



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.

Contents

1 General	4
1.1 Symbols in this Document	4
1.1.1 Signal Words	4
1.1.2 Other Symbols	5
2 Overview	6
2.1 Component Identification	6
2.2 Specifications	7
2.3 Operating Conditions	9
2.4 Intended Use	9
2.5 Intended User	9
2.6 Indications	9
2.7 Contraindications	9
2.8 Wear-and-Tear Items	10
2.9 Service Life	11
2.10 Storage	11
3 Safety	12
3.1 Labels on the Product	12
3.1.1 Symbols on the Labels	14
3.2 General Guidelines	15
3.3 Repair and Service Information	17
3.4 Operating Information	18
3.4.1 General Warnings	18

3.4.2 Anti-Tippers	19
3.4.3 Handgrips	20
3.4.4 Wheel Locks	20
3.4.5 Wheelchair Tie-Down Restraints	21
3.4.6 Lifting	21
3.4.7 Weight Limitation	21
3.4.8 Weight Training	22
3.4.9 Storage	22
3.4.10 Stability	23
3.4.11 Ramps, Slopes, Inclines, and Obstacles	24
3.4.12 Information for Healthcare Professionals or Assistants	24
3.4.13 Wheelchair User	24
4 Wheelchair Safety and Handling	25
4.1 Stability and Balance	25
4.2 Reaching, Leaning, and Bending	27
4.2.1 Forward or Sideward	28
4.2.2 Backward	29
4.3 Coping with Everyday Obstacles	29
4.4 Tipping	30
4.4.1 Tipping to Ascend	30
Ascending a Curb with a Forward Approach	30
Ascending a Curb with a Backward Approach	31
4.4.2 Tipping to Descend	32
4.5 Ramps and Inclines	33
4.5.1 Ascent	34
4.5.2 Descent	35

© 2024 Invacare Corporation

All rights reserved. Republication, duplication or modification in whole or in part is prohibited without prior written permission from Invacare. Trademarks are identified by ™ and ®. All trademarks are owned by or licensed to Invacare Corporation or its subsidiaries unless otherwise noted.

Invacare reserves the right to alter product specifications without further notice.

Making Life's Experiences Possible is a registered trademark in the U.S.A.

4.6 Curbs and Steps	35
4.7 Navigating Stairways	36
4.7.1 Moving Up Stairs	37
4.7.2 Moving Down Stairs	38
4.7.3 Using Escalators	39
4.8 Transferring To and From Other Seats	39
4.9 Unfolding and Folding the Wheelchair	41
4.9.1 Folding the Wheelchair	42
4.9.2 Unfolding the Wheelchair	44
4.10 Transporting the Wheelchair in a Motor Vehicle	45
4.10.1 Transporting the Wheelchair in the Rear Seat	45
4.10.2 Transporting the Wheelchair in the Trunk	46
5 Arms	47
5.1 Removing and Installing the Arms	47
5.2 Removing the Arms	47
5.3 Installing the Arms	48
6 Front Riggings	49
6.1 Removing or Attaching the Swingaway Footrest Assembly	49
6.1.1 Removing the Swingaway Footrest Assembly	49
6.1.2 Attaching the Swingaway Footrest Assembly	50
6.2 Adjusting the Footplate Extension Length	51
6.3 Removing or Attaching the Elevating Leg Rest Assembly	52
6.3.1 Removing the Elevating Leg Rest Assembly	52
6.3.2 Attaching the Elevating Leg Rest Assembly	53
6.4 Adjusting the Elevating Leg Rest Assembly	53
6.4.1 Raising the Leg Rest	54
6.4.2 Lowering the Leg Rest	54
6.4.3 Adjusting the Leg Rest Panel	54
7 Rear Wheels, Front Casters, and Anti-Tippers	55
8 Wheel Locks	56
8.1 Using or Adjusting the Wheel Locks	56

