE TO UNDERSTAND THE WARNINGS, CAUTIONS AND INSTRUCTIONS, CONTACT A QUALIFIED TECHNICIAN BEFORE ATTEMPTING TO USE THIS EQUIPMENT - OTHERWISE INJURY OR DAMAGE MAY RESULT.

THE INITIAL SET UP OF THIS WHEELCHAIR MUST BE PERFORMED BY A QUALIFIED TECHNICIAN.

PROCEDURES OTHER THAN THOSE DESCRIBED IN THIS MANUAL MUST BE PERFORMED BY A QUALIFIED TECHNICIAN. THE FOLLOWING PROCEDURES ARE FOUND IN THE SERVICE MANUAL.

ADJUSTING BACK ANGLE
REPLACING THE FOLDING MECHANISM
REPLACING OPTIONAL BACK UPHOLSTERY
ADJUSTABLE TENSION BACK UPHOLSTERY
REPLACING T-ARM LOCKING LEVERS
ADJUSTING WHEELBASE LENGTH AND WIDTH
ADJUSTING REAR WHEEL CAMBER AND HEIGHT
CHANGING SEAT-TO-FLOOR HEIGHT
SUSPENSION

ADJUSTING SEAT DUMP AND SEAT WIDTH
REMOVING/INSTALLING/ADJUSTING BACK
RELEASE CORD
INSTALLING HALF-ARM AND T-ARM SOCKETS
INSTALLING/ADJUSTING/REPLACING
CASTERS, HEADTUBES AND FORKS
INSTALLING/REPLACING HANDRIMS
INSTALLING/ADJUSTING ANTI-TIPPER MOUNTING
BRACKET

SAVE THESE INSTRUCTIONS

SPECIAL NOTES

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WARNING/CAUTION notices as used in this manual apply to hazards or unsafe practices which could result in personal injury or 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 health care professional capable of making such a selection.

WHEELCHAIR TIE-DOWN RESTRAINTS AND SEAT POSITIONING STRAPS

Invacare recommends that wheelchair users NOT be transported in vehicles of any kind while in wheelchairs. As of this date, the Department of Transportation has not approved any tie-down systems for transportation of a user while in a wheelchair, in a moving vehicle of any type.

It is Invacare's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and use be made of the restraints made available by the auto industry. Invacare cannot and does not recommend any wheelchair transportation systems.

AS REGARDS RESTRAINTS - SEAT POSITIONING STRAPS - IT IS THE OBLIGATION OF THE DME DEALER, THERAPISTS AND OTHER HEALTH CARE PROFESSIONALS TO DETERMINE IF A SEATING 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.

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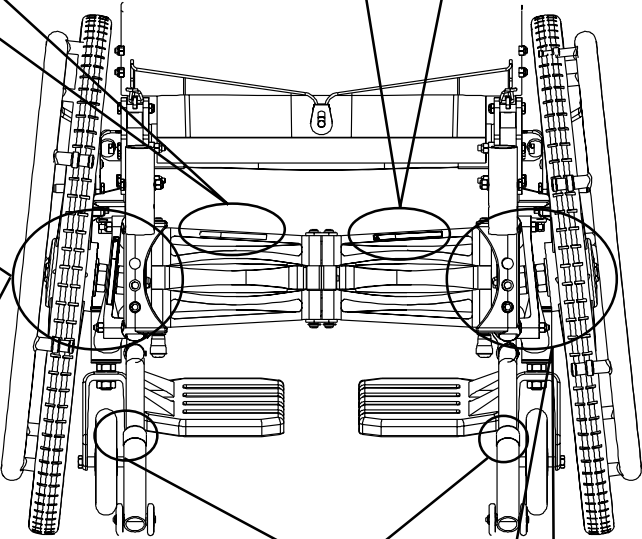
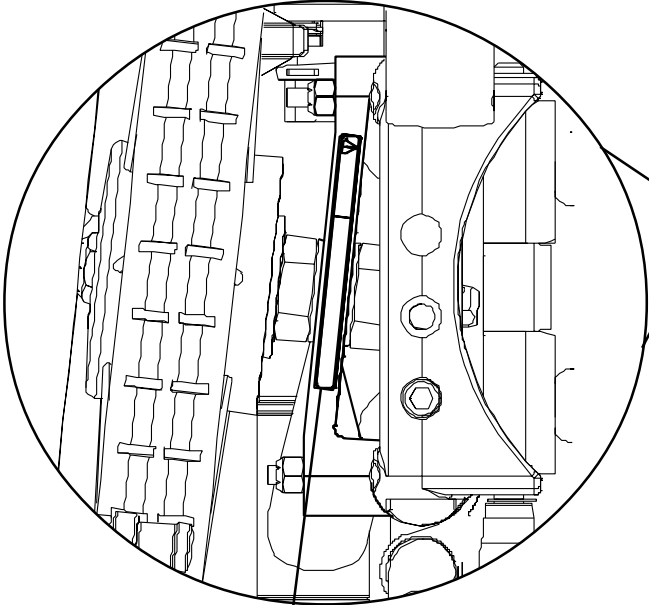
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WARNING LABEL LOCATIONS

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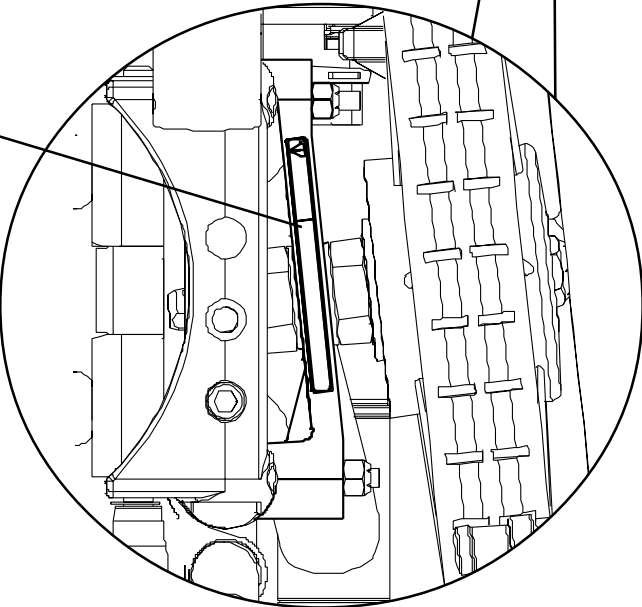
⚠ WARNING DO NOT step or stand on rear folding links. 1097061
Otherwise, injury or damage may occur. Rev.A(1)3/00

⚠ WARNING Pinch point. To unfold, grasp top edge ONLY.
1097049 Rev. A (1) 3/00



⚠ WARNING
DO NOT OPERATE
WITHOUT THE ANTI-TIP
TUBES INSTALLED.
REV. 5/98 P/N 60106X144

⚠ WARNING Detent balls should extend beyond the diameter
of the axle bushing for a positive lock. Keep
detent balls clean. REV.10/98 1026960



SPECIFICATIONS

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SPECIFICATIONS	SPYDER
Seat Width:	14 to 20-inches
Seat Depth:	14 to 18-inches
Seat-to-Floor:	<p>REAR Seat-to-Floor Range</p> <p>20-inch rear wheels - 14-1/4 to 18-1/4-inches</p> <p>22-inch rear wheels - 14-1/2 to 19-inches</p> <p>24-inch rear wheels and 559 rear wheels - 15-1/2 to 20-inches</p> <p>26-inch rear wheels - 16-1/2 to 20-inches</p> <p>FRONT Seat-to-Floor Range</p> <p>3-inch Front Casters - 16-3/4 to 17-1/4-inches</p> <p>5-inch Front Casters - 17 to 19-inches</p> <p>6-inch Front Casters - 18 to 19-1/2-inches</p> <p>8-inch Front Casters - 20-inches</p>
Back Height:	<p>Push Handles - 10° bend - 16-18-inches and 20-inches</p> <p>Sportster - No Push Handles - 12-14-inches</p> <p>Straight with Push Handles - 12-18-inches</p>
Footrest:	60°, 70°, 90° - Swingaway, Tapered, Non-Tapered, Elevating Legrest, Adjustable Angle Flip-up Footplates, Composite Footplates
Rear Axle:	Quick-Release, Quad-Release
Rear Wheels:	<p>20, 22, 24-inch Composite Wheels</p> <p>22, 24, 26-inch Spoke Wheels</p> <p>24, 26-inch Hi-Performance Spoke Wheels</p> <p>559 High Performance/Turbo Tire</p> <p>OPTIONAL - 24, 26-inch Continental Tires, 22, 26-inch Pneumatic Tires, Flat Free Inserts</p>
Handrims:	Aluminum Anodized, Plastic Coated, Black Plastic Coated, Vertical/Oblique Projection Plastic Coated, Spoke Guards
Wheel Locks:	High Mount Pull to Lock (Standard), Wheel Lock Extensions, Hill Holder, Undermount Wheel Lock
Caster Size:	3, 5, 6 and 8-inch (Urethane or Pneumatic), Precision Sealed Bearings Flat Free Inserts
Seat Cushion:	2 or 3-inch (Optional)
Back Upholstery:	Black Nylon (Optional), Adjustable Back Upholstery (Standard)
Weight:	29.6 lbs. - with Rear Wheels 20.4 lbs. - without Rear Wheels
Shipping Weight (approx.):*	44 lbs.

*14-inch Seat Frame with complete package.

<i>This Procedure includes the following:</i>
<i>Stability</i>
<i>Operating Information</i>
<i>Tire Pressure</i>
<i>Weight Training</i>
<i>Weight Limitation</i>
<i>Safety/Handling of Wheelchairs</i>

STABILITY

STABILITY WARNINGS

The seat dump, back angle, seating system, caster size and position, rear wheel size and position, anti-tippers, as well as the user condition directly relate to the stability of the wheelchair. Any change to one (1) or any combination of the nine (9) may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician **ONLY**.

	Seat Dump	Back Angle	Seating System	Caster Size	Caster Position	Rear Wheel Size	Rear Wheel Position	Anti-Tippers	User Condition
Seat Dump	●		✓						✓
Back Angle		●	✓						✓
Seating System	✓	✓	●						✓
Caster Size				●	✓	✓	✓	✓	✓
Caster Position					●	✓	✓	✓	✓
Rear Wheel Size				✓	✓	●	✓	✓	✓
Rear Wheel Position				✓	✓	✓	●	✓	✓
User Condition	✓	✓	✓	✓	✓	✓	✓	✓	●

NOTE: When changes to the left hand column occur, follow across the chart and refer to the ✓ procedure to maintain the proper stability, safety and handling of the wheelchair.

NOTE: Additional adjustments may be needed according to the wheelchair type. Refer to the wheelchair owner's manual for these procedures.

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.

OPERATING INFORMATION

GENERAL WARNINGS

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

Invacare designed this wheelchair to be used with a seat cushion. DO NOT operate the wheelchair without a seat cushion.

