



**Invacare<sup>®</sup> Ben NG**  
**User Guide**



**Yes, you can.<sup>®</sup>**



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## Useful Symbols In This Manual



### **WARNING!**

This symbol warns you of danger! Always follow the instructions to avoid injury to the user or damage to the product!



### **NOTE:**

This symbol identifies general information which is intended to simplify working with your product and which refers to special functions.



### **REQUIREMENTS:**

This symbol identifies a list of various tools, components and items which you will need in order to carry out certain work.



### **TRANSPORTATION:**

This symbol identifies important information relevant to transporting your wheelchair in a motor vehicle.

# Warranty Terms & Conditions

## Standard INVACARE Terms

This is to certify that your wheelchair is warranted by INVACARE Ltd. for a period of 2 years for parts and 5 years for frames.

1. Only INVACARE chairs purchased at full price are warranted against defective workmanship and materials.
2. If a defect or fault is discovered the INVACARE dealer from whom the wheelchair was obtained should be notified immediately.
3. The manufacturer will not accept responsibility for damage caused by misuse or non-observance of the instructions set out in the user manual.
4. During the period of the warranty any parts that have become defective, due to faulty workmanship or materials, will be renewed or repaired without charge by the INVACARE dealer.
5. The warranty will be forfeited should any unauthorised alteration be made to the equipment.
6. The purchaser's statutory rights under the Consumer Protection Act are not affected.

## Limitation Of Liability

This warranty does not extend to the consequential costs from fault clearance, in particular freight and travel costs, loss of earnings, expenses, etc.

- Natural wear and tear
- Inappropriate or incorrect use
- Defective assembly or setting-up by the purchaser or third parties
- Defective or neglectful treatment
- Use of unsuitable spares

## Introduction

The User's Manual for the INVACARE **Ben NG & Ben NG HD** range of transit and self propelling wheelchairs is designed to provide guidance on their use and maintenance. The document also gives a brief indication of the options that can be used as an alternative to the standard features. **Ben NG & Ben NG HD** wheelchairs are designed for outdoor and indoor use, and can be folded to be placed in most vehicles. The maintenance and safety checks mentioned in the manual should be carried out within the time scales covered. If an accident or damage occurs whilst using your wheelchair, notify your source of purchase/issue immediately.

Important: The contents of this manual should be read before using the wheelchair.

## Note For Customers

INVACARE provides a wide range of wheelchairs to meet the requirements of customers. However, the decision on the type of model to be prescribed rests exclusively with qualified advisers.

INVACARE or its appointed representative shall not be held responsible if a wheelchair is used that is unsuitable for the user's level of disability, if the wheelchair itself is incorrectly used or if a problem arises due to poor maintenance.

The information set out in this manual may be modified without prior notice. This manual contains copyright information. All rights are reserved. No part of this document may be photocopied or reproduced without prior written agreement from INVACARE or its appointed representative.

**This manual gives details of all the options of the *Ben NG & Ben NG HD* wheelchairs. It describes the options, operation and adjustments that may be required. However, your INVACARE retailer will be able to give you further information and demonstrations.**



### Safety Notice

Please ensure the wheelchair is fully opened and the seat rails are located in the seat saddles before sitting down.

## Intended Use

An indoor and outdoor configurable wheelchair offered with various options compliant with EN12183:2009.

The **Ben NG & Ben NG HD** manual wheelchair has been designed to provide mobility and comfort for persons with impaired mobility.

The wheelchair has been designed to be used either/or by a seated user/carer/attendant in both indoor and outdoor environments.

The **Ben NG** wheelchair has, in its **standard** transit or self propel format (15” - 18” seat widths), been designed to accommodate users who weigh up to a maximum of 127kg (20 stone), have all limbs intact and have sufficient upper body strength to maintain a safe position within the wheelchair without the addition of supporting aids.

The **Ben NG HD** wheelchair has, in its **heavy duty** transit or self propel format (20”, 22” and 24” seat widths), been designed to accommodate users who weigh up to a maximum of 160kg (25 stone), have all limbs intact and have sufficient upper body strength to maintain a safe position within the wheelchair without the addition of supporting aids.

Adaptations from the standard **Ben NG & Ben NG HD** wheelchair format are available to accommodate users who do not meet the above criteria; these will only be considered after a suitable risk assessment has been carried out by the product prescriber. When prescribing wheelchairs for use by full or partial amputees (above or below knee, single or double) it is important to recognise that lower limb amputation will affect the sitting centre of balance of the wheelchair. The impossibility of generalising the individual ability of a wheelchair user means it is imperative that the product prescriber carries out a full stability evaluation to ensure that the user is safe in the use of the wheelchair and the risk of the wheelchair tipping is minimised.

The wheelchair should only be used in accordance with the safety advice given within this user guide. Failure to follow the recommended advice within this user guide could lead to personal injury.

No claims are made that the product will medically improve the circumstances or condition of the user.



# I Safety & Operating Limits

## Stability and equilibrium

To ensure that the wheelchair remains stable and is manipulated correctly, you must always maintain good equilibrium. Many actions cause the user of a wheelchair to reach out, lean over or move about within the wheelchair and outside it. These actions will change your centre of gravity and weight distribution of the wheelchair. Your wheelchair has been designed to remain stable for normal everyday use if it is used correctly taking the precautions recommended in this manual.

## I.1 Weight Limit



The maximum user weight limit is 127kgs (20 Stone) for **Ben NG** chairs with a seat width of 15" - 18" wide chairs. The maximum user weight limit is 160kgs (25 Stone) for **Ben NG HD** 20" to 24" wide chairs.

The wheelchair user's degree of activity is important. For example, a very active user weighing 75Kg may subject the wheelchair to more stress than a less active user weighing 115Kg. We recommend very active wheelchair users to choose an appropriate design of wheelchair. Your INVACARE approved distributor will advise you on the appropriate model.



The addition of a cushion will alter the centre of gravity and adversely affect the stability of the wheelchair.



The hanging of additional loads (back pack or similar items) onto your chair backposts can affect rearward stability of your wheelchair and can cause the wheelchair to tip backwards causing injury.

## I.2 Safe Slope



There is currently no recognised test method that will ensure repeatability and accuracy for determining dynamic stability of a manual wheelchair.

**Minimum Static Stability test results for the *Ben NG & Ben NG HD* wheelchair are as follows:**

**Forward facing uphill = 11.5°**

**Forward facing downhill = 21°**

**Sideways, across slope = 18.5°**

Based on these results Invacare estimate the maximum safe slope (dynamic) as 9 degrees  
However, the maximum safe slope could vary depending on the ability of each individual.

Please consider the following before attempting to negotiate any slope:

Your / your attendants physical capability

Length of slope / distance to travel

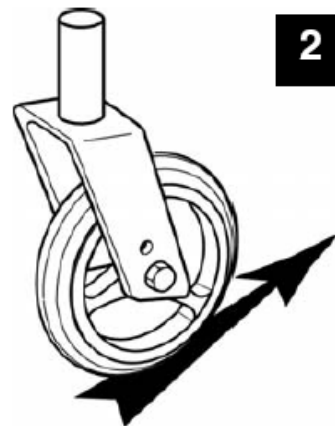
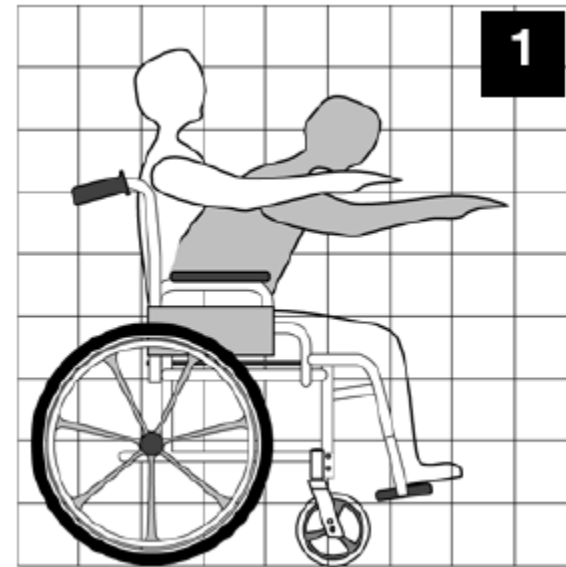
Condition of surface being traversed - rough, wet or slippery surfaces etc will present additional hazards.

