Recare
Rehabilitation and healthcare equipment specialists

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CE

# Discovery

EN

**Instructions for use for Discovery**

Contents Page

**INFORMATION**

Last update: 2016-04-08

- Please read this document carefully before using the product.
- Follow the safety instructions to avoid injuries and damage to the product.
- Instruct the user in the proper and safe use of the product.
- Please keep this document in a safe place.

**INFORMATION**

- New information regarding product safety and product recalls can be obtained from the Customer Care Center (CCC) at oa@ottobock.com or from the manufacturer‘s service department (see inside back cover or back page for addresses).
- You can request this document as a PDF file from the Customer Care Center (CCC) at oa@ottobock.com or from the manufacturer‘s service department (see inside back cover or back page for addresses). It is possible to increase the display size of the PDF document.
- For further questions about the instructions for use, please contact the authorised personnel who issued the product to you.

# 1 Preface

Thank you for choosing an Otto Bock Mobility Solutions GmbH product. Please read this manual thoroughly to ensure you get the most out of it.
The 'Accessories' section of this manual describes add-ons available for the Discovery to extend its capabilities or enhance its comfort.
The 'Delivery/preparing the mobility base for use' section describes how you can adjust the mobility base for seating shells to your own requirements.
If you have any further questions, or if you have any problems, please contact your Ottobock dealer.
The design, as described in these instructions for use, is subject to technical alterations without notice.

# 2 Indications for use

The Discovery mobility base is designed solely for use with seating systems for people who are unable to walk or those with limited mobility. It can be moved either by the user or by another person.
**The Ottobock warranty applies only when the product is used according to the specified conditions and for the intended purposes, following all manufacturer's recommendations.**
Seating shells and modular seating systems must be used with mobility bases suitable for indoor and/or outdoor use. Their aim is to provide disabled persons with mobility and for transporting them.
The Discovery mobility base for indoor and outdoor use has been specially developed for the use with orthopaedic seating systems (e.g. seating shells). There are many adjustable settings that allow you to fine tune the Discovery to meet individual needs.
It must be adjusted to integrate with the seating system you are using by an orthopaedic or rehabilitation dealer.

# 3 Legal information

All legal conditions are subject to the respective national laws of the country of use and may vary accordingly.

## 3.1 Liability

The manufacturer will only assume liability if the product is used in accordance with the descriptions and instructions provided in this document. The manufacturer will not assume liability for damage caused by disregard of this document, particularly due to improper use or unauthorised modification of the product.

## 3.2 CE conformity

This product meets the requirements of the European Directive 93/42/EEC for medical devices. This product has been classified as a class I device according to the classification criteria outlined in Annex IX of the directive. The declaration of conformity was therefore created by the manufacturer with sole responsibility according to Annex VII of the directive.

## 3.3 Warranty

Further information on the warranty terms and conditions can be obtained from the qualified personnel that has fitted this product or the manufacturer’s service (see inside back cover for addresses).

### 3.4 Service Life

Expected service life: **4 years.**
The design, manufacturing and requirements for the intended use of the product are based on the expected service life. These also include the requirements for maintenance, ensuring effectiveness and the safety of the product.
Using the product beyond the specified expected service life leads to increased residual risk and should only take place subject to the due diligence and deliberations of qualified personnel.
If the service life is reached, the user or a responsible attendant should contact the qualified personnel who fitted the product or the manufacturer's servicing department (see inside rear cover or back page for address). Here the user can obtain information about known risks and the current options for refurbishing the product.

### 3.5 Trademarks

All product names mentioned in this document are subject without restriction to the respective applicable trademark laws and are the property of the respective owners.
All brands, trade names or company names may be registered trademarks and are the property of the respective owners.
Should trademarks used in this document fail to be explicitly identified as such, this does not justify the conclusion that the denotation in question is free of third-party rights.

## 4 Service and repairs

Service and repairs on the Discovery mobility base may only be carried out by Ottobock dealers. If you have any problems, please contact your dealer. Any necessary repairs will be made exclusively with authentic Ottobock spare parts there.

**For repair and service, the following tools are required:**
Allen wrench, sizes: 4 mm and 6 mm
Wrench, sizes: 8 mm, 10 mm, 13 mm, 19 mm and 24 mm
Screwdriver
Torque wrench
Tyre levers

Your authorised Ottobock dealer is:

## 5 Safety instructions

### 5.1 Explanation of symbols

**Danger!**
Warning messages regarding possible risks of accident or injury.

**Attention!**
Read the instructions for use before using the product.

**Notice!**
Note for service personnel.

### 5.2 General safety instructions

Please read the instructions for use first! Before using the product, you should become familiar with the handling, function and use of the product.

To avoid potentially dangerous situations such as tipping, you should become familiar with your new mobility base with seating shell on level ground first.

Do not stand on the footrests when getting into or out of your mobility base with seating shell.

Get to know how the mobility base with seating shell reacts when the centre of gravity shifts; for example on slopes or inclines or when clearing obstacles like steps and curbs. This should be done only with assistance from another person.

Park the mobility base with seating shell only on level ground. If parking it on a slope is unavoidable, make sure that you bring the seat to an upright position and that the anti-tipper is in functional position. If the seat is reclined then there is a risk that the mobility base with seating shell could tip over backwards.

Please note that the seat may only be tilted with the anti-tipper in functional position.

When reaching for objects in front, to the side or behind the mobility base with seating shell, be sure the seat occupant does not lean too far out of the seating shell as the shift in the centre of gravity might cause the mobility base with seating shell to tilt or tip over.

Treat your mobility base with seating shell with care. Do not "jump" it down from higher surfaces and do not drive against obstacles (including steps and curbs) without braking.

The anti-tipper is a component that has been designed to prevent the mobility base with seating shell from tipping over backwards. The anti-tipper should never be used to support the back of the mobility base with seating shell with the rear wheels removed.

Do not go up or down stairs without assistance from another person. Use ramps or elevators where they are available. If they are not available then two people should carry the mobility base with seating shell over the obstacle. If only one helper is available, this person should adjust the anti-tipper (if mounted) so that it does not contact the steps during transport. This will help avoid a potential fall. Afterwards, the anti-tipper should be put back in its previous position. When using lifting platforms with mounted anti-tipper, be certain that the anti-tipper is inside the standing area of the lifting platform.

When lifting the mobility base, always hold it by firmly attached components, not by lose or moving parts such as the footrests.

Be sure that the clamping levers of the height adjustable push handles are firmly tightened.

Make sure that the brakes are applied when stationary on uneven ground or when transferring (e.g. to a car).

Tyre pressures have a big effect on handling. The maneuverability and ease of use of the mobility base with seating shell are at their best when the rear wheel tyres are correctly inflated and when the pressures are the same in both wheels on each axle.

Before starting to use your mobility base with seating shell, check that the tyres are inflated correctly. The correct air pressure is printed on the sidewall of the tyre. Alternatively please refer to the air pressure table in the 'Technical data' section of this manual.

