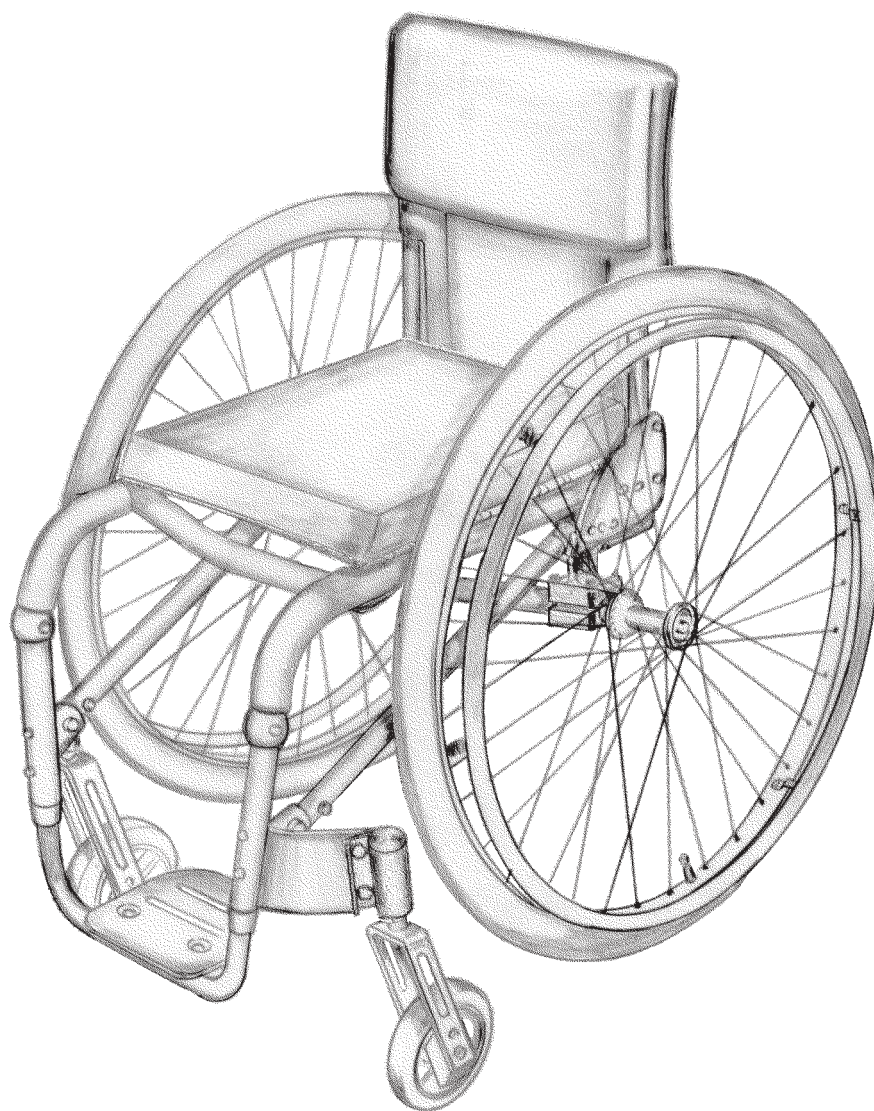


▷ **QUICKIE** REVOLUTION

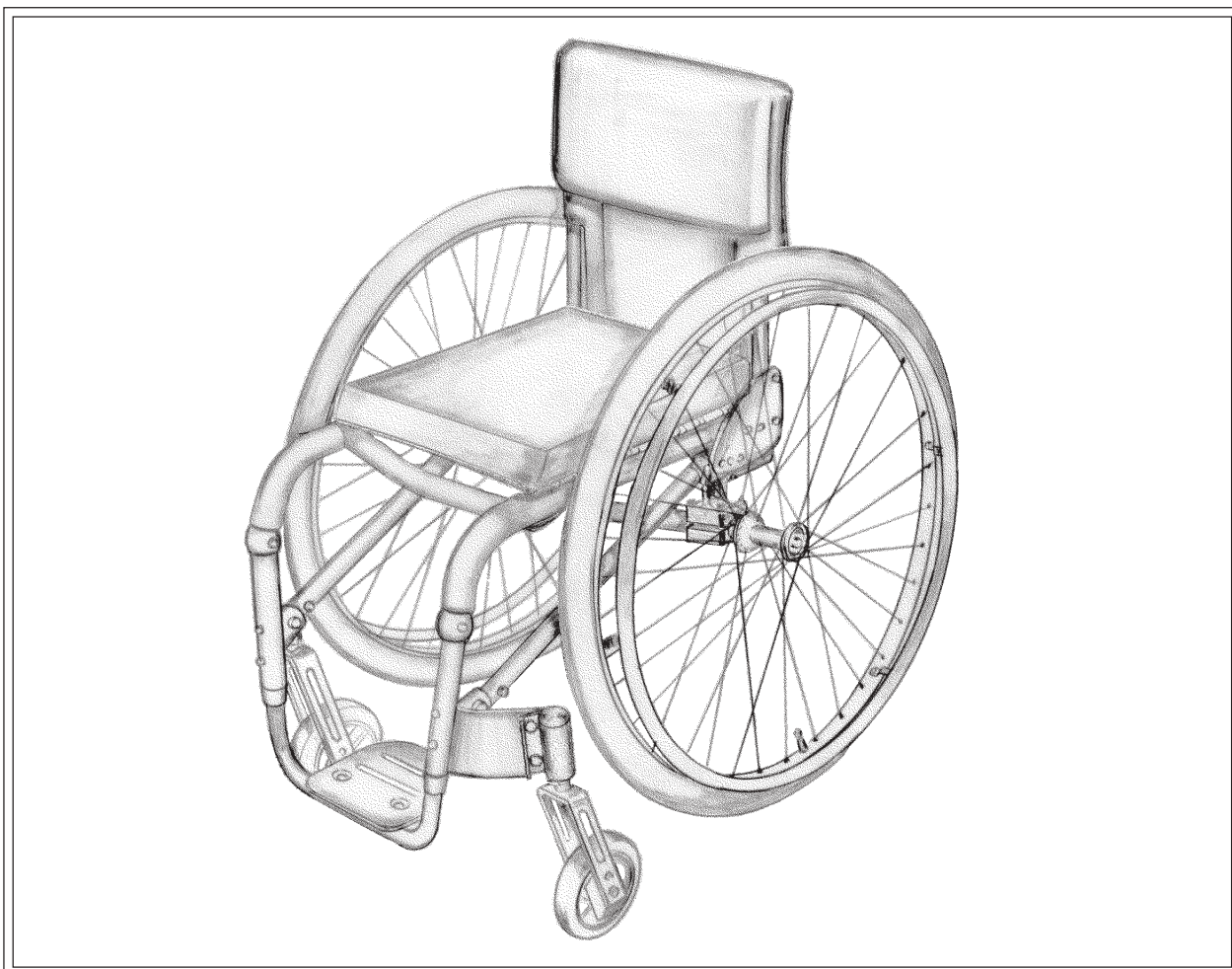


Owner's Manual



ENGLISH





How to use this manual

We at Sunrise Medical want you to get the best out of your Quickie Revolution wheelchair. This Owner's Manual will familiarise you with the chair and its features. It contains hints on everyday usage and general care in addition to information on the high quality standards which we adhere to and details about the guarantee. There are a wide range of accessories and adjustments available on the Quickie Revolution for further information about these you should contact your wheelchair prescriber/supplier.

Your wheelchair will reach you in excellent condition having been personally inspected before leaving our factory. By following the guidelines for maintenance and cleaning on pages 33-34 your wheelchair will maintain its first class condition and give you complete satisfaction.

For ease of use ⚠ Warning denotes a risk of personal injury or damage to your chair and ⇨ indicates points which will improve the performance and safety of your chair.

Contents

Introduction	page 1
Guarantee	page 2
Features and options	page 3
Safety tips	page 4
Using your chair	page 5 - 17
Footrest	page 18
Armrests	page 18 - 19
Anti-tip tubes	page 20
Quick-release axles	page 20
Backrest	page 21
Wheel locks	page 21
Chair adjustments	page 22 - 32
Transportation	page 33
Lap belt instructions	page 34 - 36
Maintenance schedule	page 37
Cleaning guidelines, accessories and tools	page 38
Technical data	page 39
Sunrise Medical	page 40

Introduction

Sunrise is dedicated to providing products of exacting quality which conform fully and reliably to the requirements of their intended use.

This wheelchair is to be used to aid individuals with limited or no personal mobility. The Revolution is suitable for both indoor and outdoor use.

The maximum user weight for this chair is 113kg (250lb).

Sunrise is accredited to BS EN ISO 9001, which is the internationally recognised standard for quality management systems. This approval ensures we provide quality in all areas of our business from development through to final delivery.



This product is manufactured to comply with the
'Medical Device Directive' 93/42/EEC.

If you have any queries about the use, maintenance or safety of your wheelchair please contact your wheelchair prescriber/supplier. Sunrise Medical will be pleased to answer any other questions that you may have and can provide a list of approved Sunrise Medical agents on request to:

SUNRISE MEDICAL LIMITED
HIGH STREET WOLLASTON
WEST MIDLANDS DY8 4PS
ENGLAND

Telephone 01384 44 66 88 Fax. 01384 44 66 99

International Telephone +44 1384 44 66 88 Fax.+44 1384 44 66 99

www.sunrisemedical.co.uk

Serial Number:

Inspected by:

Your local dealer:

Your local dealer:

Guarantee

Your guarantee

The guarantee form is included in the Sunrise Pack, which accompanies the chair on delivery. Please fill in the relevant details and return to us to register your entitlement. The guarantee is for your information.

THIS IN NO WAY AFFECTS YOUR STATUTORY RIGHTS.

Sunrise Medical guarantees the frame and wheel axles on Quickie wheelchairs against defects in materials and workmanship for the lifetime of the original purchaser.

All Quickie wheelchairs, parts and components (including frame components, axle plates, castors, armrest, backrests etc.) are guaranteed against defects in materials and workmanship for one year from purchase date.

Warranty conditions

- 1 This warranty does not affect the statutory rights of the Customer but if the Customer wishes to have the benefit of the Company's warranty the Customer must comply with the provisions set out below.
- 2 In the event of a defect in the goods supplied becoming apparent within the warranty period which commences from the delivery date the Company either itself or by an authorised dealer repair agent will effect any necessary repair or replacement of parts free of charge on condition that the Customer complies with the following provisions of this warranty.
- 3 Any part repaired or replaced during the warranty period is warranted for the remainder of the duration of that period.
- 4 The arrangements for repairs and service and the designated repairer will be notified to the Customer by the Company and will be confirmed at any time on request.
- 5 ON A DEFECT OCCURRING DURING THE WARRANTY PERIOD THE CUSTOMER MUST NOTIFY THE DESIGNATED REPAIRER IMMEDIATELY GIVING FULL INFORMATION AS TO THE PROBLEM AND NO USE MUST BE MADE OF THE GOODS AND NO ALTERATION OR UNAUTHORISED REPAIRS MADE TO THE GOODS PRIOR TO INSPECTION BY THE DESIGNATED REPAIRER.
- 6 If the Customer is operating the Goods away from the locality of the designated repairer the Customer must contact the Company to obtain the name and address of another repairer authorised by the Company. If the Customer is operating the Goods outside the UK the Customer must bear the transport, insurance and packaging costs incurred in having the Goods repaired or replaced by an authorised repairer of the Company.

7 Items of a consumable nature will not normally be covered during the 12 month warranty period unless such items have suffered undue wear as a direct result of an original manufacturing defect. These items include amongst others, lubricants, motor brushes, upholstery, tyres, inner tubes, pushhandle foam, brakes and similar parts. Batteries will be covered by the warranty only where they have been charged and maintained fully in accordance with the manufacturer's recommendations.

8 Under normal circumstances no responsibility will be accepted where the goods have required repair or replacement as a direct result of:

- a) The goods or part not having been maintained in accordance with the manufacturer's recommendations, where such exist and using only the specified original equipment parts.
- b) The goods or part having been damaged by neglect, accident or improper use.
- c) The goods or part having been altered from the manufacturer's specifications, or repairs having been attempted prior to the designated repairer being notified.
- d) Fair wear and tear.

Please keep a note of your local service agent's address and telephone number in the space provided on the previous page. In the event of a breakdown, contact them and try to give all relevant details so they can help you quickly.

The wheelchairs shown and described in this manual may not be exactly the same in every detail as your own model. However, all instructions are still entirely relevant, irrespective of detail differences.

The manufacturer reserves the right to alter without notice any weights, measurements or other technical data shown in this manual. All figures, measurements, and capacities shown in this manual are approximate, and do not constitute specifications.