### 1.3 Reaching For An Object From A Wheelchair

(Note: All images showing a self propel wheelchair are for illustrative purposes).

The limitations on reaching out from a wheelchair shown in **Figure 1** have been produced using a representative sample of wheelchair users. Only the arms should extend beyond the seat of the wheelchair. For safety reasons, the body and head should remain within the wheelbase.

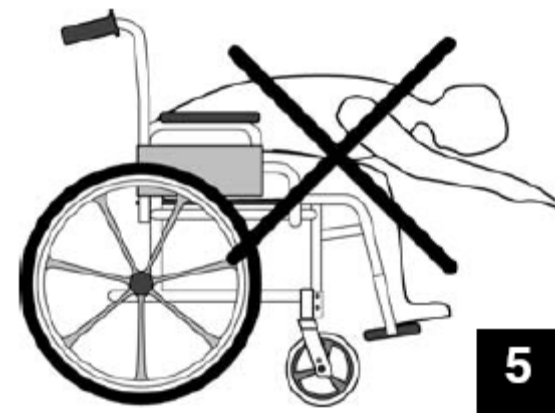
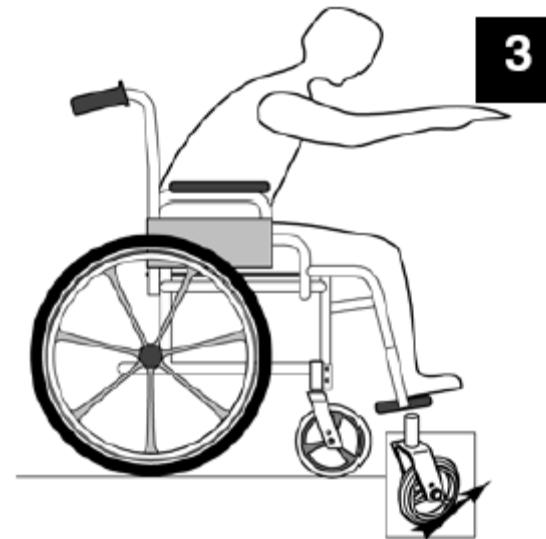
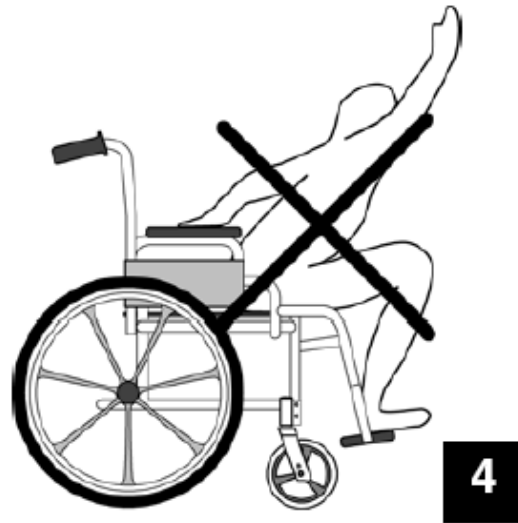
Position the castors to give the longest possible wheelbase (**Figure 2**). Lock the manual brakes on the rear wheels.



### Leaning Forwards

(Figures 3, 4 & 5)

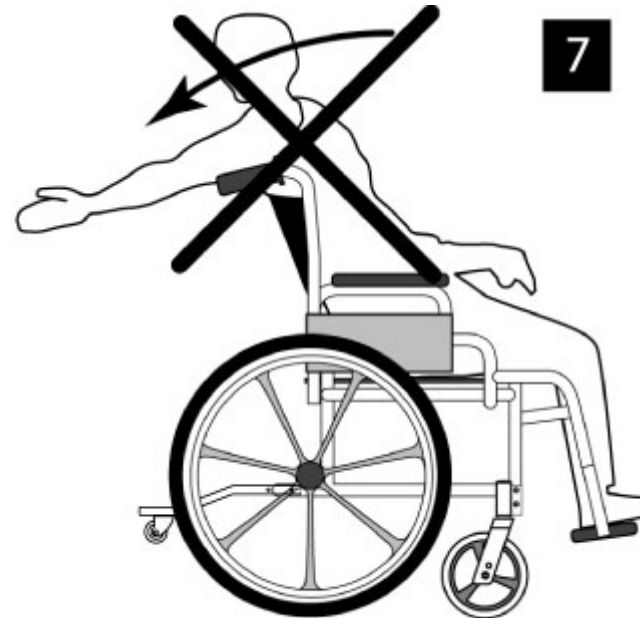
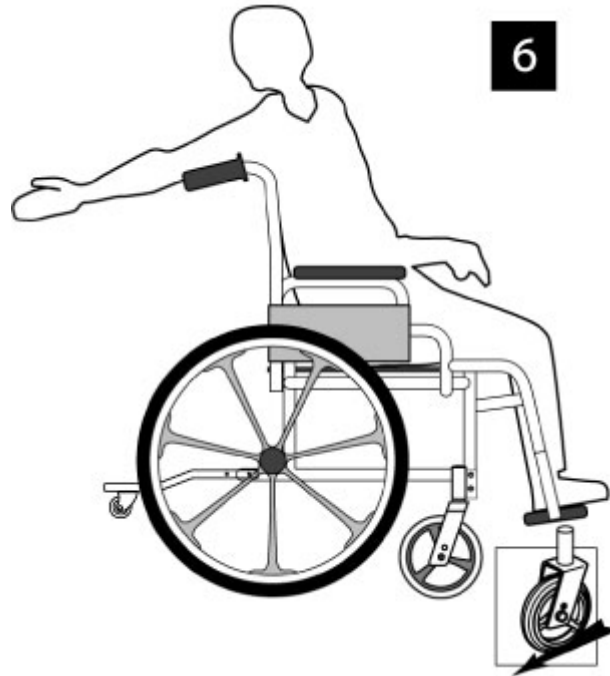
With the wheelchair as close as possible to the object you wish to reach, only reach out to take what is within arm's length in normal sitting position.



## Leaning Backwards

(Figures 6 & 7)

With the wheelchair as close as possible to the object you wish to reach, only lean back for objects that are within arm's length in normal sitting position.



## 1.4 Transferring To Other Seats

### Leaning To One Side

(Figure 8)

This is a dangerous manoeuvre as it is easy to tip sideways.

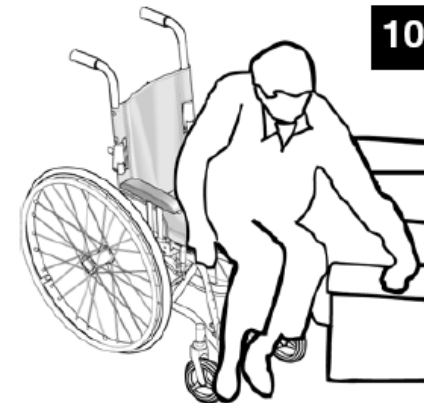
When next to an object and leaning over, you must use the castors as a means of keeping the wheelchair stable and balanced.

For your safety, it is essential to be in the correct position.

Do not try to pick something up from the floor if this would upset your balance.

It is possible to move from and to a manually propelled chair if the following guidelines are followed. INVACARE does not recommend any particular method for transferring: This is the responsibility of a medical adviser who should consider your level of disability and type of wheelchair. When transferring, either to get out of or return to your wheelchair, make sure that the gap between the two seats is as small as possible.

