# Invacare® Essentials™ EX1 Wheelchair

IEX166DASA, IEX186DASA, IEX106DASA, IEX166DAEL, IEX186DAEL, IEX106DAEL

en

**Manual Wheelchair**

User Manual

This manual MUST be given to the user of the product.
BEFORE using this product, this manual MUST be read and saved for future reference.

Yes, you can.

### 4.2.2 Backward

**WARNING!**
**Risk of Injury or Damage**
- Do not engage the wheel locks while reaching or bending backward. If your weight suddenly shifts accidentally, it is better to roll in that direction than to tip over.
- Do not lean over the back upholstery; this could cause the wheelchair to tip.

1. Maneuver the wheelchair as close as possible to the object.
2. To rotate both casters fully forward:
   A. Go forward.
   B. Back the wheelchair toward the object to swing the casters fully forward.
3. Reach only as far as your arm will extend without changing your sitting position. If in doubt, reposition the wheelchair or ask for assistance.

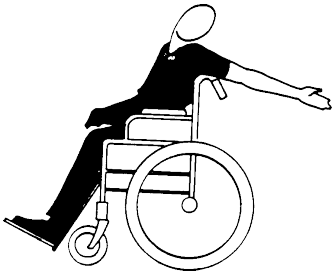

*Fig. 4-4*

## 4.3 Coping with Everyday Obstacles

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

## 4.4 Tipping

**WARNING!**
**Risk of Injury or Damage**
DO NOT tip the wheelchair without assistance.
- 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 damage to the wheelchair.

When tipping the wheelchair to negotiate a curb or other obstacle, the 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 or her to lean back. Be sure the occupant's feet and hands are clear of all wheels and pinch points.
After mastering the techniques of tipping the wheelchair, use one of the following methods to tackle obstacles such as curbs and short stairs.

### 4.4.1 Tipping to Ascend

**Ascending a Curb with a Forward Approach**

*Fig. 4-5*

To ascend a curb or other obstacle while moving forward:

1. Ensure the hand grips are securely fastened and do not turn or slip off.
2. Tilt the wheelchair backward to its balance point and move forward until the front casters pass over the top of the curb.
3. Roll the wheelchair forward and slowly lower the front casters onto the raised surface in one continuous movement.
4. Push the wheelchair forward until the rear wheels roll up and over the curb.
5. Ensure the wheelchair clears the curb and cannot roll backward.

## Ascending a Curb with a Backward Approach

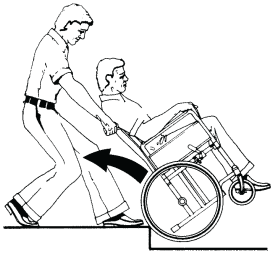

*Fig. 4-6*

To ascend a curb or other obstacle while moving backward:

1. Ensure the hand grips are securely fastened and do not turn or slip off.
2. Turn around the wheelchair and back up until the rear wheels are against the curb.

3. Tilt the wheelchair backward to its balance point and lift up by the push handles while pulling the wheelchair up and over the curb.
4. Roll the wheelchair backward and slowly lower the front casters onto the raised surface.
5. Ensure the wheelchair clears the curb. DO NOT let the front casters down until the wheelchair clears the curb.

### 4.4.2 Tipping to Descend

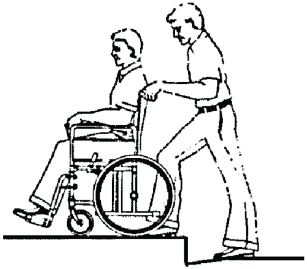

*Fig. 4-7*

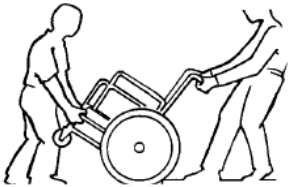

*Fig. 4-8*

To descend a curb or other obstacle:

1. Ensure the hand grips are securely fastened and do not turn or slip off.
2. Stand behind and turn around the wheelchair.
3. Carefully back down the step.

4. Tightly hold the handgrips and pull the wheelchair back until the rear wheels reach the curb edge, then slowly roll the rear wheels onto the lower level.
5. After the rear wheels are safely on the lower level, tilt the wheelchair back to its balance position and turn it so it faces forward.
6. Carefully lower the front casters by placing one foot on the tipping lever and gradually decreasing the force of exertion.

## 4.5 Ramps and Inclines

**WARNING!**
**Risk of Injury or Damage**
- During descent, the footplate lowest point should be no closer to the ground than 2 1/2 inches to permit proper clearance.

**WARNING!**
**Risk of Injury or Damage**
- Do not attempt inclines without anti-tippers installed. Do not attempt any incline or decline of more than 6 degrees (10% grade, or one foot of rise or fall per 10 feet of ramp length).

