



# WOLTURNUS

## Manual active wheel chair

### Tukan



UK – User instruction

Date: \_\_\_\_\_

Serial no.: \_\_\_\_\_

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## Instructions for use - Wolturnus Tukan active wheelchair

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## 1 General information

### 1.1 Preface

With the purchase of Tukan active wheelchair from Wolturnus A/S, you have chosen a quality product for versatile use during everyday life - both indoors and outdoors. Before you start using your wheelchair, please make sure you read the following: The chapter "Delivery and Preparation for Use" and „Safety instructions“.

The chapter "Adjustment and personal fitting" provides an overview of the ways the wheelchair can be customised to your requirements. Technical changes to the design described in these instructions for use are reserved.

The chapter "Accessories and their assembly" presents various additional components of the Tukan, which can expand its field of application and improve comfort for the wheelchair user.

The chapter „Maintenance, cleaning and disinfection“ contents guidelines for securing the function and durability of the wheelchair.

The chapter "Problem finder" provides solutions for various problems with the function of the wheelchair.

### 1.2. Intended use

W5 active wheelchair is designed solely for individual use by persons who are unable to or who have a walking impediment, and can be operated either by the patient or by another person.

Wolturnus A/S will only be liable for the product, when it is used under the described conditions and for the meant purposes. The dealer/user is himself responsible for combining the Tukan and its original accessories with parts and accessories from other manufacturers.

### 1.3. Area of application

The large range of equipment options and the individual fitting allow the wheelchair to be used by patients who are unable to walk or who have a walking impediment due to paralysis (paraplegia/tetraplegia), or loss of limb (leg amputation), or limb defect/deformation, or joint contractures/defects, or muscle and nerve disorders, and disorders such as cardiac or circulatory insufficiency, equilibrium disturbances or cachexia, as well as geriatric patients who still have usable residual strength in the upper limbs.

When judging the individual users needs it shall be considered, that Tukan is developed primarily with users in mind, that is able to operate their wheelchair independently.

Further for custom fittings should also be considered body size and body weight (max. load capacity 120 kg/265 lbs), physical and mental condition and age, plus environment, daily activities etc.

### 1.4. Description of the Tukan wheelchair

The W5 wheelchair has a fixed frame construction, which has an adjustable axle and folding back. The adjustable balance point, and the adjustable back, makes it possible to adjust the wheelchair, for alterations according to what the user wants. Furthermore the back and seat upholstery can be set and adjusted as/if needed, and the footrest can be adjusted in height.

Each frame is optimized individually, according to the size and strength of the user. This way we make sure that heavy and strong users get a wheelchair, that is strong enough, and also that smaller and lighter users do not have to drag unnecessary weight around. Tukan transfers the users energy efficiently by its own forward drive of the rear wheels, it is also easy to lift and handle in the everyday life. Accessories are mounted according to the wishes of each user. The wheelchair will work for the everyday life of an active user for years to come, if maintained properly and on a running basis.

### 1.5. CE conformity

This product meets the requirements of the 93/42/EEC guidelines for medical products. This product has been classified as a class I product according to the classification criteria outlined in Annex IX of the guidelines. The declaration of conformity was therefore created by Wolturnus A/S with sole responsibility according to Annex VII of the guidelines.

## 1.6. Liability

Wolturnus A/S has only designed the frame of the Tukan wheelchair and some of the fitted metal parts. The frame is granted with a five year warranty against breakage and the rest of the self produced parts are granted with a two year warranty. For the parts which are mounted on the Tukan wheelchair, but are designed and produced by other manufacturers, Wolturnus A/S grant only the warranty claim to the extent these other manufacturers are granting Wolturnus A/S warranty to be advanced, although the warranted product is resold.

Wolturnus A/S only assumes the warranty liability according to the guidelines mentioned above for Tukan wheelchairs that are ordered and delivered via authorized Wolturnus consultants/dealers and only to the first owner of the chair. The warranty given by Wolturnus A/S only applies if the product has been used under the specified conditions and for the intended purpose. Wolturnus A/S recommend that the product is used and maintained in accordance with this guidance purposes and directions. Finally, the installation and mounting conditions must be followed.

Wolturnus A/S is not responsible of damages caused by:

- components and spare parts not approved by Wolturnus A/S
- modifications of the original surface treatment
- repairs and/or changes on the Tukan wheelchair, which is not carried out by Wolturnus A/S . All repairs under the liability must be carried out by authorized dealers or Wolturnus A/S.
- use which is not within the discribed purposes (ie. use for sports purposes like rugby, basket etc.) and loads exceeding the maximum load claimed by Wolturnus A/S and due to the construction given limitations (according to the 93/42/EEC directive for medical devices)
- situations where others than the original owner use the Tukan wheelchair.
- situations which results of bad weather or dangerous conditions and all foreseeable uncausious use.
- lack of maintenance of the Tukan wheelchair.
- cleaning with detergents which contents acid or alcalics or the use of high pressurized water or the like.

Wolturnus A/S' liability is limited to change or repairing of the Tukan frame or the fitted parts within the mentioned periods of warranty. Wolturnus A/S is not under any circumstances economic responsible for any other kind of damage. All repairs under the warranty must be carried out by authorized dealers or Wolturnus A/S.

Questions regarding the rules of warranty will be answered using 'contact' on [www.wolturnus.dk](http://www.wolturnus.dk).

## 2 Safety instructions

### 2.1 Symbol legend



Danger!  
Warning about possible risk of accident or injury.



Attention!  
Warning about risk of technical damage.



Note!  
Note about equipment operation.



Note!  
Note for service personnel.



Attention!  
First read the instructions for use!

## 2.2 General safety instructions



NB!

Please read the Instructions for Use first! Before using the product, you should become familiar with the handling, function and use of the product. You may compromise your safety if you do not observe these instructions. However, it is impossible to protect against and avoid all unforeseeable circumstances and situations.



Danger!

Using the wheelchair with damaged skin can lead to complications such as reddening of the skin and pressure sores. The wheelchair places continuous strain on the skin, especially in the area of the buttocks, back, and rear thigh, sometimes over several hours. For this reason, please thoroughly examine these areas of the skin before using the wheelchair. No liability will be assumed for health injuries caused by use of this this wheelchair with damaged skin.



Danger!