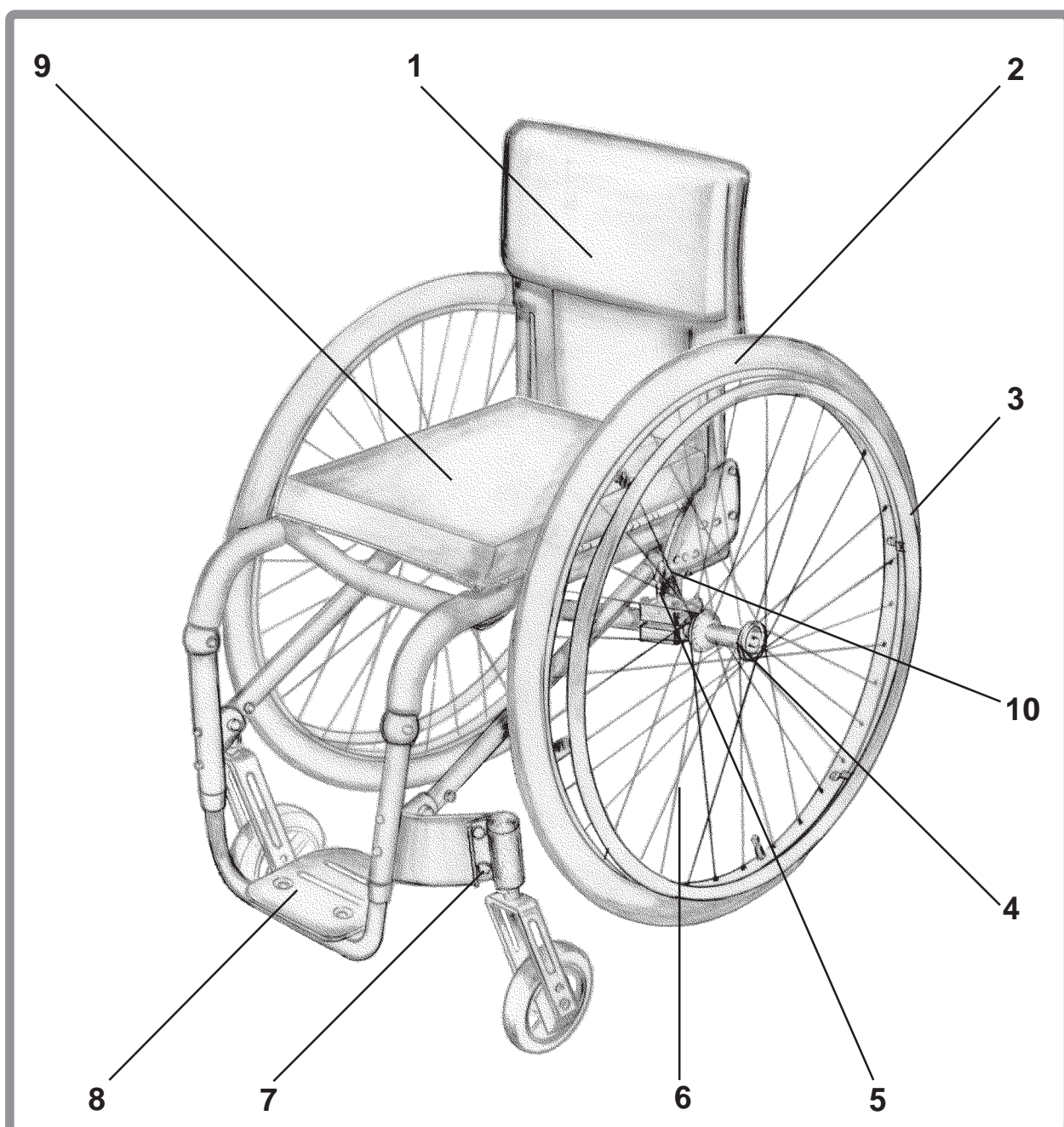
Please remember to fill in and post the guarantee registration card enclosed with this manual. **Sunrise Medical Limited** recommend that you do not undertake maintenance tasks other than those explained in this manual. Your local approved Sunrise Medical service agent is fully trained by Sunrise Medical to carry out detailed maintenance as and when required. **Use only genuine Sunrise Medical replacement parts.**



Sunrise Medical Limited

High Street, Wollaston, West Midlands DY8 4PS England
Tel 01384 44 66 88 Fax 01384 44 66 99
www.sunrisemedical.co.uk

Features and options



- | | |
|-------------------------|------------------------------------|
| 1 Backrest | 6 X spoked wheel |
| 2 Pneumatic tyre | 7 Castor assembly |
| 3 Handrim | 8 Height/angle adjustable footrest |
| 4 Quick-release axle | 9 Seat sling |
| 5 Adjustable axle plate | 10 Seat height spacer |

Safety tips

Anti-tip tubes

Under normal use, anti-tip tubes will prevent the wheelchair from tipping over backwards. Anti-tip tubes are available from your local wheelchair prescriber/supplier. Sunrise Medical recommends anti-tip tubes for first time and less experienced wheelchair users.

Tyre pressure

Ensure that pneumatic tyres are properly inflated. The correct tyre pressure is 450 kilopascals/4.5 bar (65 psi) for the pneumatic rear wheels, and 250 kilopascals/2.5 bar (36 psi) for pneumatic castor wheels. Low tyre pressure may allow the rear wheels locks to slip.

Armrests

Always secure swing-away armrests before using the wheelchair. Never lift the wheelchair by the armrests. These parts are detachable and lifting the wheelchair by them may cause damage to the chair and/or injury to the user.

Transfers

Guidelines on how to do a side transfer are provided in this manual, however, this is only one method of transfer and you should work with your wheelchair prescriber/supplier to develop a technique which best suits your abilities.

Wheelies

Doing a wheelie (tilting the wheelchair backward to its balance point) is dangerous, as the chair may tip over. Wheelies should only be performed by experienced users. Do not attempt to learn or practice this manoeuvre without the aid of an attendant.

Footrest

The lowest point of the footrest should be at least 63mm (2½") from the ground to allow proper clearance. Never stand on the footrest because the chair may tip over.

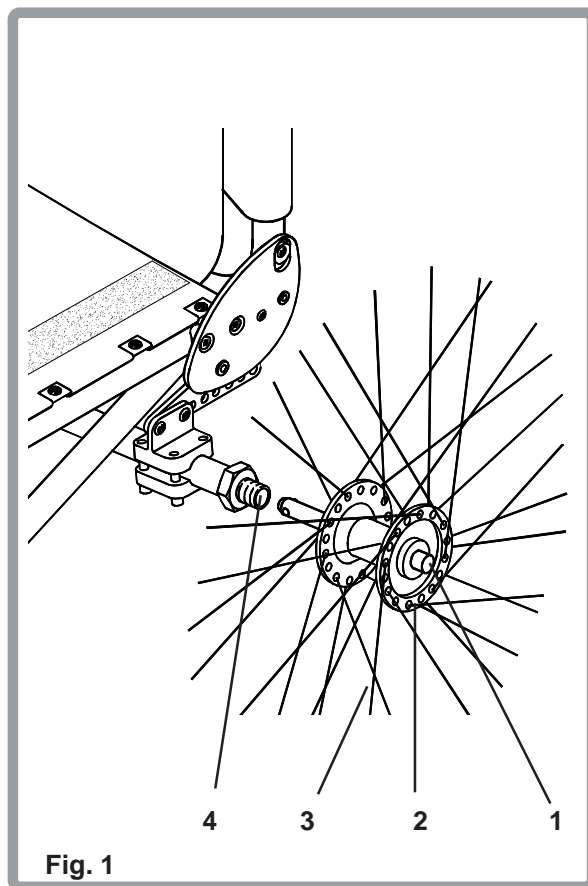
Kerbs, inclines, obstacles and ramps

Always practice with a qualified attendant before attempting to negotiate kerbs, inclines or ramps alone. It is important for you to develop safe techniques suited to your abilities. Do not attempt to go up or down inclines greater than 10% (1 in 10).

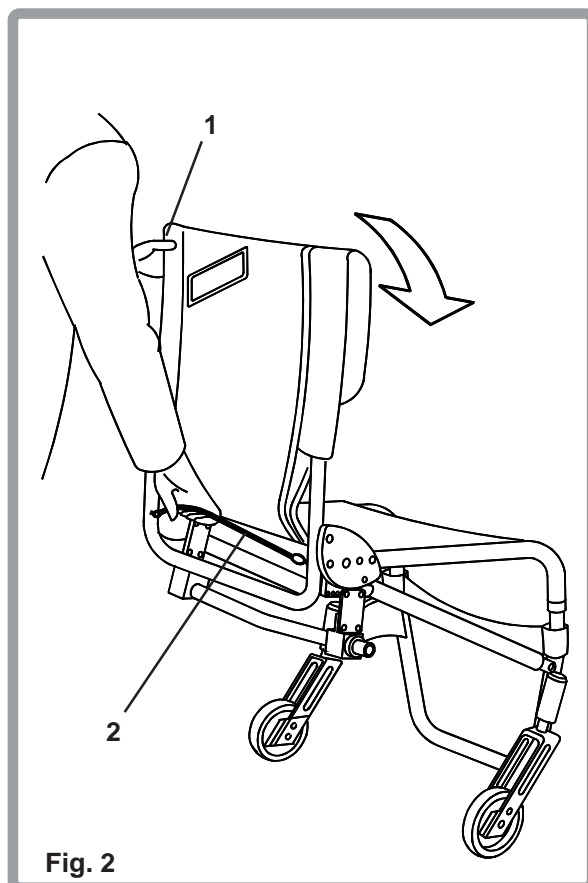
Folding and opening

Folding

Remove both rear wheels (Fig. 1), by pressing the quick release button (1) which is located in the wheel hub (2), and grip the wheel through the spokes (3) around the hub and pull the axle out of its sleeve (4).



Standing at the rear of the chair (Fig. 2) firmly grasp the backrest support tube (1). Pull the backrest release cord (2) and push the backrest forwards and down until it reaches its semi-folded position (shown in the Fig. 3).



Folding and opening

Semi-folded position

Release the backrest cord and holding the chair as shown in Fig. 3 (semi-folded position) pull the main frame lock release cord (4) and pull the camber bar (5) toward you until the front castors (6) are parallel with the seat frame (7). This is the fully folded position (Fig. 4).

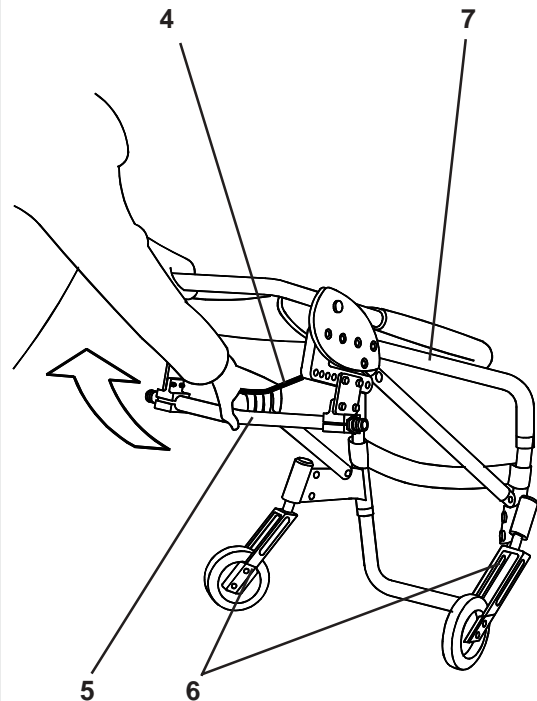


Fig. 3

Opening

Standing at the rear of the chair hold the bottom of the backrest tube and push the camber bar away from you until the frame locks into position.

Pull the backrest up into its used position ensuring that the locks are locked.

Replace the wheels by sliding the axle into the sleeve until the release button 'pops' out.

⚠ Warning:

The axle is not secure until the outside quick-release button pops out to its fully extended position.

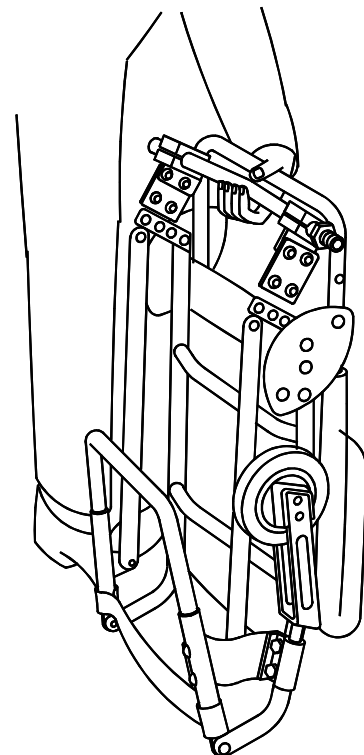


Fig. 4

Using your chair

Water, snow and ice

Contact with water, snow or ice may affect the performance of your wheelchair.

1. Never use your wheelchair in a pool or other body of water.
2. If your chair becomes wet, or if you use water to clean it, dry the chair thoroughly as soon as you can.

When you need assistance

⚠ Warning:

If you fail to heed the following warnings, a fall or tip over may occur and cause severe injury to you or to your attendant.

For the Rider:

You should make sure that persons who assist you, read and follow all warnings and instructions that apply to that use. Before using this chair each attendant must know what to do to ensure safety.

For Attendants:

1. Put the rider at ease. Tell the rider what you plan to do and explain what you expect the rider to do.
2. Work with the rider's doctor, nurse or therapist to learn safe methods best suited to your abilities and those of the rider.

3. Always use good posture and proper body mechanics. When you lift or support the rider or chair, bend your knees slightly and keep your back as upright and straight as you can.
4. Unlock and rotate anti-tip tubes up out of the way, to avoid a trip or fall, when operating the chair from the back.
5. Always lock the rear wheels and lock anti-tip tubes in the down position if you must leave the rider alone, even for a moment. Doing so will reduce the risk of a tip over or loss of control of the chair.

Centre of balance

⚠ Warning:

The point where this chair will tip forwards, backwards or to the side depends on its centre of balance and stability. If you fail to heed these warnings a fall or tip over may occur and cause severe injury to you:

1. The most important adjustment to your chair is the position of the rear axles. The further you move the rear axles forward, the better the chair manoeuvres, but the more likely it is that your chair will tip over backwards.
⇒ Consult your doctor, nurse or therapist to find out what axle position is best for you.