(Figures 9 and 10)

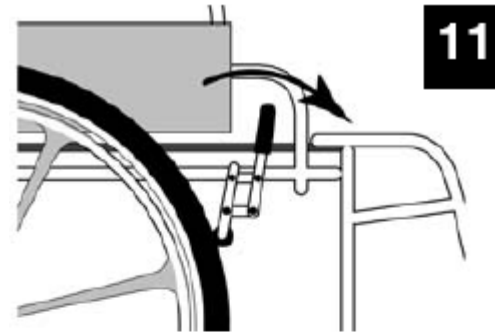




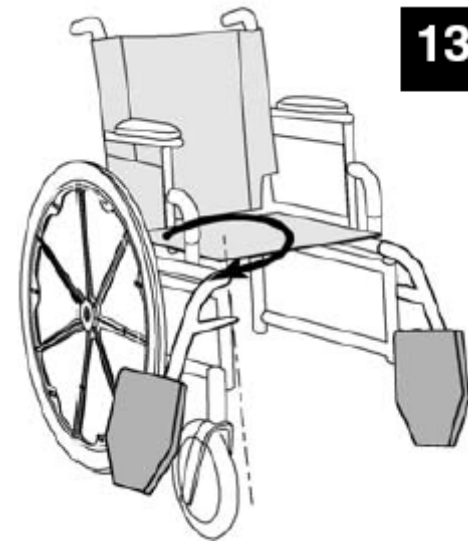
When transferring, either to get out of or return to your wheelchair, make sure that the manual brakes on the rear wheels are on to prevent the wheel moving (**Figure 11**).

Turn both castors towards the seat to which you wish to move. Lift up the footplates (**Figure 12**).

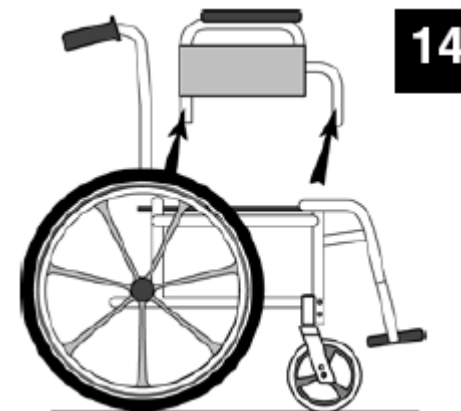
Do not stand on the footplates.



If possible, swing the legrest hangers out to the side to clear the passage (**Figure 13**).



If possible, remove the armrest on the side between the wheelchair and the other seat (**Figure 14**).







**Note:** Never stand on the footplates (**Figure 15**).



## 1.5 Tilting On The Rear Wheels & Obstacle Climbing

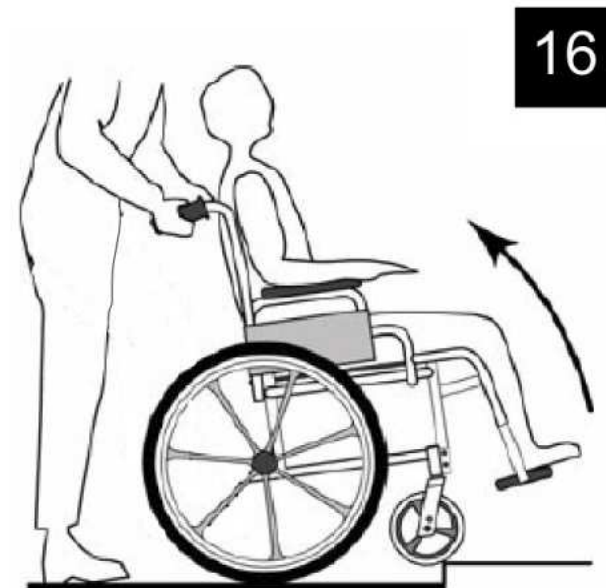
**Tilting with assistance from a third person:** The user should be sitting correctly and firmly in the chair or if unable to support themselves, should be strapped in position to prevent them falling out of the chair. If a wheelchair user needs assistance in tilting the chair, the assistant must know how to use his body correctly. Keep your back straight and bend at the knee to tilt the wheelchair. Never exert too much force. The medical team in charge of the user will advise you in the methods best suited to your morphology. The INVACARE approved distributor will provide you with information on the risks of using the wheelchair incorrectly if the wheelchair has removable parts such as armrests or leg rests.



**These must NEVER be used as aids when lifting** as they may inadvertently become detached and cause injury.

To tilt the wheelchair (**Figure 16**), a third person should grip the handles firmly. Warn the user of the wheelchair before tilting it and remind him/her to lean backwards. Check that the user's feet and hands are clear of all the wheels. Place a foot on the foot tipping lever and push smoothly until the wheelchair is at the point of equilibrium. At this stage, the helper will feel a difference in weight distribution. Turn the wheelchair in the direction required and negotiate the obstacle.

Lower the front of the wheelchair smoothly, holding the handles firmly. Use your weight on the tipping lever to act as a counterweight. Do not lower the wheelchair suddenly for the last few centimetres before returning to the normal position. This might hurt the user.

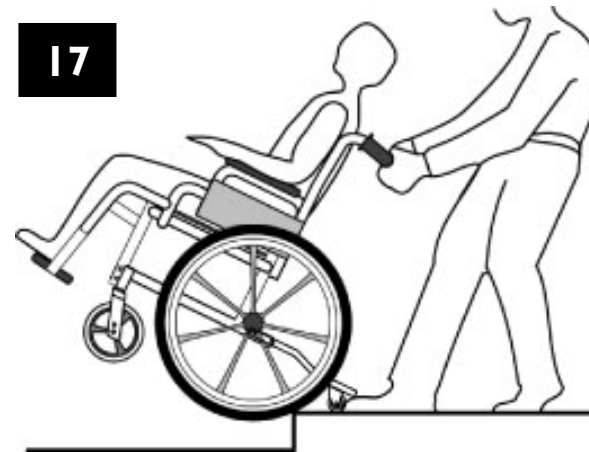


## Method 2 - Negotiating the obstacle backwards

### (Figure 17)

The helper should stand on the pavement and turn the wheelchair until the rear wheels are against the kerb. Tilt the wheelchair backwards to the point of equilibrium and, in a continuous movement, pull the wheelchair until the rear wheels mount the kerb and pass onto the pavement. Do not lower the castors to the ground until you have pulled the rest of the wheelchair sufficiently far to clear the kerb.

Note: Folding backs should always be checked to ensure they are engaged.



## 1.6 Steps, Stairs Or Obstacles Over 50mm High

We recommend that you take very great care when taking a wheelchair up or down stairs. Two people are required for this.



**ADVICE TO THIRD PERSONS:** Make sure that you grip onto fixed, non-removable parts only.

18

Use the following procedure for going up stairs (**Figure 18**): Tilt the wheelchair to its point of equilibrium. One helper (at the back) holds the wheelchair up against the first step, gripping the handles firmly to lift. The second helper, holding firmly a fixed part of the front frame, lifts the wheelchair above the stairs and holds it while the first helper places one foot on the following step and repeats the operation. The wheelchair must not be lowered until the last step has been negotiated and until the chair is clear of the stairs.



### Escalators

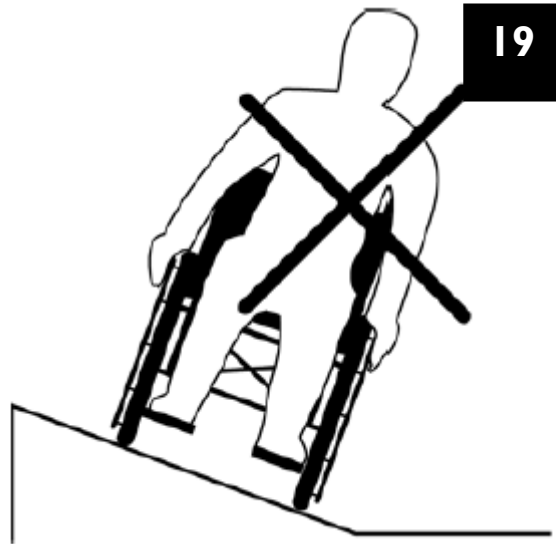
Do not use an escalator when moving a wheelchair from one floor to another. This might cause serious injury.