**WARNING!**
**Risk of Injury or Damage**
- Do not use wheel locks to slow your descent. Attempting to use wheel locks is likely to result in accidental locking that could cause the wheelchair to stop abruptly, suddenly pitch forward, or tip sideways.

**WARNING!**
**Risk of Injury or Damage**
- Avoid changing direction while descending a ramp or incline, as this could cause instability.

Most people are capable of negotiating short inclines without assistance, depending upon upper body strength, endurance, and the degree of incline. Know your own capabilities and limitations in terms of strength and endurance before attempting to negotiate an incline or decline. Practice with an attendant or healthcare professional first before attempting any inclines, declines, curbs, or ramps. Always inspect the ramp for hazards such as holes or slippery or uneven surfaces before starting up or down. If you cannot see the entire ramp, ask someone to inspect it for you.

### 4.5.1 Ascent

Lean the upper part of your body slightly forward as you ascend the incline. If it becomes necessary to stop on the incline, avoid any abrupt or sudden forward movement as you resume climbing, as this could cause tipping.

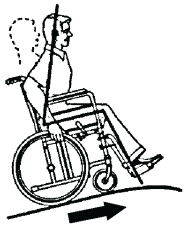

*Fig. 4-9*

### 4.5.2 Descent

Always face forward when going down a ramp, but do not lean forward; this could cause tipping. Lean slightly backward to increase stability. It is critical to keep the wheelchair under control at all times. Descent should be made slowly and safely by grasping the handrims; however, use care, as friction heat will be generated. The use of gloves to reduce the effects of friction heat is recommended, but going slower is a better alternative.

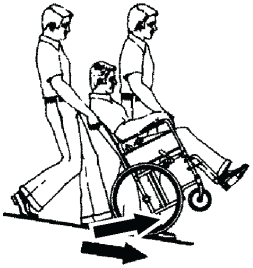

*Fig. 4-10*

## 4.6 Curbs and Steps

Curbs, steps, and stairways are dangerous obstacles that confront wheelchair users. When you encounter curbs, find a way around or use the ramps available in most locations. If you encounter steps and there is no ramp available, avoid the steps by utilizing the disabled designated elevators now required in most locations.

**WARNING!**
**Risk of Injury or Damage**
-Never attempt to negotiate steps, stairs, or escalators in your wheelchair.

**WARNING!**
**Risk of Injury or Damage**
- Always engage the wheel locks before using an elevator.

## 4.7 Navigating Stairways

**WARNING!**
**Risk of Injury or Damage**
- Extreme caution is advised when it is necessary to move an unoccupied wheelchair up or down the stairs. Invacare recommends using two assistants and making thorough preparations. Use only secure, non-detachable parts for hand-hold supports.
- DO NOT attempt to lift the wheelchair by any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a wheelchair may result in injury to the user or damage to the wheelchair.

Follow the procedures in this section to move the wheelchair between floors when an elevator is NOT available.

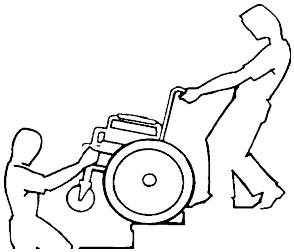

*Fig. 4-11*

### 4.7.1 Moving Up Stairs

1. Remove the occupant from the wheelchair.
2. If necessary, rotate the anti-tippers so the wheels are facing up.
3. Do the following:
   - Assistant 1:
     A. Position yourself behind the wheelchair.
     B. Securely grasp a non-removable (non-detachable) part of the wheelchair for leverage.
     C. Tilts the wheelchair back to the balance point.
     D. Back the wheelchair against the first step.
   - Assistant 2:
     A. Position yourself in the front of the wheelchair.
     B. Securely grasp a non-removable (non-detachable) part of the framework.
     C. Lift the wheelchair up and onto the next stair above and steady the wheelchair.
4. Assistant 1: Place one foot on the stair above.
5. Do the following until the top stair is reached:
   - Assistant 1: Repeat step 3 substep D and step 4.
   - Assistant 2: Repeat step 3 substep C.

     The wheelchair should not be lowered until the last stair has been negotiated and the wheelchair has been rolled away from the stairway.

6. If necessary, rotate the anti-tippers so the wheels are facing down.

### 4.7.2 Moving Down Stairs

1. Remove the occupant from the wheelchair.
2. If necessary, rotate the anti-tippers so the wheels are facing up.
3. Do the following:
   - Assistant 1:
     A. Position yourself behind the wheelchair.
     B. Securely grasp a non-removable (non-detachable) part of the wheelchair for leverage.
     C. Tilt the wheelchair back to the balance point.
     D. Roll the wheelchair to the edge of the first step.
   - Assistant 2:
     A. Position yourself in front of the wheelchair.
     B. Securely grasp a non-detachable part of the framework.
     C. Lower the wheelchair to the next stair below and steady the wheelchair.
4. Assistant 1: Place one foot on the stair below.
5. Do the following until the bottom stair is reached:

- Assistant 1: Repeat step 3 substep D and step 4.
- Assistant 2: Repeat step 3 substep C.