Please ensure that the cables for activating the drum brake and for releasing the gas compression springs are behind the back and that they do not come near the spokes.

Make sure the tyres have sufficient tread depth.

We would like to point out that persons seated in seating shells must be secured with suitable safety systems such as straps or belts at all times.

With some combinations of settings the caster wheels may be able to hit the footrest. If this happens then it will impair the steering range of your caster wheels and you should change the settings to avoid it.

Please note that when using your mobility base with seating shell in public places or on streets you must observe the traffic regulations for your area.

Be sure you are visible in the dark. Wear light-coloured clothes if possible. We recommend attaching active lighting as well.

For transfemoral amputee users, use of an anti-tipper is required.

Be careful with your fingers when using the mobility base with seating shell or during adjustment and assembly works (risk of injuries).

Maximal load capacity including seating shell is 110 kg/242 lbs.

**Using your Ottobock product as a seat in vehicles for transporting persons with reduced mobility**
Passengers should use the seats and vehicle restraint systems already installed in the vehicle whenever possible while travelling. This is the only way to ensure optimum protection of passengers in the event of an accident.
Your Ottobock product can be used as a seat in a vehicle for transporting persons with reduced mobility with the use of the safety elements offered by Ottobock and appropriate restraint systems. For further information please refer to our instructions for use **"Using your wheelchair/mobility base for seating shells or buggy as a seat for transportation in a wheelchair accessible vehicle",** order number 646D158.

Be sure to firmly re-tighten the screws after all adjustments.

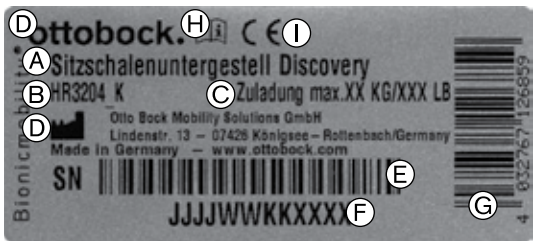
While installing add-on drives on the product is generally not permitted, it can be reviewed by our Custom Fabrication department on request.

**Serious injuries due to exceeding the service life**
Using the product beyond the specified expected service life (see the section „Service life“) leads to increased residual risk and should only take place subject to the due diligence and deliberations of qualified personnel.
If the service life is reached, the user or a responsible attendant should contact the qualified personnel who fitted the product or the manufacturer‘s servicing department (see inside rear cover or back page for address). Here the user can obtain information about known risks and the current options for refurbishing the product.

## 5.3 Further notes

Even in the event of compliance with all applicable guidelines and standards, it is possible that alarm systems (e.g., in department stores) may respond to your product. Should this happen, remove your product from the area where the alarm was triggered.

### Warning symbols and type plates

| Label/nameplate | Explanation |
|---|---|
|  | A Type designation<br>B Manufacturer’s article number<br>C Maximum load capacity (see section „Technical data“)<br>D Manufacturer / address / country of manufacture<br>E Serial number<br>F Manufacturing date<br>G European article number / International article number<br>H Read the instructions for use prior to using the product.<br>I CE marking – product safety in conformity with the EU directives |

| Label/nameplate | Explanation |
|---|---|
|  | Anchoring point/securing point for securing the rehab device in motor vehicles for the transportation of disabled persons. |

# 6 Delivery/preparing the mobility base for use

The original package contains the following components:

- Mobility base for seating shells
- Instructions for use and tools required
- Accessories as ordered

Carefully remove the transport safety snaps and packaging material.

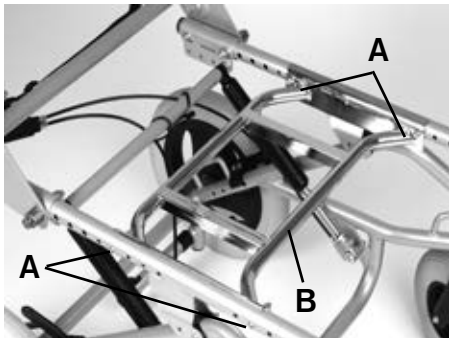



Figure 1

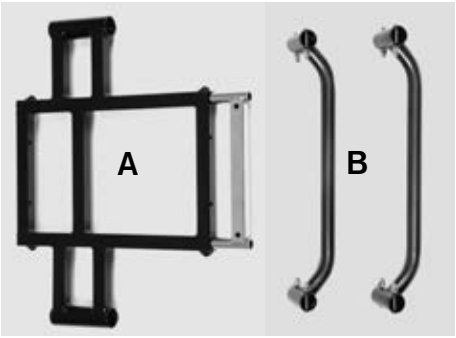



Figure 2

## 6.1 Exchanging/shifting the interface adapters

At the moment, the following types of interface adapters for seating systems are available:

1 Parallel adaption
2 Trapezoid adaption
3 R82/Ato Form
5 Dräger
6 Shape/Moss (Fig. 2, item A)
7 Universal crossbars (Fig. 2, item B)

**Models 1 - 4** After loosening the screw connections (Fig. 1, item A) on the seat bars, the interface adapter (Fig. 1, item B) can be shifted or exchanged.

**Models 5 + 6** Slide the interface adapters (Fig. 2) onto the seat bars and tighten the screws. For this purpose it is necessary to remove the attachment device for the backrest from the seat bars.

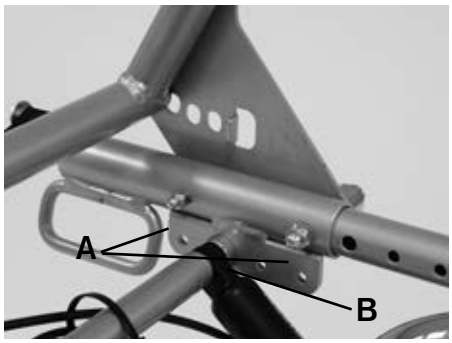



Figure 3

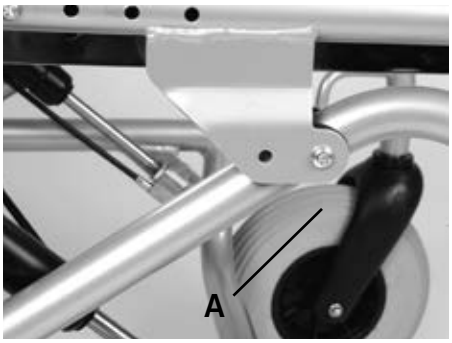



Figure 4

## 6.2 Seat depth

The seat depth can be set by selecting one of the four seat depth positions (Fig. 3).
To change the depth position, the fixing screws of the attachment device for the backrest (Fig. 3, item A) and the screws of the gas compression spring attachment (Fig. 3, item B) must be removed on the left and on the right.
Then the attachment device for the backrest can be moved on the seat bar for adjustment.
The back frame doesn't need to be disassembled when setting the seat depth.