To avoid tipping and dangerous situations, familiarise yourself with your new wheelchair by practicing in a level, clear area first.



Danger!

Do not use the footrest when getting into or out of your wheelchair. Distance between footrest and floor should be a minimum of 4 cm/2" to avoid problems with obstacles, doorsteps etc.



Danger!

Depending on the diameter and adjustment of the casters and the centre of gravity adjustment of the wheelchair, the casters may wobble at higher speeds. This can lead to blocking of the casters and cause the wheelchair to tip over. Therefore, ensure that the casters are properly adjusted (see chapter 5 "Adjustment and personal fitting"). When travelling down slopes, do not drive without braking and reduce your speed.



Danger!

With secure support from an assistant, make yourself familiar with the effects of centre of gravity shifts on wheelchair behaviour, for example on slopes or inclines or when clearing obstacles. Using an anti-tipper is strongly recommended for inexperienced wheelchair users.



Danger!

The anti-tipper is designed to prevent the wheelchair from accidentally tipping backwards. Under no conditions should the anti-tipper assume the function of transport wheels, for example to transport a person in the wheelchair with the rear wheels removed.



Danger!

Extreme settings (e.g. rear wheels mounted in the foremost position) combined with an unfavourable body posture can cause the wheelchair to tip even on level ground.



Danger!

When ascending slopes, lean you upper body far forward to avoid tipping.



Danger!

When reaching for objects (located in front of, beside, or behind the wheelchair), ensure that you do not lean out of the wheelchair too far since this will shift the centre of gravity, creating the risk of tipping or overturning.



Danger!

Use the wheelchair only as specified. Avoid driving against obstacles or jumping of higher surfaces (steps, curbs etc.).



**Danger!**

Stairs can only be negotiated with assistance by attendants. If equipment such as a ramp or elevator is present, it should be used. If there is no such equipment, two attendants are required to carry the wheelchair over the obstacle. If only one attendant is available, he or she must first adjust the anti-tipper (if installed) so that it does not come into contact with the steps during transport; otherwise, severe falls can result. Subsequently, the anti-tipper must be readjusted correctly.

Please note the Tukan wheelchair can tip over if the angle is below 10 degree tested by Tüv Süd, Hannover carried out according to ISO 7176-1.



**Danger!**

Ensure that the attendant(s) grasp your wheelchair only by components that are firmly attached (not detachable or foldable parts as footrests, armrest etc.).



**Danger!**

If your wheelchair is equipped with height-adjustable push handles, ensure that the brakes are firmly tightened.



**Danger!**

If your wheelchair is equipped with anti-tippers and you are using a lifting platform, ensure that the anti-tipper is free of moving parts and will not create danger.



**Danger!**

On uneven ground or during transfers (e.g. into a car or to another chair), secure the wheelchair by activating the wheel brakes.



**Danger!**

Before your commence wheelchair operation, check that the tyres are inflated correctly. The maximum inflation pressure is printed on the side of the tyre. The pressure should be at least 3,5 bar (350 kPa) for the rear wheels. The wheel brakes are only efficient with sufficient air pressure and proper adjustment. When engaged, the friction rods should be positioned approx. 5 mm into the surface of the rear tyre.



**Danger!**

For transfemoral amputees, the rear wheels must definitely be moved to the rear position (only chairs with adjustable rear axle) to protect against tipping.



**Danger!**

If the seat and/or back upholstery becomes worn or damaged, please replace immediately and commence correct adjustment procedure to prevent pressure sores and spinal damages.



**Danger!**

Use caution with open fire or spars - especially lit cigarettes. The upholstery is treated with a flame retardent but can burn.



**Danger!**

To avoid hand injuries when operating the wheelchair, do not put hands between the rear wheel and the wheel lock, and be careful when passing narrow openings.



**Danger!**

The maximum load capacity for the Tukan active wheel chair is 120 kg/265 lbs. Extra large loads, such as the mounting of a hand bike or Swiss track can cause a damaging effect.



**Danger!**

Using the wheelchair as a seat for transportation in a vehicle for the disabled:  
The Tukan wheelchair for active use is not approved for transportation in a vehicle for the disabled.



**Danger!**  
Always make sure that the quick-release axles are correctly adjusted at the rear wheels. It must not be possible to remove a rear wheel unless the button on the quick-release axle is pushed.



**Danger!**  
When using the pushrims when braking from high speeds or on longer downward slopes, the user can burn his fingers severely. Use eventually gloves as protection.



**Danger!**  
As consequence of various adjustment options, there can be risk of crushing between the wheel lock lever and the side or frame of the wheelchair.



**Danger!**  
The wheelchair can heat up significantly due to solar radiation or in the sauna. In extreme cold, there is a risk of hypothermia - insulating covers for the sideguards is recommendable.  
Please note in damp surroundings such as chlorine steam in swim baths, steam of water in saunas or salty surroundings at the sea side the front wheel bearings can be damaged.



**Danger!**  
When nuts with locking feature are loosened or tightened more than 2-3 times, they should be renewed to prevent risk of malfunction causing danger.



**Note!**  
The effectiveness of the wheel locks and the overall driving characteristics depend on proper tyre pressure. With properly inflated rear wheels and even tyre pressure on both sides, your wheelchair is much easier to operate and manoeuvre. Ensure that your tyres have sufficient tread depth to provide secure grip.



**Note!**  
Please note that when you operate your wheelchair in public road traffic, you are subject to road traffic regulations.



**Note!**  
In the dark, wear light clothing or clothing with reflectors in order to improve your visibility. Ensure that the reflectors installed on the sides and rear of the wheelchair are easily visible. We also recommend installing active illumination.



**Note!**  
In order to avoid injuries and damage to the product, only use original packaging when shipping of the wheelchair is needed.

### 2.3 Symbol legend of type marking

On the wheelchair is there stick a type marking on the seat underbow, where there is referred to read this instruction for use. The Type marking will be found with the following marking with explanation:



The Year of production for the wheel chair is produced at Wolturnus A/S.



### 3 Delivery and preparation for use



**Danger!**  
Risk of crushing: Only grasp the components described.

Your Tukan wheelchair is usually delivered fully assembled, with the backrest folded and the rear wheels and sideguards/armrests removed (photo 1).

Please verify that the wheelchair is delivered with the ordered equipment/accessories, and please check the W5 wheelchair and its accessories, incl. the wheels, in making sure it is not damaged in any way.