8.1.1 Using the Wheel Locks	56
8.1.2 Adjusting the Wheel Locks	57
9 Cross Braces	59
9.1 Tightening the Cross Braces	59
10 Maintenance	61
10.1 Maintenance	61
10.1.1 Maintenance Safety Precautions	61
10.1.2 Replacing or Repairing the Rear Wheel Tire or Tube	63
10.1.3 Replacing or Repairing the Caster Tire or Tube	63
10.2 Maintenance Checklist	64
10.3 Tools List	67
10.4 Performing Maintenance Tasks	67
10.4.1 Checking for Tire Wear	67
10.4.2 Checking the Hand Rims	67
10.4.3 Checking the Wheel Lock Engagement	68
10.4.4 Checking the Anti-tippers (optional)	68
10.4.5 Checking the Hand Grips	68
10.4.6 Checking the Upholstery	69
10.4.7 Checking the Rear Wheel Adjustment	69
10.4.8 Checking the Arms	70
10.4.9 Checking the Back Posts or the Push Handles	70
10.4.10 Checking the Footrests and the Elevating Leg Rests	70
10.4.11 Cleaning the Wheelchair	70
10.4.12 Checking the Casters	71
10.4.13 Checking the Wheel Bearings	71
11 Warranty	72
11.1 Limited Warranty	72

1 General

1.1 Symbols in this Document

1.1.1 Signal Words

Signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. Refer to the table below for definitions of the signal words.

DANGER!

-Danger indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING!

-Warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION!

-Caution indicates a potentially hazardous situation which, if not avoided, may result in property damage.



Gives useful tips, recommendations, and information for efficient, trouble-free use.

1.1.2 Other Symbols

Other symbols may be used in this manual as required.

 References to International Organization for Standardization (ISO) symbols are listed if applicable.

Symbol	Description	ISO Reference
	Indicates the tools required to complete the procedure.	n/a
	Indicates the distributor name and address.	ISO 15223-1:2021 Section 5.1.9
	Indicates the manufacturer name and address.	ISO 15223-1:2021 Section 5.1.1

2 Overview

2.1 Component Identification

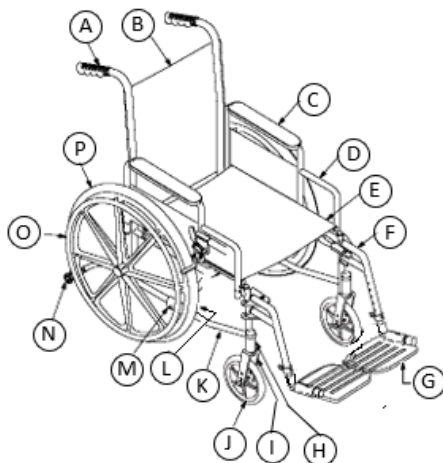


Fig. 2-1

Symbol	Component
Ⓐ	Push Handle/Back Post
Ⓑ	Back Upholstery
Ⓒ	Arm Pad

Symbol	Component
Ⓓ	Arm
Ⓔ	Seat Upholstery
Ⓕ	Footrest
Ⓖ	Foot Plate
Ⓗ	Caster Housing
Ⓘ	Caster Fork
Ⓣ	Caster Wheel
Ⓚ	Frame
Ⓛ	Wheel Lock
Ⓜ	Cross Brace
Ⓝ	Anti-tipper (optional)
Ⓞ	Handrim
Ⓟ	Rear Wheel

2.2 Specifications

Specifications	
Seat Width	• 20 inches (50.8 cm) • 18 inches (45.7 cm) • 16 inches (40.6 cm)
Overall Width	Seat width + 7.5 inches (19 cm)
Folded Width	11.8 inches (30 cm)
Seat Depth	16 inches (40.6 cm)
Overall Depth (without riggings)	31 inches (78.7 cm)
Overall Height	36 inches (91.4 cm)
Seat-to-Floor Height	19.5 inches (49.5 cm)
Back Style	Fixed
Back Height	18 inches (46 cm)
Arm Styles	Desk length and removable

Specifications	
Front Riggings	Swingaway footrests and elevating legrests
Rear Axle	Permanent
Rear Wheel Size	24 inches (61 cm)
Hand Rims	Composite
Wheel Locks	Toggle lock—push
Caster Size	8 inches (20.3 cm)
Upholstery	Black vinyl
Frame Color	Silver vein
Weight	• Chair only: 40 lb (18.5 kg) • Chair with front rigging: 44 lb (20 kg)
Shipping Weight	45.5 lb (20.6 kg)
Weight Limit	250 lb (113.4 kg)