To determine and establish your particular safety limits, practice bending, reaching and transferring activities in several combinations in the presence of a qualified healthcare professional BEFORE attempting active use of the wheelchair.

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

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

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

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

DO NOT tip the wheelchair onto the rear wheels without assistance.

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

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

Before attempting to transfer in or out of the wheelchair, every precaution should be taken to reduce the gap distance. Turn both casters toward the object you are transferring onto. When transferring to and from the wheelchair, ALWAYS ENGAGE BOTH WHEEL LOCKS.

DO NOT operate on roads, streets or highways.

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

NEVER leave the wheelchair unattended at any time, especially 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 use parts, accessories, or adapters other than those authorized by Invacare.

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.

DO NOT stand on the frame of the wheelchair.

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

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

GENERAL WARNINGS (CONTINUED)

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.

TIRE PRESSURE

DO NOT use your wheelchair unless it has the proper tire pressure (p.s.i.). DO NOT over-inflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm.

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

WEIGHT TRAINING

Invacare DOES NOT recommend the use of its wheelchairs as a weight training apparatus. Invacare wheelchairs have NOT been designed or tested as a seat for any kind of weight training. If occupant uses said wheelchair as a weight training apparatus, Invacare shall NOT be liable for bodily injury and the warranty will be voided immediately.

WEIGHT LIMITATION

The Invacare Spyder has a weight limitation of 250 lbs. (113.5 kg.).

SAFETY/HANDLING OF WHEELCHAIRS

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

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

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

Stability And Balance

WARNING

ALWAYS wear your seat positioning strap. Inasmuch as the SEAT POSITIONING 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.

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

To assure stability and proper operation of your wheelchair, you must at all times wear your seat positioning strap and maintain proper balance. Your wheelchair has been designed to remain upright and stable during normal daily activities as long as you do not move beyond the center of gravity.

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

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

Coping With Everyday Obstacles

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

A Note To Wheelchair Assistants

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

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.

Also, be aware of any removable (detachable) parts. These must **NEVER** be used for hand-hold or 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.

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.

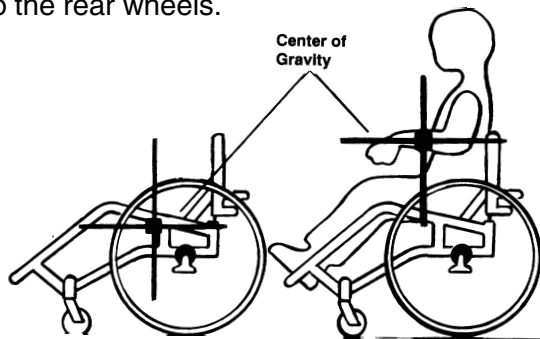
The seat dump, back angle, seating system, caster size and position, rear wheel size and position, anti-tippers, as well as the user condition directly relate to the stability of the wheelchair. Any change to one (1) or any combination of the nine (9) may cause the wheelchair to decrease in stability. These adjustments **MUST** be performed by a qualified technician **ONLY**.

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

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

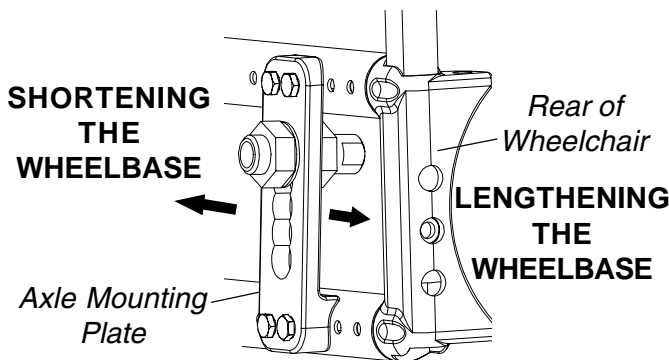
LENGTHENING THE WHEELBASE will increase the stability and maintain standard maneuverability of the wheelchair.

SHORTENING THE WHEELBASE will increase the maneuverability and distribute additional weight onto the rear wheels.



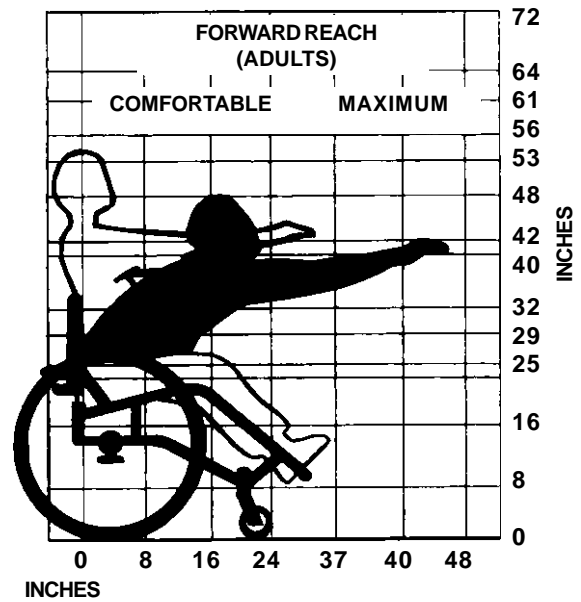
Example	46%	54%	103 lbs.	130 lbs.
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Functional Reach From a Wheelchair

The approximate reach-limit values shown in the accompanying graph were derived on the basis of a sample of 91 male and 36 female wheelchair users. Note the difference between the maximum and the comfortable reach limits, a subjective but important consideration in design.

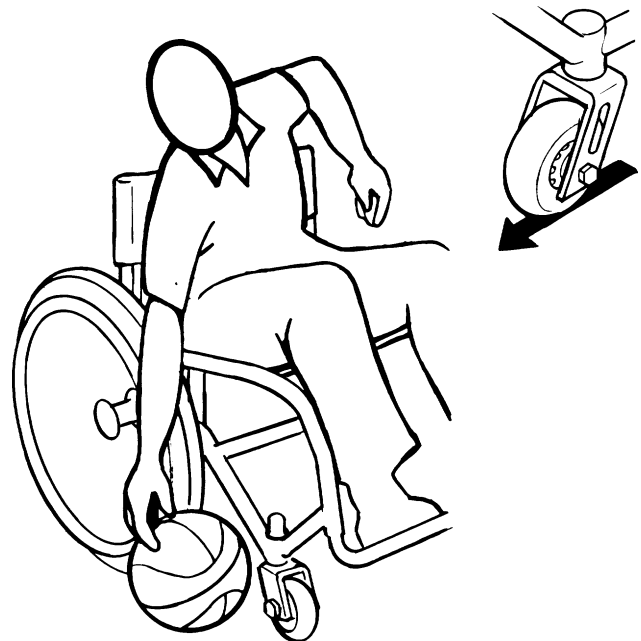


REACHING, LEANING AND BENDING - FORWARD.

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

WARNING

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



REACHING, LEANING - BACKWARDS.

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.



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

Tilting

WARNING

DO NOT tilt the wheelchair without assistance.
DO NOT step or stand on rear folding links. Otherwise, injury or damage may occur.

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

TILTING - CURBS.

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

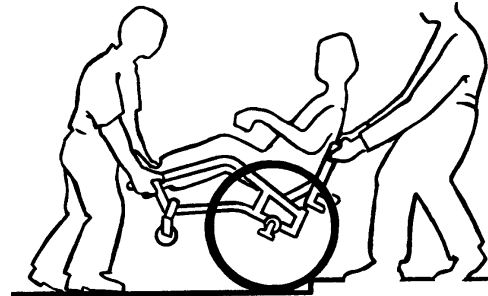
Unless the first assistant has exceptional upper body strength, it is recommended that two (2) assistants perform this operation. The second assistant should be positioned at the front of the wheelchair lifting upward on a non-removable (non-detachable) part of the wheelchair frame when lifting the wheelchair and stabilizing the wheelchair when the wheelchair is being lowered to the ground.

The first assistant should stand on the sidewalk and turn the wheelchair so that the rear wheels are against the curb. The wheelchair should be tilted back to the balance point and, in one continuous upward 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.

WARNING

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

Roll the wheelchair backward and **SLOWLY** lower the wheelchair in one continuous movement. DO NOT let the wheelchair drop the last few inches to the ground. This could result in injury to the occupant.



Stairways

WARNING

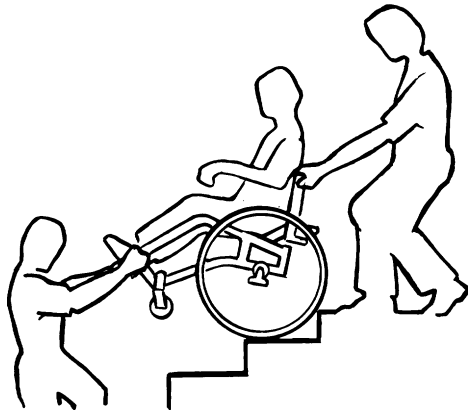
ALWAYS wear your seat positioning strap. Inasmuch as the SEAT POSITIONING STRAP is an option on this wheelchair (You may order with or without the seat positioning strap), Invacare strongly recommends ordering the seat positioning strap as an additional safeguard for the wheelchair user.

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 (2) assistants and making thorough preparations. Make sure to use ONLY secure, non-detachable parts for hand-held supports.

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

1. After the wheelchair has been tilted back to the balance point, one assistant (in the rear) backs the wheelchair up against the first step, while securely grasping a non-removable (non-detachable) part of the wheelchair for leverage.
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 (1) 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.



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

Transferring To And From Other Seats

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

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

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



Position the wheelchair as close as possible along side the seat to which you are transferring, with the front casters parallel to it. Engage wheel locks. Shift body weight into seat with transfer.

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

This Procedure includes the following:
Safety Inspection Checklist
Troubleshooting
Maintenance/Transport

NOTE: Every six (6) months 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.