Only three simple steps is needed to prepare the wheelchair for use:

1. Move the backrest to upright position (photo 2) until locking (when equipped with folding lock, pull the cable release at the back).
2. Put sideguards/armrests into their mounts on the frame (photo 3).
3. Finally install the rear wheels. Grasp the spokes around the rear wheel hub and push the quick-release button with a fingertip. Now the rear wheel can easily be installed into the bushing (photo 4). Be aware that the quick-release axle is fully inserted and securely locked!

Now test drive the wheelchair. Verify that it runs straight and freely, that the front castors rotates freely and that the wheel locks function efficient and evenly balanced. If necessary the tire pressure should be controlled.

Finally the seating position should be adjusted. From the Wolturnus A/S factory the seat and back upholsteries have been adjusted as specified on the orderform, but seat and back upholstery should be optimized for the user using the velcro straps inside the upholsteries. Instructions is found in chapter 5.5.



When using the wheelchair, the user might come across barriers such as ramps, steep terrain, curbstones, stairs and getting in and out of the chair. How to get in and out of the wheelchair is described under section 4.1 Personal shifting to and from wheelchair.

Known misuse of the wheelchair, which might lead to harming the user and/or the wheelchair is as follows:

- Leaning forward too much in the wheelchair, causing the user to tip forward.
- Always remember to activate the breaks before getting in and out of the wheelchair.
- Always remember to activate the anti-tippers again after stairs etc. are passed.

## 4 Transportation

In a few steps your Tukan wheelchair can be disassembled for easier storage or transportation.

1. Remove the sideguards/armrests.
2. Unlock the backrest by pulling the cable and fold it fully forward (with folding lock, this should engage).
3. Grasp the rearwheels at the hub, push the quick-release button and remove the wheels (photo 6)



**Note!**

Press the button on the rear wheel quick-release axles (photo 6) and the casters if applicable (optional) and remove them in order to reach the minimum transportation size.



**Note!**

During assembly it is essential to ensure that the backrest is fully folded back until locking with a 'click'. Likewise the quick-release axles on the rear wheels and, in applicable, the casters, are securely locked in the axle housings. It must not be possible to remove the wheels unless the quick-release buttons are pressed. Before using the chair please verify that the wheel brakes are efficient on both wheels.

## 4.1 Transfer

As example transfer into the wheelchair from another wheelchair is described below. The Tukan wheelchair is designed for persons who normally move around in the wheelchair independently. Therefore, the independent transfer is described. Should you require an attendant, the steps described here are carried out correspondingly but with support.



Manoeuvre the wheelchairs so that they are positioned at an angle of approx. 45° degrees to each other (photo 7). Ensure that the wheel brakes do not get caught in each other but remain freely movable. First activate the wheel brakes of the wheelchair that is currently in use (photo 8).



Move your feet from the footrest to the floor and move eventually forward in the seat (photo 9). Now position the other wheelchair as convenient as possible and activate its wheel brakes (photo 10).



Transfer into the second wheelchair. The method illustrated is one possible way to transfer (photo 11/12). Find the most suitable method for yourself through practising - eventually with help from an attendant.



Position your feet on the footrest (photo 13) and release the wheel brakes (photo 14). You are now ready to use the wheelchair.

## 5 Adjustments and personal fitting

Each wheelchair user has her/his own ideas regarding which type of wheelchair and accessories that are optimal for her/him, not to mention the position in the wheelchair and its handling characteristics. Therefore the Tukan wheelchair for active use is individually fitted to match your needs precisely. We recommend consulting your dealer or therapist to determine and optimize the wheelchairs settings to your needs.



Note:  
The following tools are required for repair and maintenance:  
Allen keys, size 3 mm, 4 mm, 5 mm and 6 mm  
Top wrench  
Combination wrenchs, size 8 mm, 10 mm og 27 mm  
Caliper  
Screwdriver with straight notch  
Tyre levers  
Torque wrench if the recommended torque is to be used

### 5.1 Adjusting the footrest height (photo 15+16)

To adapt the lower leg length, the footrest bar is continuously adjustable. The main purpose with this adjustment is to secure the users thighs gets the optimal support from the seat/cushion at the same time as the feet is in suitable contact with the footrest.

Remove the two screws on each of the front tubes by loosening and removing the nuts on the back side of the tubes (photo 15). It is now possible to move the footrest in the front tubes. Set the desired lower leg length by moving the footrest up or down until the best fitting hole for the screws are found. Ensure that the footrest has the same position in both sides. Replace screws (photo 16) and nuts and tighten them (torque 4 Nm/3,0 ft.lbf/35 in.lbf).



Note:  
Ensure that all screws and nuts are in place and tightened before putting load on the footrest.

5.2 Adjustable footplate (photo 17-19)

Height adjustmen: As described above in chapter 5.1.

Angle adjustment: Loosen the two nuts on the bottom of the footplate (photo 17) and set the desired angle by rotating the footplate. Tighten the nuts again (torque 10 Nm/7,4 ft.lbf/88 in.lbf).



Adjustment forwards/backwards: The footplate is detached from the clamp below by removing the two nuts (photo 17) and lifting the footplate away (photo 19). It is now possible to move the footplate by moving the two screws to the other holes in the footplate (visible on photo 19) and/or rotating the clamp.

To rotate the clamp first push it to the side to free the tubes to be rotated away from each other. Now the clamp can be pulled of (photo 18) and rotated horisontally. Reassemble the clamp in reverse sequence and replace the footplate with the screws in the desired holes (photo 19). Finally the nuts are fitted and, before tightening them, the footplate is adjusted to the desired angle (torque 10 Nm/7,4 ft.lbf/88 in.lbf).



Note:  
Ensure that all screws and nuts are in place and tightened before putting load on the footrest.

5.3 Adjusting calves strap (photo 20)

The calves strap positions the feet on the footrest. It should be adjusted to prevent the feet from sliding backwards of the footrest. The calves strap is adjusted by retracting the velcro(photo 20), adjusting the length and locking the velcro again by firmly pressing the parts together.

## 5.4 Adjusting angle between seat and back (photo 21+22)

Due to ergonomic reasons it is necessary to adjust the preset angle between seat and back individually. The angle of the backrest is adjusted by altering the length of the hex screw in the bottom of the backrest tubes (photo 21) (torque 10 Nm/7,4 ft.lbf/88 in.lbf).