2.3 Operating Conditions

Recommended Storage and Use Temperature	41°F to 105°F (5°C to 41°C)
Recommended Storage and Use Humidity	30% to 70% relative humidity, non-condensing
Maximum Slopes (uphill, downhill, sideways)	10°

2.4 Intended Use

The intended use for the manual wheelchair is to provide mobility to persons who are restricted to a sitting position.

2.5 Intended User

The intended users for the manual (mechanical) wheelchair are persons who are restricted to a sitting position.

2.6 Indications

The mechanical wheelchair is a manually operated device with wheels that is intended for medical purposes to provide mobility to persons restricted to a sitting position.

2.7 Contraindications

Pediatric users and users who weigh more than 250 pounds should not use the wheelchair.

2.8 Wear-and-Tear Items

Invacare reserves the right to ask for any item that has an alleged defect in workmanship to be returned. See the warranty that shipped with the product for specific warranty information.
Refer to the user manual for the proper preventative maintenance schedule and use of the product.

 This information is a general guideline and does not include items damaged due to abuse and misuse.
Useful life depends upon many factors.

Normal wear-and-tear items and components include but are not limited to the items in the following table.

Product Type	Product Wear-and-Tear Parts
Wheelchairs	• Wheels • Brake assembly/wheel locks • Hand grips
Upholstery and Seating	• Arm pads • Seat cushion foam • Seat cushion covers • Back cushion foam • Back cushion covers • Footplate covers • Calf pad foam and cover (if applicable)

2.9 Service Life

WARNING!

Risk of Injury or Damage

Use of the product beyond this time period may cause product damage and injury.

- This product has an expected lifetime of five (5) years when used in accordance with safety instructions, maintenance intervals, and correct use stated in this manual.

- Perform all maintenance according to the recommended schedule in this manual.



The effective product lifetime can vary according to the frequency and intensity of use.

2.10 Storage

Storing or using the wheelchair near open flame or combustible products can result in serious injury or damage.

Storing the wheelchair in a damp area or when wet may cause rust or corrosion of wheelchair parts and may result in injury or damage.

DO NOT use the wheelchair in a shower, pool, or other body of water.

DO NOT store the wheelchair in a damp or humid area.

Avoid extreme weather such as rain or snow when possible.

Avoid excessive moisture or humidity.

If the wheelchair is exposed to water, dry it as soon as possible.

3 Safety

Every six months or as necessary, take your wheelchair to a qualified technician for a thorough inspection and servicing. Regular cleaning will reveal loose or worn parts and enhance the smooth operation of your wheelchair. To operate properly and safely, your wheelchair **MUST** be cared for just like any other vehicle. Routine maintenance will extend the life and efficiency of your wheelchair.

3.1 Labels on the Product

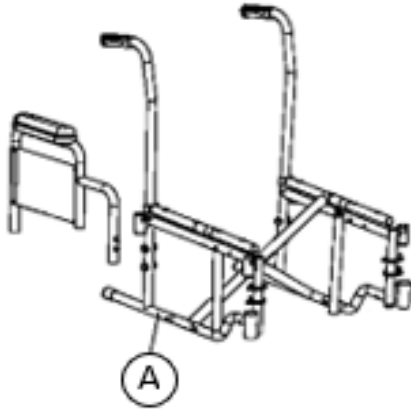


Fig. 3-1

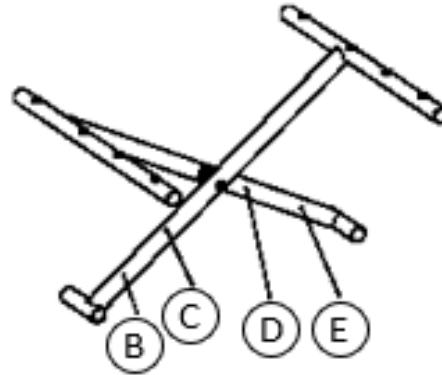
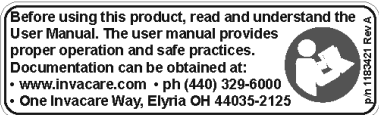
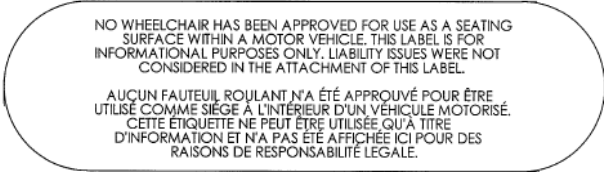