## Upward & Downward Slopes (Operating Limits)

1.7



Always go straight up and down slopes otherwise the wheelchair might overturn (**Figure 19**).



## **I.8 Heat and Fire Warnings**

The wheelchair is made from metal and plastic materials and, as with all products made with such materials, it can absorb heat from the sun when used outdoors or exposed to sunlight through windows etc. This can result in the surfaces of the wheelchair becoming hot, so take care in using it and touching the surfaces if it is left or used in such an environment.

### **Fire and burning**

The seat and backrest materials have been tested to ensure compliance with ISO requirements for cigarette and match flame equivalent and are non flammable but care must still be exercised if using cigarettes or other smoking products, or sources of heat, not to drop them onto the seat and/or backrest where they can become trapped between contacting/trap points on the wheelchair.

## 2 Use

### 2.1 Unfolding & Folding The Wheelchair

To Unfold:

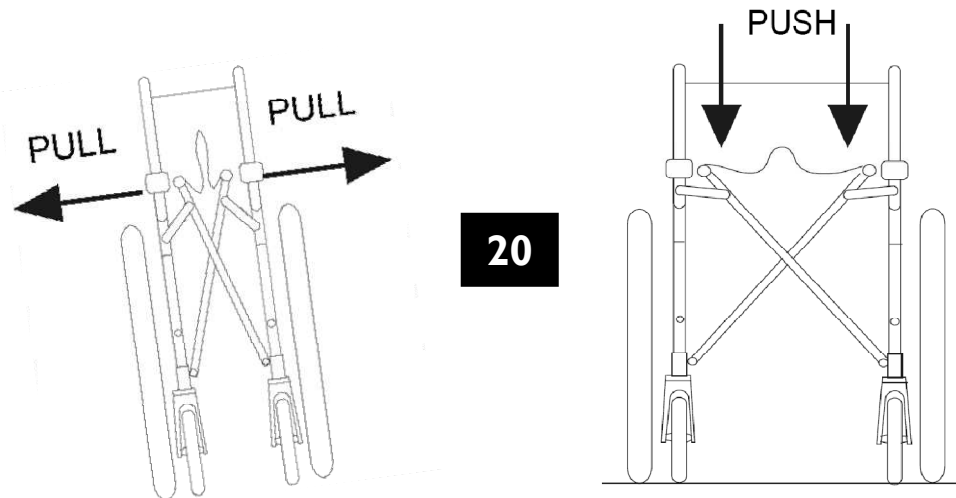
(Figure 20)

Unfold the wheelchair by taking hold of the armrest or the side of the chair nearest to you, tip the chair sideways (lifting the rear wheel and the caster from the ground) and press on the tube supporting the seat upholstery until it is fully down. The seat upholstery should be fully open.

**Note:**



Ensure that the seat rails are positioned above the cradles before sitting down. To avoid injury, keep hands and fingers away from moving parts (armrests, folding frame, footrest supports or leg rests, etc).



**To fold:**

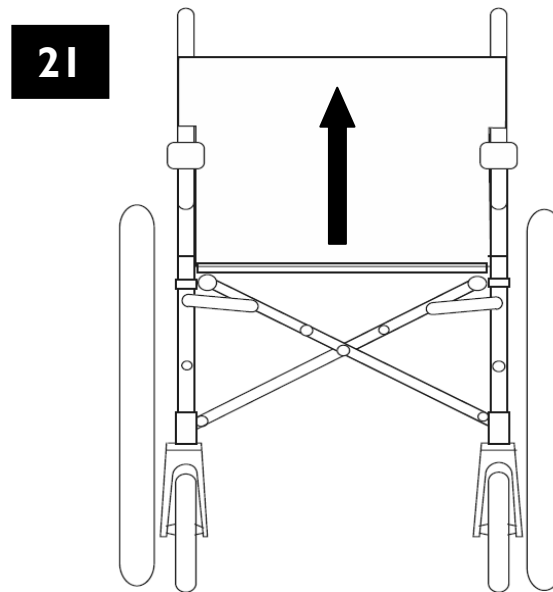
**(Figure 21)**

Lift the footplates.

Release the backrest tension bar if where fitted.

Using both hands, take the centre of the seat fabric at the front and back edges and raise it.

Or, tilt the wheelchair to one side and close it using the handles on the back rest or the armrests.







### 3

## Summary Of Safety Instructions

Summary of instructions for use for improved safety

- User **weight limit** for **Ben NG** is 127kgs (20 Stone) for chairs with a seat width of 15” - 18” wide chairs.
- User **weight limit** for **Ben NG HD** is 160kgs (25 Stone) for 20” to 24” wide chairs.
- **Do not try** to reach objects if you have to move forward on the seat.
- **Do not try** to reach objects on the ground if you have to lean down beyond the safety limits.
- **Do not lean** too far back to reach objects behind you: you may tip over.
- **Do not move** your weight, or your sitting position in the direction in which you wish to go: you may tip over.
- **Always apply both manual brakes** before trying to get out of or back into the wheelchair.
- **The manual brakes are not designed for slowing you down.**
- **Do not try** to stop a moving wheelchair using the manual brakes.
- **Do not tilt the wheelchair without assistance from a third person when negotiating obstacles more than 30mm high.**
- **Do not use** an escalator for moving a wheelchair from one floor to another. (This may cause serious injury).
- **Do not use** your wheelchair if the tyres are not inflated to the correct pressure shown on the side.
- **Carry out** the regular checks recommended in this guide and by your INVACARE approved retailer.
- **Use** your wheelchair with respect for other people.
- **Do not use** your wheelchair as a transport seat in a vehicle. Unless it is not practical for the user to be transferred (Refer to section - Transportation).

## 4



# General Descriptions

Each wheelchair is specially designed to meet the requirements of its user. This manual describes how to adjust the chairs in this range, enabling you to find out how to adjust the wheelchair to suit your needs.

### General descriptions

Your wheelchair has a number of main parts which will be mentioned throughout this manual. These parts are described below.

Support is provided by the **backrest, seat** and **armrests**.

The **folding chassis** comprises of the **side frames** and **folding cross brace**. This is the essential supporting framework of the wheelchair on which all the other parts are mounted.

The **rear wheel** comprises of the **wheel** and **axle**.

The **front castors** comprise of the fork and wheels. The front wheels provide contact with the ground and the rotating forks steer the chair.

**Manual brake** - The manual brake is used to park the wheelchair.

**Swing away footrest support** and **leg rest** - These are mounted to the chassis and can be swung away to make transfer easier to and from the wheelchair.

The **footplate assembly** comprises of the **adjustable tube** and **foot plate**. These support your feet.

These parts are illustrated on the following page.