If the backrest - after adjustment - do not lock freely in the rearmost position, it is necessary to adjust the two locking mechanisms. Loosen the locking hex screws (photo 22), rotate the lock housings until both locks 'snaps' in place and tighten the screws again (torque 10 Nm/7,4 ft.lbf/88 in.lbf).



## 5.5 Fitting of seat and back upholsteries (photo 23-26)

Altering the length of the seat: Detach the front part of the seat from the rear part(photo 23), push or pull it to the preferred position and fasten the velcro on the rear part again (photo 24).

Fitting the sag of the seat: Remove the seat cushion and tip the wheelchair rearward to make the velcro straps underneath the seat accessible. Loosen the straps one by one (photo 25) and tighten them as preferred, before fastening them again. Remark that it is suitable for most users that the front straps are more tightened towards the front of the seat. This outbalances the forward pressure from the back support and leads to a better positioning of the hips. If the upholstery gets more slack after being used for some time, it should be tightened again to keep the optimal sitting position.



Fitting the sag of the back upholstery: The back upholstery is also adjustable with velcro straps but consists of two parts.

On the outside is a cover which has a polstered front part with velcro that locks on the seat upholstery (under the cushion) and makes adjustment of the stretch of the back upholstery possible.

Inside is an adjustable part with velcro straps making altering of the back sag adjustable. The rear part of the outer upholstery is pulled free and folded forward to make the velcro straps accessible (photo 26).

By adjusting the individual straps the sag should be carefully adapted to provide the optimal back support for the user. To provide the user the full advantage of the Tukan active wheelchair, it is of absolute necessity to perform this fitting of the back sag correct. When performing this fitting the first time we redommend support from your therapist or dealer.



**Danger!**

When altering the sitting height by adjusting the straps in the seat and/or the back upholsteries the centre of gravity can be moved, thus leading to risk of tipping over. It is important to test the balance of the wheelchair after fitting the seat and back upholsteries and - if necessary - reposition the rear axle precisely before using the wheelchair (se chapter 5.6).

#### 5.6 Modifying the rear wheel position (centre of gravity) (photo 27+28)

Repositioning the rear axle and thereby the rear wheels forward or backward alters the balance of the wheelchair and thereby its stability.

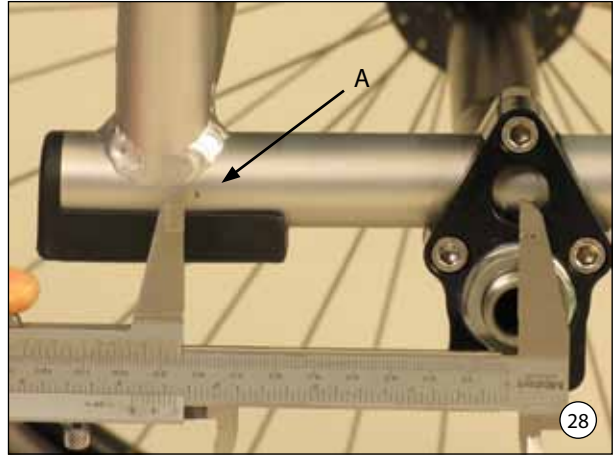
Moving the rear axle rearwards, leads to a more stable wheelchair which is less prone to tip over and, due to the longer distance between front and rear wheels, more stable on the course. By security reasons the W5 will normally be delivered with the rear axle in a rearmost position. New users should not alter this before they are thoroughly trained in using the wheelchair.

Moving the rear axle forwards puts more of the weight on the rear wheels. With less pressure on the front wheels it is easier to tip the chair controlled and it will turn easier too. Tipping the wheelchair controlled makes it easier for the experienced user to clear obstacles.

To modify the rear axle position first dismount the rear wheels (chapter 5.8), then loosen the 3 hex screws on the axle consols (photo 27) on both sides of the wheelchair suitably to freely move the axle unit for- or backwards. When the preferred positon is established you must use a caliper or another usable messure to verify the axle units distance to the messuring point A (photo 28) is identical at both sides of the chair. Now retighten the screws (torque 10 Nm/7,4 ft.lbf/88 in.lbf) and install the rear wheels. To protect against unwanted tipping over it is recommended, that you allways have another person standing behind the wheelchair, when a new rear wheel position is tested.

After modifying the rear wheel position, it is necessary to readjust the wheel brakes (chapter 5.9).





Note!  
Check out that the rear axle distance to the measuring point is identical on both sides of the wheelchair (photo 28).



Note!  
Ensure that all screws and nuts are in place and tightened before using the wheelchair again after repositioning the rear axle.



Danger!  
Positioning the rear axle in a foremost position combined with a non-suitable positioning of the body could tip over the wheelchair on a level surface.  
Anti-tippers are always recommended for new users and for all users when utilizing extreme setting of the centre of gravity.



Note!  
When reinstalling the rear wheels, be aware that the quick-release axle is fully inserted and securely locked!

### 5.7 Modifying the distance between the rear wheels (photo 29+30)

Detach the rear wheels. The nuts on the rear wheel bushings are loosened with a 27mm wrench (photo 29). It is now possible to screw the bushings in or out (a maximum of 15mm out is recommended due to the enhanced pressure on the bushing) to obtain the desired position. Then tighten the nuts again (torque 50 Nm/37 ft.lbf/440 in.lbf). Finally it should be controlled, that the wheel brakes function securely.



**Note!**

Ensure that all screws and nuts are in place and tightened before using the wheelchair again after modifying the rear axle.

**5.8 Adjusting the wheel brakes (photo 31+32)**

When you wish to modify the rear wheel position or install a different size of wheel or tyre it might be necessary to loosen the wheel brake mounts previously. This is done by loosening the hex screws on the wheel brake mounts (photo 31) and move the wheel brakes forward before starting work on the rear wheels. When the rear wheels are installed and/or repositioned, the wheel brakes should be moved against the rearwheel and positioned to ensure a suitable locking of the rear wheels, when the wheel brakes are activated. The screws shall be tightened securely after positioning (torque 10 Nm/7,4 ft.lbf/88 in.lbf). When the wheel brakes are activated they should be pressed approx. 5mm into the surface of the tyre (photo 32).