SAFETY INSPECTION CHECKLIST

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

ITEM	INITIALLY	INSPECT/ ADJUST WEEKLY	INSPECT/ ADJUST MONTHLY	INSPECT/ ADJUST PERIODICALLY
GENERAL - TROUBLESHOOTING Wheelchair rolls straight (no excessive drag or pull to one side). Inspect folding front strap for wear and damage.	X X	X		X
SEAT AND BACK UPHOLSTERY - PROCEDURE 4 Inspect for rips or excessive sagging. Inspect fastening flaps to ensure they securely latch. Inspect back release cord for wear.	X X X	X	X	X
WHEEL LOCKS - PROCEDURE 7 Do not interfere with tires when rolling. Pivot points free of wear and looseness. Wheel locks easy to engage.	X X X		X X	X
REAR WHEELS - PROCEDURE 7 Axle plate is securely tightened. Quick/Quad-release axles lock properly. No excessive side movement or binding when lifted /spun.	X X X	X	X	X X
HANDRIMS Inspect for signs of rough edges or peeling finish.	X			X
SPOKES Inspect for bent or broken spokes. All spokes uniformly tight.	X X	X X		
FRONT CASTERS Inspect wheel/fork assembly for proper tension by spinning caster; caster should come to a gradual stop. Loosen/tighten locknut if wheel wobbles noticeably or binds to a stop. Wheel bearings are clean and free of moisture. CAUTION: As with any vehicle, the wheels and tires should be checked periodically for cracks and wear, and should be replaced.	X X X	X	X X	X
TIRES Inspect for flat spots and wear. If pneumatic tires check for proper inflation. CAUTION: As with any vehicle, the wheels and tires should be checked periodically for cracks and wear, and should be replaced.	X X	X X		
CLEANING Clean upholstery and armrests. Inspect axles are free from dirt, lint, and debris.	X		X	X

INSPECTION

TROUBLESHOOTING

INSPECTION

CHAIR VEERS RIGHT	CHAIR VEERS LEFT	SLUGGISH TURN OR PERFORMANCE	CASTER FLUTTERS	SQUEAKS AND RATTLES	LOOSENESS IN CHAIR	CHAIR 3 WHEELS	SOLUTIONS
X	X	X	X			X	Check tires for correct and equal pressure.
		X	X	X	X		Check for loose stem nuts.
				X	X		Check spokes/nipples.
X	X		X			X	Check caster headtube angle.
X	X					X	Check that rear wheels are equally spaced away from seat frame (Procedure 7).

MAINTENANCE/TRANSPORTING

Maintenance Safety Precautions

WARNING

After ANY adjustments, repair or service and BEFORE use, make sure all attachment hardware is tightened securely - 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 your Invacare SPYDER, make sure all nuts and bolts are tight. Check all parts for damage or wear and replace. Check all parts for proper adjustment.
2. Keep quick/quad-release axles free of dirt and lint to ensure positive locking and proper operation. Refer to ADJUSTING QUICK-RELEASE AXLES or ADJUSTING QUAD-RELEASE AXLES in PROCEDURE 7 of this manual.
3. Oil quick-release axles at least once (1) a month (3-in-1 oil[®] or equivalent).

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

3-in-1 oil - Registered trademark of American Home Products Corporation.

Teflon - Registered trademark of E. I. Du Pont De Nemours and Company.

CAUTION

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

5. Check wheels and tires periodically for cracks and wear. If damaged, have them replaced by a qualified technician.
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 or damaged, have them tightened or replaced by a qualified technician.
8. Periodically adjust wheel locks in correlation to tire wear. Refer to REPLACING/ADJUSTING THE WHEEL LOCK in PROCEDURE 7 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.

Transporting the Invacare Spyder

1. Remove the seating system. Refer to seating system owner's manual.
2. Remove the footrests. (PROCEDURE 3).
3. Remove the arms. (PROCEDURE 6).
4. Fold down the back. (PROCEDURE 5).
5. Fold the wheelchair. (PROCEDURE 5).
6. Remove the rear wheels. (PROCEDURE 7).
7. After transporting, reverse STEPS 1-6 to prepare the wheelchair for use.

This Procedure includes the following:
Installing/Removing the Footrest(s)
Adjusting the Footrest Height
Installing/Adjusting Adjustable Angle Flip-Up Footplates
Impact Guards/Optional Calf Strap
Heel Loop Replacement

WARNING

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

INSTALLING/REMOVING THE FOOTREST(S) (FIGURE 1)

NOTE: Remove the footrests from the wheelchair by reversing this procedure.

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

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

4. Repeat this procedure for other footrest assembly.
5. To release the footrest, push the footrest release lever inward, rotate footrest outward.

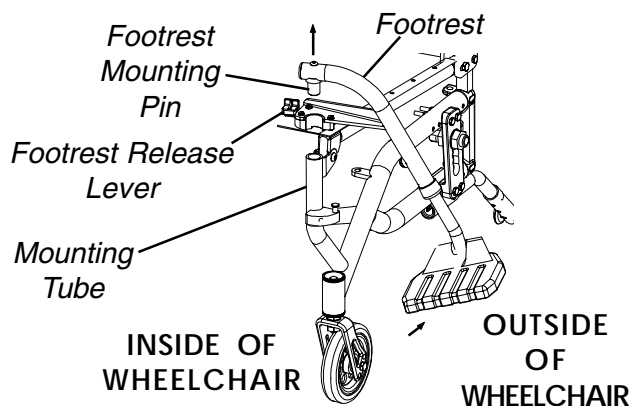


FIGURE 1 - INSTALLING/REMOVING THE FOOTREST(S)

ADJUSTING THE FOOTREST HEIGHT (FIGURE 2)

NOTE: Lay the assembly on a flat surface to simplify this procedure.

1. Remove the footrest from the wheelchair. Refer to INSTALLING/REMOVING THE FOOTREST(S) in this procedure of the manual.
2. Remove impact guards and/or calf strap, if necessary.
3. Remove the hex screw and covered washer and position the footrest assembly to a determined height.
4. Lineup the mounting hole in the footrest frame, reinsert the hex screw and covered washer; hand-tighten.
5. Tighten the hex screw and covered washer to 80-90 in./lbs.
6. Repeat this procedure for the other footrest.
7. Replace impact guards and/or calf strap, if necessary.

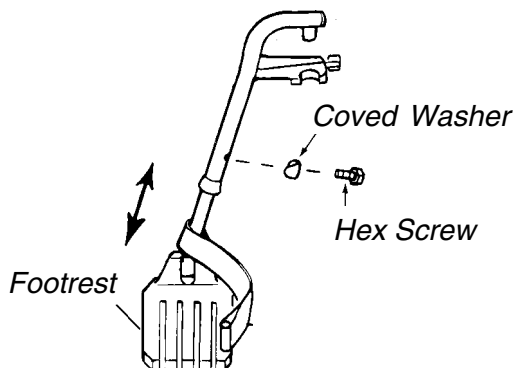


FIGURE 2 - ADJUSTING THE FOOTREST HEIGHT

INSTALLING/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.

Installing Hinge (FIGURE 3)

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

1. Position the adjustable angle flip-up footplate (footplate) hinge on the footrest support tube at the desired height.
2. Position the hardware on the footrest support as shown in FIGURE 3.

- Flip the footplate hinge to the UP position.

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

- Tighten the socket screw and locknut that secure the footplate hinge to the footrest support until the footplate hinge remains in the UP position.
- 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 1/4-turn.

NOTE: If the footplate's motion is too loose, tighten socket screw and locknut approximately 1/4-turn.

- Install the adjustable angle flip-up footplate. Refer to the following section of this procedure.

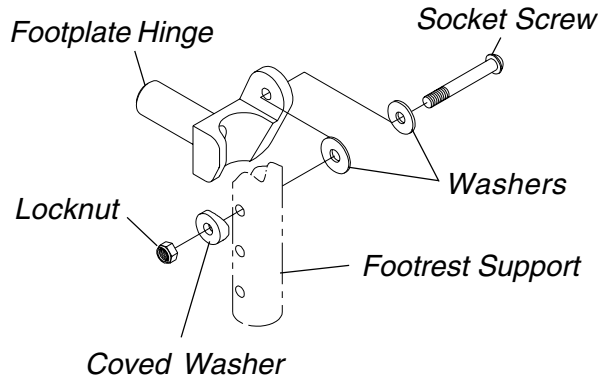


FIGURE 3 - INSTALLING HINGE

Installing Footplate (FIGURE 4)

- Slide the half clamp over the footplate hinge.
- Loosely tighten the two (2) flat screws that secure the footplate to the half clamp.
- Adjust the footplates to the necessary angle and depth for the user. Refer to the following sections of this procedure.

Depth Adjustment (FIGURE 4)

- Remove the two (2) flat screws, washers and locknuts that secure articulating footplate to the footplate hinge.

NOTE: Observe the angle of the articulating footplate for reinstallation.

- Move the articulating footplate to one (1) of four (4) mounting positions.

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

- Retighten the two (2) flat screws, washers and locknuts.

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

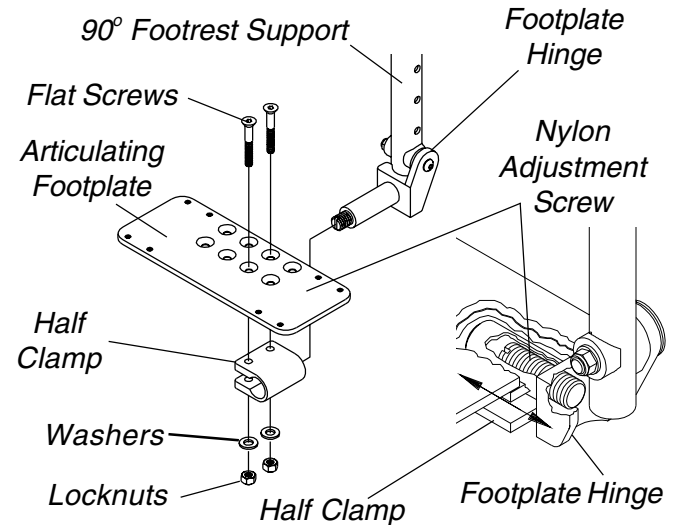


FIGURE 4 - INSTALLING FOOTPLATE/DEPTH ADJUSTMENT/ANGLE ADJUSTMENT/PERPENDICULAR AND/OR INVERSION/EVERSION ADJUSTMENT

Angle Adjustment (FIGURES 4 AND 5)

- Loosen, but do not remove the two (2) flat screws and locknuts that secure footplate to the footplate hinge.
- Position the articulating footplate to the necessary angle to accommodate the user.
- Retighten the two (2) flat screws and locknuts.

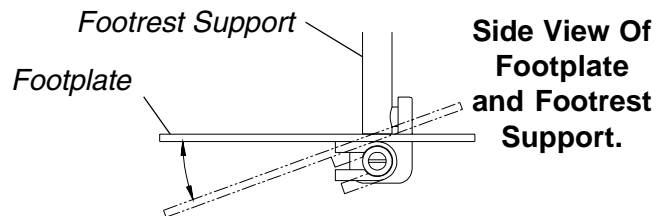


FIGURE 5 - ANGLE ADJUSTMENT

Perpendicular and/or Inversion/Eversion Adjustment (FIGURES 4 AND 6)

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

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

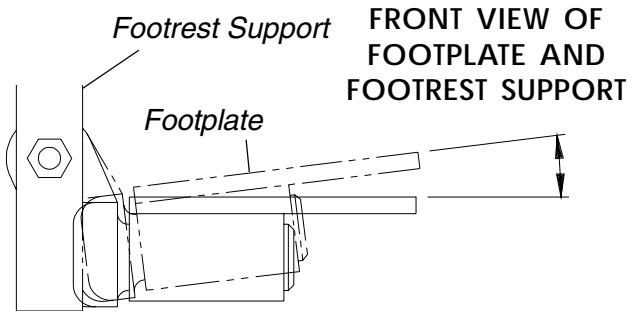


FIGURE 6 - PERPENDICULAR AND/OR INVERSION/EVERSION ADJUSTMENT

IMPACT GUARDS/OPTIONAL CALF STRAP (FIGURE 7)

1. Remove impact guard/calf strap from packaged container if not already secured to the footrest.
2. Secure the impact guards to the footrest frame as shown in FIGURE 7.
3. Secure the optional calf strap around the footrest frame (with the impact guards attached).