Fig. 3-2

Symbol	Label	Description
Ⓐ		Lists product documentation information. See 3.1.1 <i>Symbols on the Labels</i> , page 14.
Ⓑ		Lists Proposition 65 information. See p65warnings.ca.gov for information.
Ⓒ		Indicates transportation safety information.
Ⓓ		Indicates the product model, serial number, and other information. See 3.1.1 <i>Symbols on the Labels</i> , page 14.
Ⓔ		Indicates the product weight capacity.

3.1.1 Symbols on the Labels

 References to ISO symbols are listed if applicable.

Symbol	Description	ISO Reference
	Indicates the user should read the product documentation.	n/a
	Indicates the product serial number.	ISO 15223-1:2021 Section 5.1.7
	Indicates the product Unique Device Identifier (UDI).	ISO 15223-1:2021 Section 5.7.10
	Indicates the manufacturer name and address.	ISO 15223-1:2021 Section 5.1.1

3.2 General Guidelines

WARNING!

Risk of Serious Injury or Damage

- DO NOT use this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as owner's manuals, service manuals or instruction sheets supplied with this product or optional equipment. If you are unable to understand the warnings, cautions or instructions, contact a healthcare professional, dealer or technical personnel before attempting to use this equipment; otherwise, injury or damage may occur.
- A qualified technician **MUST** perform the initial setup of the product. Also, a qualified technician must perform all procedures specifically indicated in the manual.
- Use of non-Invacare accessories may result in serious injury or damage.
- Invacare products are specifically designed and manufactured for use in conjunction with Invacare accessories. Accessories designed by other manufacturers have not been tested by Invacare and are not recommended for use with Invacare products.
- DO NOT use non-Invacare accessories.
- To obtain Invacare accessories, contact Invacare by phone or at pro.invacare.com.

DANGER!

Risk of Death, Serious Injury, or Damage

- Use of incorrect or improper replacement or service parts may cause death, serious injury, or damage.
- Replacement parts **MUST** match original Invacare parts.
- ALWAYS** provide the wheelchair serial number to assist in ordering the correct replacement parts.
- Setup and assembly instructions **MUST** be performed only by qualified technicians. "Qualified Technician Only" sections are marked accordingly.

DANGER!**Risk of Death, Serious Injury, or Damage**

Lighted cigarettes dropped onto an upholstered seating system can cause a fire resulting in death, serious injury, or damage.

Wheelchair occupants are at particular risk of death or serious injury from these fires and resulting fumes because they may not have the ability to move away from the wheelchair.

-DO NOT smoke while using this wheelchair.

DANGER!**Risk of Injury, Damage, or Death**

Improper monitoring or maintenance may cause injury, damage, or death due to ingestion or choking on parts or materials.

-Closely supervise children, pets, or people with physical or mental disabilities.

WARNING!**Risk of Injury or Damage**

To avoid injury or damage from moving parts:

-ALWAYS keep hands and fingers clear of moving parts.

-Do not place your hands between the seat rail and the side panel.

-Closely supervise children, pets, or people with physical or mental disabilities.

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

Invacare disclaims responsibility for any personal injury or property damage which may occur during any use which does not comply with federal, state, or local laws or ordinances.



THE INFORMATION CONTAINED IN THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE.

Check all parts for shipping damage and test before using. In case of damage, DO NOT use. Contact Invacare or the carrier for further instruction.

3.3 Repair and Service Information

WARNING!