## 6.3 Position of seat bars

After removing the screw connections to the basic frame (Fig. 4, item A), the seat bars can be shifted by 2.5 cm, e.g. to provide more space for the footrests or for centre of gravity shifting.
**After you have finished adjustment, thoroughly re-tighten all screws.**

## 6.4 Mounting of seating systems

When using seating systems of other manufacturers, please observe the corresponding manufacturer's instructions for use.
Ottobock will assume no liability for combinations with interface adapters not listed under 'Exchanging/shifting the interface adapters'.

**Figure 5**

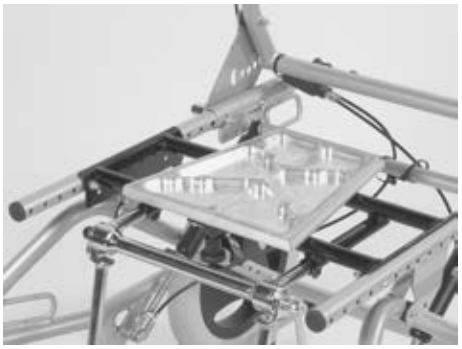


**Figure 6**

**Removing and mounting seating systems equipped with the 'Horacek' seating shell interface** (Fig. 5)
For transporting the mobility base with seating shell or to divide its weight into two more manageable loads, the seat can easily be removed from the mobility base. This also allows for easy transfer of the seat between indoor and outdoor mobility bases.
Position yourself on the side of the seating unit. Hold the head area of the seat back with one hand. Now reach beneath the seat and pull the disengaging lever towards the seat edge or footrest assembly to release the seat attachment. Tilt the seat back by over 45° and remove it by lifting upwards.
To remount the seat onto the mobility base, hold the seat as described above and first put the locking unit at an angle of approx. 45° on the rear tube of the seat adapter. Press the front edge of the seat down onto the mobility base until the seat audibly snaps in place. Make sure it is secure by giving the seat a few short tugs.

**Removing and mounting shells using the trapezoid adaption** (Fig. 6)
For transporting the mobility base with seating shell or to divide its weight into two more manageable loads, the seat can easily be removed from the mobility base. This also allows for easy transfer of the seat between indoor and outdoor mobility bases.
Position yourself on the side of the seating unit. Hold the seat with one hand placed on the back. Pull down the release button (Fig. 3) under the seat.
The locking bolt will unlock and release the adapter. At the same time, push the seating shell forward.
You can then remove the seating shell unit.
To remount the seat on the mobility base, place the posterior part of the seating shell interface on the adapter attachment and slide the seating shell backwards until the locking bolt audibly clicks back into locking position. Make sure the seating shell is secure by giving it a few short tugs.

# 7 Checking static stability before using the mobility base with seating shell

After mounting a seating system, the stability of the entire product must be checked.
If static stability is less than 10°, the EN 12183 standard stipulates that the user and/or attendant are informed on this in a clear warning note to allow the user/ attendant to take corresponding precautions for the user's safety.

# 8 Adjustment and adaptation possibilities

## 8.1 Seat tilt

Figure 7

Figure 8

Inclined and upright position – You can tilt the seat of your mobility base with seating shell by approx. 35° to the rear (Fig. 8) by pressing the release lever (Fig. 7). This will cancel the blocking provided by the gas compression spring. When the desired angle is reached, stop pressing the lever.

Please note, that the seat may only be tilted with the anti-tipper in functional position.
When using 22" and 24" wheels, the inclination range is restricted (see 'Technical data').

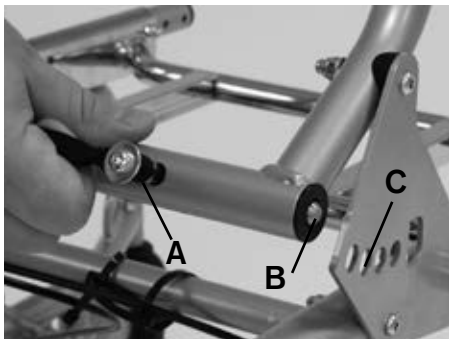



Figure 9

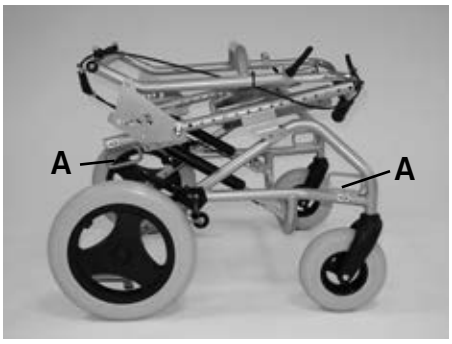



Figure 10

## 8.2 Transport

Minimizing the dimensions – If your mobility base for seating shells and the seating shell used are equipped with an interface adapter system with a quick-release lock, you can make the mobility base with seating shell more manageable e.g. to stow when traveling by car. First remove the seating system and the footrests from the mobility base. Pull the locking strap (Fig. 9, item A) and fold the back frame to the front until it rests on the seat tubes (Fig. 10). When unfolding, make sure that the stud (Fig. 9, item B) engages in the bore hole (Fig. 9, item C) provided for this. **Make sure that the back frame fully engages on both sides when unfolding it.**

**Safety in motor vehicles -** The frame features four fixing eyelets (Fig. 10, item A). If you want to secure the mobility base with straps, use these attachment points only.

## 8.3 Standard equipment


Figure 11

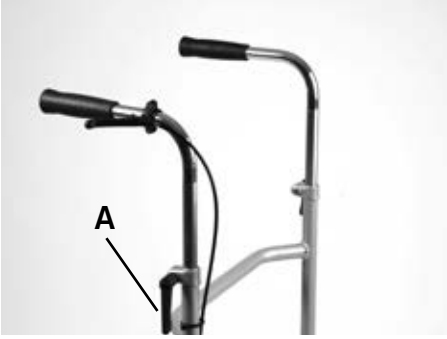



Figure 12

**Height adjustable pushbar** (Fig. 11)
It can be adjusted vertically to a more comfortable height for the person pushing the chair.
To do this, open the clamping levers on the right and left of the back tubes (Fig. 11, item A), move the pushbar to the desired height and re-tighten the clamping levers until they are snug.
The adjustment range is approx. 20 cm.

**Height adjustable push handles** (Fig. 12)
They can be adjusted vertically to a more comfortable height for the attendant.
To do this, open the clamping levers on the right and left of the back tubes (Fig. 12, item A), move the push handles to the desired height and re-tighten the clamping levers until they are snug.
The adjustment range is approx. 20 cm.

Figure 13

Figure 14

**Angle adjustable back frame** (Fig. 13)
The angle between back frame and seat frame can be adjusted with the ratchet mechanism (Fig. 9). The inclination range is 90° to 120°. Pulling the strap (Fig. 9, item A) will release the adjustment mechanism and the back angle can be set.

Make sure that you hear the lock re-engage on both sides after making adjustments.
Attention: Increasing the angle between seat frame and back frame to more than 90° may only be done if the anti-tipper is in functional position.