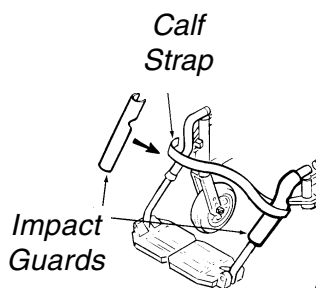


FIGURE 7 - IMPACT GUARDS/OPTIONAL CALF STRAP

HEEL LOOP REPLACEMENT (FIGURE 8)

Composite Footplates

1. Remove the hex screw and covered washer that secures the lower half of the footrest to the swingaway footrest assembly.
2. Remove the lower footrest assembly.
3. Remove the phillips screw and locknut that secure the heel loop to the footrest.
4. Slide heel loop over slide tube of footrest assembly.
5. Replace heel loop.
6. Reverse preceding steps to reassemble.

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

Adjustable Footplate

1. Remove the four (4) phillips screws and washers that secure the existing heel loop to the footplate.
2. Position the mounting holes of the new heel loop with the mounting holes in the adjustable footplate.
3. Secure the new heel loop to the footplate with the four (4) phillips screws and washers.

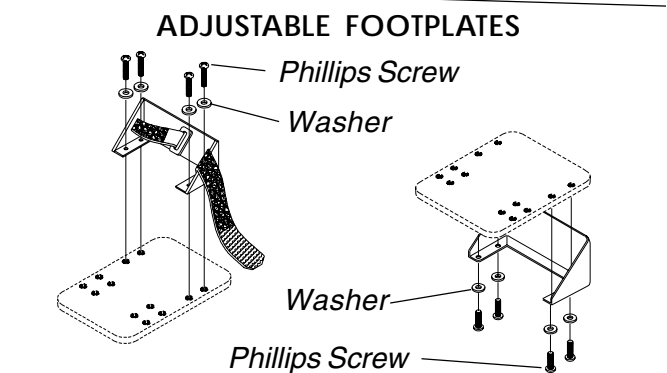
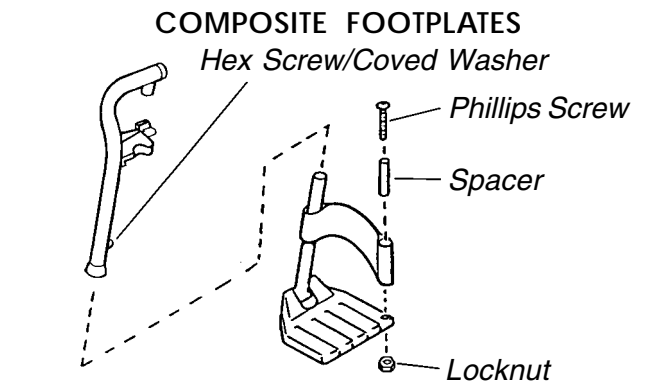


FIGURE 8 - HEEL LOOP REPLACEMENT

FRONT RIGGINGS

This Procedure includes the following:
Replacing Seat Upholstery
Installing Optional Fabric Clothing Guards
Installing/Removing Seat Positioning Strap
Installing/Removing Chest Positioning Strap

WARNING

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

REPLACING SEAT UPHOLSTERY (FIGURE 1)

1. Remove the seat cushion from the wheelchair.
2. Remove the phillips screws that secure the existing seat upholstery to the seat frame.
14 and 15-inch seat depth - Ten (10) screws.
16 and 17-inch seat depth - Twelve (12) screws.
18-inch seat depth - Fourteen (14) screws.
3. Remove the existing seat upholstery.
4. Position the NEW seat upholstery onto the seat rail, aligning the mounting holes of seat upholstery with the mounting holes on the seat rails.

NOTE: The fastening straps on the seat upholstery should face UP.

5. Install the phillips screws. Refer to STEP 2 for the correct number of phillips screws. Torque to 25-30 in./lbs.
6. If necessary, reinstall the seat cushion onto the wheelchair.

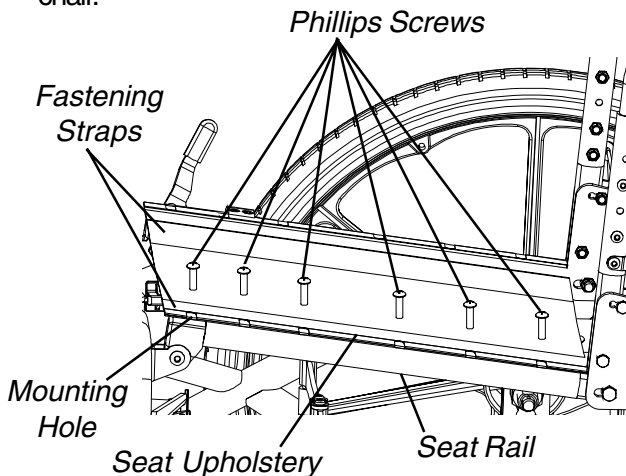


FIGURE 1 - REPLACING SEAT UPHOLSTERY

INSTALLING OPTIONAL FABRIC CLOTHING GUARDS (FIGURE 2)

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 (2) phillips 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 (2) phillips screws. Torque to 20-25 in./lbs.
7. Run the nylon cord evenly through the two (2) 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.

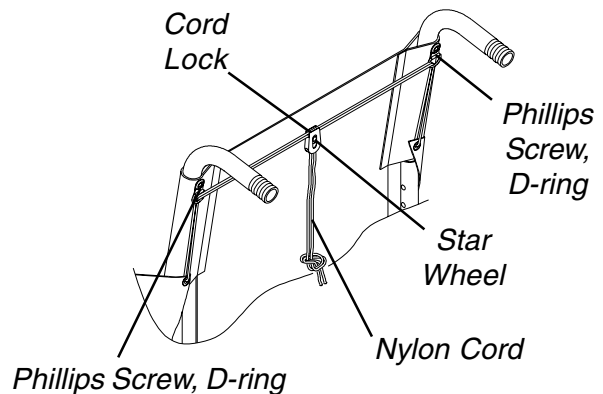
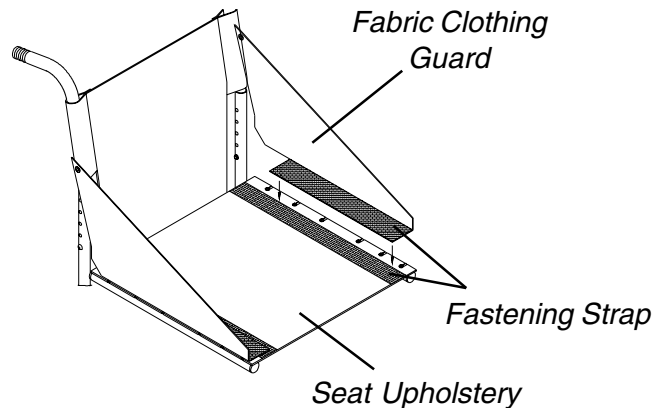


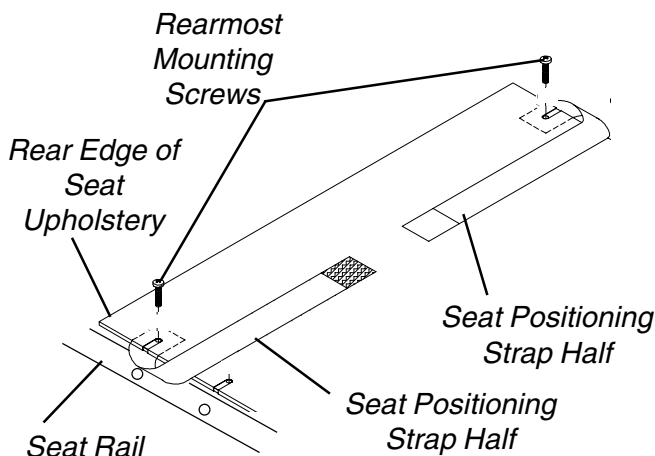
FIGURE 2 - INSTALLING OPTIONAL FABRIC CLOTHING GUARDS

INSTALLING/REMOVING SEAT POSITIONING STRAP (FIGURE 3)

1. Remove seat cushion from wheelchair, if necessary.
2. Remove the REARMOST mounting screws that secure the seat upholstery to the seat rail as shown in FIGURE 3.
3. Grasp the rear edge of the seat upholstery and lift up to expose the REARMOST mounting holes in seat rail.
4. Do one (1) of the following:
 - A. To install the seat positioning strap, proceed to STEP 5.
 - B. Remove the EXISTING seat positioning strap from the wheelchair.
5. Secure the two (2) halves of the NEW seat positioning strap together.
6. Position one (1) 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 (1) end of the NEW seat positioning strap.
8. Secure the NEW seat positioning straps and seat upholstery to the seat rail with the two (2) 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.



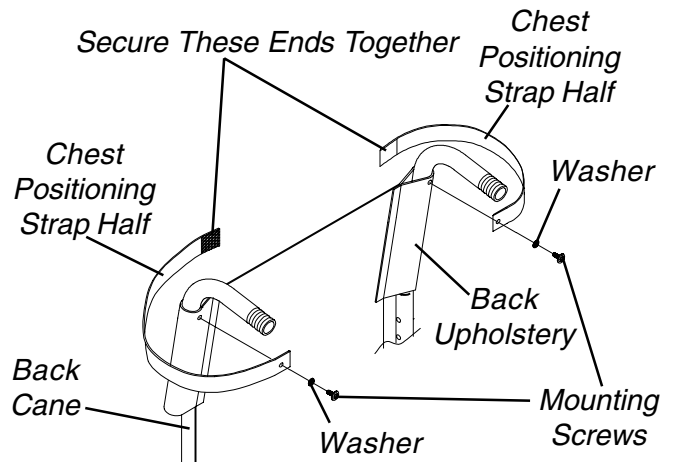
NOTE: Only Hook and Loop style seat positioning strap shown. Auto style seat positioning strap attaches the same way.

FIGURE 3 - INSTALLING/REMOVING SEAT POSITIONING STRAP

INSTALLING/REMOVING CHEST POSITIONING STRAP (FIGURE 4)

1. Remove the two (2) mounting screws and washers securing the back upholstery to the back cane.
2. Do one (1) of the following:
 - A. To install the chest positioning strap, proceed to STEP 3.
 - B. Remove the two (2) existing chest positioning strap halves from the back upholstery.
3. Secure the two (2) halves of the NEW chest positioning strap together.
4. Align the mounting hole on one (1) 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 (1) mounting screw and washer. Torque to 20-25 in./lbs.
6. Repeat STEPS 4-5 for opposite side of NEW chest positioning strap.