The wheelchair should not be lowered until the last stair has been negotiated and the wheelchair has been rolled away from the stairway.

6. If necessary, rotate the anti-tippers so the wheels are facing down.

### 4.7.3 Using Escalators

**WARNING!**
**Risk of Serious Injury**
-DO NOT use an escalator to move a wheelchair between floors. Serious bodily injury may occur.

## 4.8 Transferring To and From Other Seats

**WARNING!**
**Risk of Injury or Damage**
Always ensure the wheelchair is on a stable, level surface and engage the wheel locks before transferring to or from another seat.

**WARNING!**
**Risk of Injury or Damage**
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.

**WARNING!**
**Risk of Injury or Damage**
Do not step on the footplates; this could cause the wheelchair to tip.
-Fold the footplates, detach them, or swing them aside.

**CAUTION!**
**Risk of Injury or Damage**
When transferring, position yourself as far back as possible in the seat to help prevent damaged upholstery and the possibility of the wheelchair tipping forward.

This activity may be performed independently provided the user has adequate mobility and upper body strength.

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

Transfers into or out of a wheelchair are very difficult maneuvers. Exercise extreme care when transferring without the aid of either an attendant or a patient lift. Consult your physician, nurse, or physical therapist for assistance in developing your individual technique. Make sure the wheelchair is stabilized and will not move or slide during the transfer. Take extra precaution to prevent tipping. Use good body mechanics to prevent personal injury.

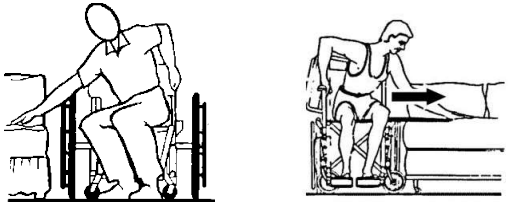

*Fig. 4-12*

To transfer to or from the wheelchair:

1. Position the wheelchair as close as possible alongside the seat to which you are transferring.
2. Ensure the front casters are parallel to the other seat.
3. Remove or flip up the armrest.
4. Engage the wheel locks.
5. Shift your body weight into the seat with the transfer.

## 4.9 Unfolding and Folding the Wheelchair

**WARNING!**
**Risk of Injury or Damage**
The wheelchair does not offer seating or occupant restraint equivalent to the seat provided in a motor vehicle.
- When traveling in a motor vehicle, always transfer to the vehicle seat and use the restraint provided by the vehicle manufacturer.

**WARNING!**
**Risk of Injury or Damage**
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 rails are fully seated.

**WARNING!**
**Risk of Injury or Damage**
Do not lift the wheelchair by the arms, footrests, leg rests, or any other detachable parts.

### 4.9.1 Folding the Wheelchair

1. Detach the footrests and leg rests from the wheelchair.
2. Remove the seat cushion, if equipped.
3. Grasp the seat upholstery at the center front and rear with both hands.

*Fig. 4-13*

4. Pull up sharply and lift the upholstery.

*Fig. 4-14*

5. Fold the excess seat upholstery over the arm as necessary.

*Fig. 4-15*

*Fig. 4-16*

6. Tip the wheelchair sideways so the wheels do not drag and press together the sides.

### 4.9.2 Unfolding the Wheelchair

1. Engage both wheel locks.
2. Use both hands to push down with even pressure on the seat tubes and upholstery on the inside of the wheelchair until the seat rails are fully seated.

**WARNING!**
**Risk of Injury**
Do not place your hands or fingers between the seat tube and the side panel.

*Fig. 4-17*

*Fig. 4-18*

3. Attach the footrests or leg rests to the wheelchair.
4. Reinstall the seat cushion, if necessary.

**WARNING!**
**Risk of Injury**
When reassembling the wheelchair, ensure the seat frame is completely open. If not, the wheelchair is unsafe to occupy.

**WARNING!**
**Risk of Injury**
Ensure the footrests or leg rests are locked in place before occupying or operating the wheelchair.

## 4.10 Transporting the Wheelchair in a Motor Vehicle

When transporting the wheelchair in a motor vehicle, do not place the wheelchair where it will interfere with the safe operation of the vehicle or endanger the driver or passengers.
The front seat IS NOT a good location to store a wheelchair during transport because it can be dislodged and become a serious hazard to the driver.
Always take precautions to avoid personal injury when loading or lifting a wheelchair into or out of a vehicle.

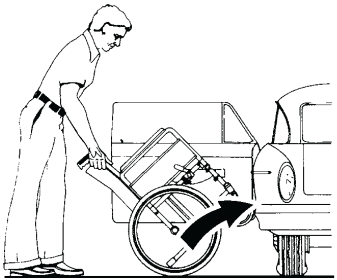

*Fig. 4-19*

### 4.10.1 Transporting the Wheelchair in the Rear Seat

1. Move the front seat as far forward as possible.
2. Fold the wheelchair. See *4.9 Unfolding and Folding the Wheelchair, page 41*.