Using your chair

Centre of balance (continued)

2. Changing the setup of this chair increases the risk of a fall or tip over. Be very careful if you make a change to any of the following:
 - ⇒ The position of the rear axles, the distance between the rear wheels or the amount of rear wheel camber.
 - ⇒ The distance between the centre of the front castors and rear wheels and the angle of the castors.
3. To avoid a fall or tip over you should:
 - ⇒ Have someone help you until you know the balance points of your chair and how to avoid a tip over.
 - ⇒ Use anti-tip tubes until you are sure you are not at risk of tipping over.
4. The centre of balance and stability of your chair are also affected by:
 - ⇒ A shift in your body position, posture or weight distribution.
 - ⇒ Riding your chair on a sloped surface.
 - ⇒ Fitted seating systems (optional).

Refer to the sections that follow to learn how you can reduce the risk of a fall or tip over by proper use of this chair.

Dressing and changing clothes

⚠ Warning:

Your weight may shift if you dress or change clothes while seated in this chair. This may cause a fall or tip over and severe injury to you. To help prevent this you should:

1. Rotate the front castors to the forward position.
2. Lock anti-tip tubes in the down position if your chair has anti-tip tubes.
3. Back your chair up against a wall and lock both rear wheels.

Using your chair

Wheelies (rear wheel balance)

A wheelie is performed by balancing on the rear wheels of your chair, while the front castors are raised off the ground. If done safely, it can help you overcome kerbs and other obstacles.

⚠ Warning:

It is dangerous to do a wheelie, as you may fall or tip over backwards and suffer a severe injury. Make sure that you heed these warnings:

1. Consult your doctor, nurse or therapist to find out if you are a good candidate to learn to do a wheelie.
2. Do not try to do a wheelie unless you are a highly skilled rider or unless you have help.
3. Make sure that anti-tip tubes are up, out of the way, so they do not interfere.
4. When learning to do a wheelie, make sure that this chair has push handles. The attendant needs secure points to hold the rear of the chair to prevent the user from tipping over backwards.

Follow these steps when learning to do a wheelie with help:

1. The attendant should be at the rear of the chair, and must be able to move with the chair to prevent a tip over.
2. The attendant's hands should be beneath the push handles or back brace ready to catch you if you tip too far backwards.
3. When the attendant is in position, place your hands on the forward area of the handrims.
4. Make a quick backward movement of the rear wheels, immediately followed by a hard forward thrust. This will tilt the chair backwards and lift the castors from the ground. Try to find the balance point, which is the point where you will not fall backwards or forwards.
5. Maintain your balance by small movements of the handrims.

Using your chair

Doorways and obstacles

⚠ Warning:

1. As much as possible ensure that the floor areas where you use the chair are level and free of obstacles by:
 - ⇒ Removing or covering threshold strips between rooms,
 - ⇒ Installing a ramp at entry or exit doors.
2. If your chair has anti-tip tubes, make sure you lock them in the down position before you go over an obstacle.
3. Keep both your hands on the handrims. If you fail to do so, you may lose control of your chair and tip over.
4. Do not propel your chair by pushing or pulling on an object. Never pull yourself through a doorway by grabbing the doorjambs with one or both hands.
5. To help correct the centre of balance of your chair you should:
 - ⇒ Lean your upper body forward slightly as you go up over an obstacle.
 - ⇒ Press your upper body backward as you go down from a higher to a lower level.

Reaching or leaning

⚠ Warning:

Reaching or leaning affects the centre of balance of your chair if you fail to heed these warnings, a fall or tip over may occur and cause severe injury to you.

1. Avoid reaching or leaning if you must shift your weight to do so. Moving forwards in your seat may cause the chair to tip forward. Always keep your lower back in contact with the backrest. Ask for help or use a device to extend your reach.
2. Never reach with both hands. If you do so, you may not be able to catch yourself to prevent a fall if the chair tips.
3. Never lean backwards to reach for an object unless your chair has anti-tip tubes and they are locked in the down position.
4. If you must reach or lean from your wheelchair:
 - ⇒ Rotate the front castors to the forward position. To do this, move your chair past the object, then back up alongside it.
 - ⇒ Place your chair as close as you can to the object you wish to reach.
 - ⇒ Steady yourself by firmly grasping an armrest with one hand. This will help you prevent a fall if the chair tips.
 - ⇒ Avoid putting pressure on the footrests while reaching. This may cause the chair to tip forward.
 - ⇒ Do not lock the rear wheels. This creates a tipping point and makes a fall or tip over more likely.

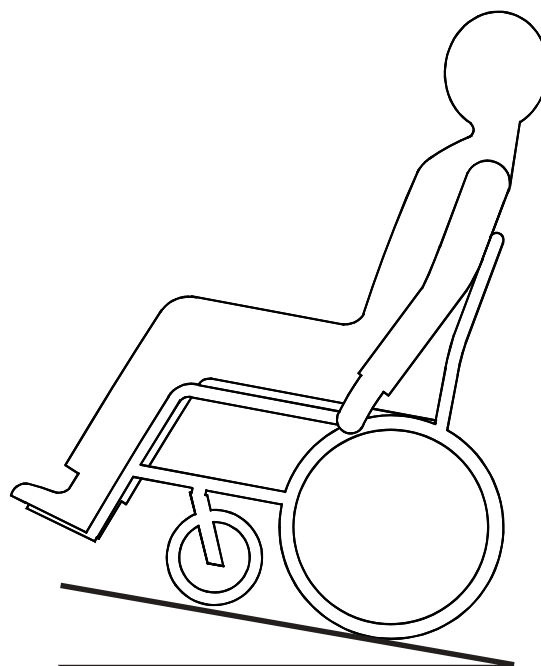
Using your chair

Slopes and hills

⚠ Warning:

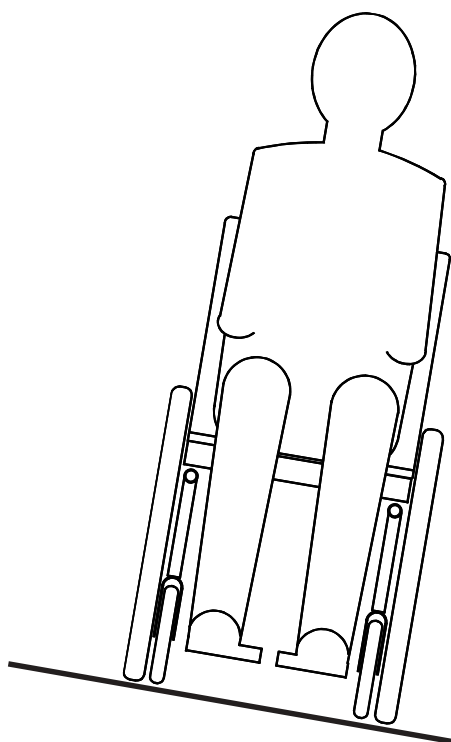
Going up or down a slope (Fig. 5) or riding on the side of a hill (Fig. 6) will change the centre of balance of your chair. If you fail to heed these warnings you may suffer a severe injury from a tip over, fall or loss of control:

1. Lean or press your body uphill to help correct the change in the centre of balance.
2. Avoid turning on a slope or the side of a hill, as a tip over is likely. Always go as straight up and straight down as you can.
3. Be very careful if you must climb a slope greater than 10% (1 in 10). Ask for help if the slope may be beyond your ability.
 - ⇒ On a steep slope, anti-tip tubes may not prevent a tip over.
 - ⇒ On a steep slope, you may not be able to reach the top without stopping. If you have to stop turn the chair sideways on to the hill otherwise you may lose control and tip over.
4. Always control your speed when going downhill. If you go too fast, you may not be able to control your chair. Ask for help if the slope may be beyond your ability.
 - ⇒ You can control your speed by keeping constant pressure on the handrims.
 - ⇒ Never use the rear wheel locks to try to slow or stop your wheelchair. Doing so is likely to cause you to veer out of control or tip over.



10% MAXIMUM SLOPE

Fig. 5



10% MAXIMUM SIDE HILL SLOPE

Fig. 6

Using your chair

Transfers

⚠ Warning:

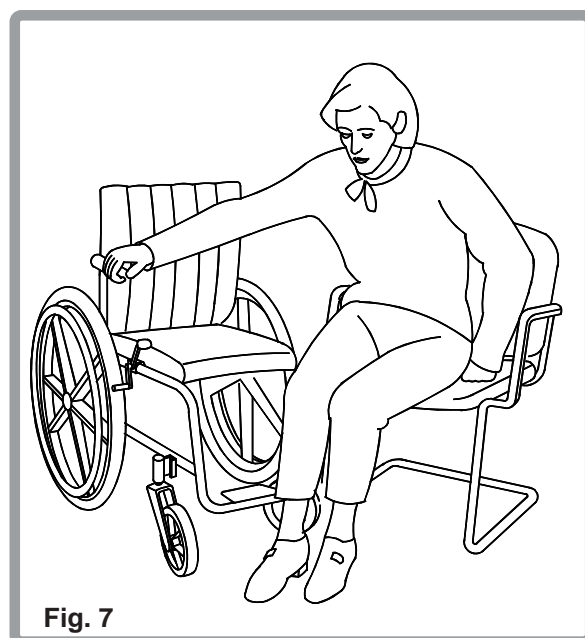
If you fail to heed these warnings, a fall or tip over may occur and cause severe injury to you:

Please refer to figures 7 and 8.

1. Transfers require good balance and agility and are very dangerous. Be aware that there is a point during each transfer when the wheelchair seat is not below you.
2. To avoid a fall, you should:
 - ⇒ Learn how to position your body and how to support yourself during the transfer.
 - ⇒ Work with your doctor, nurse or therapist to learn safe transfer methods.
 - ⇒ Have someone help you until you are sure you can perform safe transfers on your own.
3. Wherever possible position your wheelchair as illustrated in Fig. 7 and 8.
4. Always lock the rear wheels before you transfer to keep the chair from rolling.

Locking the rear wheels will not always keep your chair from sliding away from you or tipping.
5. Rotate the front castors forward to make the chair more stable.
6. If your chair has armrests, make sure that they are out of the way and do not interfere.

7. Be careful of the footrest. To avoid a trip or fall when you transfer you should:
 - ⇒ Make sure that your feet do not hang up or get caught on the footrest.
 - ⇒ Avoid putting weight on the footrest as the chair may tip forwards.



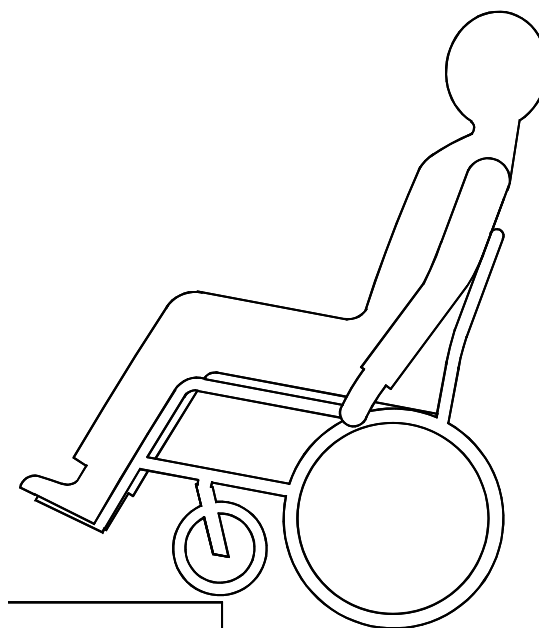
Using your chair

Kerbs and single steps

⚠ Warning:

If you fail to heed these warnings, a fall or tip over may occur and cause severe injury to you or others:

1. Never try to climb or descend a kerb or step alone (Fig. 9) unless you are a skilled rider and:
 - ⇒ You can safely do a wheelie and
 - ⇒ You are sure you have the upper body strength needed to do so.
2. Unlock and rotate anti-tip tubes up, out of the way, so they do not interfere.
3. Do not try to climb a kerb or step more than 100mm (4") high unless you have help; your chair may exceed its balance point and tip over.
4. When you have an attendant, make sure that the chair has push handles. The attendant must have secure points to hold the rear of the chair.



100mm (4") MAXIMUM KERB HEIGHT

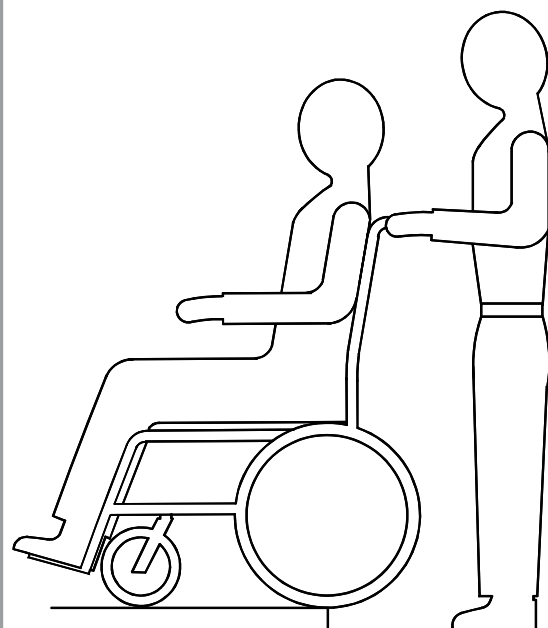
Fig. 9

Using your chair

Tips for descending a kerb or single step with help

Read and follow the warnings for attendants. To help the rider descend a kerb or single step in a backward direction:

1. Check to make sure that push handle grips will not rotate or slip off.
2. Always stay behind the wheelchair (Fig. 10).
3. Before you reach the edge of the kerb or step, turn the chair around and pull it backwards.
4. While looking over your shoulder, carefully step back until you are off the kerb or step and standing on the lower level.
5. Pull the chair towards you until the rear wheels reach the edge of the kerb or step. Then allow the rear wheels to slowly roll down onto the lower level (Fig.11).
6. When the rear wheels are safely on the lower level, tilt the chair back to its balance point. This will lift the front castors off the kerb or step.
7. Keep the balance position and take small steps backwards. Turn the chair around and carefully lower the front castors to the ground.