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



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

FIGURE 4 - INSTALLING/REMOVING CHEST POSITIONING STRAP

This Procedure includes the following:
Folding/Unfolding the Wheelchair
Using/Storing the Strap
Folding/Unfolding the Back
Adjusting the Back Release Cord Tension
Adjusting the Back Height

WARNING

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

FOLDING/UNFOLDING THE WHEELCHAIR (FIGURE 1)

Unfolding (DETAILS "A", "B" and "C")

WARNING

When unfolding the wheelchair, grasp the TOP edge ONLY of the rear hinge (DETAIL "B") - otherwise, injury may occur.

1. Push the two (2) side frames apart.
2. Perform one (1) of the following:
 - A. **FROM REAR** - Grasp TOP of REAR hinge, and pull rearward until folding frame clicks and locks into place.
 - B. **FROM FRONT** - Push CENTER of folding frame REARWARD until folding frame clicks and locks into place.
3. Examine the detent pin under the wheelchair to verify that the folding frame is securely locked (DETAIL "C")
 - A. **DETENT PIN IN** - The frame is securely locked and the wheelchair is ready for use.
 - B. **DETENT PIN OUT** - The frame is not securely locked. Repeat STEPS 2-3.

WARNING

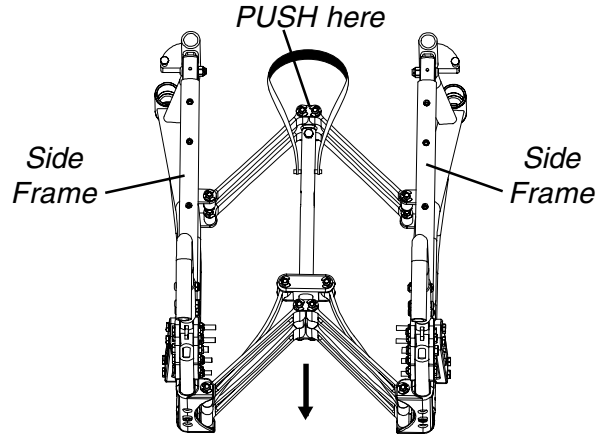
Ensure the folding frame clicks and locks into place. If folding frame WILL NOT lock, DO NOT use. Contact a qualified technician. Otherwise, injury or damage may occur.

Folding (DETAIL "D")

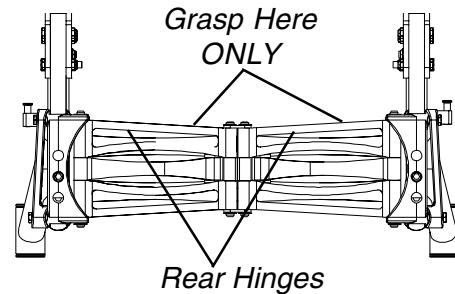
NOTE: For easier access to front strap it may be necessary to tip the wheelchair forward or rearward.

1. Pull front strap to disengage folding frame.
2. Push side frames together.
3. Secure side frames together with strap, if desired. Refer to USING THE STRAP in this procedure of the manual.

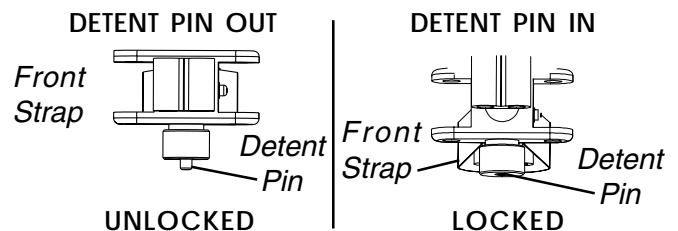
DETAIL "A" - UNFOLDING
TOP VIEW OF HALF-FOLDED WHEELCHAIR FRAME



DETAIL "B" - UNFOLDING
REAR VIEW OF WHEELCHAIR FRAME



DETAIL "C" - UNFOLDING
BOTTOM VIEW OF FOLDING FRAME



DETAIL "D" - FOLDING

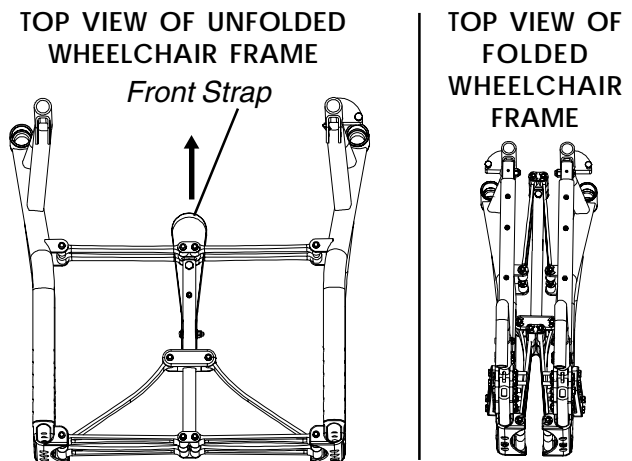


FIGURE 1 - FOLDING/UNFOLDING THE WHEELCHAIR

**USING/STORING THE STRAP
(FIGURE 2)**

WARNING

DO NOT use strap without a seat cushion. The strap MUST be secured under seat cushion when operating the wheelchair. Otherwise, strap may become entangled in rear wheels and injury or damage may occur.

DO NOT use the strap to carry or lift the wheelchair. Otherwise, injury or damage may occur.

The strap is provided to secure the folded wheelchair during transport.

Using the Strap

1. Remove the seat cushion from the wheelchair.

NOTE: Disconnect the back upholstery cover from the seat upholstery if adjustable tension back upholstery is installed.

2. Pull the strap UP to remove from the fastening strips on the seat upholstery.
3. Fold the wheelchair. Refer to **FOLDING/UNFOLDING THE WHEELCHAIR** in this procedure of the manual.
4. Wrap the strap around the seat rails of the wheelchair as shown in FIGURE 2.
5. Press the hook fastening strip at the end of the strap firmly against the loop fastening strip on the strap to secure the wheelchair.

Storing the Strap

1. Unfold the wheelchair. Refer to **FOLDING/UNFOLDING THE WHEELCHAIR** in this procedure of the manual.
2. Secure the loop fastening strip of the strap to the fastening strips on the seat upholstery as shown in FIGURE 2.

NOTE: Secure the back upholstery cover to the seat upholstery if adjustable tension back upholstery is installed.

3. Install the seat cushion.

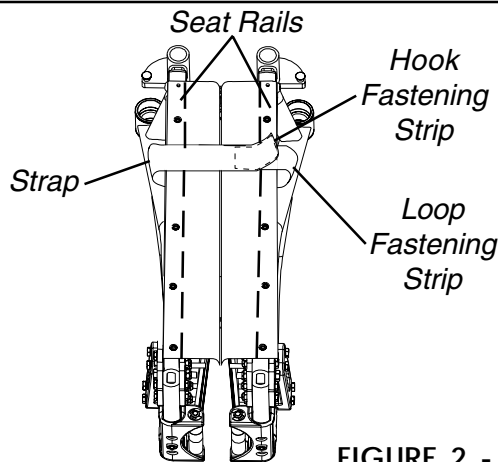


FIGURE 2 - USING/STORING THE STRAP

**FOLDING/UNFOLDING THE BACK
(FIGURE 3)**

WARNING

The back MUST be locked securely in place BEFORE using the wheelchair. Otherwise, injury or damage may occur.

Unfolding

1. Push/pull the back canes UP towards REAR of wheelchair until the back locks in place.
2. Check to make sure the back is securely locked in place.

Folding

1. Pull the back release cord UP and push the back canes DOWN towards the seat upholstery.

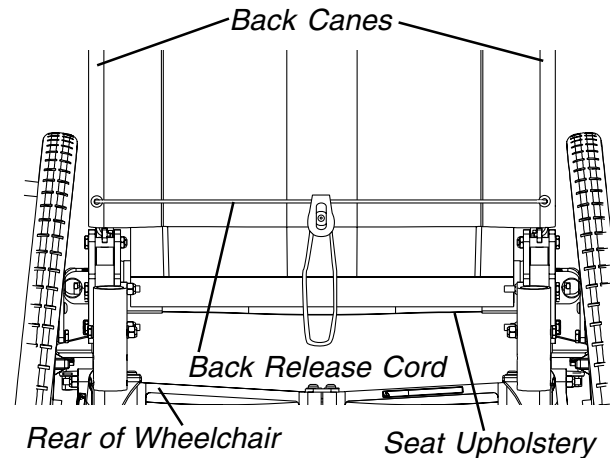
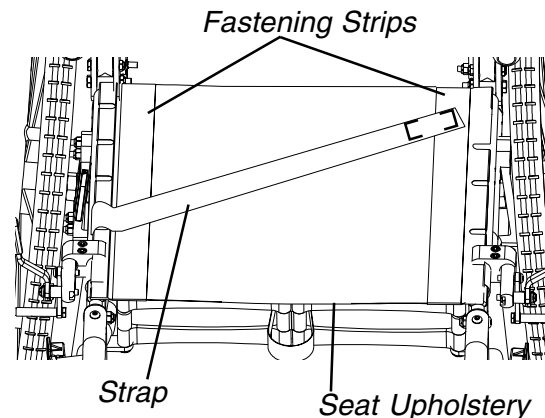


FIGURE 3 - FOLDING/UNFOLDING THE BACK



ADJUSTING THE BACK RELEASE CORD TENSION (FIGURE 4)

1. Grasp and hold the excess back release cord.
2. Loosen the cord lock by pressing the star wheel DOWN.
3. Move the cord lock along the back release cord until the desired tension is achieved.
4. Secure the cord lock by pressing the star wheel UP.

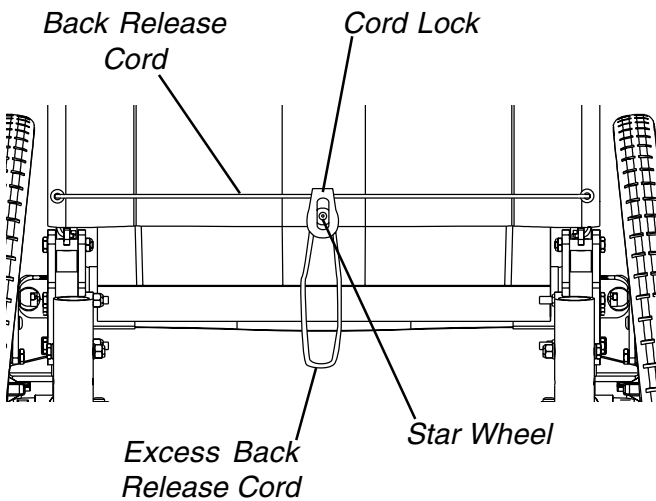


FIGURE 4 - ADJUSTING THE BACK RELEASE CORD TENSION

ADJUSTING THE BACK HEIGHT (FIGURE 5)

NOTE: There are four (4) height ranges of back canes available: 12-14-inches (straight with or without push handles), 14-16-inches (straight), 16-18-inches (straight and 10° bend with push handles) and 20-inches (10° bend with push handles).