Risk of Serious Injury or Damage

-Unless otherwise noted, all service and adjustments should be performed while the wheelchair is unoccupied. After ANY adjustments, repair, or service and BEFORE use, make sure all attaching hardware is securely tightened; otherwise, injury or damage may result.

3.4 Operating Information

3.4.1 General Warnings

WARNING!**Risk of Injury or Damage**

To avoid product damage or personal injury:

- 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.
- Avoid storing or using the wheelchair near open flame or combustible products. Serious injury or damage to property may result.
- DO NOT stand on the frame of the wheelchair.
- DO NOT use the footplate as a platform. When getting in or out of the wheelchair, make sure that the footplates are in the upward position.
- ALWAYS use the handrims for self-propulsion.
- Invacare recommends a non-folding device be installed to keep the wheelchair from being folded when left unoccupied in a public place.
- DO NOT operate on roads, streets, or highways.
- DO NOT allow children to play on or operate the wheelchair.
- DO NOT operate on hilly or rough terrain, soft surfaces such as sand, grass, or gravel, wet or icy surfaces, or other surfaces with impaired traction.
- Do not turn the wheelchair while going downhill, as the wheelchair could tip over.
- Ensure pathways are clear of all obstacles.
- Do not lean on the wheelchair or use it as a walker as this could result in a loss of balance and injury.

WARNING!**Risk of Injury or Damage**

Do not tie down or attach anything to the wheels.

- Restraints or attachments could cause tipping and possibly result in injury or damage to the wheelchair.

WARNING!

Risk of Injury or Damage

DO NOT tilt the wheelchair backward until it reaches its balance point (do a "wheelie").

-This maneuver is dangerous and could result in personal injury to the user.

3.4.2 Anti-Tippers

WARNING!

Risk of Injury or Damage

Anti-tippers are specific to the different rear wheels and/or seat-to-floor heights. Contact an Invacare dealer or a qualified technician to install or adjust them.

-Any changes to the seat-to-floor angle or seat-to-floor height may require different anti-tippers. The correct anti-tippers MUST be ordered to maintain a 3.81 X 5.08 cm (1.5 to 2 inches) ground clearance.

-Inasmuch as the anti-tippers are an option on this wheelchair, Invacare strongly recommends ordering the anti-tippers as an additional safeguard for the wheelchair user.

-Invacare strongly recommends that anti-tippers be used at all times.

-The manual wheelchair is intended for indoor and outdoor use on firm surfaces. When outdoors on wet, soft ground or on gravel surfaces, anti-tippers may not provide the same level of protection against tipping over.

WARNING!

Risk of Injury or Damage

When in use, anti-tippers must be installed in the downward position.

3.4.3 Handgrips

WARNING!**Risk of Damage or Injury**

- ALWAYS check the handgrips for looseness before using the wheelchair. If the handgrips are loose or worn, IMMEDIATELY replace them.
- When cleaning the rear cane or handgrip areas, use only a clean towel lightly dampened with cool water. Verify the grips are dry prior to use. Use of soap or ammonia-based cleaning solutions will result in the handgrips sliding off the cane assembly. Failure to observe this warning may result in injury to the user or bystanders.
- If the wheelchair is exposed to extreme temperature (above 100°F or below 32°F), high humidity, or becomes wet, ensure the handgrips DO NOT twist on the handle prior to use. Otherwise, damage or injury may occur.

3.4.4 Wheel Locks

WARNING!**Risk of Injury or Damage**

- DO NOT attempt to stop a moving wheelchair with wheel locks. Wheel locks are not brakes.
- Engaging the wheel locks may not prevent the wheelchair from moving on all floor surfaces, including those that may be wet or slick.
- ALWAYS exercise caution when transferring into or out of the wheelchair.
- ALWAYS engage the wheel locks before transferring, using a wheelchair lift, or using an elevator.

3.4.5 Wheelchair Tie-Down Restraints

WARNING!

Risk of Injury or Damage

- 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 transporting in any type of moving vehicle a user who is in a wheelchair.
- It is Invacare's position that users of wheelchairs should be transferred into appropriate seating in vehicles for transportation and the restraints made available by the auto industry be used. Invacare cannot and does not recommend any wheelchair transportation systems.