It is important that the wheel brakes are positioned symmetrical. It is recommended to use a caliper or other appropriate measure to control this. Also control that the friction provided by the wheel brakes are equal.

**Danger!**

Before your commence wheelchair operation, check that the tyres are inflated correctly. The maximum inflation pressure is printed on the side of the tyre. The pressure should be at least 3,5 bar (350 kPa) for the rear wheels. The wheel brakes are only efficient with sufficient air pressure and proper adjustment. When engaged, the friction rods should be positioned approx. 5 mm into the surface of the rear tyre.

**Note!**

Ensure that all screws and nuts are in place and tightened before using the wheelchair again after adjusting the wheel brakes.

## 5.9 Adjusting the anti-tippers (photo 33+36)

The shown swingable anti-tipper is adjustable in several ways to obtain the best possible function..

1. Front/rear positioning relative to the frame: Loosen the 3 hex screws on the rear axle mount (be careful not to change the position of the rear axle)(photo 33). The anti-tipper can now be moved in/out. When a suitable position is obtained - tighten the screws.

2. Height adjusting: Loosen the two hex screws which locks the anti-tippers vertical tube (photo 34) and move the anti-tipper up or down as preferred. Tighten the screws.

3. In/out adjusting of the anti-tipper's supporting wheel: Loosen the nut and screw (photo 35) and remove the screw. Find the most suitable hole on the inner tube (photo 36), install the screw and nut and tighten them again

Torque for the on photo 33+34 shown screws are 10 Nm/7,4 ft.lbf/88 in.lbf and for the on photo 35-36 shown 4Nm/3,0 ft.lbf/35 in.lbf.



### Note!

Ensure that all screws and nuts are in place and tightened before using the wheelchair.

### 5.10 Adjustment and use of various pushhandles

Height adjustable pushhandles (photo 37-38) has screws with adjustable handles on both sides of the back upholstery for positioning the height of the pushhandles. Loosen one screw at a time and position the pushhandle as preferred (photo 37). Tighten the screw thoroughly again. The small handles can be repositioned rotationswise by pulling out and then turned to the preferred position.

To detach the height adjustable pushhandles, the above mentioned screws should be fully unscrewed and removed. It is now possible to pull the pushhandles out when pressing the two safety knobs at the bottom of the pushhandles (photo 38).



To remove the detachable pushhandles (photo 39) press the button on the small quick-release axle and retract it. Now the pushhandle can be removed. The pushhandles are installed in the reverse order. Remark that the little button clicks out and reassure that the axle is locked in place.

Foldable pushhandles is locked in horisontal position by means of a mecanisme which is unlocked by pressing a button just below the handle itself (photo 40).



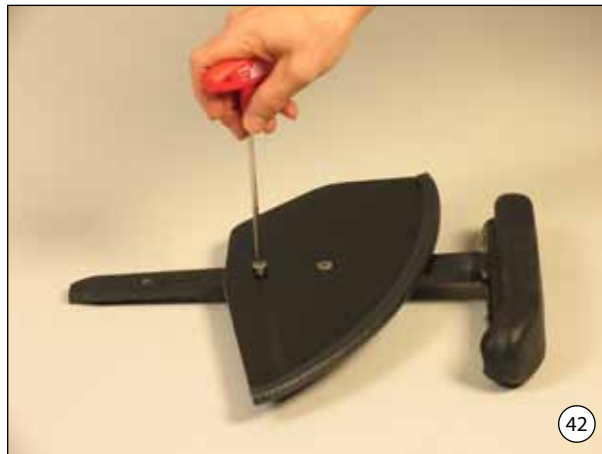
**Danger!**  
When using height adjustable pushhandles it is of major importance to controll that the locking screws are securely tightened before using the wheelchair.

### 5.11 Height adjustable armrests (photo 41+42)

Armrests with side guards is height adjustable in steps of 15mm.

To change the height of the armrests they should first be removed from the wheelchair. Then loosen and remove the screws that fixate the side guards to make it possible to move these up or down to find the suitable height of the armrest (photo 41).

Finally the screws are installed in the chosen holes in the armrest (photo 42) (torque 8 Nm/5,9 ft.lbf/71 in.lbf).



**Note!**

Ensure that all screws and nuts are in place and tightened before using the wheelchair.



**Danger!**

Assistants must under no circumstances grasp the armrests when lifting the wheelchair, clearing obstacles etc. Risk of personal injury.

### 5.12 Use of Wolturnus W5 wheelchair in vehicles for the disabled



**Danger** when using the Wolturnus Tukan wheelchair as seat when transported in a vehicle for the disabled:

When transported in vehicle for the disabled wheelchair users should be seated in the original and fixated seats of the vehicle using the suitable security systems. This is the only way to obtain the optimal protection of the user in case of an accident.

Active wheelchair W5 is not approved of fixating in vehicles for the disabled.



## 6 Accessories and their assembly

There is a vast range of accessories available for your Wolturnus Tukan active wheelchair. In the following we will inform about use and assembly of some of these.

General information concerning chapters 6.1 - 6.4

Whenever you are installing anti-tippers, crutch holder or tip assisting pedal it is necessary to remove the internal mounting block(s) of the rear axle. First detach the rear wheels as described in chapter 4 and showed on photo 6. Then detach the internal mounting blocks by unscrewing the three screws shown on photo 27 in chapter 5.6 and remove it from the inside of the frame. Delivered with the accessory you will find 3 longer screws and a new, extra mounting block. Insert the screws and slide the extra block on the screws. Now reinstall the old internal mounting block and use it for fastening the accessory (photo 43) (torque 10 Nm/7,4 ft.lf/88 in.lbf).

It is advisable not to loosen the internal mounting blocks on both sides of the wheelchair at the same time to avoid the balance of the chair to be altered.

### 6.1 Anti-tipper with swing-away function (photo 43)

The anti-tipper prevents the wheelchair from tipping and is recommended for users who is unfamiliar in the use of a wheelchair (2 pcs. anti-tipper) or when the rear axle is set very active.

When there is no need for the anti-tipper it can be put away under the wheelchair. Pull or press the anti-tipper downwards to free the locking mechanism and swing it away until the lock engages again (photo 44).



### 6.2 Crutch holder (photo 45+46)

The crutch holder offers you the opportunity of bringing crutch and the like with you on the wheelchair.