NOTE: The back height of the 20-inch back cane is not adjustable. The following steps refer to 14-18-inch, 12-14-inch and 16-18-inch back canes only.

1. Remove the two (2) back height adjustment screws and locknuts that secure the two (2) back canes to the wheelchair frame.
2. Reposition the back canes to the desired adjustment hole:

NOTE: The 12-14-inch back has a receiver tube with only three (3) holes. The 14-16, 16-18, and 20-inch back canes have receiver tubes with five (5) holes. A new receiver tube is necessary when changing to/from 12-14-inch back canes. Contact a qualified technician.

NOTE: NEW back upholstery is required when changing back canes. Contact a qualified technician.

Original Back Height (in inches)

◆ HOLE #	12-14	14-16	16-18	20
1	12	14	X	20
2	13	15	16	X
3	14	16	17	X
4	N/A	X	18	X
5	N/A	X	X	X

◆Holes numbered from bottom to top for reference only. (There are no numbers on the receiver tubes.)

X - DO NOT use these adjustment holes.

3. Adjust the back release cord tension. Refer to ADJUSTING BACK RELEASE CORD TENSION in this procedure of the manual.
4. Reinstall the two (2) back height adjustment screws and locknuts that secure the back canes to the wheelchair frame. Torque to 80-90 in./lbs.

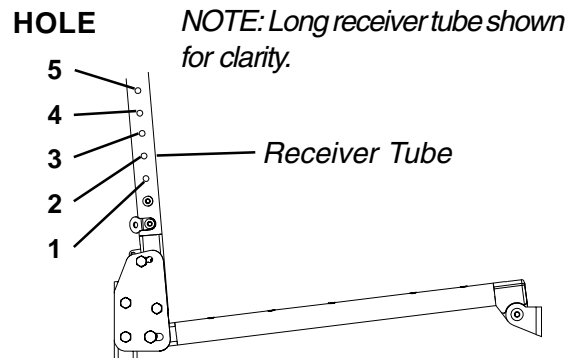
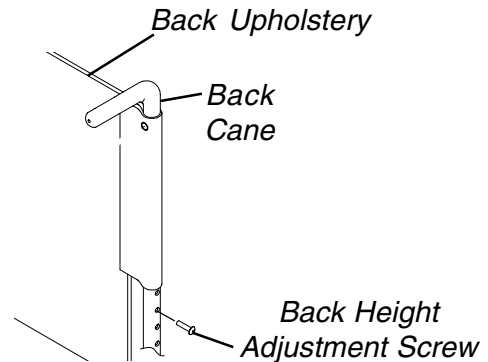


FIGURE 5 - ADJUSTING THE BACK HEIGHT

This Procedure includes the following:

Adjusting Half Arm Height

Installing/Removing T-Arms

Adjusting the T-Arms

Adjusting T-Arm Transfer Assists and/or Side Guards

Installing Optional Rigid Clothing Guards

WARNING

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

ADJUSTING HALF ARM HEIGHT (FIGURE 1)

1. Pull up on the half arm to remove from the arm socket.
2. Remove the hex screw and locknut mounted in the arm socket that determine the half arm height.
3. Reposition hex screw to one (1) of three (3) positions in the arm socket depending on the desired height.
4. Secure the hex screw to the arm socket with the locknut. Torque to 70-80 in./lbs.
5. Reinstall the half arm into the arm socket.
6. Repeat STEPS 1-5 for the opposite side, if necessary.

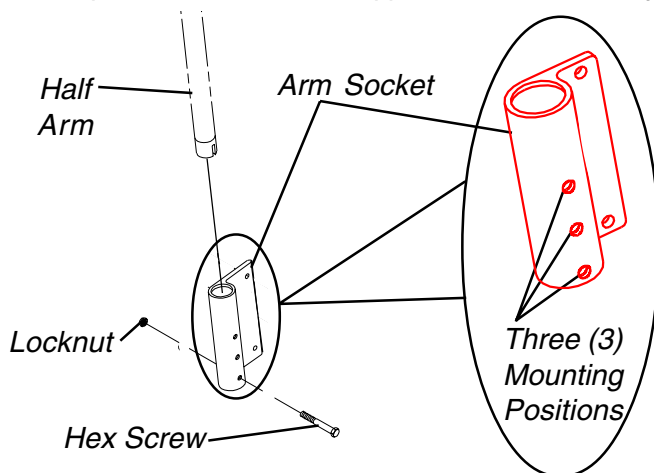


FIGURE 1 - ADJUSTING HALF ARM HEIGHT

INSTALLING/REMOVING T-ARMS (FIGURE 2)

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 THE T-ARMS in this procedure of the manual.

4. Adjust the T-arm for desired height, width and depth, if necessary. Refer to ADJUSTING THE T-ARMS in this procedure of the manual.
5. Repeat STEPS 1-4 for opposite side of wheelchair.

Removing T-Arms

1. Press in on the locking lever 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 THE T-ARMS in this procedure of the manual.

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

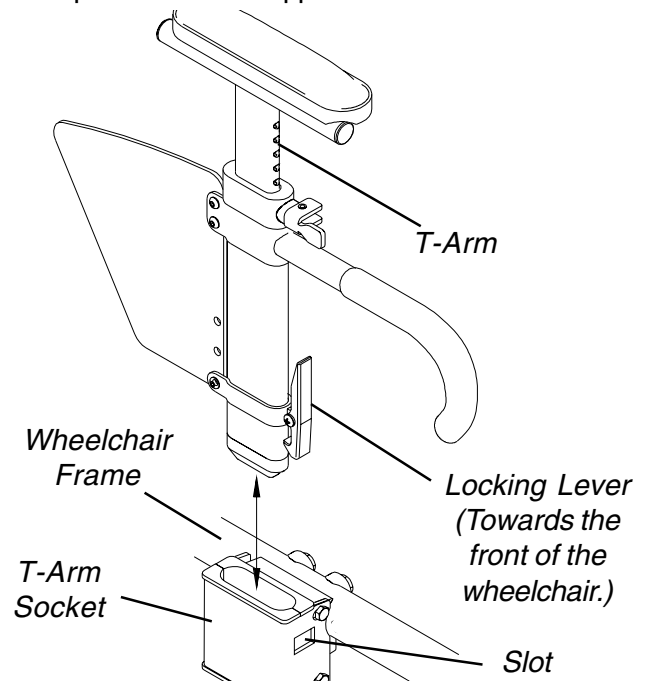


FIGURE 2 - INSTALLING/REMOVING T- ARMS

ADJUSTING THE T-ARMS

Adjusting T-Arm Height (FIGURE 3)

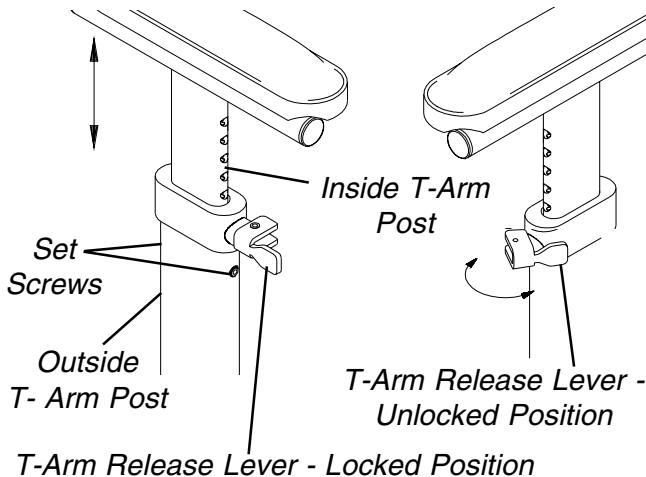
1. Unlock the T-arm by flipping the T-arm release lever towards the inside of the wheelchair.

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

2. Slide the T-arm to one (1) of:
 - A. **Low Height T-Arms** - Nine (9) positions.
 - B. **High Height T-Arms** - Seven (7) positions.

NOTE: If the inside T-arm post does not slide up and down in the outside T-arm post as desired, perform one (1) of the following:

- A. **Tighten** - Tightening the set screws on the outside T-arm post **will make it harder** to move the inside T-arm post up and down.
 - B. **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.



T-Arm Release Lever - Locked Position

FIGURE 3 - ADJUSTING T-ARM HEIGHT

Adjusting T-Arm Width (FIGURE 4)

1. Remove the two (2) phillips 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 (2) phillips screws. Tighten securely.
4. Repeat for the opposite side, if necessary.

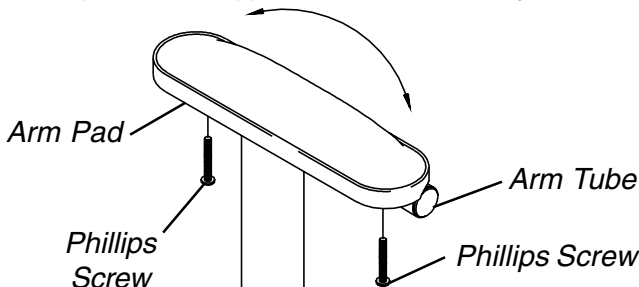


FIGURE 4 - ADJUSTING T-ARM WIDTH

Adjusting T-Arm Depth (FIGURE 5)

1. Remove the two (2) phillips screws that secure the arm pad to the arm tube.
2. Remove the two (2) socket screws that secure the arm tube to the T-arm post.
3. Reposition the arm tube on the T-arm post:
 - A. **Desk Length Arms** - to one (1) of three (3) positions depending on the desired arm pad depth.
 - B. **Full Length Arms** - to one (1) of five (5) positions depending on the desired arm pad depth.

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

4. Re-secure the arm tube to the T-arm post with the two (2) socket screws. Torque to 60-70 in./lbs.
5. Reattach the arm pad to the arm tube with the two (2) phillips screws. Tighten securely.
6. Repeat for the opposite side, if necessary.

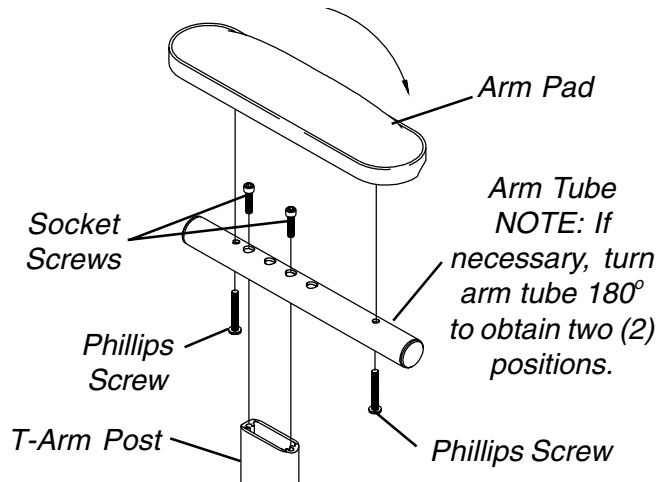


FIGURE 5 - ADJUSTING T-ARM DEPTH

Adjusting T-Arm Sockets (FIGURE 6)

1. Remove the rear wheels from the wheelchair, if necessary. Refer to INSTALLING/REMOVING REAR WHEELS in PROCEDURE 7 of this manual.
2. Loosen, but do not remove the four (4) hex screws and washers that secure T-arm socket to T-arm clamp.