3.4.6 Lifting

WARNING!

Risk of Injury or Damage

- DO NOT attempt to lift the wheelchair by any removable or detachable parts. Lifting by means of any removable or detachable parts of the wheelchair may result in injury to the user or damage to the wheelchair.

3.4.7 Weight Limitation

WARNING!

Risk of Injury or Damage

- Weight limitation is 250 lb evenly distributed.

3.4.8 Weight Training

WARNING!**Risk of Injury or Damage**

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 the occupant uses said wheelchair as a weight-training apparatus, Invacare shall not be liable for bodily injury or damage to the wheelchair and the warranty is void.

3.4.9 Storage

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

Storing or using the wheelchair near open flame or combustible products can result in serious injury or damage.

- Avoid storing or using the wheelchair near open flame or combustible products.
- Avoid storing the wheelchair in a damp area or when wet to avoid rust or corrosion of wheelchair parts resulting in injury or damage.
- DO NOT use the wheelchair in a shower, pool, or other body of water.
- DO NOT store the wheelchair in a damp or humid area.
- Avoid extreme weather such as rain or snow when possible.
- Avoid excessive moisture or humidity.
- If exposed to water, dry the wheelchair as soon as possible.

3.4.10 Stability

WARNING!

Risk of Injury or Damage

The back height, front caster position, caster size, seat-to-floor angle, position of the rear wheels, correct anti-tipper as well as the end user's disability or physical condition and capabilities directly relate to the stability of the wheelchair. Any change to one or any combination of these factors may decrease the wheelchair stability. These adjustments **MUST** be performed by a qualified technician. Seat-to-floor heights have specific positions depending on rear wheel size, rear wheel position, front caster position, and seat-to-floor angle. These adjustments must be performed by a qualified technician.

 When adjustments in the left column in the following table occur, follow across the chart and refer to the procedures with X's to maintain the proper wheelchair stability, safety, and handling.

Adjustment	Procedure					
	Caster Size	Caster Position	Wheel Size	Wheel Position	Anti-Tippers	User Condition
Caster Size	•	X	X	X	X	X
Caster Position	X	•	X	X	X	X
Wheel Size	X	X	•	X	X	X
Wheel Position	X	X	X	•	X	X
Anti-Tippers	X	X	X	X	•	X
User Condition	X	X	X	X	X	•

3.4.11 Ramps, Slopes, Inclines, and Obstacles

WARNING!**Risk of Injury or Damage**

- DO NOT traverse, climb, or go down ramps or slopes greater than 10.
- 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 the wheelchair to tip over and cause bodily harm to the user or damage to the wheelchair.
- NEVER leave an unoccupied wheelchair on an incline.
- DO NOT attempt to stop the wheelchair while on a sloped surface.

3.4.12 Information for Healthcare Professionals or Assistants

WARNING!**Risk of Injury or Damage**

- When the wheelchair user requires assistance, remember to use good body mechanics. Keep your back straight and bend your knees when tipping the wheelchair or traversing curbs or other impediments.
- When learning a new assistance technique, have an experienced assistant help you before attempting it alone.

3.4.13 Wheelchair User

WARNING!**Risk of Injury or Damage**

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 wheelchair type an individual will use rests solely with the user and his or her healthcare professional capable of making such a selection.

4 Wheelchair Safety and Handling

Wheelchair safety and handling require the user's and the assistant's close attention. This manual includes the most common procedures and techniques involved in the safe operation and maintenance of the wheelchair. It is important to practice and master these safe techniques until you are comfortable in maneuvering around frequently encountered architectural barriers.

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

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 or her in overcoming architectural obstacles they may encounter. However, all WARNINGS and CAUTIONS 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.

4.1 Stability and Balance

WARNING!**Risk of Injury or Damage**

- Be aware that carrying heavy objects on your lap while occupying the wheelchair may adversely affect the stability of the wheelchair, resulting in serious bodily injury to the user or damage to the wheelchair and surrounding property.
- This wheelchair has been designed to accommodate one individual. If more than one individual occupies the wheelchair, this may adversely affect the stability of the wheelchair, resulting in serious bodily injury to the user and passenger and damage to the wheelchair and surrounding property.