## Features



- 1. Armrest Assembly 2. Seat Canvas 3. Swing Away Legrest Hanger 4. Footplate Assembly  
5. Front Castor 6. Brake Assembly 7. Rear Wheel 8. Folding Chassis 9. Backrest  
10. Serial Number label**

## Serial Number Label




Pencoed Technology Park, Pencoed, Bridgend  
CF35 5AQ UK. Tel 01656 776200

**INVACARE**

Date:

**CE**

Model	<input type="text"/>	Total Weight	<input type="text"/>	Max Speed	<input type="text"/>	Max Incline	<input type="text"/>
	<input type="text"/>	Unladen Weight	<input type="text"/>	Amperes	<input type="text"/>	Voltage	<input type="text"/>
	<input type="text"/>	Max User Weight	<input type="text"/>				
<b>SN</b>	<input type="text"/>	Max Front Load	<input type="text"/>				
		Max Rear Load	<input type="text"/>				

Pencoed Technology Park, Pencoed, Bridgend  
CF35 5AQ U.K., Tel 01656 776200

**INVACARE**

Date:

**CE**

Model	<input type="text" value="1550169"/>	Total Weight	<input type="text" value="145KG"/>	Max Speed	<input type="text" value="NA"/>	Max Incline	<input type="text" value="NA"/>
	<input type="text" value="Ben NG TR 15X16"/>	Unladen Weight	<input type="text" value="18.0KG"/>	Amperes	<input type="text" value="NA"/>	Voltage	<input type="text" value="NA"/>
	<input type="text" value="NA"/>	Max User Weight	<input type="text" value="127KG"/>				
<b>SN</b>	<input type="text" value="HL110800004"/>	Max Front Load	<input type="text" value="NA"/>				
		Max Rear Load	<input type="text" value="NA"/>				

Example of the serial number label which can be found on the side frame of the wheelchair.

## 5 Backrest

### (Photograph 1, 2 & 3)

The backrest can be folded at the middle by means of a locking mechanism and can be operated by either the user or an attendant.

To fold the backrest of the wheelchair, stand behind and simultaneously pull the lever situated at each side of the backrest frame (see below). With the lever disengaged, the backrest can be folded down. To raise the backrest, simply lift until it is upright and ensure that the levers are pushed down positively into the locked position.

**CAUTION** - Ensure that the backrest locking mechanism is correctly engaged before using your wheelchair.



## 6 Seat

### (Photograph 4)

The seat upholstery is screwed onto the seat tubes of the folding cross brace.

This model requires no adjustment. Just check regularly that the fixing screws are tight. If the washers are loose, these screws should be tightened. If the problem continues, contact your INVACARE retailer and ask him to change the mounting for safety reasons.

4



## 7 Armrests

The armrests are fitted in pairs on the wheelchair. When removing them, remember that there is one armrest for the right hand side and another for the left hand side.

### (Photograph 5)

The arm rest has a tube which supports the front and back locking devices as well as the armrest pad. This armrest can be swung towards the back, and can also be removed if required.

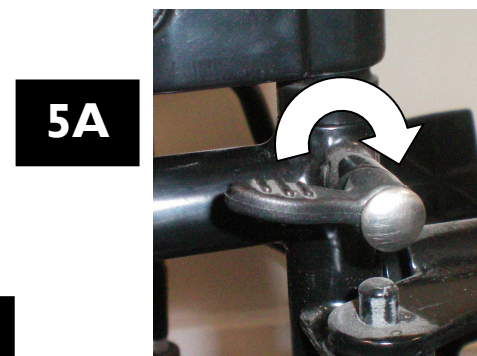
Use: To swing away, turn the front lock **(5A)** in order to release. Lift the armrest and position it towards the back in order to carry out lateral transfers. Carry out these operations in reverse order to replace the armrest. Turn the front lock **(A)** in order to firmly secure the armrest to its location.

Removal: Turn the front lock **(A)** in order to release. Lift up the armrest. Carry out this operation in reverse order to replace the armrest. Turn the front lock **(A)** in order to firmly secure the armrest to its locations.

Adjustable Armrest: Optional

### (Photograph 6)

Fitting and removal is the same procedure as above. Ensure the armrest is secure following adjustment.



## 8 Chassis

### Side Frames

The side frames provide the mounting points for the rear wheels and the castors.

Adjustment: No adjustment is possible on this series of wheelchair.

### Folding cross brace

The folding cross brace has two members which enable the wheelchair to be folded.

Adjustment: No adjustment is required. To fold or unfold your wheelchair, refer to section 2.1 in this user guide.

## 9 Rear Wheels

### Self Propelled Rear Wheels

The rear wheels are available as 24" (61cm) composite MCP tyres. The rear wheels can be mounted to the sideframes in two positions. Rear wheels are fitted with handrims.

### Transit Rear Wheels

The rear wheels are available as 12" (30.5cm) composite MCP tyres. The rear wheels are attached to the sideframes in one position.





### **Assembly Instructions**

#### **Wheel Mounting Block.**

3 x M6 bolts and nyloc nuts are used to secure the mounting block to the 3 x pre drilled holes in the rear of the frame. The Self propelled wheel can then be located at two positions, standard, and set-back for added stability.

Manual brakes will require repositioning.

Ensure that all fixings are secure, and brake efficiency is tested before use of the wheelchair.

Mounting block not to be positioned in reverse.

Standard position



Set back position for added stability





**Do not fix the mounting block in forward facing position.**



**10**

## **CASTORS**

**(Photograph 8)**

Standard front wheels have a diameter 190mm (7.5") and a width of 30mm (7.5"). Heavy Duty wheels are available with a width of 45mm (1.75").

### **Forks**

The fork connects the chassis and the wheel.

Adjustment: The forks do not require adjustment. Check that the fork rotates freely.

**8**



# Manual Brakes

## (Photograph 9)

II

The manual brakes are designed to secure the wheelchair when stationary. They are not intended to slow down the wheelchair or to be used as support during a transfer. They must be operated simultaneously.

In order to engage the brake, push the handle (A) forward. The handle folds back to facilitate transfers. Draw as a preliminary the handle upwards! Once the brakes are engaged, the wheelchair should not move at all.

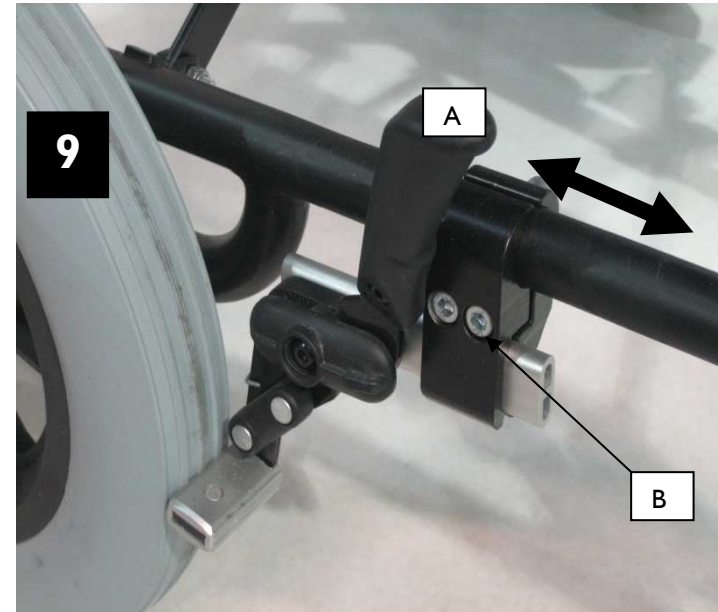
**Note:** The brakes are fitted in pairs to the wheelchair. When adjusting or removing, remember that there is one brake for the right hand side and another for the left hand side. Brake adjustments are based upon the diameter and type of the wheels. In the event of wear of the solid tyre, you may need to adjust the brake(s). To adjust the brake(s), loosen the two screws (B) and slide the brake assembly to obtain the following value between the wheel and the brake shoe in unlocked position.

Please make sure this adjustment is always done as describe whatever the chair configuration is.

Solid tyre X = 6 mm

Firmly tighten the screws (B) after adjustment.

Keep your fingers away from movable parts to prevent injuries!



Note: It may be necessary to use one or two tyre removal tools (not supplied).

### WARNING

Applicable only to chairs fitted with 24" wheels. These chairs are assembled with the wheels set in the rearward position. It is important that the chairs are not re-configured with the wheels set in the "forward" position; this would allow the footrest hangers to disengage the brake levers when swung away from their locked position, causing the chair to become unstable.