**Polyurethane wheels with wheel lock** (Fig. 14)
The wheel locks serve to lock the wheels. To apply the wheel lock, press the wheel operating lever to the front. To release the wheel lock, pull the wheel operating lever to the rear.
Check if the wheel locks are operational each time before using the mobility base with seating shell and re-adjust if necessary (see section 'Maintenance, cleaning and care').

# 9 Accessories

The mobility base for seating shells is designed as a modular assembly system, which means that certain accessories may be used with it. The following options and accessories may make it easier to use your mobility base with seating shell.

**Figure 15**

**Figure 16**

## 9.1 Storage bag (Fig. 15)

The storage bag is hung into the frame beneath the seat. It is attached with an overlapping tongue and 2 loops with snap fasteners. The maximal load capacity is 5 kg.

## 9.2 Tip-assist (Fig. 16)

For clearing obstacles like curbs etc. it may be necessary to tip the mobility base with seating shell at the front. The tip-assist is used to make tipping easier. Step onto the tip-assist with your foot and pull the push handles/ pushbar to the rear.

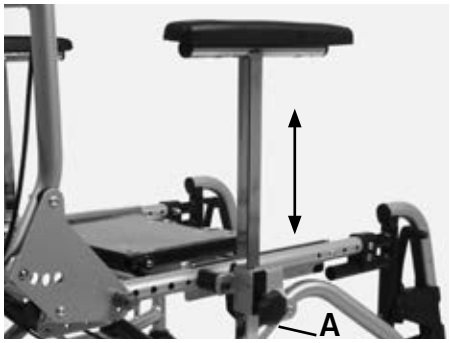



**Figure 17**


**Figure 18**

## 9.3 Armrests

**Height adjustment of the armrests**

To adjust the armrest height, loosen the clamp connection (Fig. 17, item A) and move the armrest to the desired height. Secure this position using the clamping screw.

**Angle adjustment of the armrests (optional)**

To adjust the angle of the armrest, loosen the screw connection (Fig. 18, item A). Adjust the desired angle and firmly re-tighten the screw connection.

## 9.4 Footrest assemblies mounted to the seat tube

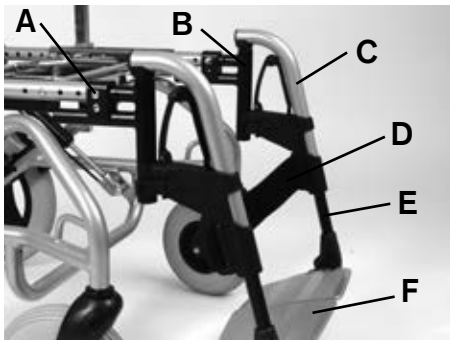



Figure 19

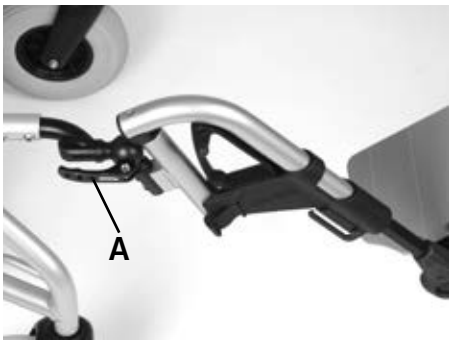



Figure 20

Components of the footrest assemblies
The footrest assemblies consist of the following components:
- Footrest receiver (Fig. 19, item B)
- Footrest holder (Fig. 19, item C)
- Calf band (Fig. 19, item D)
- Footrest bar (Fig. 19, item E)
- Footplate (Fig. 19, item F)

**Footrest receivers**
The different footrest assemblies are adjustable in their depth by pushing the footrest receiver more or less deeply into the the seat tube which features a corresponding adjustment hole channel. For this purpose, loosen the Allen head screws (Fig. 19, item A) on both sides and move the footrest receiver to the desired position. Then re-tighten the Allen head screws.

Footrest receivers with ratchet joints allow the footrests to elevate after opening the eccentric lever (Fig. 20, item A). Choose an angle and lock the footrest by closing the eccentric lever.

Figure 21

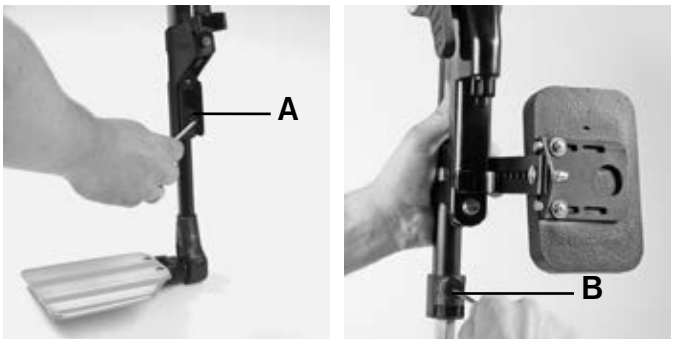



Figure 22

**Footrest holder** (Fig. 21)
The footrest holder is hung into the footrest receiver.
To remove the footrest, pull the lever to the rear and twist the footrest outwards.
Now you can remove the footrest by pulling it upwards.

**Adjusting the lower leg length (Fig. 22)**
After loosening the screw on the footrest holder (Fig. 22, item A) or foot support tube (Fig. 22, item B), the footrest bar and footplate can be adjusted to the required lower leg length and for the height of the seating shell you use.

When making adjustments, always make sure that the footplate does not contact the caster wheel.
Ensure that the footplate bar for the elevating footrest (Fig. 22, right) is inserted into the swivel segment by at least 40 mm (to the marking).
After you have finished all adjustments, fully re-tighten the screws that have been loosened.

Figure 23

Figure 24

**Calf band** (Fig. 23)
The calf band serves to support the lower legs at calf height to prevent the feet from slipping to the rear off the footplates. Hook & loop closures allow length adjustment of the calf band.
For removing the footrest, you first have to pull the calf band upward and out of the calf band holder on one side.
Individual footrests can also be equipped with heel straps.

**Individual footrests, angle adjustable** (Fig. 23)
With the individual footrests, angle adjustable, the right and left footplate can be flipped up to make transfers of the user easier.

**Single-panel footrest, angle adjustable** (Fig. 24)
The footplate can be flipped up towards one footrest bar making transfers of the user easier in case the legs are capable to bear weight.

Figure 25

Figure 26

**Adjusting the angle of the footplate** (Fig. 25)
Angle adjustable footplates are included as standard equipment.
Loosen the Allen head screw (wrench size 5 mm) at the rear footplate suspension by several turns.
Adjust the footplate to the desired position and firmly re-tighten the screw.

**Attention – To ensure perfect function of the single-panel footrest, the angle on the hinged side and on the resting side must be identical.**

**Locking device for single-panel footrest** (Fig. 26)
The locking device prevents inadvertent loosening and flipping-up of the footplate, especially with spastic users.
Pull the bar at the ring (Fig. 26) to flip the footplate up.