3. Place the wheelchair so it faces the open vehicle door.
4. Tilt the wheelchair backward and roll it forward on the rear wheels until the casters are in the car.
5. Tilt the wheelchair away from the back of the front seat, then lower the casters to the floorboard.
6. Simultaneously lift and roll the chair into the car.

**WARNING!**
**Risk of Injury or Damage**
Ensure the wheelchair is stable and will not shift while the car is in motion.

**WARNING!**
**Risk of Injury or Damage**
Ensure the wheelchair does not block the driver's field of vision.

### 4.10.2 Transporting the Wheelchair in the Trunk

1. Fold the wheelchair. See *4.9 Unfolding and Folding the Wheelchair, page 41*.
2. Engage the wheel locks. See *8.1 Using or Adjusting the Wheel Locks, page 56*.
3. Grasp the front of the frame and rear of the wheels, carefully lift the wheelchair, and place it in the trunk.

   Use good body mechanics to avoid injury.

   **WARNING!**
   **Risk of Damage**
   DO NOT place anything on top of the wheelchair before closing the trunk to avoid the risk of damage to the wheelchair.

4. Carefully close the trunk lid.

# 5 Arms

**WARNING!**
**Risk of Injury or Damage**
- After any adjustments, repair, or service and before use, make sure all attaching hardware is securely tightened. Otherwise,
injury or damage may occur.

## 5.1 Removing and Installing the Arms

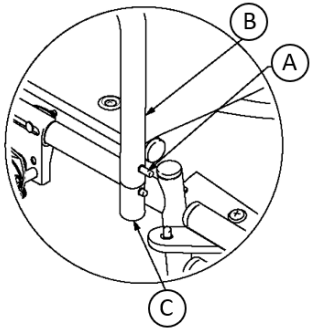


*Fig. 5-1*

## 5.2 Removing the Arms

1. Depress the lower arm release pins Ⓐ in the front and the back of the arm until they unlock.
2. Hold the arm Ⓑ by its front and back frame and lift the arm straight up and off the wheelchair.
3. Repeat steps 1-2 for the other arm.

## 5.3 Installing the Arms

1. Hold the arm Ⓑ by its front and back frame, lower the arm straight down into the front and back sockets Ⓒ.
2. Ensure the release pins are locked.
3. Repeat steps 1-2 for the other arm.

**WARNING!**
**Risk of Injury or Damage**
-Ensure the arm release pin is in the locked position before occupying or operating the wheelchair.

# 6 Front Riggings

**WARNING!**
**Risk of Injury or Damage**
After any adjustments, repair, or service and before use, make sure all attaching hardware is securely tightened. Otherwise, injury or damage may occur.

## 6.1 Removing or Attaching the Swingaway Footrest Assembly

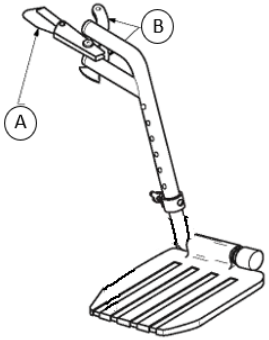


*Fig. 6-1*

In the preceding image, the left footrest is shown.

### 6.1.1 Removing the Swingaway Footrest Assembly

1. To release the lock, pull the swingaway release lever Ⓐ forward toward the front of the wheelchair. The footrest swings outward.

2. To remove the footrest, lift the footrest straight off the wheelchair hinge pins Ⓑ.
3. Repeat steps 1-2 for the other side.

### 6.1.2 Attaching the Swingaway Footrest Assembly

1. Place the footrest on the wheelchair so the footrest hinge plates engage the wheelchair hinge pins Ⓑ.
2. Swing the footrest inward.
3. Ensure the swingaway release lever Ⓐ is locked in a rearward position toward the back of the wheelchair.
4. Repeat steps 1-3 for the other footrest assembly.

**WARNING!**
**Risk of Injury or Damage**
-Ensure the footrests are in the locked position before occupying or operating the wheelchair.

## 6.2 Adjusting the Footplate Extension Length

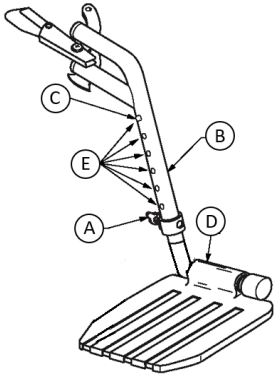


*Fig. 6-2*

1. Loosen the knob Ⓐ to free the footplate extension inside the hanger Ⓑ.
2. Press down on the locking button Ⓒ and adjust the footplate Ⓓ to the desired length. Ensure the locking button Ⓒ is completely extended and securely fastened in the adjustment hole Ⓔ.
3. Tighten the knob Ⓐ to secure the footplate extension inside the hanger Ⓑ.
4. Repeat steps 1-3 on the remaining footplate extension.
5. Ensure both footplate extensions are securely fastened and the minimum ground clearance is 2 1/2 inches.