100mm (4") MAXIMUM KERB HEIGHT

Fig. 10



100mm (4") MAXIMUM KERB HEIGHT

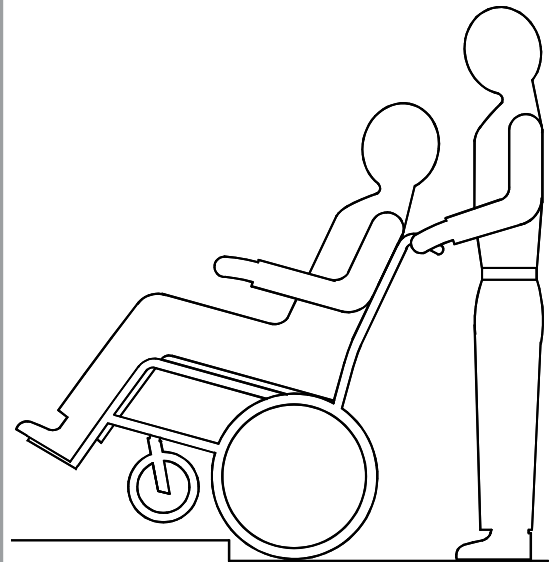
Fig. 11

Using your chair

Tips for climbing a kerb or single step with help

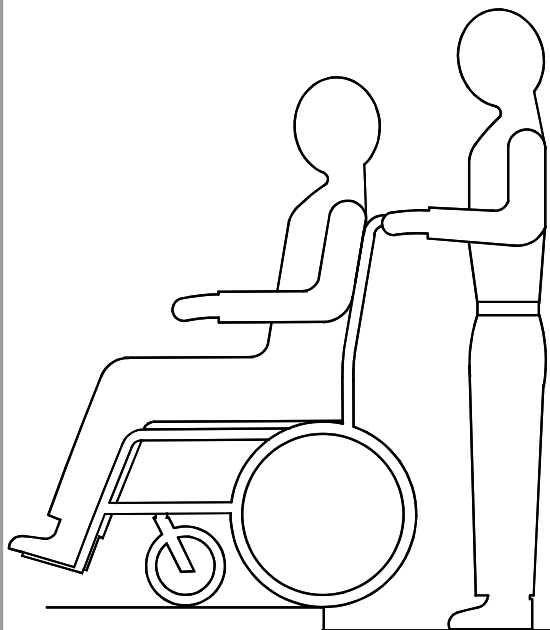
Read and follow the warnings for attendants. To help the rider mount a kerb or single step in a forward direction:

1. Always stay behind the wheelchair.
2. Face the kerb and tilt the chair up on the rear wheels so that the front castors clear the kerb or step (Fig.12).
3. Move forward, placing the front castors on the upper level as soon as you are sure that they are past the edge.
4. Continue forward until the rear wheels contact the face of the kerb or step (Fig. 13). Lift and roll the rear wheels to the upper level.



100mm (4") MAXIMUM KERB HEIGHT

Fig. 12



100mm (4") MAXIMUM KERB HEIGHT

Fig. 13

Using your chair

Moving a chair and rider up or down stairs

⚠ Warning:

Where possible, avoid carrying out this manoeuvre to prevent attendant injury.

Read and follow the warnings for attendants. If you fail to heed these warnings a fall or tip over may occur and cause severe injury to the rider and/or attendants:

1. Always use two or more attendants when moving a chair and rider up or down stairs (Fig. 14).
2. Make sure that this chair has push handles and that the grips will not rotate or slip off. The attendant at the rear needs secure hand-holds to bear the weight of the chair and rider.
3. Use only non-detachable parts of the main frame as hand-holds.
4. Make sure that the rider is secure in the chair, with his or her feet, arms and hands safely out of the way of any obstacles.

Tips for climbing stairs with help

Read and follow the warnings for attendants. Follow these steps when helping the rider climb stairs:

1. Move the chair and rider backwards up the stairs.

2. The attendant at the rear is in control. He or she tilts the chair back to its balance point (Fig. 14).
3. A second attendant at the front firmly grasps a non-detachable part of the front frame and lifts the chair up and over one step at a time.
4. The attendants reposition themselves on the next step up and repeat the same procedure for each step. When the landing is reached, return the chair to its upright position.

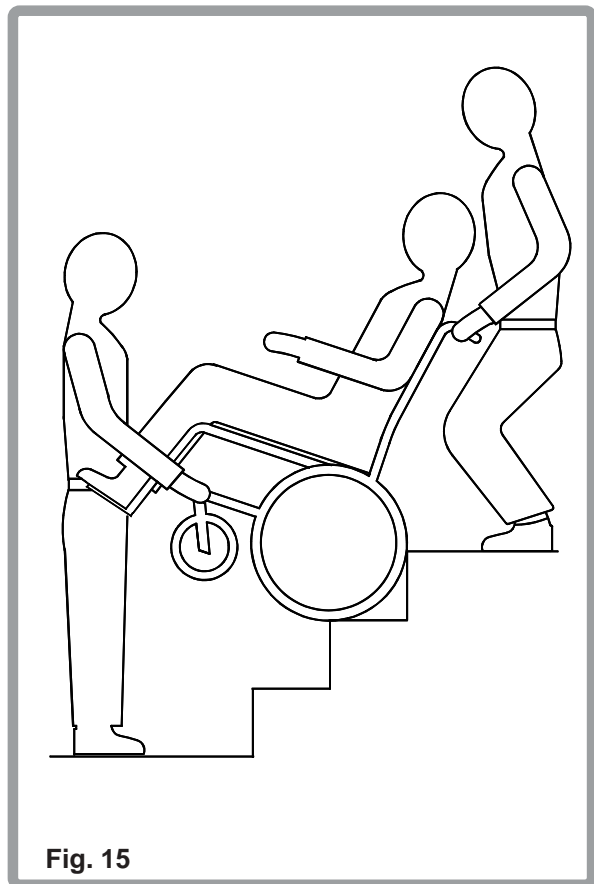


Using your chair

Tips for descending stairs with help

Read and follow the warnings for attendants. Follow these steps when helping the rider descend stairs:

1. Move the chair and rider forward down the stairs (Fig. 15).
2. The attendant at the rear is in control. He or she tilts the chair to the balance point of the rear wheels and rolls it to the edge of the top step.
3. A second attendant stands firmly on a lower step and grasps the chair frame. Both attendants lower the chair one step at a time by letting the rear wheels roll over the step edge.
4. The attendants move to the next step down and repeat the same procedure for each step. When the landing is reached return the chair to its upright position.



Chair features

Angle adjustable footplate

An angle and height adjustable footplate is shown in Fig. 16.

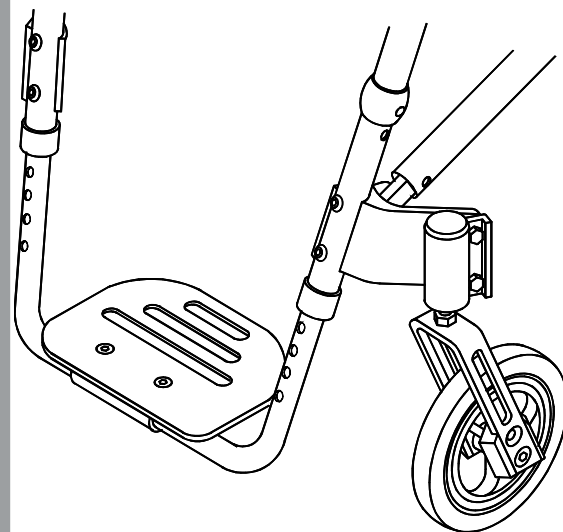


Fig. 16

Swing-away armrests

Fig. 17 shows the swing-away armrest. To fit swing-away armrests simply drop the armrest (1) into the receiver (2).

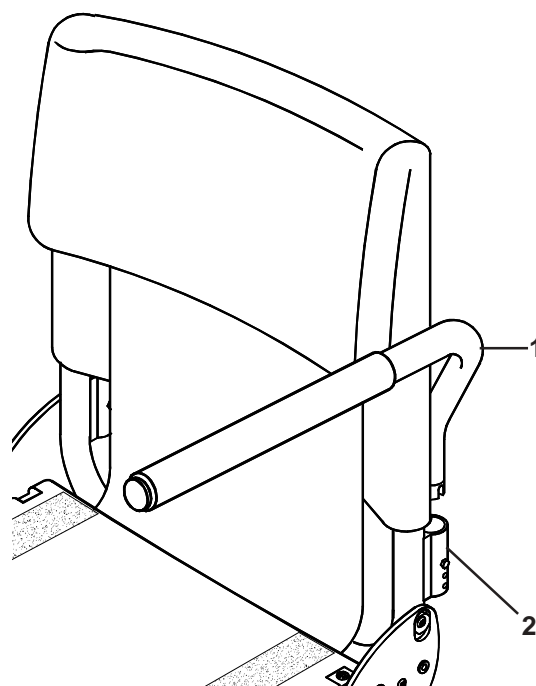


Fig. 17

Chair features

Height adjustable armrests

Fig. 18 shows the height adjustable armrest. To install armrests, slide the outer arm post (1) into the receiver (2). The armrest will automatically lock into place.

To adjust armrest height, rotate the release lever (3) to the second stop (Fig. 18B). Slide the armrest pad (4) up or down to the desired height and return the lever to the locked position. Push the arm pad until the upper arm post locks firmly in place.

To detach the armrest, rotate the release lever to the first stop (Fig. 18C) and remove the armrest. To replace the armrest, slide it back into the receiver (2) and return the release lever to the locked position (Fig. 18).

The armrest can be adjusted to remove free play in the receiver and inner arm post. To tighten or loosen the fit of the outer post in the receiver, first loosen the four bolts (5) on the sides of the receiver (2) with a 10mm A/F spanner. With the armrest in the receiver, squeeze the receiver to achieve the desired fit, then tighten the four bolts to 8-10Nm torque. To adjust the fit of the inner arm post (Fig. 18D), two set screws (6) are installed in the outer arm post. Turn the set screws in or out until the desired fit is achieved using a 3/32" Allen key.

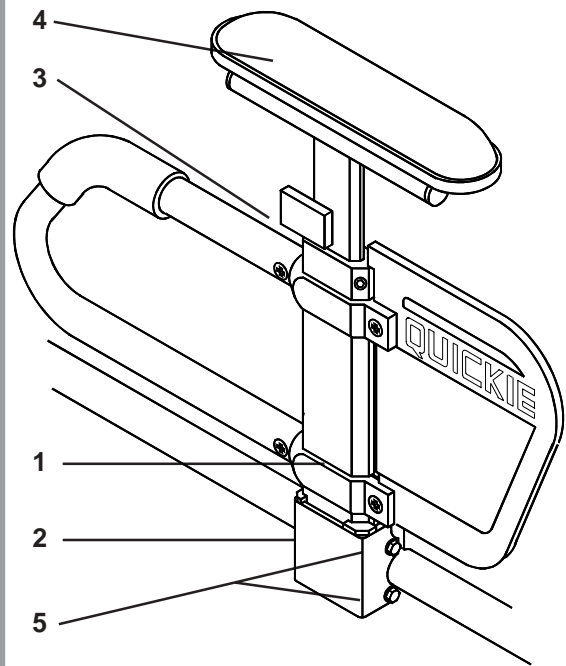


Fig. 18

Fig. 18B

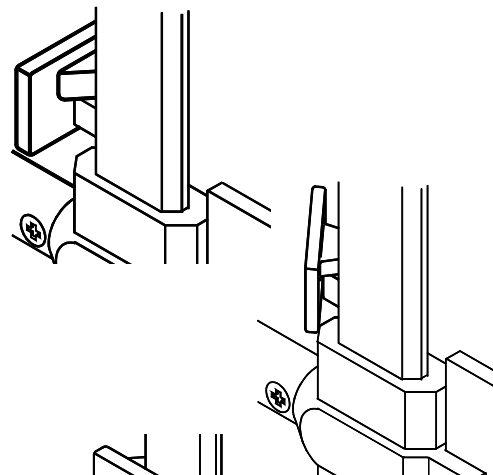
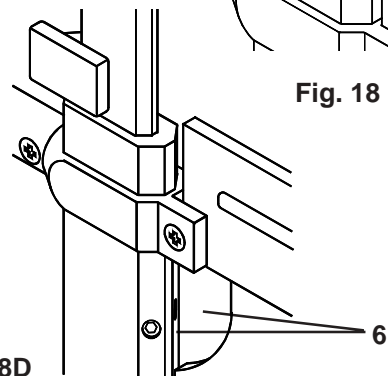


Fig. 18 C

Fig. 18D



Chair features

Anti-tip tubes

To fit anti-tip tubes (Fig. 19), hold the release pins (1) in and insert the anti-tip tube into the receiver (2).

To remove the anti-tip tube hold the release levers in and slide the tubes out. In some instances it can be wise to rotate the tubes through 180°, hold the release pins in and rotate the tubes through 180°, allowing the locking pins to click into position. Note the rear wheel is shown removed for clarity.

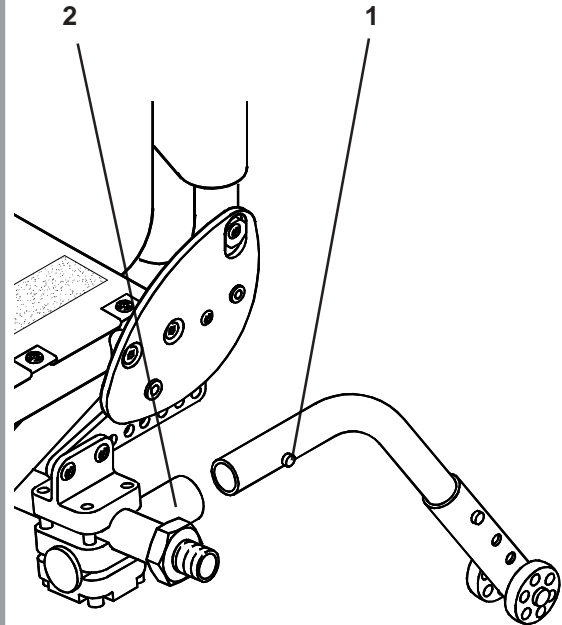


Fig. 19

Quick-release axles

To remove quick-release axles (Fig. 20) simply press the quick release button (1) which is located in the wheel hub (2), and grip the wheel through the spokes (3) around the hub and pull the axle out of its sleeve (4). To replace, slide the axle into the sleeve until the release button 'pops' out.