After you have finished all adjustments make sure to re-tighten any screws you have undone.

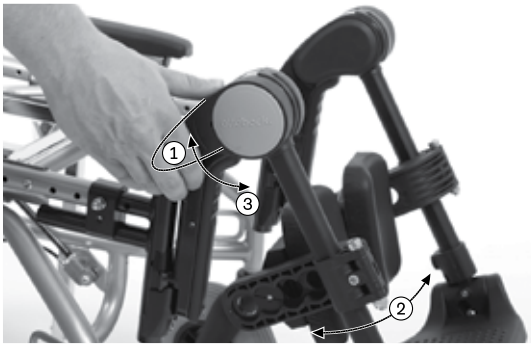



Figure 27

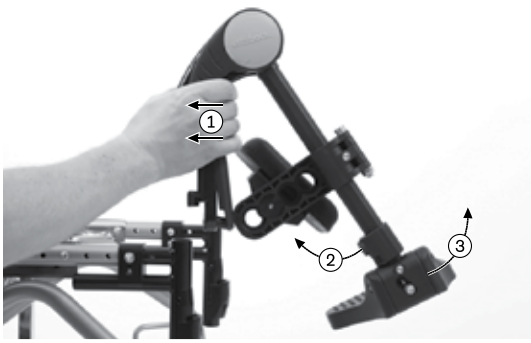



Figure 28


Figure 29

**Elevating footrest (Fig. 27–29)**
This allows positioning of the leg at different angles. With the release lever which is attached to the swivel segment, the footrest angle can be adjusted in small increments.

*Adjusting the angle*
Turn the release handle for raising/lowering the footrest upwards (Fig. 27, item 1). At the same time, support the footrest bar and move it to the desired angle (Fig. 27, item 2).
Now carefully turn the release lever back (Fig. 27, item 3). At the next free position, the footrest will snap into place.

*Removing the footrest*
Press the unlocking handle for removing the footrest (Fig. 28, item 1). Swivel the footrest at least 30° outwards (Fig. 28, item 2) until it can be removed.

*Attaching the footrest*
Hold the footrest outwards at an angle of at least 30° to the side and insert the pivot bearing into the footrest adapter (Fig. 29, item 1). Swing the footrest in the direction of travel until the footrest engages (Fig. 28, item 3).

*Adjusting the lower leg length*
See Fig. 22, item B.

Figure 30

Figure 31

*Adjusting the footplate angle (Fig. 30/31)*
The footplate of the elevating footrest is angle-adjustable as standard equipment.
Loosen the Allen head screw on the adapter to adjust the angle of the footplate (Fig. 30). Now adjust it to the desired position (Fig. 31). Firmly retighten the Allen head screw (Fig. 30).

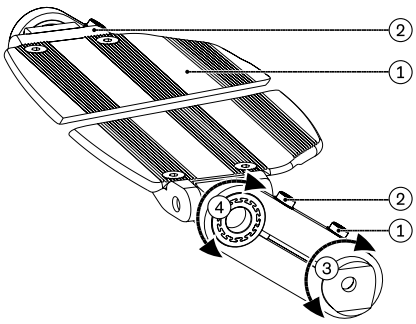



**Figure 32**

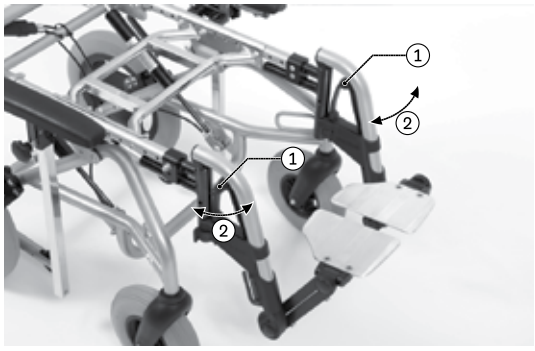



**Figure 33**

**Footrest for short lower leg length (Fig. 32/33)**
Provides support for users with a short lower leg length (especially children) at various heights and angles.

*Adjusting the lower leg length*
After loosening the clamping screws (Fig. 32, item 1/2), the footplate can be set to the desired height and depth by rotating (Fig. 32, item 3).

To make necessary simultaneous adjustments to the footplate angle, see the next section.
When making adjustments, always make sure that the footplate does not contact the caster wheel.
After you have finished all adjustments, snugly retighten the screws that have been loosened.

*Adjusting the footplate angle*
The standard footplate is angle-adjustable.
Loosen the upper clamping screw (Fig. 32, item 2). The lower clamping screw may also have to be loosened (Fig. 32, item 1).
Now adjust to the desired position (Fig. 32, item 4) and firmly retighten the clamping screws.

*Detaching/attaching the footrest (Fig. 33)*
To remove, pull the lever back (Fig. 33, item. 1) and swing the footrest out to the side by at least 30° (Fig. 33, item 2). Now you can remove the footrest by pulling it upwards.
To attach, hold the footrest outwards at an angle of at least 30° to the side and insert the pivot bearing into the footrest adapter (Fig. 33, item 2). Swing the footrest in the direction of travel until it engages.

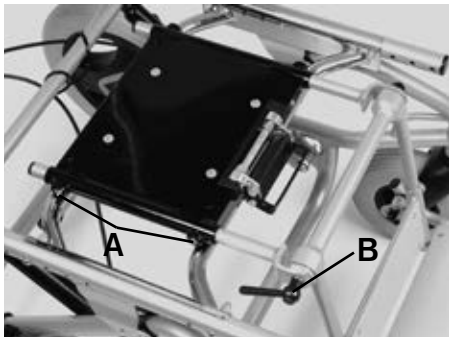



**Figure 34**

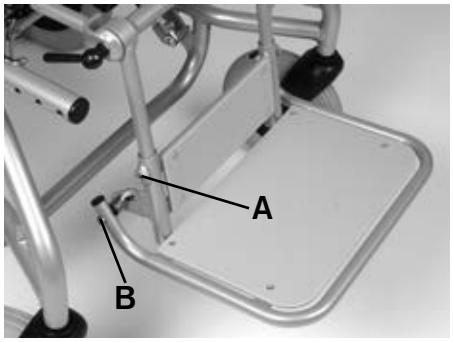



**Figure 35**

## 9.5 Footrest assembly for seating shell interface (Fig. 34)

The footrest assembly is mounted to the seating shell interface. To do this, loosen the Allen head screws at the seating shell interface (Fig. 34, item A) and move the knee angle to the desired position. Firmly re-tighten the Allen head screws.
The knee angle can be adjusted using the clamping lever (Fig. 34, item B).
The Allen head screws (Fig. 35, item A) allow adaptation to the lower leg length.
To adjust the angle of the footplate undo the two screw connections (Fig. 35, item B) on the left and right of the footplate.

**When making adjustments, always make sure that the footplate does not contact the caster wheel.**

## 9.6 'Horacek' seating shell interface (Fig. 34)

The seating shell interface easily attaches to the 'Horacek' interface adapter by means of the quick-release lock. The seating shell interface is attached underneath the seating system. For the handling, please refer to section 'Removing and mounting seating systems equipped with the 'Horacek' seating shell interface'.