**WARNING!**
**Risk of Injury or Damage**
-Ensure the footplates are in the locked position before occupying or operating the wheelchair.

## 6.3 Removing or Attaching the Elevating Leg Rest Assembly

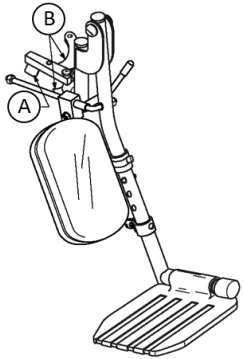


*Fig. 6-3*

### 6.3.1 Removing the Elevating Leg Rest Assembly

1. To release the lock, pull the swingaway release lever Ⓐ forward toward the front of the wheelchair. The leg rest swings outward.
2. Lift the elevating leg rest assembly off the hinge pins Ⓑ.

### 6.3.2 Attaching the Elevating Leg Rest Assembly

1. Place the elevating leg rest assembly on the wheelchair so the leg rest hinge plates engage the wheelchair hinge pins Ⓑ.
2. Swing the leg rest inward.
3. Ensure the leg rest is locked in place and the swingaway release lever Ⓐ is locked in a rearward position toward the back of the wheelchair.
4. Repeat steps 1-3 for the other leg rest assembly.

**WARNING!**
**Risk of Injury or Damage**
-Ensure the leg rests are in the locked position before occupying or operating the wheelchair.

## 6.4 Adjusting the Elevating Leg Rest Assembly

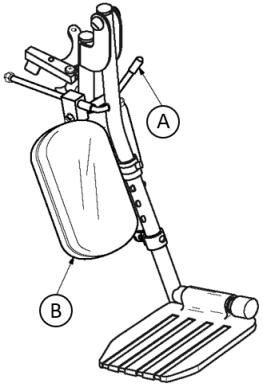


*Fig. 6-4*

### 6.4.1 Raising the Leg Rest

1. Slowly rotate the leg rest up to the desired position.
2. Ensure the elevating leg rest is locked in position.
3. Repeat steps 1-2 on the remaining leg rest assembly.

### 6.4.2 Lowering the Leg Rest

1. To allow the elevating leg rest to lower without suddenly dropping, support its weight and move the release lever Ⓐ forward.
2. Slowly lower the elevating leg rest to the desired position.
3. Release the lever Ⓐ.
4. Ensure the elevating leg rest is locked in position before releasing the leg rest.
5. Repeat steps 1-4 on the remaining leg rest assembly.

### 6.4.3 Adjusting the Leg Rest Panel

The leg rest panel Ⓑ can be rotated up and out of the way.

1. Hold the panel Ⓑ and rotate it upward.
2. To return the panel to its original position, hold the panel and rotate it downward. The panel will stop at the proper position.
3. Repeat steps 1-2 on the remaining leg rest panel.

**WARNING!**
**Risk of Injury or Damage**
-Ensure the leg rest panels are in the locked position before occupying or operating the wheelchair.

# 7 Rear Wheels, Front Casters, and Anti-Tippers

**WARNING!**
**Risk of Injury or Damage**
After any adjustments, repair, or service and before use, make sure all attaching hardware is securely tightened; otherwise, injury or damage may occur.

**WARNING!**
**Risk of Injury or Damage**
Because special tools and training are required, contact your provider or a qualified technician when your rear wheels, casters, or anti-tippers require adjustment.

# 8 Wheel Locks

**WARNING!**
**Risk of Injury or Damage**
After any adjustments, repair, or service and before use, make sure all attaching hardware is securely tightened. Otherwise, injury or damage may occur.

## 8.1 Using or Adjusting the Wheel Locks

The wheelchair has one wheel lock on each of the fixed rear wheels.

### 8.1.1 Using the Wheel Locks

**WARNING!**
**Risk of Injury or Damage**
-DO NOT attempt to stop a moving wheelchair with wheel locks. Wheel locks are not brakes.

Position the wheelchair on a flat, level surface to perform these procedures.

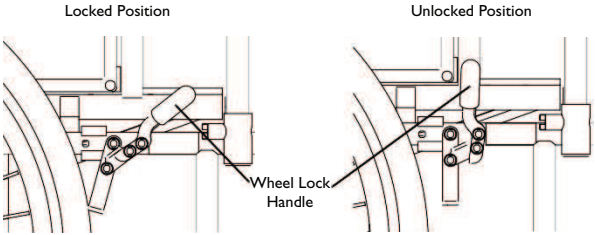


*Fig. 8-1*

1. Ensure the wheelchair is not moving before engaging the wheel locks.
2. To engage the wheel lock, push the lever forward until you feel it lock into the locked position.
3. To disengage the wheel lock, pull back the lever until you feel it lock into the unlocked position.