To ensure 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 or chest positioning straps for additional safety while involved in activities that shift your weight.

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

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

4.2 Reaching, Leaning, and Bending

WARNING!

Risk of Injury or Damage

- DO NOT shift your weight or sitting position toward the direction you are reaching as this may cause the wheelchair to tip.
- DO NOT attempt to reach objects if you have to pick them up from the floor by reaching down between your knees.
- DO NOT lean over the top of the back upholstery to reach objects behind you, as this may cause the wheelchair to tip.
- Operate the wheelchair only with anti-tippers in place when leaning or tipping. When in use, anti-tippers must be installed in the downward position.
- To reduce the risk of tipping, sit back in the seat and fully rotate the casters toward the front of the wheelchair before leaning or reaching.

4.2.1 Forward or Sideward

1. Maneuver the wheelchair as close as possible to the object you want to reach.
2. To rotate both casters fully forward:
 - A. Go forward.
 - B. Back the wheelchair toward the object to swing the casters fully forward.
3. Engage both wheel locks.
4. Ensure the casters are rotated fully forward before reaching. If the casters are not fully rotated, repeat step 2.



Fig. 4-1

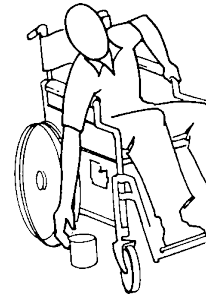


Fig. 4-2



Fig. 4-3

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

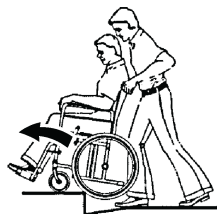


Fig. 4-5

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

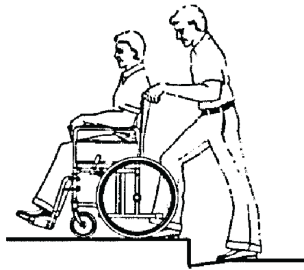


Fig. 4-7

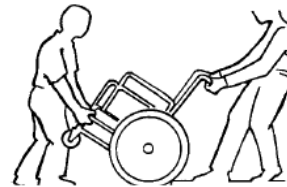


Fig. 4-8

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.

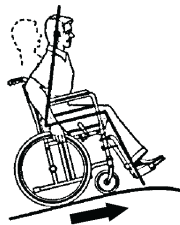


Fig. 4-9

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.

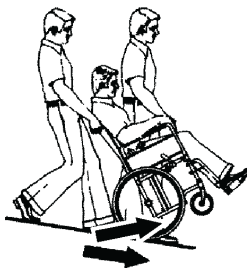


Fig. 4-10

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.

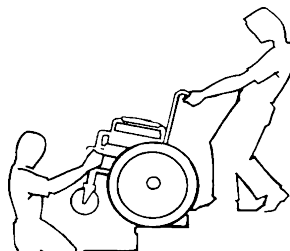


Fig. 4-11

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.

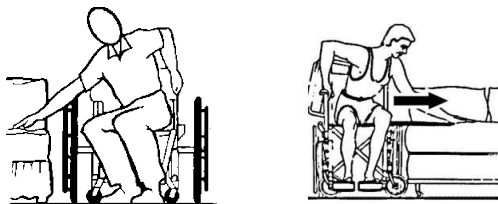


Fig. 4-12

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.

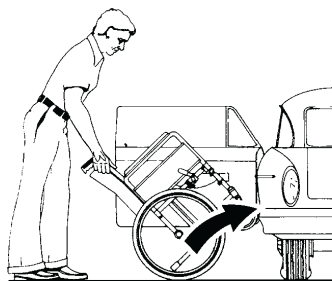


Fig. 4-19

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

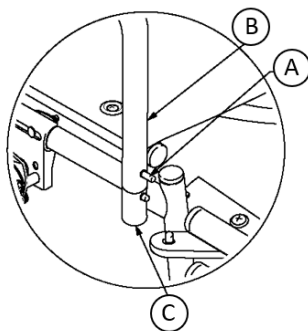


Fig. 5-1

5.2 Removing the Arms

1. Depress the lower arm release pins ① in the front and the back of the arm until they unlock.
2. Hold the arm ② 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 ⑥ by its front and back frame, lower the arm straight down into the front and back sockets ⑦.
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