NOTE: The T-arm socket will disassemble if the four (4) hex screws and washers are removed.

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 the T-arm clamp together until the socket is flush with the T-arm.

- While holding the T-arm socket and the T-arm clamp together, tighten the four (4) hex screws and washers. Torque to 80-90 in./lbs.
- Press in on the locking lever and lift the T-arm straight up and out of the T-arm socket.
- Repeat STEPS 3-6, if necessary until the T-arm slides in the T-arm socket as desired.
- If necessary, install rear wheels. Refer to INSTALLING/REMOVING REAR WHEELS in PROCEDURE 7 of this manual.

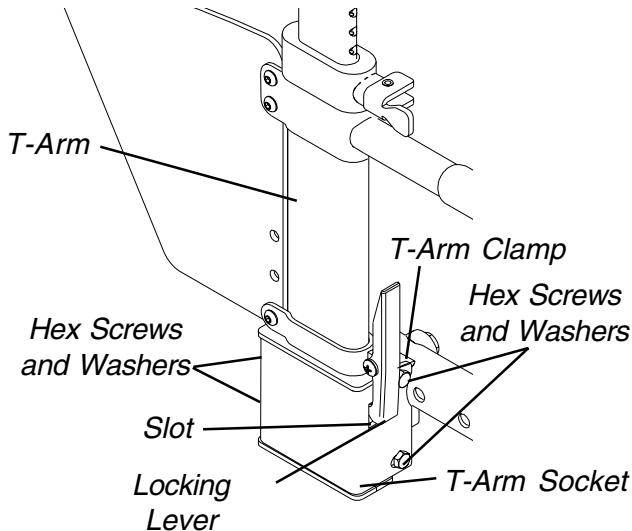


FIGURE 6 - ADJUSTING T-ARM SOCKETS

ADJUSTING T-ARM TRANSFER ASSISTS AND/OR SIDE GUARDS (FIGURE 7)

- Remove the T-arm from the wheelchair. Refer to INSTALLING/REMOVING T-ARMS in this procedure of the manual.
- Remove the two (2) socket screws that secure the side guard to the bottom clamp.

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

- Perform one (1) of the following:
 - SMALL SIDE GUARDS** - Move the bottom clamp up one (1) of two (2) mounting positions in the side guard.
 - LARGE SIDE GUARDS** - Move the bottom clamp up one (1) of three (3) mounting positions in the side guard.
- Re-secure the side guard to the bottom clamp with the two (2) socket screws. Torque to 80-90 in./lbs.
- Install the T-arm onto the wheelchair. Refer to INSTALLING/REMOVING T-ARMS in this procedure of the manual.

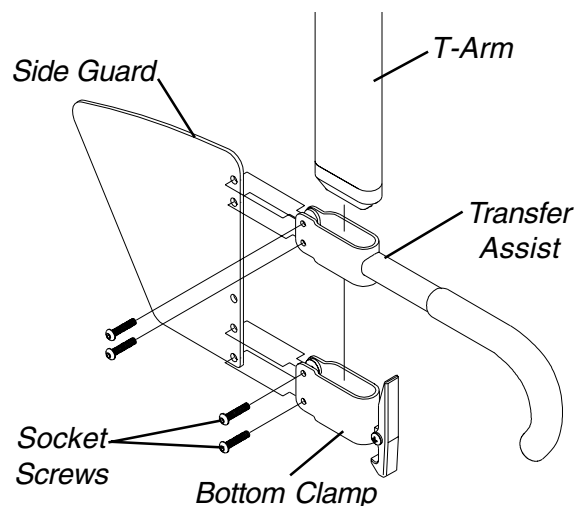


FIGURE 7 - ADJUSTING T-ARM TRANSFER ASSISTS AND/OR SIDE GUARDS

INSTALLING OPTIONAL RIGID CLOTHING GUARDS (FIGURE 8)

- Position the threaded and unthreaded half clamps on inside and outside of the wheelchair frame.

NOTE: Make sure the threaded half clamp is on the outside of the wheelchair frame.

- Loosely install the washer and socket screw into the unthreaded and threaded half clamps.
- Determine the desired rigid clothing guard position and tighten the two (2) half clamps together with the socket screw. Torque to 110-120 in./lbs.
- Insert the rigid clothing guard into the slot on the threaded half clamp as shown in FIGURE 8.
- Repeat STEPS 1-4 for the opposite rigid side guard.

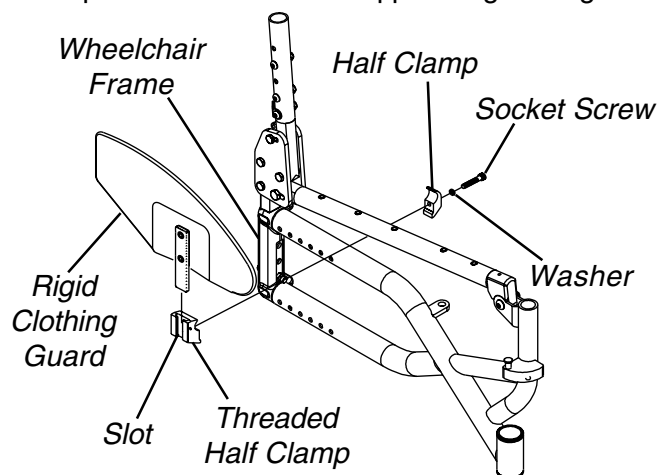


FIGURE 8 - INSTALLING OPTIONAL RIGID CLOTHING GUARDS

- This Procedure includes the following:***
- Removing/Installing Rear Wheels***
 - Adjusting Quick-Release Axles***
 - Installing Quad-Release Axles***
 - Adjusting Quad-Release Handles***
 - Repairing/Replacing Pneumatic Caster or Rear Wheel Tire/Tube***
 - Replacing/Adjusting the Wheel Lock***
 - Installing/Adjusting the Anti-tippers***

WARNING

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

REMOVING/INSTALLING REAR WHEELS (FIGURE 1)

1. Push in the tip of the quick-release axle (with wheel) and pull the axle out through the opening in the center of the rear wheel.
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 detent balls of the quick/quad-release axle are fully released BEFORE operating wheelchair.

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

Keep detent balls clean.

5. If the detent balls 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 motion, refer to ADJUSTING THE QUICK-RELEASE AXLE or ADJUSTING THE QUAD-RELEASE HANDLE in this procedure of the manual.

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

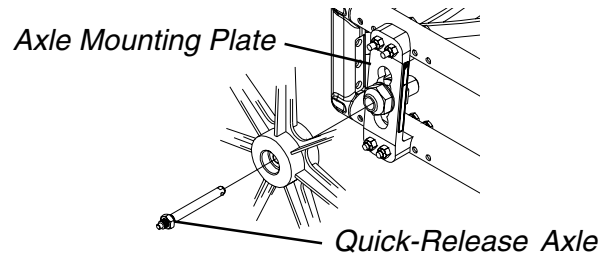


FIGURE 1 - REMOVING/INSTALLING REAR WHEELS

ADJUSTING QUICK-RELEASE AXLES (FIGURE 2)

1. Remove rear wheel and quick/quad-release axle from the wheelchair. Refer to REMOVING/INSTALLING REAR WHEELS in this procedure of the manual.
2. Depress detent pin in the quick-release axle and slide axle through the wheel hub.
3. Release detent pin ensuring that the detent balls 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 detent balls of the quick-release axle are fully released BEFORE operating wheelchair.

Keep detent balls clean.

5. Reinstall rear wheel onto the wheelchair. Refer to REMOVING/INSTALLING REAR WHEELS in this procedure of the manual.

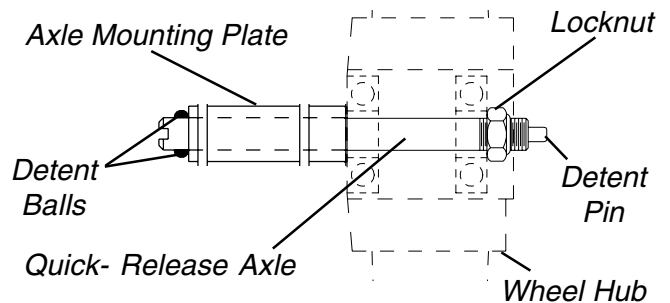


FIGURE 2- ADJUSTING QUICK-RELEASE AXLES

INSTALLING QUAD-RELEASE AXLES (FIGURE 3)

1. Remove rear wheel and the existing quick-release axle from the wheelchair.
2. Remove existing quick-release axle from rear wheel hub.
3. Insert new quad-release axle through rear wheel hub.
4. Slide locking collar onto quad-release axle until snug against rear wheel and tighten securely with allen screw.
5. Reinstall rear wheel and the quad-release axle onto the wheelchair.

WARNING

Make sure the detent pin and detent balls of the quad-release axle are fully released **BEFORE** operating wheelchair.
Keep detent balls clean.

6. Flip handle of quad-release axle down to release detent pin ensuring that detent balls are fully released.
7. If detent pin does not fully release, proceed to ADJUSTING THE QUAD-RELEASE HANDLE IN AND/OR OUT in this procedure of the manual.
8. Repeat STEPS 1-7 for the opposite rear wheel.

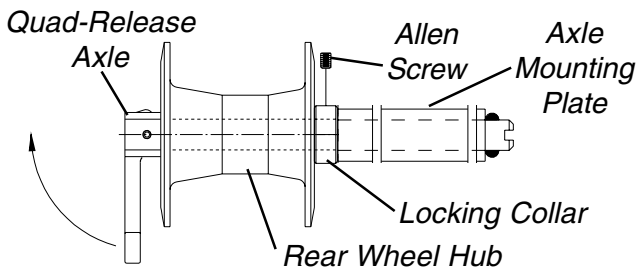


FIGURE 3 - INSTALLING QUAD-RELEASE AXLES

ADJUSTING QUAD-RELEASE HANDLES

In and/or Out (FIGURE 4)

1. Remove rear wheel and the quad-release axle from the wheelchair.
2. Loosen the locking screw.
3. Make the following adjustments:

If the quad-release handle is **not releasing the detent balls completely**, rotate the quad-release handle approximately **one-quarter (1/4) turn CLOCKWISE**.

If the quad-release handle **hits the spokes** of the rear wheel when assembled, rotate the quad-release handle approximately **one-quarter (1/4) turn COUNTERCLOCKWISE**.