### 8.1.2 Adjusting the Wheel Locks

M10 wrench

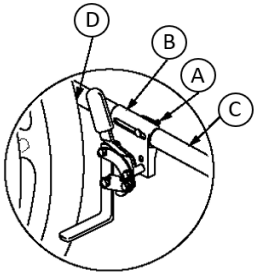


*Fig. 8-2*

The wheel lock is unlocked in the previous image.

1. Use an M10 wrench to loosen the adjustment bolt Ⓐ until the wheel lock Ⓑ slides on the frame Ⓒ.
2. Place the wheel lock Ⓑ in the locked position and slide it into contact with the tire Ⓓ.
3. Place the wheel lock Ⓑ in the unlocked position and slide it 3/8 inch closer to the tire Ⓓ.

4. Use an M10 wrench to tighten the adjustment bolt Ⓐ and engage the wheel lock Ⓑ to check the fit. Note the wheel lock should indent the tire at least 3/8 inch.
5. Repeat steps 1-4 for the other wheel lock Ⓑ. Securely tighten the adjustment bolts Ⓐ to eliminate wheel lock movement on the frame.

**WARNING!**
**Risk of Injury or Damage**
-Ensure the wheel locks are adjusted so they lock in place before occupying or operating the wheelchair.

# 9 Cross Braces

**WARNING!**
**Risk of Injury or Damage**
- After any adjustments, repair, or service and before use, make sure all attaching hardware is securely tightened. Otherwise, injury or damage may occur.

## 9.1 Tightening the Cross Braces

- M13 wrench
- M6 hex key

*Fig. 9-1*

1. Ensure the cross brace bolt and nut in the center of the wheelchair are secure.

   The cross braces should be loose enough to fold easily yet snug enough to take up excess play.

2. Use an M13 wrench and an M6 hex key to tighten the hardware as necessary.

# 10 Maintenance

## 10.1 Maintenance

### 10.1.1 Maintenance Safety Precautions

**WARNING!**
**Risk of Injury or Damage**
- After any adjustments, repair or service and before use, make sure all attaching hardware is tightened securely. Otherwise, injury or damage may result.
- Replace any labels that are missing, worn, or torn. Refer to *3.1 Labels on the Product, page 12* for a listing of the labels and their locations.

**CAUTION!**
**Risk of Damage**
- DO NOT overtighten hardware attaching to the frame. This could cause damage to the frame tubing.

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

4. Perform periodic checks of the rear wheels, casters, and tires for cracks and wear. Contact a qualified technician to replace them if they are damaged.

**CAUTION!**
**Risk of Damage**
- As with any vehicle, periodically check the wheels and tires for cracks and wear. Replace them if they are damaged. Refer to *10.1.2 Replacing or Repairing the Rear Wheel Tire or Tube, page 63* and *10.1.3 Replacing or Repairing the Caster Tire or Tube, page 63*.

Signs of excessive tire wear vary depending on the tire type.

- Urethane tires
  - Cuts or surface defects
  - Tires are loose on the rims

Invacare recommends that tires and casters be replaced every five years.

5. Perform periodic wheel lock adjustments in correlation to tire wear. Refer to *8.1 Using or Adjusting the Wheel Locks, page 56*.
6. Perform periodic handrim checks to ensure they are securely attached to the rear wheels.
7. Perform periodic caster wheel bearing checks to ensure they are clean and free from moisture. Use a Teflon® lubricant if necessary.
8. Check the upholstery for sagging, rips, or tears.
9. Clean the upholstery with mild soap and water.
10. Replace any labels that are missing, worn, or torn. Refer to *3.1 Labels on the Product, page 12* for a listing of labels and their locations.

11. Perform monthly hand grip checks for wear, looseness, or deterioration. Replace the hand grips if looseness or deterioration is found. Clean the hand grips if necessary.

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

### 10.1.2 Replacing or Repairing the Rear Wheel Tire or Tube

**WARNING!**
**Risk of Injury or Damage**
- Replacement of solid urethane tires is not recommended. If a solid urethane tire needs repaired, Invacare recommends replacing the complete wheel assembly.
- Replacement of the rear wheel tube must be performed by a qualified technician.

### 10.1.3 Replacing or Repairing the Caster Tire or Tube

**WARNING!**
**Risk of Injury or Damage**
- Replacement of solid urethane, rubber, or semi-pneumatic tires is not recommended. If a solid urethane, rubber, or semi-pneumatic tire needs replaced, Invacare recommends replacing the complete caster assembly.