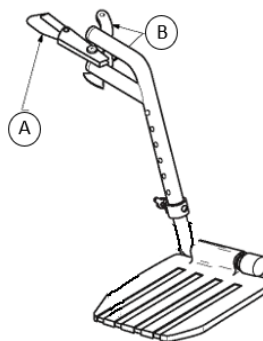


Fig. 6-1



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 ⑥.
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 ⑥.
2. Swing the footrest inward.
3. Ensure the swingaway release lever ④ 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

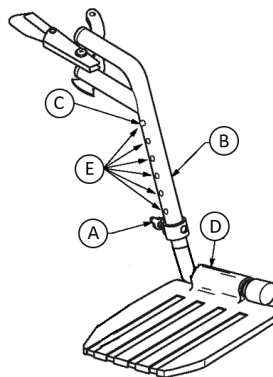


Fig. 6-2

1. Loosen the knob (A) to free the footplate extension inside the hanger (B).
2. Press down on the locking button (C) and adjust the footplate (D) to the desired length. Ensure the locking button (C) is completely extended and securely fastened in the adjustment hole (E).
3. Tighten the knob (A) to secure the footplate extension inside the hanger (B).
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

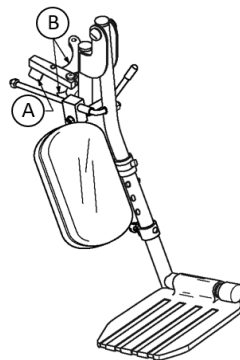


Fig. 6-3

6.3.1 Removing the Elevating Leg Rest Assembly

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

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.
2. Swing the leg rest inward.
3. Ensure the leg rest is locked in place and the swingaway release lever ① 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

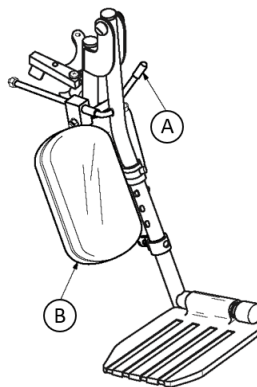


Fig. 6-4

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.

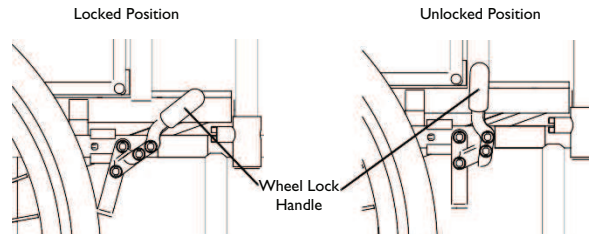


Fig. 8-1

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

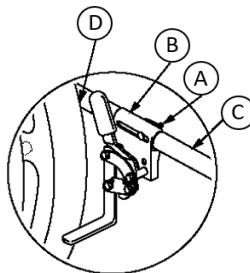


Fig. 8-2



The wheel lock is unlocked in the previous image.

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

4. Use an M10 wrench to tighten the adjustment bolt ① and engage the wheel lock ② 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 ②. Securely tighten the adjustment bolts ① 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 • Forks • Front riggings • Hand rims • 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



United States

Invacare Corporation • One Invacare Way, Elyria, Ohio 44035 • Tel: 800-333-6900 • pro.invacare.com

Canada

Invacare Canada LP • 84 Citation Drive #14, Concord, Ontario L4K 3C1 • Tel: 800-668-5324 • pro.invacare.ca



Jiangsu Intco Medical Products Co., Ltd. • No. 298 Yandunshan Road, Dagang Zhenjiang, Jiangsu, 212132 China • Tel: 0086-511-83174088 • intcomedical.com

Aracent Healthcare • www.aracent.com • Email: sales@aracent.com • Tel: 888-550-7750 • Fax: 888-550-7752

60133784-A 2024-01-30



Making Life's Experiences Possible®



Yes, you can.