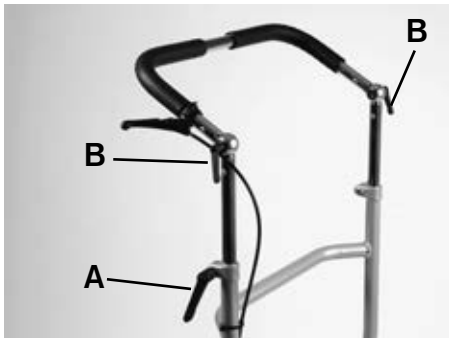



**Figure 36**

**Figure 37**

## 9.7 Pushbar with ratchet joint (Fig. 36)

The pushbar with ratchet joints allows height and angle adjustment of the pushbar to obtain a comfortable position for the person pushing the chair.
By loosening the clamping levers (Fig. 36, item A) you can release the pushbar and bring it into the correct height.
To adjust the angle, loosen the clamping levers (Fig. 36, item B).
**Be sure to snugly re-tighten the clamping levers (items A and B) after all adjustments.**

## 9.8 Anti-tipper

**Anti-tipper, swing-away, for 12" wheels** (Fig. 37)
The anti-tipper prevents the mobility base with seating shell from tipping too far backward. The anti-tipper can be disengaged with slight pressure from above and then swung to the rear into functional position or back to the front.

The anti-tipper engages in 2 positions:
1. Rearwards oriented (active setting of the anti-tipper, functional)
2. Approx. 90° position (setting required when using the storage bag or when clearing obstacles or simply when the anti-tipper is not needed).

It is absolutely necessary that the anti-tipper be in functional position when tilting the seating unit to the rear or when adjusting the angle between seat and back to more than 90°!

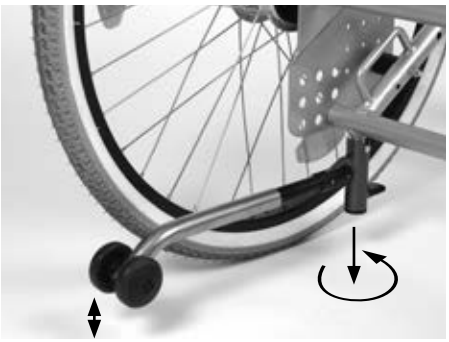


Figure 38

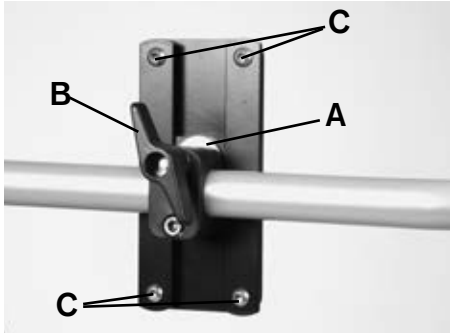



Figure 39

**Anti-tipper for 22"/24" wheels**
The anti-tipper (Fig. 38) prevents the mobility base with seating shell from tipping too far backward. The anti-tipper can be disengaged with slight pressure from above and then swung to the rear into functional position or back to the front.
It is essential for the anti-tipper to be swung into functional position if the seat or backrest is to be tilted backwards.
After unscrewing the fixing screw, the anti-tipper can be length adjusted in three increments. With increasing length of the anti-tipper in functional position the possible tilting range decreases.
In functional position, the distance between the anti-tipper wheels and ground must be 5 cm at maximum.

Please note that with the anti-tipper swung to the rear, it will be impossible to clear obstacles (e.g. curbs) from a certain height. To avoid risking an accident, swing the anti-tipper to the front before driving over such obstacles.

## 9.9 Back guide for seating shells (Fig. 39)

Insert the narrow side of the attachment plate into the slotted hole (Fig. 39, item A), rotate by 180° and tighten the plate with the wing screw (Fig. 39, item B). The back shell is now attached to the guide plate (Fig. 39, item C).
When adjusting the back angle, the back guide will move upward or downward correspondingly.

Figure 40

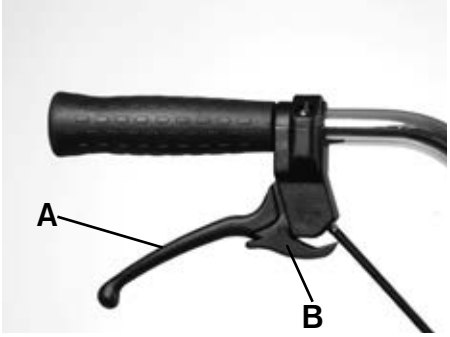



Figure 41

## 9.10 Tray (Fig. 40)

The tray can only be used in conjunction with armrests. Make sure that both armrests are at equal height. Coming from the front, slide the tray onto the armrests.
The user of the seating shell should still have enough space thanks to the cutout.
It is recommended that angle adjustable armrests are used.

## 9.11 Drum brake for attendant (Fig. 41)

The drum brake allows the mobility base with seating shell to be braked independently of the tyre pressure.
Tighten the brake handles (Fig. 41, item A) to activate the drum brakes.
To lock the brakes, pull the brake handle completely and engage the retaining claw (Fig. 41, item B) with your index finger. To release the brake, pull the brake handle slightly and the retaining claw will open.
Please note that the brakes must be readjusted if the braking effect is not even.
Check the adjustment of the drum brake from time to time (see section 'Adjustable brake force with rear wheel with drum brake').

Figure 42

Figure 43

Instead of the 12" rear wheels, 22" or 24" wheels can also be mounted using a special rear axle (Fig. 42). For this purpose, a hole matrix allows adjustment of the axle height and of the wheelbase in increments of 25 mm. The wheels are provided with quick-release axles (Fig. 43) and can be removed.

**Attention when using 22" and 24" wheels** (Fig. 43):
In an extreme case, the static stability can change to: 5.9° to the front, 3.9° to the side and 7.2° to the rear. The drum brakes are designed to function safely as parking brakes on slopes of up to 8°.
Dependent on the wheelbase, the special rear axle for the mounting of large wheels can lead to restrictions of the seat inclination range. Values for this are listed in the 'Technical data' section.
In order to reduce the risk of injury, the spokes of the wheels must not be accessible for the user from the inner side. Please protect the user accordingly by mounting spoke covers (spoke protectors) or by other measures (side plates on the seating shell).

## 10 Use in vehicles for transporting persons with reduced mobility

**Use in vehicles for transporting persons with reduced mobility**
Serious injuries in case of accidents due to user error.
Always use the seats and restraint systems in the vehicle for transporting persons with reduced mobility first. This is the only way to ensure optimum protection of passengers in the event of an accident.
If the product is to be used as a seat in a vehicle for transporting persons with reduced mobility, the safety elements offered by the manufacturer and appropriate restraint systems must be used. Further information can also be found in the document "Using your product for transportation in a wheelchair accessible vehicle", order number 646D158.