Velcrostraps installed on the back support provides secure fastening of the crutches.



### 6.3 Tip-assisting pedal (photo 47)

The tip-assisting pedal helps an assistant when it is convenient tipping the chair when clearing obstacles like doorsteps or curbs. Step on the pedal and tip the wheelchair simultaneous with the pushhandles.



### 6.4 Frame protectors (photo 48)

Frame protectors protect the front upper part of the frame against scratches. The frame protector is folded tight around the frame and fastened by means of the velcro tape (photo 48)



### 6.5 Calves strap (photo 49)

The calves strap can be installed by velcro attached to the frame or by welded-on fittings (photo 49, extra to be ordered before the wheel chair is manufactured). It will help preventing the feet to slide down from the footrest. Adjustment of the calves strap is described in chapter 5.3.



### 6.6 Special back upholsteries (photo 50)

Back upholsteries can be ordered in different varieties. Photo 50 show a back upholstery which is reinforced by leather on the upper corners.



### 6.7 Bags (photo 51)

Bags for the Tukan wheelchair are available in a version to be attached under the seat by means of velcro straps (photo 51) or can be ordered as an internal part of the back upholstery.



### 6.8 Cushions (photo 52)

Cushions are available in several variations of height and size.

### 6.9 Pushhandles, various models

Pushhandles are available in the following variations:

1. Detachable (photo 39, page 21), which can be removed by means of a small quick-release axle.
2. Height adjustable and removable as described in chapter 5.10.
3. 'Tetra-pushhandles (photo 53), which provide the user with a stable support by putting the arm rears around the pushhandles.
4. Foldable pushhandles which can be folded by the push of a button. When the pushhandles are unfolded they will automatically be locked again (photo 41, page 21).

### 6.10 Side guards/cloth protection

The side guards keep the user's clothes clear of the rear wheels and protect against water and dirt from the tyres.

The side guards are available in several variations and can be installed in different ways depending on the needs of the user. Wolturnus archives a cardboard shape of the individual sideguard ensuring the user the possibility of ordering perfectly fitted sideguards for his/her chair.

Watch our assortment on [www.wolturnus.dk](http://www.wolturnus.dk), 'Accessories'.

## 6.11 Insulating of side guards

Cover of cell-rubber which is particularly purposefull at aluminium side guards but can be fastened by glue or velcro on all types of sideguards. Wolturnus A/S archives a cardboard shape of the individual sideguard ensuring the user the possibility of ordering perfectly fitted cell-rubber insulation for his/her sideguards.

## 6.12 Enlargement kit/side guard fitting

This enhancement kit enlarges the distance between the side guards provides the user more space when using winther clothing etc. It also makes it possible to fold the backsupport down without removing the side guards (unless back support with enhanced width is fitted on the chair).

## 6.13 Locking mecanism for folded back (photo 54)

This mecanism locks the back support when folded down to make transportation and handling easier.



## 6.14 ABS side guards with armrests, height adjustable

This side guard with armrest is height adjustable (see chapter 5.11).

## 6.15 Aluminium front castors (photo 55+56)

Improves the looks of the wheelchair. Depending on the existing castor it can be necessary with another type of front fork to install the aluminium front castors. Assembly of complete unit: Remove the plastic cover carefully with a screwdriver with straight notch (photo 55). The nut is unscrewed with a 19mm top wrench (photo 56). Pull out the old front castor unit and install the new unit instead. Be carefull not to overtighten the nut. The front castor shall rotate freely.



## 6.16 Upgrades of rear wheels, pushrims and tires

Rear wheels and pushrims can be upgraded to stronger, more advanced types as Spinergy wheels and titanium pushrims and special tyres as non-puncture Schwalbe Marathon or MTB.

Please look at [www.wshoppen.dk](http://www.wshoppen.dk) to get more information.

## 6.17 Variable wheel brakes

There is a broad selection of wheel brakes available with very different features:

Push-activated wheel brakes are easy to activate and are out of the way when transferring due to the horizontal position of the handles when locked.

Single hand activated wheel brake locks both wheels by the touch of one hand and it is hidden under the frame when not in use. Thus minimizing the risk of getting a finger crushed.

Scissor wheel brakes are the choice of very active users with full ability in hands and upper body. This is necessary since the wheel brakes are activated by grasping under the seat upholstery and swinging the handle sideways. The advantage of these wheel locks are, that they are fully hidden, when not in use.

Please look at [www.wshoppen.dk](http://www.wshoppen.dk) to get more information.



### Danger!

Before your commence wheelchair operation, check that the tyres are inflated correctly. The maximum inflation pressure is printed on the side of the tyre. The pressure should be at least 3,5 bar (350 kPa) for the rear wheels. The wheel brakes are only efficient with sufficient air pressure and proper adjustment. When engaged, the friction rods should be positioned approx. 5 mm into the surface of the rear tyre.

## 6.18 Hip security strap

Users with a limited control of the upper body can use the accessory as a protection against slipping forward. It is also functional when performing sport activities.

The hip security strap can be mounted onto the wheelchair under the seat tubes right in front of the place where the back tubes are mounted, as illustrated on photo 57+58.



This is done at back of the wheel chair using the Velcro attached to the hip security strap.

## 6.19 Single hand propulsion

With this accessory the wheelchair can be propelled with one hand since both wheels are activated from one side of the wheelchair.

## 6.20 Heel straps for double foldable footrests

To prevent the feet from sliding of the footrests on chairs with double footrests like the W5D and Dalton.

6.21 Quick-release on front castors

Opens the possibility for quick change between different types of front wheels and also convenient to make the wheelchair even smaller when transporting it in a car etc.

6.22 Quick-release handles for tetraplegics, rear wheels

Makes it easy for tetraplegics to release the locking mechanism of the rear wheel axle.

6.23 Spoke guards

It is possible to install spoke guards on the rear wheels. Our spoke guards are available as transparent or with different colours or motives.

Please look at [www.wshoppen.dk](http://www.wshoppen.dk)

## 7 Maintenance, cleaning and disinfection

Your Tukan wheelchair carries CE markings. Hereby Wolturnus A/S guarantee that this wheelchair is fulfilling the demands of the EU-directive 93/42 EEC.

In principle the wheelchairs function - especially the wheel brakes - should be examined before every use. Self-locking nuts should be renewed after being loosened or unscrewed 2-3 times.