Protect the wheelchair by scheduling regular services. Proper care and maintenance are essential to keep the wheelchair in safe working condition. Periodic inspection, adjustment, and replacement of worn parts will provide many years of superb performance. When you believe a component or part of the wheelchair is not functioning properly, immediately contact the provider as a potentially hazardous condition could result. Only excellent condition is acceptable where safety is concerned.

## 10.2 Maintenance Checklist

**WARNING!**
**Risk of Injury or Damage**
Unauthorized modifications or the use of non-Invacare replacement parts could change the structure of the wheelchair, void the warranty, or create a hazardous condition that results in serious personal injury or damage to the wheelchair.

Improper maintenance can cause operating problems and can affect your warranty.

Protect the wheelchair by scheduling regular services. Proper care and maintenance are essential to keep your wheelchair in safe working condition. Periodic inspection, adjustment, and replacement of worn parts will provide many years of superb performance. When you believe a component or part of your wheelchair is not functioning properly, immediately contact your provider as a potentially hazardous condition could result. Only excellent condition is acceptable where safety is concerned.
Many scheduled maintenance tasks can be performed by users with mechanical ability and a few basic tools. Refer to *Maintenance Schedule, page 64* for recommended service intervals. If a maintenance procedure is not clear, ask your provider for assistance.

| Maintenance Schedule | | | | |
|---|---|---|---|---|
| **Procedure** | **Service Interval** | | | |
| | **Week** | **Month** | **Quarter** | **Six Months** |
| Check the tire wear. | X | | | |

| Maintenance Schedule | | | | |
|---|---|---|---|---|
| **Procedure** | **Service Interval** | | | |
| | **Week** | **Month** | **Quarter** | **Six Months** |
| Check the handrims. | X | | | |
| Check the wheel lock engagement. | X | | | |
| Check the anti-tippers, if equipped. | X | | | |
| Wipe the frame with a soft cloth. | X | | | |
| Check the hand grips. | | X | | |
| Check the upholstery. | | X | | |
| Check the rear wheel adjustment. | | X | | |
| Check the arms. | | X | | |
| Check the back posts and push handles. | | X | | |
| Check the footrests and elevating leg rests. | | X | | |
| Clean the frame. | | | X | |
| Check the caster stem rotation. | | | X | |

| Maintenance Schedule | | | | |
|---|---|---|---|---|
| **Procedure** | **Service Interval** | | | |
| | **Week** | **Month** | **Quarter** | **Six Months** |
| Have your provider or a qualified technician perform a maintenance check. | | | | X |
| Have your provider or a qualified technician check the rear wheel bearings. | | | | X |
| Have your provider or a qualified technician check the caster bearings. | | | | X |

## 10.3 Tools List

Use the tools and cleaning supplies listed in the following table while completing the maintenance procedures in this section.

- 30 weight oil (available at most auto parts stores)
- Phillips screwdriver
- Soft cloth
- Mild soap-and-water solution

## 10.4 Performing Maintenance Tasks

Always evaluate the overall operation of your wheelchair. It should function with ease and travel straight without excessive dragging or pulling to one side.
Remember your Invacare provider knows your wheelchair best when it comes to service and repairs. Contact your Invacare provider with any questions or concerns regarding the safe operation and maintenance of your wheelchair. Regular maintenance is essential for your safety and for the continued operation of the wheelchair.

### 10.4.1 Checking for Tire Wear

At least once per week, examine the tires for surface wear and cracks and replace them as necessary.
Replace solid rubber tires when they become loose on the rims or cracks appear.

### 10.4.2 Checking the Hand Rims

Check the hand rims at least once per week.

Inspect each hand rim for rough or sharp edges and immediately replace the hand rims if defects are found. Ensure all hardware is properly aligned and secure.

### 10.4.3 Checking the Wheel Lock Engagement

Check the wheel lock engagement at least once per week. See *8.1 Using or Adjusting the Wheel Locks, page 56* to adjust the wheel lock engagement.

If a wheel lock is worn or damaged, immediately replace it. Inspect the hardware for looseness or signs of wear.

Ensure the locking mechanism operates smoothly. The locking assembly should be tight enough so the wheel cannot rotate or the lock slip. Ensure the locking shoe does not press against the tire when in the unlocked position.

Excessive force should not be required to engage or release the wheel locks. Oil the wheel lock pivot points with one or two drops of 30 weight oil. Remove excess oil and dirt.

### 10.4.4 Checking the Anti-tippers (optional)

Check the anti-tippers at least once per week. Ensure the anti-tippers are securely fastened and properly positioned.

**WARNING!**
**Risk of Injury or Property Damage**
-When in use, anti-tippers must be installed in the downward position.

### 10.4.5 Checking the Hand Grips

Check the hand grips at least once per week. Ensure they are not ripped and they are tight and securely fastened.