**Use of the belt system as a restraint system in vehicles for transporting persons with reduced mobility is forbidden**
Serious injuries due to improper handling of the product.
Under no circumstances may the belts and positioning aids offered with the product be used as part of a restraint system for transportation in a vehicle for transporting persons with reduced mobility.
Note that the belts and positioning aids offered with the product are only intended to help support the user sitting in the product.

**Prohibited transportation of the passenger with activated back angle adjustment and seat tilt**
Loss of safe restraint in the product due to user error.
Ensure the passenger is seated in a nearly upright position during transport.
Move the backrest to a nearly upright position prior to travel.
Check the locking mechanism on both sides.

During transport in vehicles for transporting persons with reduced mobility, the product must be sufficiently secured with attachment straps.The transport weight of the person to be transported in a vehicle for transporting persons with reduced mobility corresponds to the maximum permissible user weight (see the "Technical data" section).

**Required accessory**
The Discovery and Discovery HR32040450 mobility bases for seating shells are always equipped with fixation points. No additional fixation sets are required for the seating shell mobility base.

**Using the product in the vehicle**
The mobility base for seating shells has been tested according to ANSI/RESNA and ISO 7176-19.

Figure 44

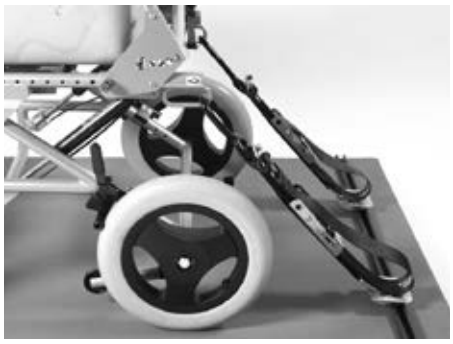


Figure 45

**Securing the product in the vehicle**

1. Position the product in the vehicle for transporting persons with reduced mobility. For further information see section 5 in the brochure "Using your product for transportation in a wheelchair accessible vehicle", order number 646D158.
2. Engage the attachment straps at the front and rear before tightening them (Fig. 44/45).
   The product showing the correct positioning of the attachment straps (see Fig. 46).

Figure 46

Figure 47

**Routing the restraint lap belt**

1. Place the passenger in a nearly upright seated position.
2. Pull each end of the restraint lap belt from the inner side of the seat through between the upholstery and the frame to the outer side of the seat.
3. Engage the end of the restraint lap belt on the pin (see fig. 47).
4. Check that the belt strap is not twisted but rests flat against the passenger's body.
5. Tighten the strap, taking the user's comfort into account.
6. If required, attach the calf strap on the frame and position the passenger's feet behind the calf strap.

**Restrictions for use**

**Using the product with certain settings and/or installed options**
Severe injury in case of accidents due to options coming loose.
Before using the product as a seat in a vehicle for transporting persons with reduced mobility, remove options that need to be taken off for safe transportation. Please observe the following table.
Stow all dismantled options securely in the vehicle for transporting persons with reduced mobility.
Please note that certain settings on the product exclude the use of the product in a vehicle for transporting persons with reduced mobility.

| Option | Transportation in a vehicle for transporting persons with reduced mobility not possible | Option must be removed | Secure option on product |
|---|---|---|---|
| Combination of: Rear axle with drum brake in combination with 20"/22"/24" wheels and tilting option up to 35° | X | | |

# 11 Maintenance, cleaning and care

Many screw connections utilise screws and nuts equipped with a thread lock.
If you have to undo such screw fastenings, replace the nut or screw with a new thread lock and/or nut.

The correct function of the mobility base with seating shell should be checked before every use. The checks listed in the following table must be carried out by the user at the indicated intervals. Failure to carry out these simple checks may lead to problems arising that could invalidate the warranty.

| Check | before each use | weekly | monthly |
|---|---|---|---|
| Function test of the brake/wheel lock | X | | |
| Secure lock of the seating system | X | | |
| Firm seat of all wheels | X | | |
| Firm seat of the push handles / pushbar and | | | |
| Firm seat of the rubber grip covers on the push handles | X | | |
| Contamination on bearings | | X | |
| Air pressure (printed on the sidewall of the tyre) | | X | |
| Examination of screw connections | | | X |
| Visual examination of wearing parts (e.g. tyres, bearings) | | | X |
| Check spoke tension if 22" or 24" wheels are used | | | X |

Should any defects become apparent, please contact your authorised dealer. We also recommend that you have your mobility base with seating shell serviced every twelve months by your authorised dealer.

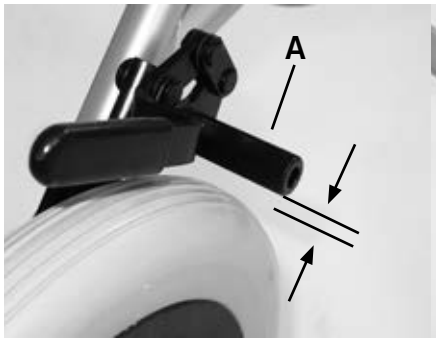



Figure 48

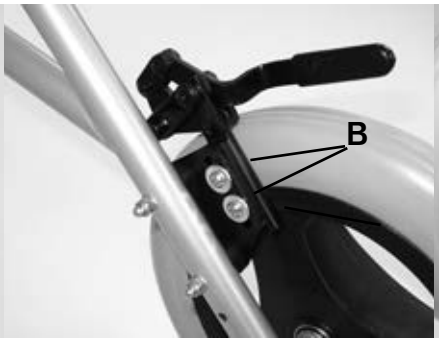



Figure 49

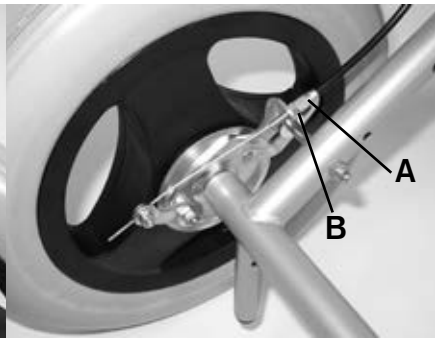



Figure 50

**Adjustable brake force with rear wheel with wheel lock**
A reduction of the distance between the wheel lock bolt (Fig. 48, item A) and the wheel increases the braking force; a larger distance decreases the braking force. After loosening the screws on the guide plate (Fig. 49, item B) you can move the wheel lock and adjust the distance to the tyre. The wheel lock should be mounted so that when the wheel lock is not activated, the distance between the tyre and wheel lock bolt is 10 mm maximum (when using polyurethane tyres) or 5 mm maximum (when using pneumatic tyres). After finishing the adjustment, fix the wheel lock by tightening the screws on the guide plate (Fig. 49, item B).