If errors and deficiencies occurs on the wheelchair you should immediately make contact to your supplier or Wolturnus A/S to get these remedied. Be alert if the driving characteristics change or the wheelchair seems to be unstable.

We recommend that your wheelchair is serviced at least once a year at your suppliers workshop.

The prescribed actions below shall be performed by the user according to schedule:

Action	Every day	Monthly	Every 3d month
Check wheel brake function	X		
Fitting of seat and back upholstery		X	
Check wheel positioning		X	
Visual checking of wear (ie. tyres, bearings)		X	
Check for dirt on bearings (ie. salt, sand)		X	
Check pushrims for damages		X	
Check air pressure of rear wheels		X	
Check folding mecanism for wear		X	
Check tension of rear wheel spokes			X
Check all connections, screws and bolts			X

If you are technical minded you can adjust and maintain important parts of you wheelchair by yourself to ensure flawless function. Here are a some examples:

- In the gap between the front fork and the front wheels hairs and dirt will collect and lead to resistance. Detach the front wheel and clean fork and wheel.
- Rear and front wheels can be fitted with quick-release axles that are released be depressing a button. To keep this system functioning it is necesssary to keep it clean of dirt on the axle or in the bushing. Once in a while the button and the locking balls should be lubricated with a thin oil.
- If the wheelchair gets wet, we recommend to wipe it off with a clean cloth.
- The wheelchair must not be used in salty water and it should be avoided that any salt, sand and other damaging dirt gets into bearings of front castors and rear wheels. If this happens anyway the bearings should be changed.
- After adjustments of the settings of the wheelchair all connections should be controlled referring to correct tightness/torque. If a connection gets loose repeatedly you should make contact to your dealer.

There might be circumstance of maintenance, which needs to be taken care of by the dealer, the sales consultant or the manufacturer Wolturnus A/S. These circumstances concerns:

- The straight driving of the wheelchair.
- Back upholstery and/or side guards needed to be changed into a new one (factory of Wolturnus A/S has shape and drawings for those cases).

Wheels, tyres, inner tubes, front wheels and bearings, can with some advantage be ordered from the Wolturnus A/S Web shop, [www.wshoppen.dk](http://www.wshoppen.dk), and then delivered to you by mail.

Mounting and dismounting of the parts are described under section 6.15 (front wheels) and chapter 9 (tyres). The parts as well as where they are placed are illustrated here as well.

## Cleaning and disinfection

Clean cushions and upholsteries with lukewarm water and detergent. Remove spots with a sponge or a soft brush. Flush with clean water and let dry.



Attention!  
Do not use aggressive detergents, solvents or hard brushes.



Attention!  
No wet wash. None of the parts must be put in a washing machine.

Always use waterbased solutions for disinfection. Follow the manufacturers instructions.



Attention!  
Cushion and handles should be cleaned before disinfection.

Plastic parts, frame parts, chassis and wheels can be cleaned with a mild detergent. The cleaned parts should be wiped thoroughly after treatment.

## 8 Problem finding

In daily use it can happen from time to time that minor flaws have to be corrected. The following short list will cover some of these.

Front castor makes noises and/or makes resistance:

Look if there is dirt stuck between the fork and wheel and/or in the bearings. The dirt has to be removed and ensure the screws/bolts are tighten. Eventually change the bearings if they do not rotate freely.

Front castors vibrate:

Remove the plastic cover on the top of the axle housing as mentioned in chapter 6.15. Tighten the nut carefully, but still the front wheels should rotate freely.

Rear wheels make a loud clicking noise:

Check and eventually tighten the spokes and the fastening screws of the pushrim.

Loud clicking noise:

Check and tighten the screws of the rear axle housing on the frame (see chapter 5.6).

Folding back function is not satisfactory:

- Check that the locking mechanism mentioned chapter 5.4 is clean and lubricated.
- Check that the metal plate, on which the locking mechanism slides, is correct positioned.
- Check that the locking mechanism is correct positioned.

Footrest is not horizontal:

The fastening screws in the front frame tubes is not positioned correctly. Readjust the footrest (see chapter 5.1) and verify that the screws are in the same position of the footrest tubes in both sides.

Wheel brakes misfunctions

Verify that both wheel brakes are correctly situated and adjust if needed (chapter 5.8). Verify the air pressure (see warning page 19) and wear condition of the rear tyres.

If your problem with your Tukan wheel chair could not be easily solved by the above list or by your or an assistants knowledge you should contact your dealer.

## 9 Tyre change

If a tyre punctures, you might be able to correct this yourself. It takes some strength in the hands, technical skills and suitable tools. It is recommended allways to carry a repair kit (or repair spray) for tyres and an airpump (unless you use puncturefree tyres).

Suitable airpumps and repair kits and sprays (which fill the tire with expanding and sealing foam) can be bought in bicykle stores.

### Removing tyre and tube

- Carefully work the side of the tyre over the edge of the rim with a suitable tyre lever - two might be necessary, if the tyre is very tight. Be carefull not to harm tire and tube (photo 59).
- Uncrew the valve fastening nut and pull the valve out of the rim and rim liner. Now pull the tube out between tyre and rim.

### Repair and control

- Repair the tube according to the instructions in the repair kit or change it with a new tube.
- Before you reinstall the tyre and tube again it's important to inspect the inner surface of the rim and the inside wall of the tyre if there are any objects that may have caused the puncture.
- Likewise you should look after that the rim liner is clean and in good shape. It protects the tube against being damaged by the spokes' ends and nuts.

### Mounting the tube

- Put the valve through the hole in the rim liner and rim. Reinstall the valve fastening nut.
- Place the rim liner in correct position and inspect that all the spokes' ends are covered.
- Inflate the tube lightly until it regains its round form and push it into the rim and tyre all the way round.

### Mounting the tyre

- Begin at the valve by pulling the loose side of the tyre over the edge of the rim (photo 60).
- Check that the tube is properly positioned and does not fold anywhere. If there are folds - release a little air and rearrange. Now work all the way round the wheel by hand until the last part of the tyre gets tight and needs to be lifted over the edge of the rim by means of a tyre lever (or two).



### Inflation

- Inspect around the tyre on both sides to ensure that the tube is not caught between the edge of the tyre and the rim.
- Push the valve a little into the rim and pull it out again to ensure that the tyre is properly seated around the valve.