⚠ Warning:

The axle is not secure until the outside quick-release button pops out to its fully extended position.

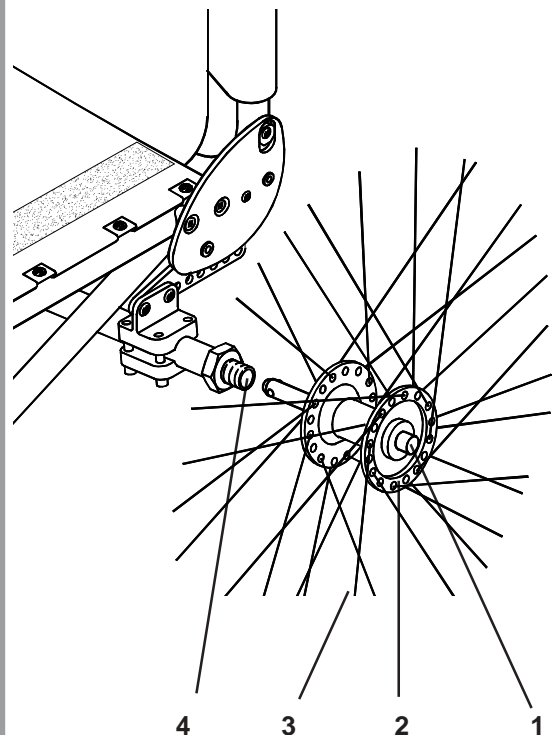


Fig. 20

Chair features

Wheel locks

Scissor wheel locks are shown in Fig. 21a. The wheel locks mount on clamping systems (1) and are correctly set prior to leaving the factory. To apply the wheel lock pull the operating lever (2) forwards until you feel it go over centre, and the grip arm (3) grips the tyre (4). Scissor locks can also be mounted on the lower frame tube (Fig. 21b).

⚠ Warning:

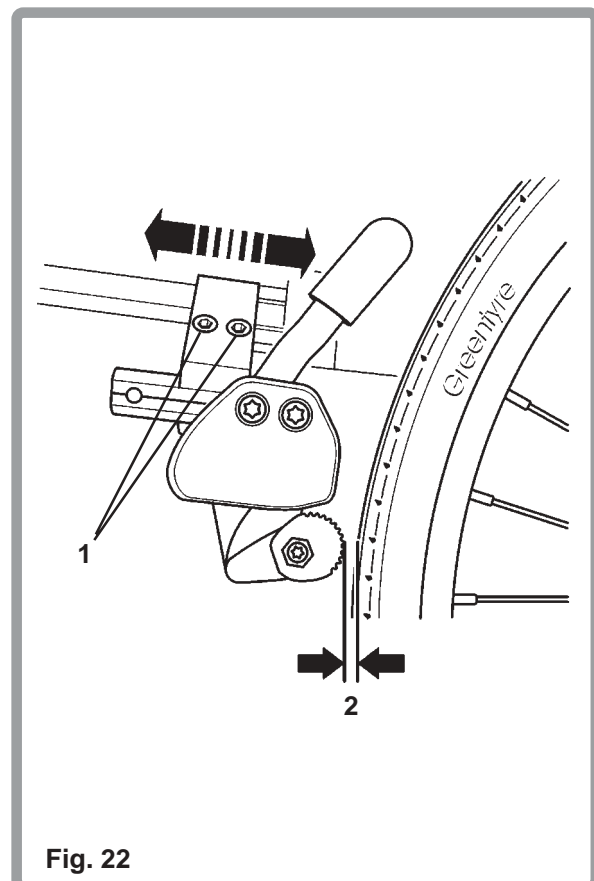
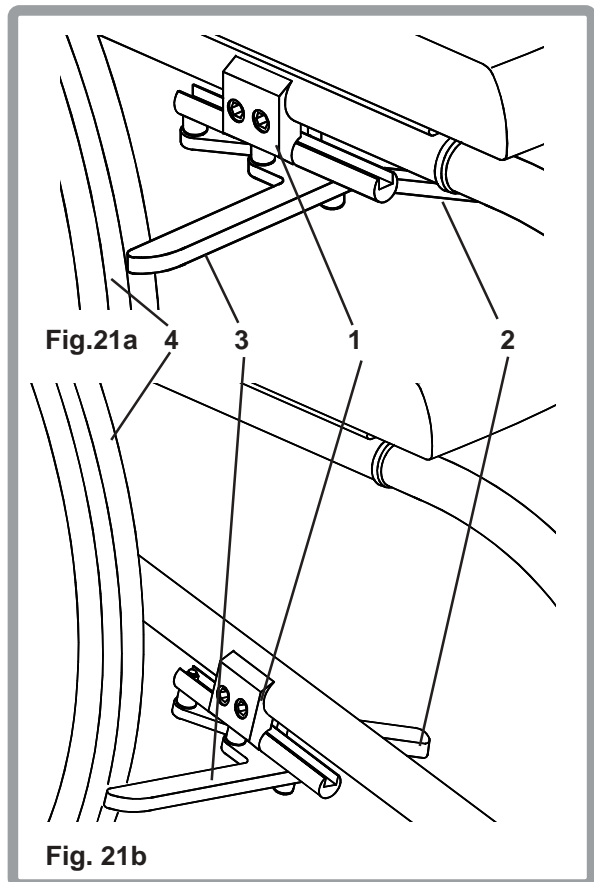
Wheel locks are not brakes they are not designed to slow down the chair when it is moving. Wheel locks, when properly adjusted, prevent the rear wheels from turning when the chair is stationary.

Knee brake

Operating position and adjustment instructions for the kneebrake wheel lock are shown in Fig. 21.

Slacken the two screws (1) on the wheel lock clamp and slide the brake to achieve the correct wheel lock gap, then retighten.

The wheel lock gap (2) (which is the gap between the nearest point of the wheel lock and the tyre) should be 3mm with pneumatic tyres (tyres filled with air) and 5mm with solid tyres, when the wheel lock is in the released position.



Chair adjustments

Backrest

An angle and height adjustable backrest is shown in Fig. 23.

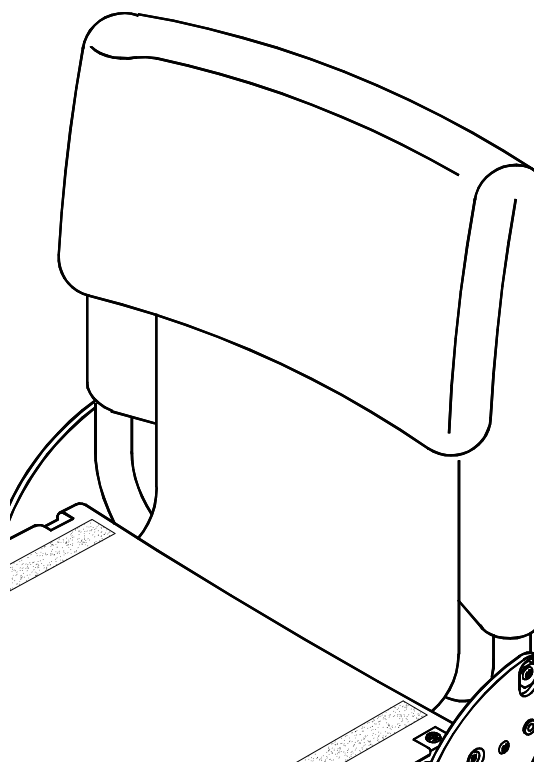


Fig. 23

Footplate angle adjustable

To adjust the angle of the footplate (Fig. 24) loosen the retaining screws (1) as shown, using a 5mm Allen key, sufficiently to allow the footplate to be rotated to the desired position. Tighten to 7-12Nm torque.

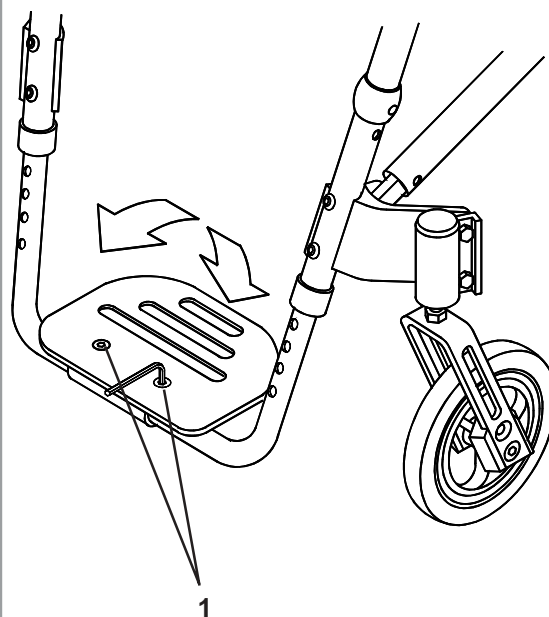


Fig. 24

Chair adjustments

Footplate height

To adjust the footplate height (Fig. 25) loosen the two footplate screws (1), sufficiently to allow the tubes (2) to slide in or out of the footplate. (Use a 5mm Allen key). Remove both screws (3), using a 4mm Allen key, and move the tubes up or down to the required position, carefully aligning the holes on the tubes with the holes in the frame (4). Replace both screws and tighten to 7-12Nm torque.

⚠ Warning:

The screws (3) also connect the front frame (4) and the castor housings (6) to the lower frame tubes (5). When loosening the screws ensure the castor housing is kept in its original position.

Footplate position

To adjust the footplate position (Fig. 26) remove the two footplate screws (1) and nuts (2). Turn the footplate (3) through 180° replace both screws and nuts and tighten to 7-12Nm torque using a 4mm Allen key.

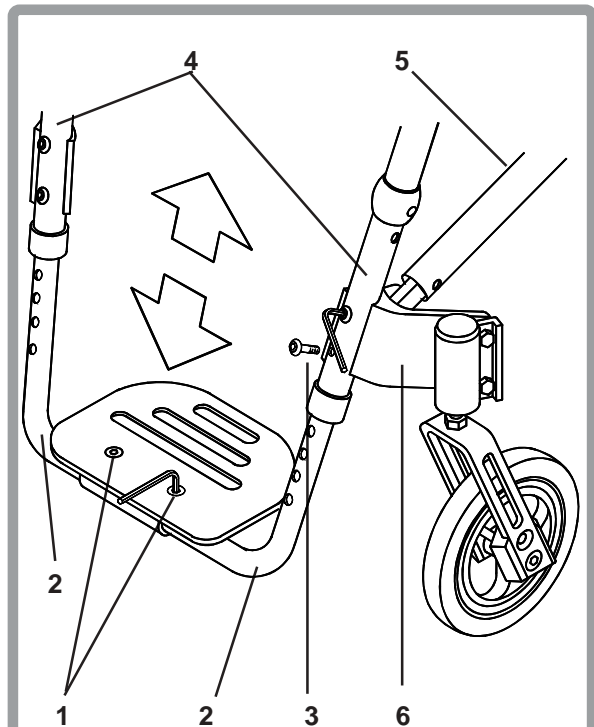


Fig. 25

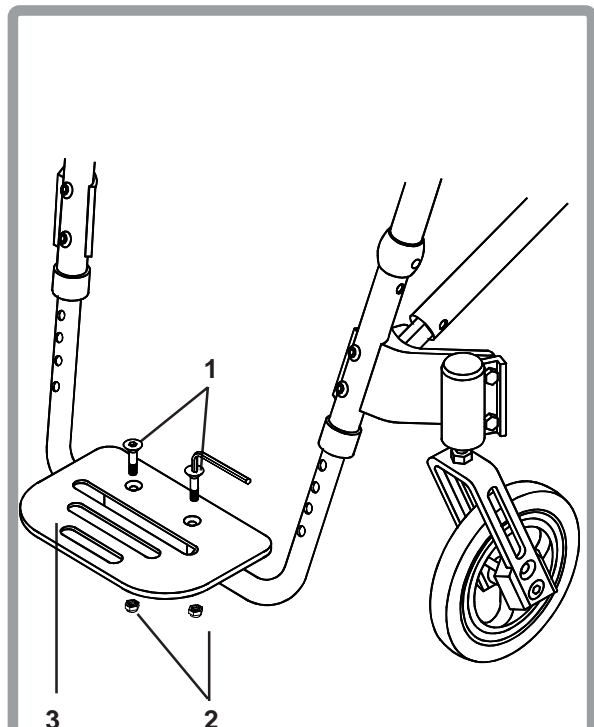


Fig. 26

Chair adjustments

Wheel locks

To adjust, loosen the screws (1) on the side of each clamp (2). Using a 5mm Allen key turn one of the screws anticlockwise $\frac{1}{4}$ turn. Repeat the same process with the second of the two screws (Fig. 27). Loosen the screws until the clamp can slide freely. Slide the clamp towards the rear wheel until the grip bar (3) embeds into the tyre (4) approximately 4mm ($\frac{3}{16}$ ") when in the locked position. Tighten the screws to a torque setting of 15Nm. Some adjustments to the wheel lock position can be accomplished without moving the clamp. To adjust, loosen the two screws as above. Slide the mounting bar (5) forwards or backwards and rotate it to the correct angle position. The grip bar should embed into the tyre approximately 4mm ($\frac{3}{16}$ ") when in the locked position. Tighten the screws to a torque setting of 15Nm.