## 12 Footrests

### Swing away footrest supports

(Photograph 10 and 11)

The footrest supports can be swung away to the outside/rear of the wheelchairs to free the front of the wheelchair and making it easier for the user to transfer to another seat. They can also be completely removed.

Use: To swing the support to the outside, press the release mechanism lever **(A)**. Rotate the support carefully to the outside of the wheelchair. To return the support, repeat the operations in the reverse order. Check that the release mechanism **(A)** has automatically locked.



To remove the support, carry out the same operation as for swing back, remove the “R” clip and lift the support upwards. To refit it, offer the support in the open position, align the holes **(B)** on the pivots **(C)** and press down. Rotate the support to the locked position. Remember to refit the “R” clip.

Adjustment: The footrest supports cannot be adjusted.

Note: The footrest supports are fitted in pairs to the wheelchair. When adjusting or removing, remember that there is one support for the right hand side and another for the left hand side.

## Elevating Legrests

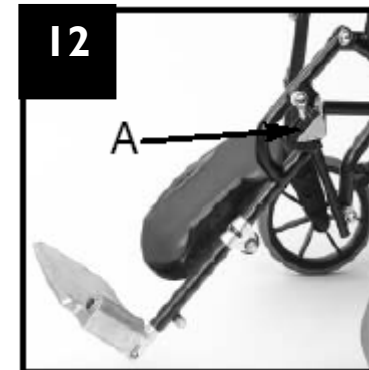
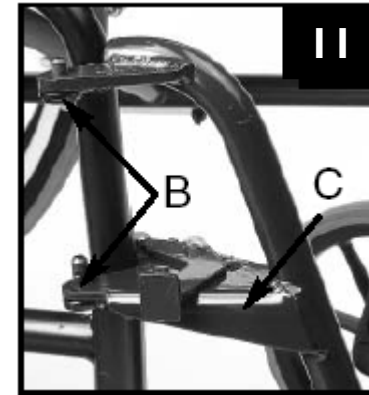
**(Photographs 12 and 13)**

The leg rests shown are leg rest supports with an integral pad for supporting the lower leg. The leg rests can be swung away and removed.

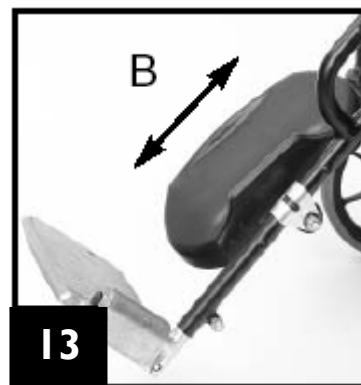
Use: the operations for swing away and removing are the same as for the footrest supports.

Adjustment: To adjust the angle of the leg rest, lift it upwards to the angle required. To lower the leg rest, hold the leg in one hand and operate the release lever **(A)** with the other hand. Lower to the required position.

The calf support pad can be pivoted when folding the wheelchair. The position can also be set on the mounting tube in one of three locations. It can also be set along the mounting tube by sliding into the chosen location.



Note: The elevating legrests are fitted in pairs to the wheelchair. When adjusting or removing, remember that there is one elevating legrest for the right hand side and another for the left hand side.

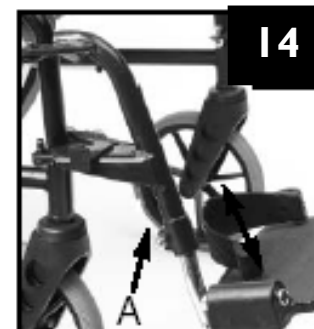


## Footplate Assemblies

### Independent footplates for footrest supports

#### (Photograph 14)

The footplate assemblies comprise of an adjustment tube and footplate and are intended solely as a foot support when you are sitting in the wheelchair and should not be used for standing. Each footplate assembly can be adjusted in height. The footplates can be pivoted to an upright position to aid front transfers.



Adjusting the footrests on the supports: Release the nut (**A**), position the footplate assembly at the required height in the footrest support tube, tighten the nut to secure.

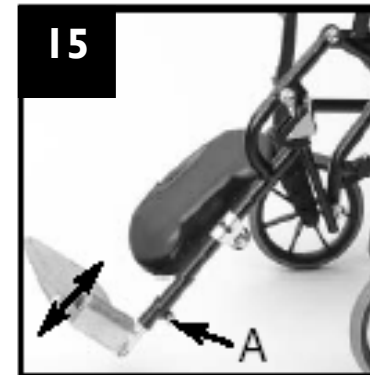
Recommended height adjustment for footplates – minimum 4” for kerb clearance.

### Independent footplate assemblies for elevating leg rests

#### (Photograph 15)

The foot rests comprise a pair of mounting tube and rest assemblies and are intended solely as a foot support when you are sitting down. Each footplate assembly can slide into the elevating legrest on the appropriate side and its height can be adjusted. The footplates can be raised for front transfers.

Adjusting the footplate assemblies on the leg rests: Release the set screw (A) and position the foot rest assembly at the required height in the leg rest tube. Tighten set screw (A).



## 13

### Heel support straps

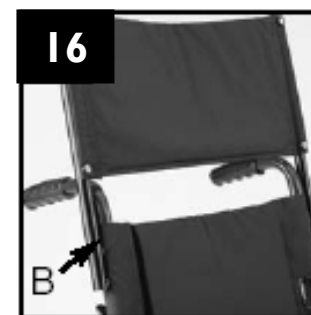
To ensure the correct foot position is maintained, the footrest is fitted with heel straps as a standard feature. The strap cannot be removed and should be repositioned towards the front when folding back the footplate.

## I4 Backrest Extension

(Photograph 16 & 17)

The backrest extension has two uprights (**B**) and backrest extension upholstery. The locating pegs should only be fitted to the push handles of the backrest by a qualified technician. When refitting, make sure that it is firmly fixed onto the locations fitted to the backrest tubes. Raise the head rest assembly to remove it from the tubes of the recliner backrest.

Adjustment: No adjustment is required for this extension. However, it can be removed for transport.



### Fitting Instructions - Backrest Extension is suitable for Vehicle Transport

The backrest extension can be used when using your wheelchair as a seat in transportation. Please ensure that the extension is securely fitted to the push handles.

Using a M5 x 30mm Thumb screw  
(See photo)

Feed the Thumb screw through the tube and location ring and firmly secure to the push handle.





## 15 Lap Belt

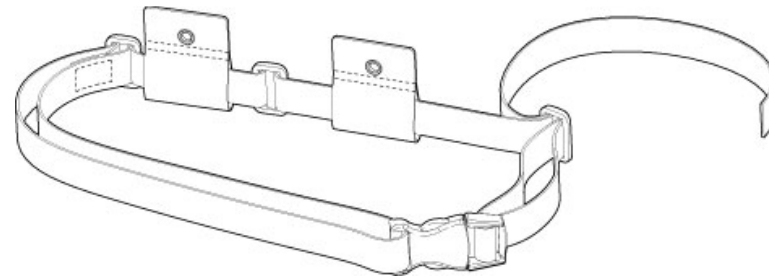
### 15.1



#### TYPES OF LAPBELT:

The lap belt is commonly used to assist wheelchair users to maintain an optimal sitting posture. Correct use of the lap belt is intended to help the user, especially those with limited sitting balance, to remain safe, comfortable and well positioned in their wheelchair. Please note however, that the lap belt may have been replaced with an alternative by your therapist to meet your requirements. If an alternative lap belt or harness, etc. has been fitted please ensure you are provided with the manufacturers written instructions for fitting and safe usage.

'Plastic buckle belt' – adjustment is possible on both sides will allow the buckle to remain in a central position.