**Adjustable brake force with rear wheel with drum brake**
Brake force can be adjusted using the adjustment screw (Fig. 50, item A) to achieve the optimum braking effect. By unscrewing the screw the brake force will be increased, to decrease it tighten the screw. With the wheel rotating freely you should loosen the adjustment screw until you hear the noise of the wheel being braked. Next, screw in the adjustment screw until the friction noise disappears. The wheel should run freely. After finishing the adjustment, fix the adjustment screw by tightening the counter nut (Fig. 50, item B).

Be sure the brake force (wheel lock / drum brake) of both rear wheels is adjusted equally. Make sure that the force of the drum brake as parking brake will be sufficient only when the hand brake lever is set to the second or third ratchet position!

### Cleaning and care

To clean your mobility base, use a mild detergent. Some components of your mobility base need to be serviced from time to time to ensure smooth operation.

- Hair or dirt particles may accumulate between the caster wheel and fork making it difficult for the caster wheels to rotate. Remove hair and dirt particles.
- Clean the fork and caster wheel thoroughly using a mild detergent.
- When carrying out mounting work at the drum brakes, please make sure that no oil gets on the brake linings or on the brake drum.
- If your mobility base gets wet, towel dry it as soon as possible.
- Do not use your mobility base in salt water, and keep sand or other particles from damaging the wheel bearings.
- Check the tightness of all screw connections regularly. If a screw connection frequently comes loose then consult your dealer.

### Maintenance of pneumatic tyres

- We recommend that you always carry an air pump and tyre repair kit for emergencies. As an alternative, consider keeping a spray can of hardening foam (available at bicycle shops) to fill your tyre in case of punctures.
- If a tyre goes flat, use the appropriate tools to carefully remove the tyre from the rim.
- Be sure not to damage the rim and the tube.
- Repair the tube according to the directions in the repair kit, or replace the old tube with a new one.
- Before re-mounting the tyre, inspect the inner rim surface and the inside of the tyre for any object that may have caused the flat.
- To ensure that the brakes continue to work correctly please only use the original rear wheels.

**Figure 51**

**Figure 52**

**Mounting** (Fig. 51)

- Start pressing the underside of the tyre over the edge of the rim behind the valve. Pump the tube with a small amount of air until it is round; then insert it in the tyre.
- Check the tube for folds. If folds are present, release some air. You can now mount the rest of the tyre starting with the section of tyre opposite the valve by gently pressing the tyre toward the valve.

**Inflating** (Fig. 52)

- Check around the tyre on both sides to see whether the tube is clamped between the edge of the tyre and the rim. Push the valve back slightly and pull it out again so the tyre is well-seated in the valve area.
- Fill the tyre with just enough air so that it can still be pressed in easily with your thumb. Be sure the tyre is centred on the rim before continuing. If not, let some air out and realign the tyre. Inflate the tyre to the pressure indicated in the air pressure table in section 'Technical data', and tighten the dust cap.

# 12 Technical data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Load capacity (all frame widths) [kg] | 110 | | | | | | |
| Load capacity of the storage bag [kg] | 5 | | | | | | |
| Seat tube height [mm] | 470 | | | | | | |
| Backrest inclination [°] | 30 | | | | | | |
| Push handle height adjustment by approx. [mm] | 200 | | | | | | |
| Front wheel diameter ["] | 8 | | | | | | |
| **Rear wheel diameter ["]** | **12** | **22** | | | **24** | | |
| Smallest height when folded with push handles or pushbar with ratchet joint [mm] | 530 | 560<br>530 without rear wheels | | | 620<br>530 without rear wheels | | |
| Smallest height when folded with pushbar [mm] | 700 | 730<br>700 without rear wheels | | | 730<br>700 without rear wheels | | |
| Weight (standard model) [kg] | 22 | 26 | | | 26 | | |
| Wheelbase [mm] | 480 | 480 | 505 | 530 | 480 | 505 | 530 |
| Seat tilt [°] | 35 | 22.5 | 35 | 35 | 17.5 | 20.5 | 35 |
| A – overall length [mm] (without accessories) | 750 | 875 | 900 | 925 | 900 | 925 | 950 |

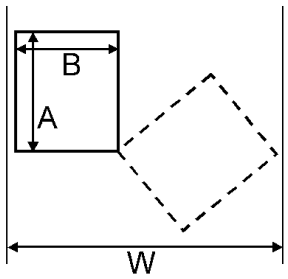
| **Frame widths (outer edge of seat bars) [mm]** | **360** | **400** | **450** | **500** |
|---|---|---|---|---|
| B – overall width 12" wheels [mm] | 550 | 590 | 640 | 690 |
| Overall width 22"/ 24" wheels [mm] | 570 | 610 | 660 | 710 |
| Distance of armrests without spacers / with spacers [mm] | 370 / 420 | 420 / 470 | 470 / 520 | 520 / 590 |

**Turning radius**
To calculate the turning radius when turning around a braked rear wheel you can use the following simplified formula.

$$W = B + \sqrt{(A^2+B^2)}$$

A = overall length, B = overall width, W = turning radius

Example:
Discovery with frame width 360 mm and 12" wheels.
A = 750 mm, B = 550 mm turning radius = 1460 mm




**Additional information**
Maximum load capacity (including seating shell): 110 kg

**Air pressure table**
The rear wheel sizes are printed on the sidewalls of the tyres.

| Wheel | Diameter ["] | Pressure [bar] |
|---|---|---|
| Front wheel | 8 | 2.5 |
| Rear wheel | 12 | 2.5 |
| Rear wheel | 22 | 4.5 |
| Rear wheel | 24 | 6 |

**Attention:** Accessories and add-on components will reduce the remaining load capacity for the user.

# 13 Threshold values for wheelchairs transportable by train

- The wheelchairs in this series fully satisfy the minimum technical requirements of regulation (EU) No. 1300/2014 for wheelchairs transportable by train. However, not all versions can comply with all threshold values due to different settings.
- With the help of the table that follows, you or the qualified personnel can take measurements and verify whether the concrete wheelchair meets the threshold values.

| **Feature** | **Threshold value** (according to regulation (EU) **No. 1300/2014)** |
|---|---|
| Length [mm] | 1200 (plus 50 mm for the feet) |
| Width [mm] | 700 (plus 50 mm on each side for the hands when moving) |
| Smallest wheels ["] | approx. 3 or greater (according to the regulation, the smallest wheel must be able to accommodate a gap measuring 75 mm horizontally and 50 mm vertically) |
| Height [mm] | max. 1375; including a 1.84 m large male wheelchair user (95th percentile) |
| Turning radius [mm] | 1500 |
| Maximum weight [kg] | 200 (for wheelchair and occupant, including any baggage) |
| Maximum obstacle height that can be overcome [mm] | 50 |
| Ground clearance [mm] | 60 (at an upward slope angle of 10°, ground clearance must measure at least 60 mm under the foot rest for going forward at the end of the slope) |
| Maximum inclination angle on which the wheelchair will remain stable [°] | 6 (dynamic stability in all directions)<br>9 (static stability in all directions, also when wheel lock engaged) |