▲ Warning:

Wheel locks when properly adjusted, prevent the rear wheels from turning when the chair is stationary. Always adjust the wheel locks after making any changes to the rear axle sleeves position, so that the grip bar embeds into the tyre approximately 4mm ($\frac{3}{16}$ ") when in the locked position.

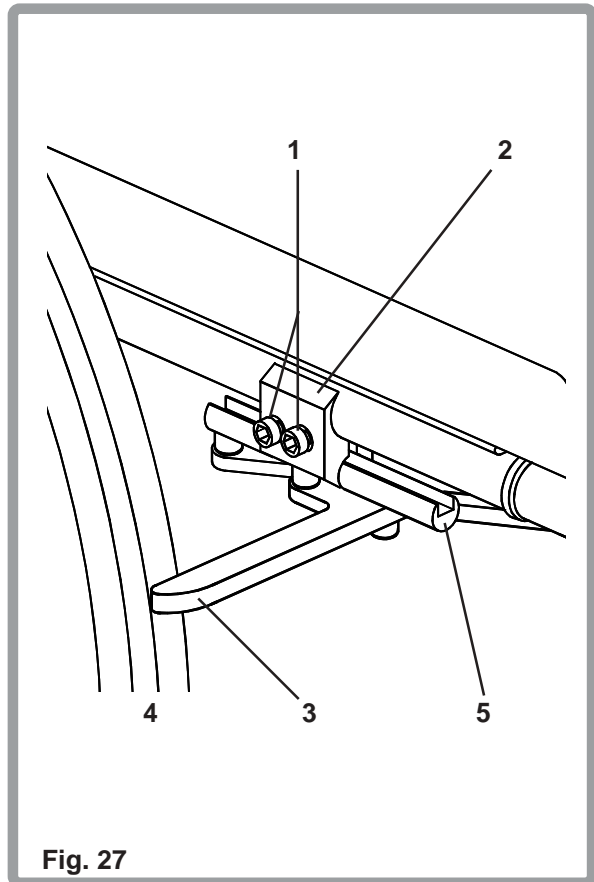
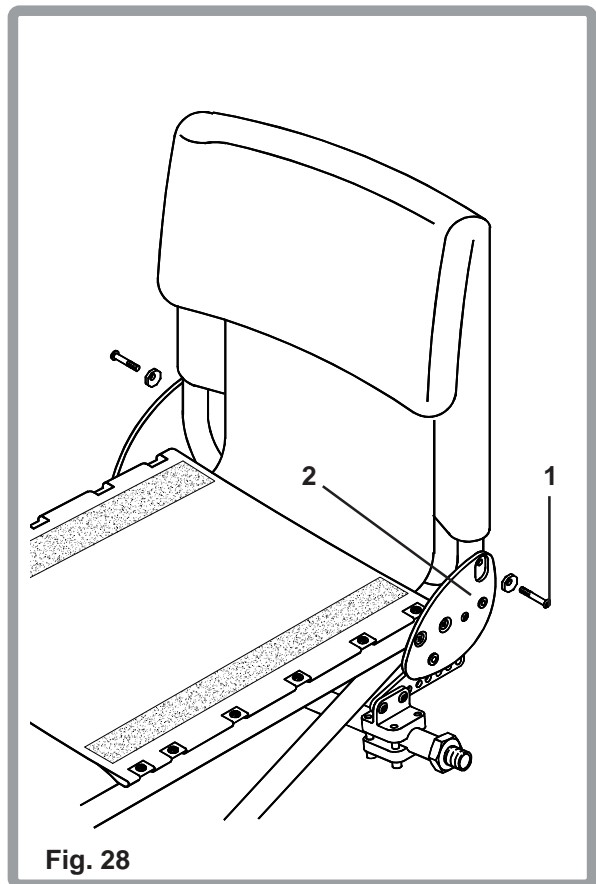


Fig. 27

Chair adjustments

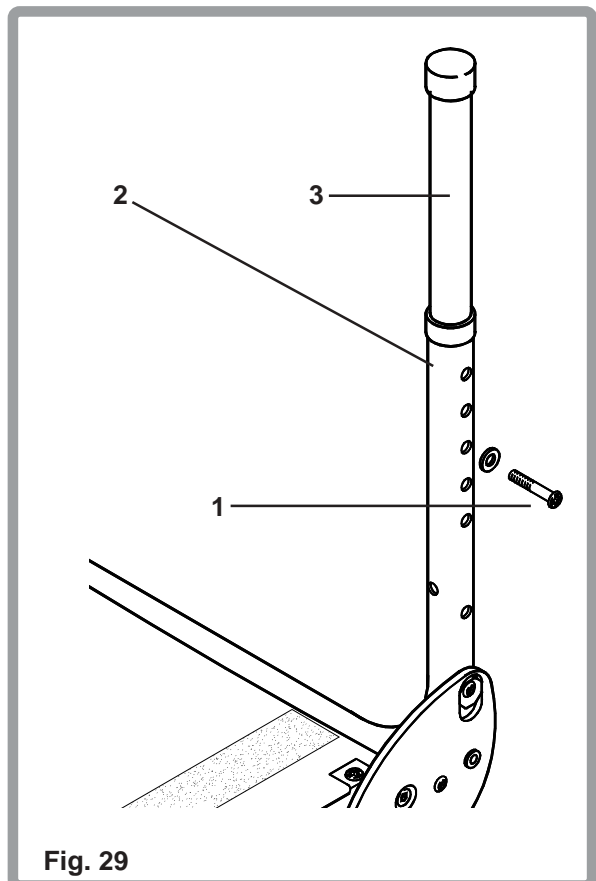
Backrest angle

The backrest angle (Fig. 28) is adjusted by loosening the eccentric bolt assembly (1) using a 4mm Allen key and the pivot bolt (2) using a 4mm Allen key sufficiently to allow the eccentric assembly to be rotated. When the desired position is reached tighten the eccentric bolt fitting and pivot bolt in the recessed position to 7-12Nm torque.



Backrest height

Remove the upholstery and remove the retaining screws and washers (Fig. 29), using a 5mm Allen key (1) from both sides of the backrest tube (2). Move the inner tubes (3) to the desired position, carefully aligning the holes in both tubes and refitting the retaining screws and washers. Tighten to 7-12Nm torque.



Chair adjustments

Armrest height

The height of swing away armrests can be changed (Fig. 30). Remove the armrest (1) from the receiver (2). Remove the height adjustment screw (3), using a 10mm A/F spanner, and replace in the required tapped hole (4), and tighten to 7-12Nm torque. Replace the armrest into the receiver.

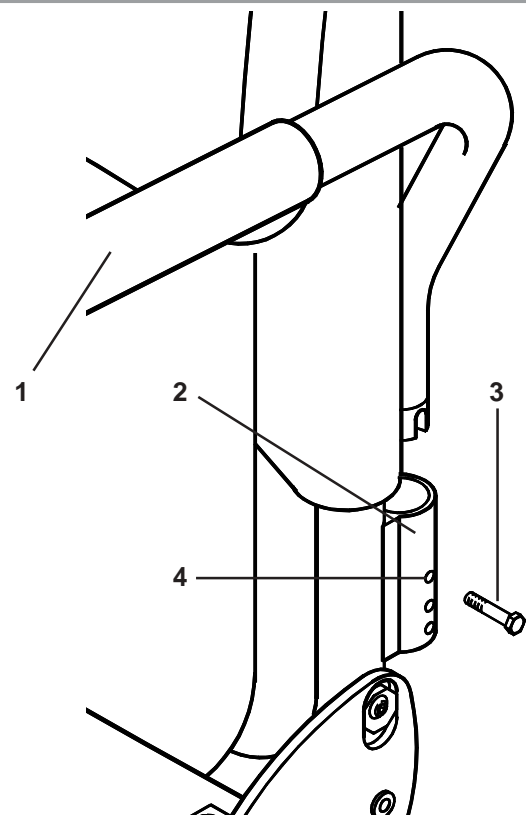


Fig. 30

Seat sling tensioning

The seat sling (Fig. 31) can be re-tensioned through the use of Velcro® panels underneath the seat (2). Remove the No 2 Philips screws (1) retaining the left side of the seat sling with a No 2 Philips screwdriver, re-adjust the Velcro® to bring the sling to its correct tension. Replace the screws and tighten to 5-8Nm torque.

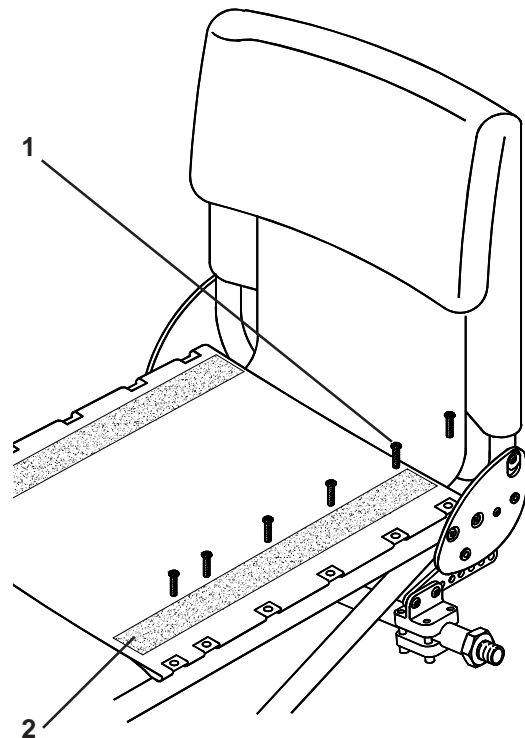


Fig. 31

Chair adjustments

Anti-tip tubes

The anti-tip tubes (Fig. 32) can be changed in height, by pressing in the location pins (1) in the anti-tip tube (2) and sliding the anti-tip adjusting sleeve (3) to the desired position. The location pin will snap into the desired hole (4) in the adjusting sleeve.

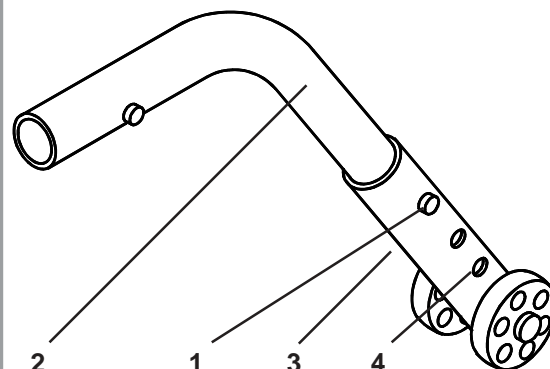


Fig. 32

Rear axle positions Centre of gravity

The centre of gravity (Fig. 33) is adjusted by moving the axle assembly (1) and camber bar (2) on the indexed axle plate (3). To move the axle assembly undo and remove the retaining bolts (4) and nuts, using a 4mm Allen key and an 10mm A/F spanner, and locate the assembly in the desired index holes (5). Fit the retaining bolts and nuts, and tighten to 8-10Nm torque.

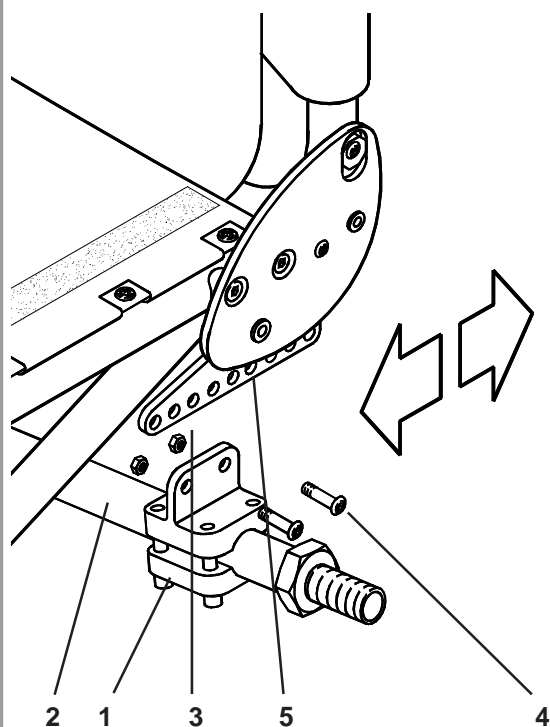


Fig. 33

Chair adjustments

Rear axle positions Seat height

The seat height (Fig. 34) is adjusted by removing the axle clamp (1) and the camber bar (2). Remove the two retaining screws (3) and nuts (4), using a 4mm Allen key and an 10mm A/F spanner, and adding an axle spacer (5), using the screws and nuts (6) provided in the kit. The screws and nuts must be tightened to 8-10Nm torque. The spacers are available in 19mm and 38mm sizes.

Note: both axle spacers must be positioned in the corresponding holes on both sides of the frame to ensure the chair's centre of gravity is correct.