## 15.2 Lap Belt Adjustment



A lap belt is a standard accessory included with the purchase of your wheelchair, this will have been factory fitted, or fitted by your INVACARE supplier / dealer, who would have provided you with a demonstration of operation and fitting, etc. The lap belt is commonly used to assist wheelchair users to maintain an optimal sitting posture. Correct use of the lap belt is intended to help the user, especially those with limited sitting balance, to remain safe, comfortable and well positioned in their wheelchair.

### Note

In the interests of safety, INVACARE recommend the use of a correctly adjusted lap belt whenever you use your wheelchair. The lap belt should be sufficiently tightened to prevent you from sliding down between the belt and seat.

### Adjustment

Ensure you are sitting correctly, i.e. fully back in the seat, and the pelvis is as upright and symmetrical as possible – not forward on one side or tilted back. Position the lap belt so that the hip bones can be felt above the belt. Adjust the length of the lap belt using the buckles on either side of the clasp. As a guide, adjust the length so that there is just sufficient room for your hand to slide between your body and the belt. For ease of use it is recommended that the clasp is kept in a central position i.e. make adjustments to each side.



### Warning

During transportation the user should be restrained independently of the wheelchair by a suitably approved restraint system, the lap belt supplied with your wheelchair may be used in addition to but never as a substitute for an approved passenger restraint system.

## 16 Routine Checks & Maintenance

### Checking Performance

As a user, you are the first to notice that your wheelchair is not operating properly. The following table shows some readily identified symptoms and gives the preliminary checks to be carried out. As a general rule, the parts subject to wear should be monitored and changed most often: tyres on the rear wheels, front castor wheels, brake pads, upholstery.

Checks	The wheelchair drags to the right	The wheelchair drags to the left	The wheelchair turns or moves slowly	The castors wobble	Creaks and clicking	Play (looseness) in the chair
Nuts, bolts and screws are tight			X	X	X	X
The angle of the front forks is correct	X	X	X			
The castors are both in contact with the ground at the same time	X	X		X		

If the symptoms persist when the nuts, bolts and screws have been tightened, consult your approved INVACARE distributor.

## Checking The General Condition

For maintenance operations, consult your distributor who has all the necessary information.

Ask your distributor to inspect your wheelchair thoroughly annually, and carry out in depth maintenance. Regular maintenance allows defective or worn parts to be identified and improves the normal operation of your wheelchair.

The following table shows what to check when the wheelchair is delivered, each week, each month and at 6 monthly intervals.

### Checks to be made:

	On delivery	Weekly	Monthly	6 Monthly
<b>1. General:</b>				
The wheelchair unfolds and folds easily	X			X
The wheelchair moves in a straight line (no resistance or drag)	X	X		
<b>2. Manual Brakes:</b>				
The manual brakes do not touch the tyres when moving.	X		X	
The manual brakes are easy to operate	X			X
The articulations are not worn and do not show signs of play	X		X	
<b>3. Cross Bars</b>				
Examine them to check that they are not worn or bent	X			X
<b>4. Clothing protectors / armrest upholstery</b>				
Check that all fixings are in position and tightened	X			X
<b>5. Armrests</b>				
Firmly attached but easy to remove	X		X	

**Checks to be made:**

	<b>On delivery</b>	<b>Weekly</b>	<b>Monthly</b>	<b>6 Monthly</b>
<b>6. Arm Pads</b>				
Check that the padding is in good condition	<b>X</b>			<b>X</b>
<b>7. Seat and backrest upholstery</b>				
Check that it is in good condition	<b>X</b>	<b>X</b>		
<b>8. Rear Wheels</b>				
Wheel nut and sealed bearings correctly tightened	<b>X</b>		<b>X</b>	
No excessive lateral movement or binding when they are lifted from the ground and turned, quick release axles correctly locked	<b>X</b>		<b>X</b>	
<b>9. Handrims</b>				
Check for rough patches	<b>X</b>			<b>X</b>
<b>10. Spokes</b>				
Inspect the spokes in case any are bent, broken or slack	<b>X</b>	<b>X</b>		
<b>11. Front Castors</b>				
Check the axle to ensure that it is correctly tightened, by turning the caster The caster should stop gradually	<b>X</b>	<b>X</b>		
<b>12. Fork / Fork tube</b>				
Check that all the fittings are in place	<b>X</b>	<b>X</b>		
<b>13. Solid tyres</b>				
The wheelchair has solid tyres, check the running surface	<b>X</b>	<b>X</b>		

## 17 Transportation

### 17.1 Using your wheelchair as a seat in a vehicle



INVACARE always advises that a wheelchair secured in a vehicle will not provide the equivalent level of safety and security of vehicle seating systems and recommends transfer to the vehicle seating, but also recognizes that it is not always practical for the user to be transferred. In those cases where it is considered that the user must be transported whilst within the wheelchair, then the following advice should be followed.

1. Seek confirmation from the transporter that the vehicle is suitably designed and equipped to transport a passenger seated in a wheelchair.

Note: The wheelchair user safety during transportation largely depends upon the diligence of the person securing the tie downs and passenger restraints.

2. Any part of the wheelchair (accessories etc.) that can be easily detached should be removed and stored in the vehicle luggage hold during transportation.

3. The wheelchair should always be transported in a forward facing direction. Rearward facing is only acceptable if the occupant's head and back can be supported by a suitable bulkhead.

4. INVACARE recommends that the wheelchair be secured by 4-Point webbing tie down systems as manufactured by Unwin Safety Systems or Koller Safety Restraint Engineers.



5. When attaching tie down systems to the wheelchair it is imperative these are fixed onto the main frame of the wheelchair and not onto any attachments or accessories (not wheels, handrims, castors, footrests, anti tipping levers etc.). Tie down points are indicated by the tie down stickers in the correct areas.

6. The tie downs should be secured, as close as possible, at an angle of 45° to ensure maximum effectiveness of the restraint in all directions.

7. The occupant should be restrained independently of the wheelchair by a suitably approved passenger safety belt or harness. Pelvic restraint or lap belts supplied with the wheelchair may be used in addition to but never as a substitute for approved passenger restraints.



## 17.2 Transporting your wheelchair as luggage



When you are transporting your wheelchair you can easily remove certain parts to make the chair smaller and lighter.

**1** Start by removing the armrest assemblies; refer to guidance provided in section 7

**2** Remove the legrest / footrest assemblies; refer to guidance provided in section 12  
Be careful not to trap your fingers between frame and legrest.

**3** Fold the backrest; refer to guidance provided in section 5

**4** Folding the chair; refer to guidance provided in section 2.1

**5** Position the wheelchair in a safe location within the storage compartment of the vehicle.



**Always exercise caution when lifting;** adopt correct posture and use correct technique to avoid injury.  
Never lift the wheelchair by removable parts (armrests, footrests etc if left connected).



## **18 Storage**



When you will not be using your wheelchair for a prolonged period, the following precautions will help to keep it in perfect condition.

Store the wheelchair in a clean, dry place.

Do not put heavy objects on top of it.

Cover it with a dust sheet to keep it dust-free.

## **19 Cleaning**

The parts of the wheelchair can be cleaned with a soft, dry cloth. Nylon seat, backrest upholstery and the tyres can be cleaned with a cloth dampened in clean soapy water.

When you have been out or whenever the metal parts have been wet, they should be wiped dry to prevent possible corrosion.

## 20 Product End of Life

Even though your wheelchair has been designed to provide a long and trouble free life it is inevitable that wear, tear and usage will eventually render the product unusable.

- INVACARE recommends that the average usable life of this product is five years, providing the product has been correctly maintained according to the manufacturer's recommendations.

When the time comes to replace your wheelchair please remember to dispose of the product responsibly and recycle any recyclable parts as mentioned in this user guide.

This product may contain substances that could be harmful to the environment if disposed of in areas (landfills) that are not appropriate according to legislation. The 'crossed out wheelie bin' symbol (as shown) is placed on this product to encourage you to recycle wherever possible.