- Now inflate the tyre lightly - still it should be possible to press the walls of the tyre free of the inner side of the rim. Inspect that the control line on the sides of the tyre has an even distance from the rim all way round on both sides. If not, it is necessary to let some air out to make it possible to adjust the tyre to make it correctly centered on the rim. Finally inflate the tyre maximum operational pressure (look at the side of the tyre) or a minimum of 3,5 bar (350 kPa) and mount the dust cap.



**Danger!**

Before your commence wheelchair operation, check that the tyres are inflated correctly. The maximum inflation pressure is printed on the side of the tyre. The pressure should be at least 3,5 bar (350 kPa) for the rear wheels. The wheel brakes are only efficient with sufficient air pressure and proper adjustment. When engaged, the friction rods should be positioned approx. 5 mm into the surface of the rear tyre.

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## 10 Technical data of the Tukan wheelchair (standard measurements)

Seat width: 38, 40, 42, 45 and 48 cm

Seat depth: adjustable between 39 and 44 cm

Standard camper is 3 degree with 24" spoke wheel and aluminium push rims.

Placement of rear axle is standard 8 cm from the measurement spot (shown in section 5.6)

Seat height in front: 48 cm

Seat height back: 42 cm

Back height: adjustable between 32 and 38 cm

VSL (length of leg from knee to foot): adjustable between 39 and 44 cm

Total width: 38 cm seat: 58cm | 40 cm seat: 60 cm | 42 cm seat: 62 cm | 45 cm seat: 65 cm

Total length: front of footrest to rear wheel: 85 cm

Tukan weight: 6-9 kg depending of the size of the wheelchair and its accessories.

Max. user weight: 120kg.

## 11 Guidelines for re-use of the Tukan active wheelchair

The Wolturnus Tukan active wheelchair could be re-used - ie. after one user has finished using the wheelchair it could be used by another user. Due to the custom made character of the wheelchair it is thought of great importance that the measures and accessories of the actual wheelchair are perfectly suitable to the new user or that it is possible to change the measures/accessories of the actual wheelchair to be so.

Similar to second-hand machines or cars, products that are being re-used have been subject to wear. It should be thoroughly inspected that features and functions have not changed in a way that could endanger users or other persons within the product's life cycle.

Based on market observations and the current state of technology, the manufacturer has calculated that the Wolturnus Tukan active wheelchair for active use can be used for a period of 5 years, provided that it is used properly and that the service and maintenance instructions are observed. Periods during which the wheelchair is stored at the dealer or with the third party payer are not included in this period. It should be clearly pointed out, however, that the Tukan wheelchair for active use is a reliable product far beyond this defined period of time, provided that it is cared for and maintained appropriately.

Before re-used the wheelchair must be thoroughly cleaned and disinfected. Subsequently, the product must be examined by an authorised specialist to check the condition, wear, and possible defects.

Any worn and damaged components as well as components which do not fit or are not suitable for the new user must be replaced.

## 12 Environmental consideration

### 12.1 Disposal

The wheelchair is during shipping packed in a brown cardboard box that can be dumped at the dumpsite or handed over to be recycled. The protecting bubble film, wrapped around the frame of the wheelchair, goes with the combustible waste at the dumpsite.

The frame of the Tukan wheelchair consists of aluminium, which can be handed in at the dumpsite in the metal section.

Upholstery and side guards go under combustible waste at the dumpsite.

### 12.2 Environmental consideration at Wolturnus A/S

Wolturnus A/S aims, as far as possible, towards the highest achievable environmental consideration.

Evaluations have been made, as to how the Tukan active wheelchair affects the environment throughout its cycle of life. During the developing of the wheelchair things such as the choice of materials and design have been optimized to minimize the waste of energy and materials in the production.

Wolturnus A/S' unique way of individual measurement of the user, and the hereby tailor-made adjustment of the wheelchair, to fit the needs of the user combined with the high mechanical quality of the Tukan active wheelchair, ensures the users satisfaction with the chair for years to come. This minimize the environmental impact.

Similarly the thorough quality control in the production process ensures that faults rarely occur, and no unnecessary resources are used at corrections or replacement products.

Residues of aluminium from the production are gathered into containers and delivered to be recycled.

As coating on the Tukan active wheelchair is solely used anodizing, which is less polluting than powder coating or spray painting.

The assembly process is using a minimum amount of hazardous substances and the work processes comply with the safety requirements for occupational safety and health (APV).

Consumption of plates for the side guards are minimized by optimized positioning of the templates onto the plates.

During transportation Wolturnus A/S use 7 mm kraftliner cardboard boxes and bubble foil to protect the wheelchairs. The packaging is recycled or used for a return shipment for service or other shipping needs.

All waste packaging are sorted into containers and delivered for recycling.

Toilets at Wolturnus A/S are equipped with small and large flush, in an effort to minimize the water use.

Toner containers for printers at Wolturnus A/S are returned for refill and batteries are handed in for waste deposition.

The lights and machines are always turned off when the factory shuts down for the night to minimize the use of power.

The diesel-powered cars for the sale consultants working for Wolturnus A/S are all equipped with particle filters to reduce pollution.

Wolturnus A/S wishes, through this manual, and through the advice of the sales consultants, to give users and helpers knowledge as to how the Tukan active wheelchair with careful maintenance can obtain the longest possible time of life, with a reduced environmental impact as a consequent.

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## Service places:

In Denmark there are sales consultants all over the country, who also can consult with the manufacturer Wolturnus A/S for spare parts, service and repairs.

Abroad we have the following distributors:

Finland: Respecta

Holland: Double Performance

New Zealand: Euromedical

Germany: Otto Bock

For all W5 wheelchairs it is possible to have spare parts delivered later on.

## Manufacturer:

Wolturnus A/S

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Bislev

DK-9240 Nibe

Denmark

Telefon +45 9671 7170

Fax +45 9671 7180

e-mail: [info@wolturnus.dk](mailto:info@wolturnus.dk)

Webpage on the Internet: <http://www.wolturnus.dk>

The Web shop for buying of accessories and spare parts on the Internet: <http://www.wshoppen.dk>

The Tukan wheelchair from Wolturnus A/S is CE approved according to the 93/42/EEC directive for medical equipment (class I) and DS/EN 12183.