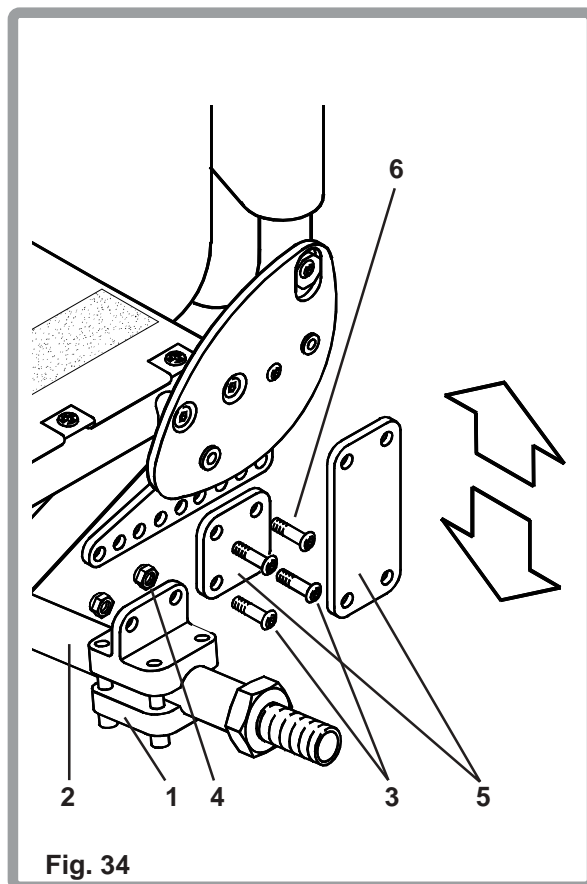


Fig. 34

Rear axle positions Wheelbase width

The wheelbase width (Fig. 35) is adjusted by loosening the 28mm A/F axle sleeve nut (1), and screwing the axle sleeve (2) in or out. The nut must be tightened to 45Nm torque.

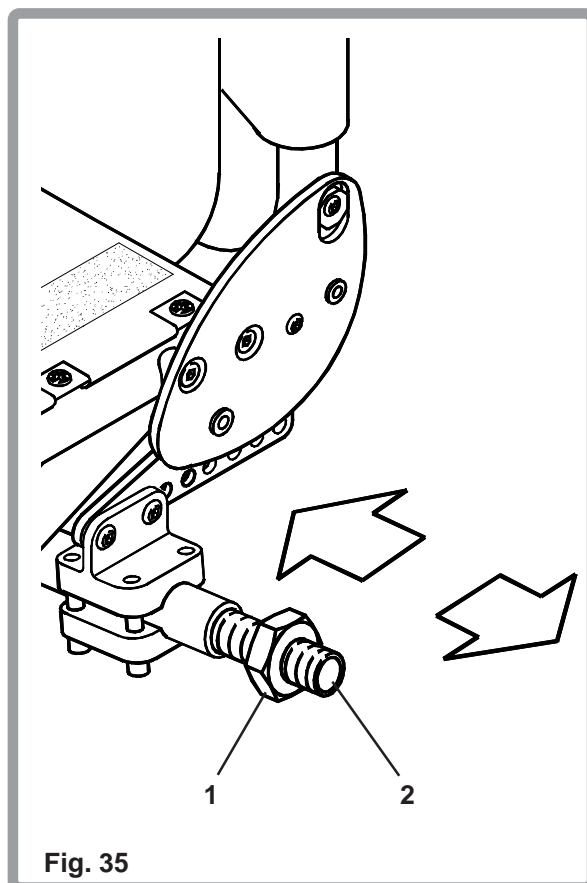


Fig. 35

Chair adjustments

Rear axle camber

Wheel camber (Fig. 36) is determined by your choice of camber bar and axle clamps. The tubes and clamps are available in 0°, 4°, 8° and 12° settings from Sunrise Medical dealers. To change the camber setting the camber bar and clamps must be removed by removing the two retaining screws and nuts per clamp following the procedure for seat height, and fitting the desired camber bar and axle clamp. The screws must be tightened to 7-12Nm.

⚠ Warning

Always ensure the camber tube and clamps angle match.

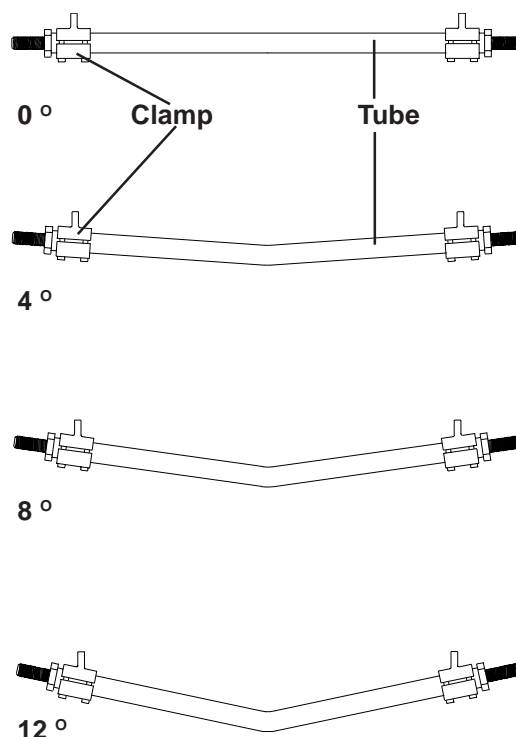


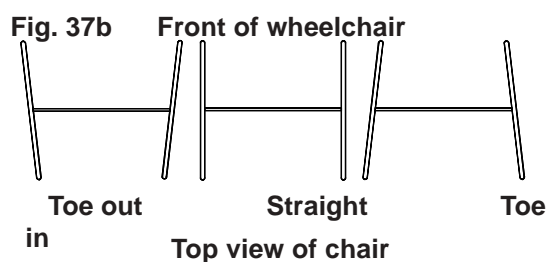
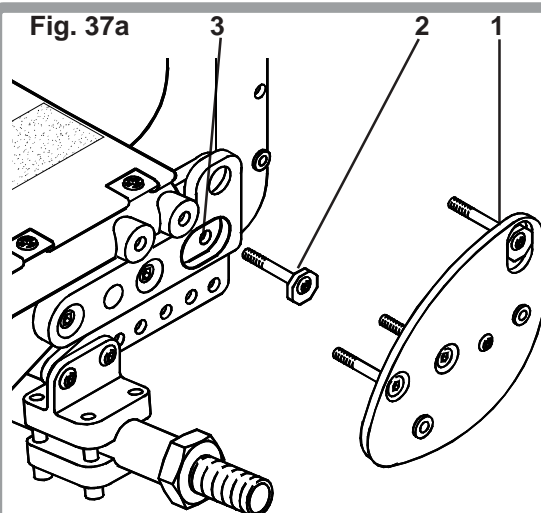
Fig. 36

Rear axle toe in or toe out

The correct wheel position is set at the factory. Should you change the seat angle, you must always check the toe in/toe out. (Fig. 37b). This can be adjusted (Fig. 37a) by removing the side plate (1), and loosening the eccentric washer retaining screw (2). Note, it must clear the housing (3), and turning the washer through the desired amount. Once the desired setting is reached tighten the screw (2) to 7-12Nm and replace the side plate, tightening all screws to 7-12Nm Allen key size 4mm.

⚠ Warning

both wheels must have equal amounts of toe in or toe out. The maximum is 15mm.



Chair adjustments

Castor adjustment

To remove play from the castor stem (Fig. 38), remove the dust cover (1) by prising it off. Tighten nut (2) with a 19mm A/F socket spanner until all play is removed, yet still allows the castor stem (3) to rotate freely. Replace the dust cover by snapping it back in place.

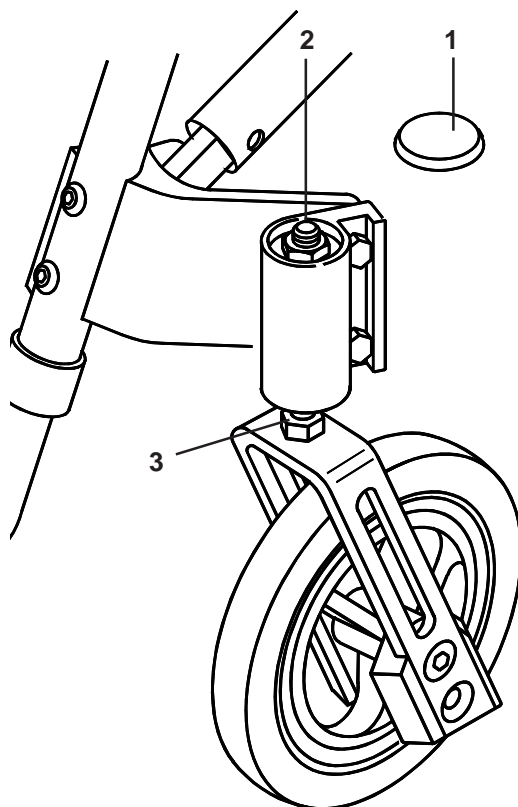


Fig. 38

Seat height adjustment (front)

To adjust the height of the front of the seat use the top axle hole (1) in the castor fork (2), as shown in Fig. 39. Remove the two axle retaining screws (3), using a 4mm Allen key, from the bottom hole, and align the axle/wheel (4) with the top holes in the castor fork, fit the axle retaining screws in the top holes and tighten to 27Nm torque. To adjust the height of the rear of the seat, the position the rear axle must be changed. See axle details on page 27.

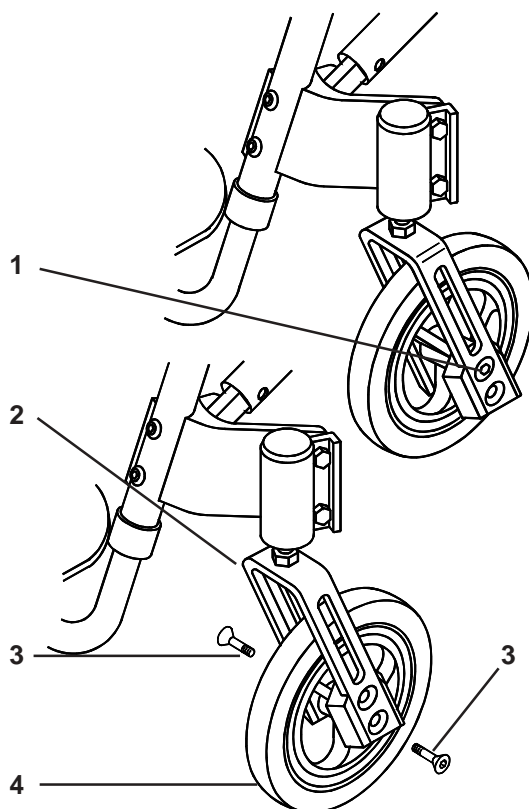


Fig. 39

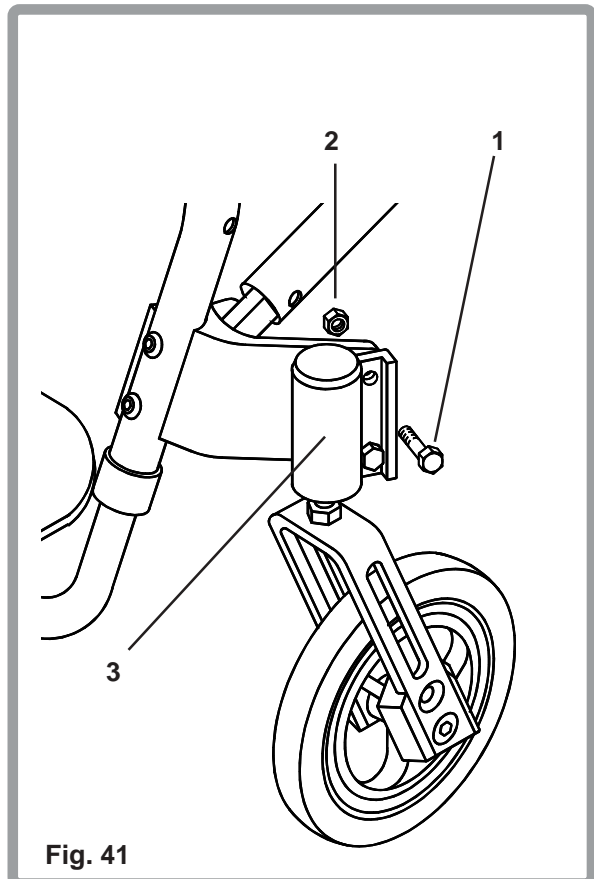
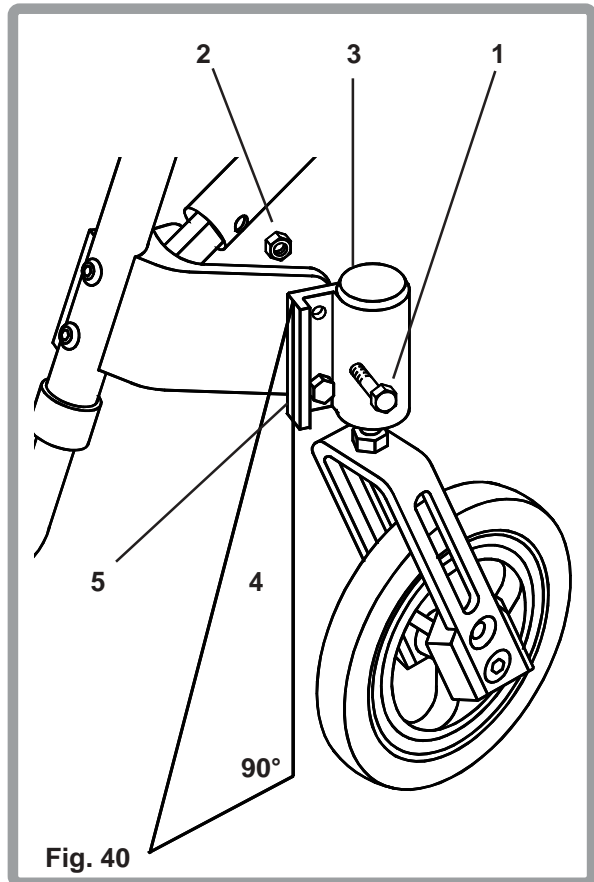
Chair adjustments

Castor angle adjustment

For optimum performance, the castor housing (Fig. 40) should always be at 90° to the floor, (perpendicular to the ground). This adjustment is made with an eccentric (offset) attachment bolt mechanism (1). To change the angle, place the chair on a flat surface (such as a table). Remove the bolt nuts (2) using a 10mm A/F spanner from the rear side of the castor plate (3). You will note that the castor plate is slotted on the side for adjustment. Place a right angled object (4) against the flat surface and the front surface of the castor bearing housing (5). Align the castor stem rotational axis perpendicular to the flat surface. Rotate the bolts independently until they fall into position. When the alignment is satisfactory, re-tighten the two retaining bolts. Repeat the process for the other castor. Torque setting: 8-10Nm.