4. Tighten the locking screw.
5. Reinstall the rear wheel and quad-release axle onto the wheelchair.

WARNING

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

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

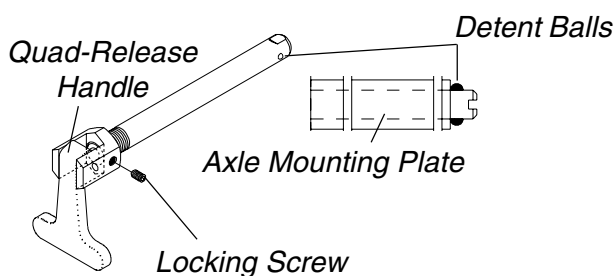


FIGURE 4 - ADJUSTING QUAD-RELEASE HANDLE IN/AND OR OUT

Removing the Play From the Rear Wheels (FIGURE 5)

NOTE: The adjusting nut on the quick-release axles originally performed this function.

1. With the rear wheel and quad-release axle still mounted onto the wheelchair, make the following adjustment:

Tighten the length adjusting screw until there is **no in and out movement** of the quad-release axle and rear wheel.

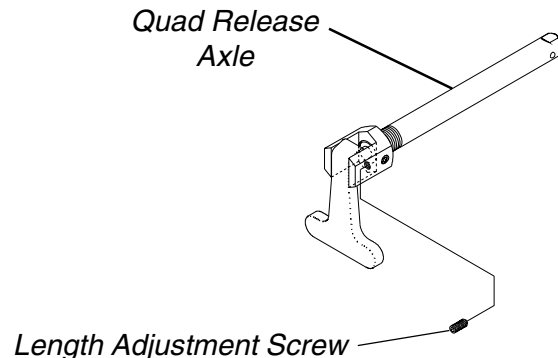


FIGURE 5 - REMOVING PLAY FROM THE REAR WHEELS

REAR WHEELS

REPAIRING/REPLACING PNEUMATIC CASTER OR REAR WHEEL TIRE/TUBE

WARNING

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

CAUTION

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

REPLACING/ADJUSTING THE WHEEL LOCK (FIGURE 6)

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

Replacing the High/Undermount Wheel Lock

1. Remove the hex screws and remove the existing wheel lock from the wheelchair.
2. Install the new wheel lock and secure with the existing hex screws. Torque to 110-120 in./lbs.

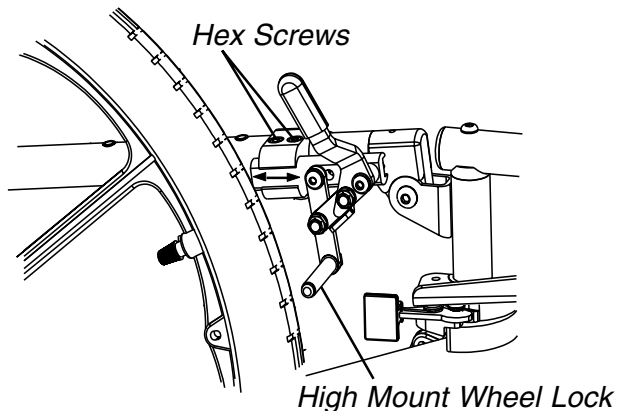
Adjusting the High/Undermount Wheel Lock

1. Engage the wheel locks.

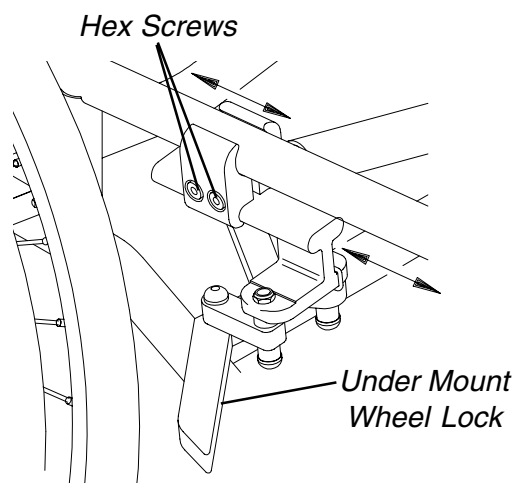
NOTE: Any wheel lock adjustment should embed the wheel lock shoe at least 3/16-inch into the pneumatic tire (1/8-inch for urethane wheels) when engaged.

2. If necessary, loosen the hex screw(s) that secure the High/Undermount 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. Torque the hex screw(s) to 110-120 in./lbs.
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.

HIGH MOUNT WHEEL LOCK



UNDER MOUNT WHEEL LOCK



WHEEL LOCK SHOE ENGAGEMENT

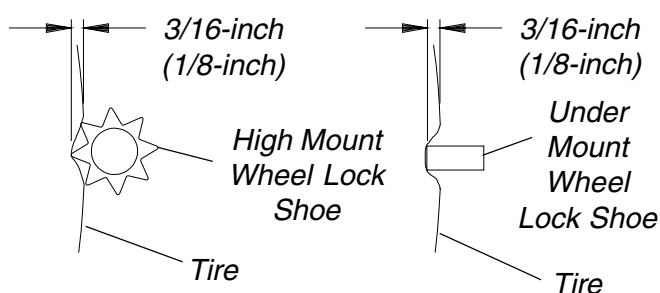


FIGURE 6 - REPLACING/ADJUSTING THE WHEEL LOCK

INSTALLING/ADJUSTING THE ANTI-TIPPERS

WARNING

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

DO NOT operate the wheelchair if the anti-tippers **CANNOT** be positioned so that they extend **BEYOND** the outer edge of the rear wheels or if a 1-1/2 to 2-inch clearance **CANNOT** be achieved - otherwise injury or damage may occur. Contact a qualified technician.

Installing Anti-tippers (FIGURE 7)

1. Press the rear release buttons of the anti-tipper and insert the anti-tipper into the opening in the anti-tipper mounting bracket until the front release buttons lock in into the front mounting hole.
2. Measure the distance between the bottom of the anti-tipper wheel and the ground/floor.

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

3. If the distance between the bottom of the anti-tipper wheel and the ground/floor is **NOT** between 1-1/2 to 2-inches refer to **ADJUSTING ANTI-TIPPERS** in this procedure of the manual.
4. Visually inspect the anti-tippers to ensure that they extend beyond the outer edge of the rear wheel.
5. If the anti-tippers **DO NOT** extend beyond the outer edge of the rear wheel, contact a qualified technician for a **NEW** anti-tipper model **OR** to adjust the anti-tipper mounting bracket.

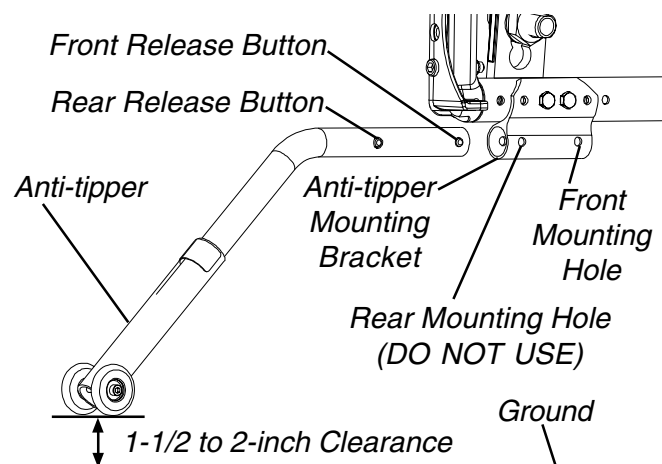


FIGURE 7 - INSTALLING ANTI-TIPPERS

Adjusting Anti-tippers (FIGURE 8)

1. Press down on the two (2) release buttons near the **BOTTOM** of the anti-tipper.
2. While performing STEP 1, perform one (1) of the following:
 - A. **FOR WHEELCHAIRS WITH THE LONG ANTI-TIPPERS** - Slide the anti-tipper extension to one (1) of the five (5) mounting holes and allow the release button to lock into place.
 - B. **FOR WHEELCHAIRS WITH THE SHORT ANTI-TIPPERS** - Slide the anti-tipper extension to one (1) of the three (3) mounting holes and allow the release button to lock into place.
3. Measure the distance between the bottom of the anti-tipper wheel and the ground/floor.

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

4. Perform one (1) of the following:
 - A. **1-1/2 TO 2-INCH CLEARANCE EXISTS** - Adjust the anti-tippers on the opposite side of the wheelchair to this position.
 - B. **1-1/2 TO 2-INCH CLEARANCE DOES NOT EXIST** - Repeat STEPS 2-3.

*NOTE: If the anti-tipper height has been adjusted and the necessary 1-1/2 to 2-inch clearance cannot be achieved, a different model anti-tipper is required. Contact a qualified technician for a **NEW** anti-tipper model.*

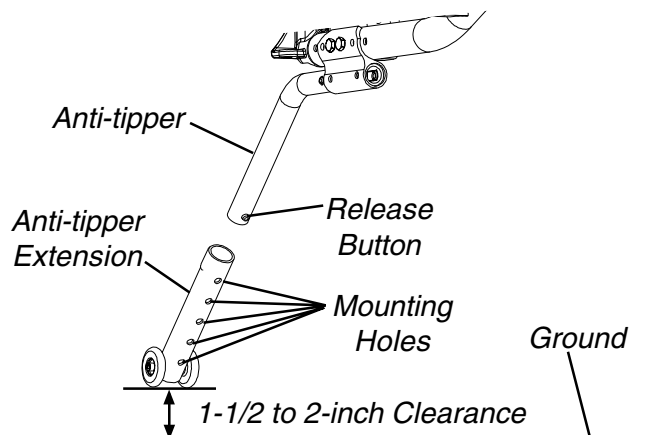


FIGURE 8 - ADJUSTING ANTI-TIPPERS

REAR WHEELS

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 the frame to be free from defects in materials and workmanship for a lifetime from date of purchase; all remaining components for one (1) year from date of purchase except upholstered materials, padded materials and tires/wheels. If within such warranty period any such product shall be proven to be defective, such product shall be repaired or replaced at Invacare's option. This warranty does not include any labor or shipping charges incurred in replacement part installation or repair of any such product. Invacare's sole obligation and your exclusive remedy under this warranty shall be limited to such repair and/or replacement.

For warranty service, please contact the dealer from whom you purchased your Invacare product. In the event you do not receive satisfactory warranty service, please write directly to Invacare at the address on the back cover, provide dealer's name, address, and the date of purchase, indicate nature of the defect and, if the product is serialized, indicate the serial number. Do not return products to our factory without our prior consent.

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

THE FOREGOING WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, IF ANY, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL NOT EXTEND BEYOND THE DURATION OF THE EXPRESSED WARRANTY PROVIDED HEREIN AND THE REMEDY FOR VIOLATIONS OF ANY IMPLIED WARRANTY SHALL BE LIMITED TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT PURSUANT TO THE TERMS CONTAINED 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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Invacare Corporation www.invacare.com

USA
One Invacare Way
Elyria, Ohio USA
44036-2125
800-333-6900

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