### 10.4.6 Checking the Upholstery

Check the upholstery at least once per month. Inspect for rips, tears, and worn spots. Ensure all upholstery screws are present, properly aligned, and well secured. Use a Phillips screwdriver to tighten the upholstery mounting screws, if necessary. Check the attaching screws for sharp edges or stripped screws and replace the screws if defects are found.

**WARNING!**
**Risk of Injury or Property Damage**
- Worn or torn upholstery, or upholstery with loose hardware, must be immediately replaced. Worn or torn upholstery may not support body weights.

### 10.4.7 Checking the Rear Wheel Adjustment

Inspect the wheels at least once per month.
To check the alignment:

1. Do one of the following:
    - Elevate the rear of the wheelchair on a stable object until the rear wheels clear the ground.
    - Place the wheelchair upside down in a stable position so the wheels can freely spin.
2. Spin the wheels to ensure:
    - The wheels do not wobble.
    - Side play is not present.
    - The wheels spin freely without binding.
3. Ensure the bearings are clean and rotate smoothly.
4. Check the rim side play to ensure the bearings are not too loose.

If there is a problem, contact your Invacare provider. Adjustments should be performed only by your Invacare provider.

### 10.4.8 Checking the Arms

Check the arms at least once per month. Inspect the arms for sharp edges or cracks which could weaken the arm. Replace the arm if defects are found.
Ensure all attaching screws are present and tight. Use a Phillips screwdriver to tighten the arm pad mounting screws.
Check for burrs on the screw heads and replace the screws if defects are found.
Ensure the screws do not extend into the padding.
Confirm the posts at the base of the arm fit correctly (snug but not binding) in the sockets.

### 10.4.9 Checking the Back Posts or the Push Handles

Check the back posts at least once per month. Ensure all mounting hardware is securely fastened and the back posts are not bent or damaged. Contact your Invacare provider if you observe cracking or peeling paint or plating.

### 10.4.10 Checking the Footrests and the Elevating Leg Rests

Check the footrests and leg rests at least once per month.
Inspect the locking mechanisms to confirm a sure fit.
Check for cracks, burrs, or sharp edges and replace the part if defects are found.
Ensure the footrest or legrest locks securely in place and does not accidentally unlock.

### 10.4.11 Cleaning the Wheelchair

At least once per week, use a soft cloth to wipe the frame.
If the wheelchair is exposed to moisture, immediately dry it.

Clean the frame every three months with a mild soap-and-water solution. The frame does not need to be waxed.
Do not use solvents, abrasive waxes, caustic chemicals, or spray silicone. Never use abrasive cleansers; they could scratch the finish. Never use steam or high-pressure cleaners.
Clean the upholstery and plastic components at least once per month with a mild soap-and-water solution.

### 10.4.12 Checking the Casters

Check the caster stems for proper rotation at least every three months. The caster fork must swivel freely to facilitate steering and handling.
Adjusting the stem nut varies the amount of force required to turn the caster. If the nut is too loose, the caster flutters or shimmies; if the nut is too tight, the wheelchair is difficult to steer.
Ensure the stems are firmly attached to the forks and the forks and stems are not bent. Evaluate all threads, locking nuts, and bearings.
If the caster stems require adjustment or the stem bearings require replacement, contact your Invacare provider.

### 10.4.13 Checking the Wheel Bearings

At least once every six months, schedule caster and rear wheel axle bearing checks with your Invacare provider.

# 11 Warranty

## 11.1 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 who purchases this product when new and unused from Invacare or a dealer. This warranty is not extended to any other person or entity and is not transferable or assignable to any subsequent purchaser or owner. Coverage under this warranty will end upon any such subsequent sale or other transfer of title to any other person.

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

Invacare warrants the mechanical and electrical components of this product when purchased new and unused to be free from defects in materials and workmanship for a period of one year from date of purchase from Invacare or a dealer, with a copy of the seller’s invoice required for coverage under this warranty. The component warranty periods are listed in the following table:

| Component | Warranty Period |
|---|---|
| • Cross braces<br>• Forks<br>• Front riggings<br>• Hand rims<br>• Side frames | 1 year |
| All other | Six months |

Invacare warrants this product when purchased new and unused to be free from defects in materials and workmanship for a period of one year from date of purchase from Invacare or a dealer, with a copy of the seller’s invoice required for coverage under this warranty. If within such warranty periods any such product 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 NORMAL WEAR AND TEAR OR FAILURE TO ADHERE TO THE PRODUCT INSTRUCTIONS.

THE WARRANTY DOES NOT EXTEND TO NON-DURABLE COMPONENTS , SUCH AS RUBBER ACCESSORIES AND CASTERS, WHICH ARE SUBJECT TO NORMAL WEAR AND REQUIRE PERIODIC REPLACEMENT.

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.

Some states do not allow the exclusion or limitation of incidental or consequential damage, or limitation of how long an implied warranty lasts, so the above exclusion and limitation may not be applicable.

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

## Notes

## Contact Information

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