Castor reversibility

The castor plate is generally mounted in a forward-facing position (Fig. 41). However, if additional footrest clearance is necessary, the castor plate can be reversed as shown in Fig. 40. This will position the castor plate rearward to allow more clearance. After reversing follow the procedure for seat height adjustment to reset the castor angle.



Chair adjustments

Reversing the castor

To reverse the castor plate as shown in Fig. 42, the left plate should be mounted on the right side of the frame, and the right plate should be mounted on the left side of the frame. Refer to Fig. 40 page 31. Both retaining bolts (1) and nuts (2) must be removed from both castor assemblies (3), and both castor assemblies removed and their positions switched on the chair. The bolts must be replaced and the sequence for castor angle adjustment followed (Fig. 40, page 31).

Fig. 42

Inside mounting

The castor assemblies can also be fitted inside the frame (Fig. 43). When fitting follow the procedure for seat height adjustment to reset the castor angle.

⚠ Warning

We advise that you only inboard mount castors if they are of the quick release type. (If other types of castors are used they can interfere with the folding of the chair and cause paint damage to the frame).

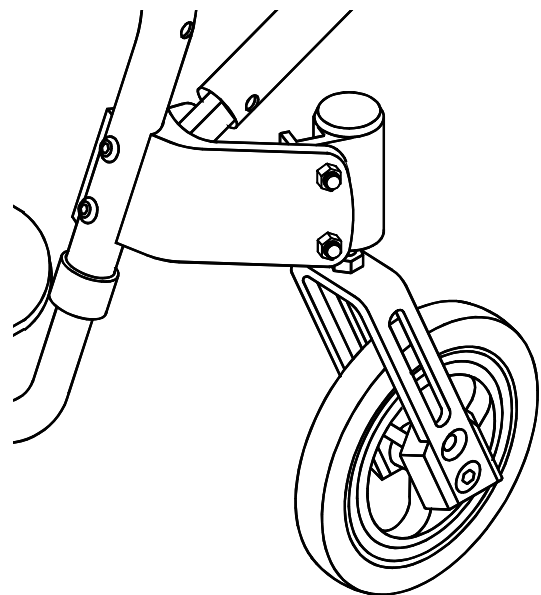


Fig. 43

Transportation

Transportation in vehicles

This wheelchair has been crash tested in its standard configuration. However, due to safety risks Sunrise Medical do not recommend the transportation of people in their wheelchairs.

Should a person need to be transported in the wheelchair on transport systems, the following should be adhered to:

1. The wheelchair must be positioned forward facing.
2. For tie down points on the wheelchair, please look for the tie-down symbols on the wheelchair.



3. A head restraint must be fitted and suitably positioned at all times during the transportation.
4. If possible, remove seat cushion to create a lower centre of gravity.
5. The chair is crash-tested, and has satisfied the Dynamic test requirements of ISO 7176-19.
6. The wheelchair must be secured by a 4-point Tie Down Restraint system, conforming to ISO 10542 part 2.

7. The occupant must be restrained independently of the wheelchair by a lap and diagonal safety belt, conforming to ISO 10542 part 3. Sunrise Medical postural lap belts are for postural support only, and not suitable as restraints during transportation.

8. Any detachable accessories or components of the wheelchair must be removed and stored securely in the vehicle luggage compartment during transportation.

9. The Tie down restraints should be fitted to the main frame of the wheelchair as indicated by the karabiner stickers, and in the User Manual, and not to any other part of the chair.

10. The Tie Down restraints should be attached as close as possible at an angle of 45°, and tightened securely in accordance with the restraint manufacturers' instructions.

11. The wheelchair parking brakes must be firmly applied.

Lap belt instructions

Note:

Lap belts are fitted as positional aids, and are not suitable as transportation restraints.

Step 1

Positioning belt kit. The Positioning belt kit contains, one positioning belt, three tri glide buckles and two cable ties.

Step 1



Step 2

To assemble the positioning belt. Take the positioning belt strap and thread through the tri-glide. Repeat on both ends of positioning belt.

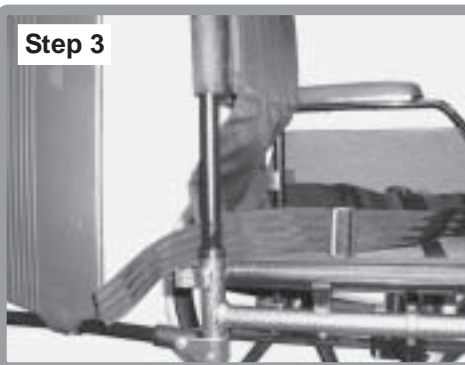
Step 2



Step 3

To fit the positioning belt to the chair. Take the positioning belt strap and wrap around back post.

Step 3



Step 4

Thread the positioning belt back through the tri-glide to form a loop around the back post. Thread positioning strap through tri-glide as shown in step 5.

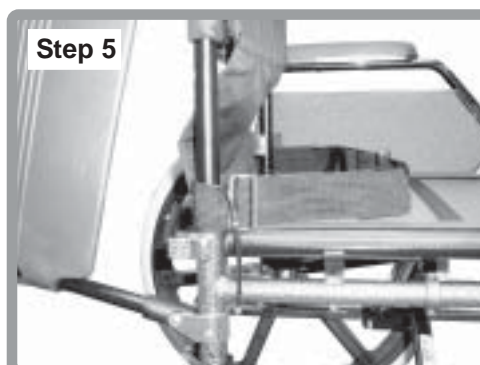
Step 4



Lap belt instructions

Step 5

To secure the positioning belt to the chair. Take one of the cable ties supplied and thread through the positioning belt strap. Then wrap around the frame and fasten together. DO NOT over tighten positioning belt. Repeat steps 3-5 with both ends of positioning belt.

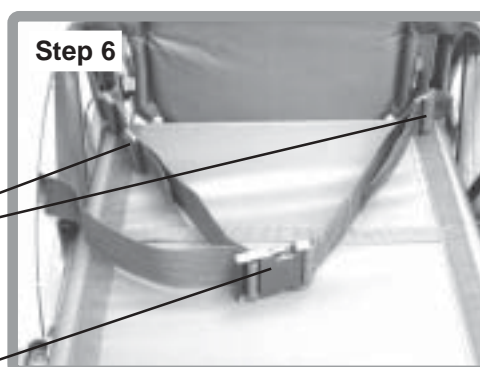


Step 6

To adjust the positioning belt use the tri-glide buckles and the fastening buckle.

Tri-glides

Fastening buckle



Step 7

The positioning belt should be adjusted so the fastening buckle is situated in the middle of the stomach.



Step 8

The positioning belt should be adjusted so a hand can be placed between the user and the belt.



Lap belt instructions

The positioning belt can be used on the Quickie RXS, Quickie 2, Breezy SLTL and Quickie 2 Millennium wheelchairs.

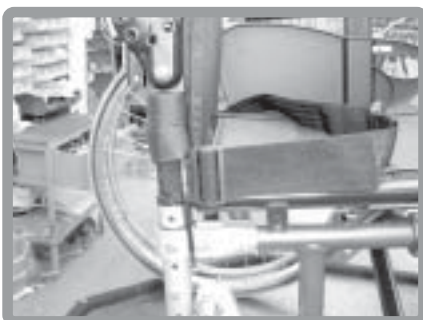
Quickie RXS:



Quickie 2:



Quickie 2 Millennium:



Breezy SL/TL:



Advice to client

The positioning belt must only be fitted by an approved Sunrise Medical dealer / agent. The positioning belt should only be adjusted by a professional, or a Sunrise Medical approved dealer / agent.

The positioning belt must be checked on a daily basis to ensure they are adjusted correctly (see step 7) and are free from any obstruction or adverse wear.

Sunrise Medical does not encourage the transportation of any person in a vehicle using this positioning belt as a method of restraint. Please see Sunrise Medical transit booklet for further advice on transportation.

Maintenance:

Check lap belt, and securing components, at regular intervals for any sign of frays, or damage. Replace if necessary.

NOTE:

The lap belt should be adjusted to suit the end user as detailed above. Sunrise Medical recommend that the length and fit of the belt be checked on a regular basis to reduce the risk of the end user inadvertently re-adjusting the belt to an excessive length.

Maintenance schedule

All Revolution wheelchairs leave the factory inspected and adjusted for immediate use. Continuous use will require routine maintenance and adjustments, especially if original settings are altered. Initial adjustment, carried out by your wheelchair prescriber/supplier, should accommodate your body structure and personal preference.

The chair needs to be checked after the first 4-6 weeks of use as the folding mechanism will 'run in' and may need adjusting to avoid unnecessary squeaking.

The following table gives an indication as to when routine maintenance checks should be made which will help sustain the life and efficiency of your wheelchair.

Revolution CHECK LIST		WEEKLY	QUARTERLY	SIX MONTHLY	ANNUALLY
GENERAL					
1. Tyre pressure 450 kilopascals/4.5 bar (65 psi) (rear wheels) 250 kilopascals/2.5 bar (36 psi) (Castors)		●			
2. Wheel locks Check for loose fasteners.			●		
3. Castor (front) wheels Check that the castor assembly and castor wheel rotate freely.			●		
4. Roll of wheelchair Check that the wheelchair rolls in a straight line with no excess drag or pull.			●		
5. Folding the chair Check that the wheelchair opens easily. Check for loose fasteners.			●		
6. Armrests (swing - away, height - adjustable) Check for loose fasteners and that all mechanisms work freely.			●		
7. Joints and folding of chair Check for loose and/or noisy joints.			●		
8. Seat sling or back upholstery Check for wear or 'sagginess' in the upholstery.				●	
9. Complete inspection, safety check and service should be made by an authorised Sunrise Medical supplier or wheelchair agent.					●
10. Frame and axle plates				●	

Cleaning guidelines, accessories and tools

Spoke Tension Maintenance

Check for loose or broken spokes every 3 months.

Tighten loose spokes so that they are the same tension as the others.

Contact an authorised dealer / maintenance centre to replace broken spokes.

Cleaning guidelines

In addition to the maintenance checks on the previous page, general cleaning of both the frame and upholstery should be undertaken. To maintain its appearance the upholstery should be cleaned regularly. Light soiling can be removed by sponging with a mild detergent and warm water, wiping in the direction of the texture. Rinse off with clean water before allowing to dry.

▲ DO NOT PUT UPHOLSTERY IN A DRYER.

Do not use bleach or solvents. If dirt is ingrained, the surface should be scrubbed with a soft brush.

The frame should be cleaned regularly with a non-abrasive cleaner followed by polishing with a non-abrasive automotive wax.

Tools

To maintain your wheelchair properly, you will need the following tools:

Adjustable spanner

2, 3, 4, 5, 6, 7mm Allen keys

3/32" Allen key

Spoke key

10, 13, 17, and 19mm A/F spanners

Philips No. 2 screwdriver

Accessories

Armrest pouch

Axle plate spacer

+ 19mm (+ ¾")

+ 38mm (+1½")

Backpack and seat pouch

Adult

Kids

Basketball roller

Caddy

Positioning belts:

Long Velcro® style 170cm (67")

Short Velcro® style 145cm (57")

Long buckle 163cm (64")

Short buckle 137cm (54")

Spoke guards - clear

Spoke guards - black

Swing-away tray table

Tool kit

Touch up paint

JAY Seating and positioning systems are available.

Contact Customer Services for individual requirements.

Technical data

Revolution

Overall length with legrest	813mm min. 892mm max.
Overall width	677mm
Folded length	690mm
Folded width	558mm
Folded height	285mm
Total mass	12.5kg
Mass of heaviest part	9.5kg
Static stability downhill	Less than 1°
Static stability uphill	Less than 1°
Static stability sideways	Less than 1°
Seat plane angle	16.5°
Effective seat depth	480mm
Effective seat width	416mm
Seat surface height at front edge	443mm
Backrest angle	16.5° min. 25.5° max.
Backrest height	350mm min. 425mm max.
Footrest to seat distance	370mm min. 460mm max.
Leg to seat surface angle	90°
Armrest to seat distance	Not applicable
Front location of armrest structure	Not applicable
Handrim diameter	532mm
Horizontal location of axle	50mm min. 120mm max.
Minimum turning radius	580mm

Sunrise Medical

Your new Revolution is manufactured in the West Midlands by Sunrise Medical. With over 30 years experience, we are one of the longest established mobility equipment manufacturers in the UK. All our Wheelchairs, Powerchairs, Scootas and Stairlifts undergo rigorous tests to ensure that they meet our requirements of comfort, safety and durability. Our success is based on the strong traditions of quality, value for money and genuinely caring for our customers.

We pride ourselves not only on designing and building the most innovative products, but also on our commitment to offer an excellent standard of customer service both during and after sale.



In addition to your new Revolution, Sunrise also manufacture oxygen concentrators, nebulizers and hoists. We also have a vast range of aids to daily living which include the Merlin Bath Lifter, bed accessories and walking sticks.

Should you require any information on our full range of products please call us on 01384 44 66 88 or contact us at:

Sunrise Medical Limited
High Street Wollaston
West Midlands DY8 4PS
www.sunrisemedical.co.uk





Sunrise Medical Limited

High Street, Wollaston, West Midlands DY8 4PS England
Tel +44 (0)1384 44 66 88 Fax +44 (0)1384 44 66 99
www.sunrisemedical.co.uk