Please be environmentally responsible and recycle this product through your recycling facility at its end of life.

### Disposal

- The equipment packaging is potentially recyclable.
- The metal parts are used for scrap metal recycling.
- The plastic parts are used for plastic recycling.
- Disposal must be carried out in accordance with the respective national legal provisions.
- If in doubt ask your local government authority for details of local waste management companies and recycling facilities.



ISO TEST METHOD	REQUIREMENT	MIN	MAX	ISO TEST METHOD	REQUIREMENT	MIN	MAX	THE WHEELCHAIR CONFORMS TO THE FOLLOWING STANDARDS:	
ISO 7176 Pt 5	Overall Length with Legrest	910 mm	1065 mm	ISO 7176 Pt 7	Seat Angle Plane	5 deg	5 deg	ISO 7176 Pt 8: Static, Impact and Fatigue Strength	Yes
ISO 7176 Pt 5	Overall Width 15" to 18" models	555 mm	675 mm	ISO 7176 Pt 7	Effective Seat Depth 16" & 17"	425 mm	475 mm	ISO 7176 Pt 9: Climatic Tests	N/A
ISO 7176 Pt 5	Folded Length	670 mm	825 mm	ISO 7176 Pt 7	Effective Seat Width 15" to 18" models	405 mm	610 mm	ISO 7176 Pt 14: Power and Controls	N/A
ISO 7176 Pt 5	Folded Width	265 mm	370 mm	ISO 7176 Pt 7	Seat Surface Height - Front Edge	455 mm	480 mm	ISO 7176 Pt 16: Resistance to Ignition	Yes
ISO 7176 Pt 5	Folded Height	680 mm	875 mm	ISO 7176 Pt 7	Backrest Angle	8 deg	10 deg		
ISO 7176 Pt 5	Total Weight	18.0 Kg	20.6 Kg	ISO 7176 Pt 7	Backrest Height	430 mm	430 mm		
C.E.N	Weight of the Heaviest Part	12.7 Kg	14.0 Kg	ISO 7176 Pt 7	Footrest to Seat Distance	350 mm	440 mm		
ISO 7176 Pt 1	Static Stability Downhill	21 deg	24.5 deg	ISO 7176 Pt 7	Leg to Seat Surface Angle	100 deg	107 deg		
ISO 7176 Pt 1	Static Stability Uphill	11.5 deg	14.5 deg	ISO 7176 Pt 7	Armrest to Seat Distance	220 mm	220 mm		
ISO 7176 Pt 1	Static Stability Sideways	18.5 deg	31 deg	ISO 7176 Pt 7	Front Armrest to Backrest	400 mm	400 mm		
ISO 7176 Pt 4	Energy Consumption Range	N/A	N/A	ISO 7176 Pt 7	Horizontal Location of Axle	0	0		
ISO 7176 Pt 2	Dynamic Stability Uphill	*	*	ISO 7176 Pt 5	Minimum Turning Radius	753 mm	945 mm		
ISO 7176 Pt 10	Obstacle Climbing	N/A	N/A	ISO 7176 Pt 5	Turn Around Width Limiting Walls	1090 mm	1280 mm		
ISO 7176 Pt 6	Maximum Speed Forward	N/A	N/A	ISO 7176 Pt 7	Handrim Diameter	535 mm	535 mm		
ISO 7176 Pt 3	Minimum Braking Distance	N/A	N/A						

- Please refer to guidance given for maximum safe slope.

## Contacting Invacare

For questions or support, please contact your authorised INVACARE dealer. They have the necessary experience, equipment, and knowledge concerning your wheelchair which enables them to offer you an all round satisfactory service.

Should you wish to contact us directly, we are at your service under the following addresses and telephone numbers:

### **European Headquarter:**

Invacare International Sàrl, Route de Cité-Ouest 2, CH-1196 Gland  
Tel : (41) (0)22 354 60 10, Fax : (41) (0)22 354 60 11  
hceurope@invacare.com  
WWW.INVACARE.CO.UK

### **Sales Units:**

#### **Belgium & Luxemburg:**

Invacare nv, Autobaan 22, B-8210 Loppem  
Tel: (32) (0)50 83 10 10, Fax: (32) (0)50 83 10 11  
belgium@invacare.com

#### **Danmark:**

Invacare AIS, Sdr. Ringvej 39, DK-2605 Brøndby  
Tel: (45) (0)36 90 00 00, Fax: (45) (0)36 90 00 01  
denmark@invacare.com

**Deutschland & Eastern Europe:**

Invacare Deutschland GmbH, Kleistraße 49, D-32457 Porta Westfalica  
Tel: (49) (0)5731 75 40, Fax: (49) (0)5731 754 52 191  
info@invacare.de

Aquatec GmbH, Alemannenstrasse 10, D-88316 Isny  
Tel: (49) (0)7562 7 00 0, Fax: (49) (0)7562 7 00 66  
infor@aquatec.de

Ulrich Alber GmbH, Vor dem Weissen Stein 21, D-72461 Albstadt-Tailfingen  
Tel: (49) (0)7432 2006 0, Fax: (49) (0)7432 2006 299  
info@ulrich-alber.de

**España:**

Invacare SA, c/Areny s/n, Polígon Industrial de Celrà, E-17460 Celra (Gironà)  
Tel: (34) (0) 972 49 32 00, Fax: (34) (0)972 49 32 20  
contactsp@invacare.com

**France:**

Invacare Poirier SAS, Route de St Roch, F-37230 Fondetts  
Tel: (39) (0)2 47 62 64 66, Fax: (34) (0)2 47 42 12 24  
contactfr@invacare.com

**Italia:**

Invacare Mecc San s.r.l., Via dei Pini 62, I-36016 Thiene (VI)  
Tel: (39) 0445 38 00 59, Fax: (39) 0445 38 00 34  
italia@invacare.com

**Nederland:**

Invacare BV, Celsiusstraat 46, NL-6716 BZ Ede  
Tel: (31) (0)318 695 757, Fax: (31) (0)318 695 758  
mobility@invacare.com  
care@invacare.com

**Norge:**

Invacare AS, Grensesvingen 9, Postboks 6230, Etterstad, N-0603 Oslo  
Tel: (47) (0)22 57 95 00, Fax: (47) (0)22 57 95 01  
norway@invacare.com  
island@invacare.com

**Österreich:**

Mobitec Mobilitätshilfen GmbH, Herzog Odilostrasse 101, A-5310 Mondsee  
Tel: (43) 6232 5535 0, Fax: (43) 6232 5535 4  
office@mobitec-austria.com  
austria@invacare.com

**Sverige & Suomi:**

Invacare AB, Fagerstagatan 9, S-163 91 Spånga  
Tel: (46) (0)8 761 70 90, Fax: (46) (0)8 761 81 08  
sweden@invacare.com  
finland@invacare.com

Dolomite AB, Box 55, V. Götgatan 5, S-33421 Anderstorp  
Tel: (46) (0)371 58 84 00, Fax: (46) (0)371 170 90  
info@dolomite.se

**Switzerland:**

Mobitec Rehab AG, Benkenstrasse 260, CH-4108 Witterswil  
Tel: (41) (0)61 487 70 80, Fax: (41) (0)61 487 70 81  
office@mobitec-rehab.ch  
switzerland@invacare.com

**Ireland:**

Unit 5, Seatown Business Campus  
Seatown Road  
Swords  
County Dublin  
Ireland  
Tel: +353 1 8107084, Fax: +353 1 8107085  
ireland@invacare.com  
www.invacare.ie

**United Kingdom:**

INVACARE Ltd, Pencoed Technology Park, Pencoed, Bridgend, CF35 5AQ  
Tel: (44) (0)1656 776222, Fax: (44) (0)1656 776220  
UK@invacare.com

WWW.INVACARE.COM



**Ben NG User Guide  
Part Number: 1551536  
Issue 2: 13/11/12**