



Ventus

EN Instructions for use (qualified personnel) 3

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1 Foreword

INFORMATION

Last update: 2016-02-08

- ▶ 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.

Initial adjustments to the product were made according to the order form. Nevertheless, fine adjustment may be required and settings may have to be made according to the medical conditions or the user's requirements.

These instructions for use provide the information necessary for adjusting the settings. This work should be closely coordinated with the user.

Please note the following:

- The instructions for use (qualified personnel) are intended only for qualified personnel and remain with them.
- The operation of the product and functionality of the options are described in the instructions for use (user). These instructions for use must be given to the user.
- The manufacturer recommends checking the product settings regularly in order to assure an optimum fit over the long term. A review is required every six months for children and youths in particular.
- The installation and retrofitting of all optional components are generally described in the service manual.

2 Application

2.1 Indications for use

The wheelchair is intended solely for everyday indoor and outdoor use by people who are unable to walk or have a walking impediment and can be operated by the patient or another person.

The wheelchair may only be used with the options listed in the product order form.

Ottobock assumes no liability for combinations with medical devices and/or accessories from other manufacturers not included in the modular system.

2.2 Indications

The broad range of equipment options and the modular design allow the product to be used by people who are unable to walk or have a walking impediment, for example due to:

- Paralysis (paraplegia, tetraplegia)
- Loss of limbs (leg amputation)
- Defects or deformation of the limbs
- Joint contractures or damage
- Neurological and muscular diseases
- Disorders such as cardiac or circulatory insufficiency, balance disorders or cachexia as well as geriatric patients who still have usable residual strength in the upper limbs.

The wheelchair was designed in particular for individuals who are generally able to move around **actively and freely** in the wheelchair.

2.3 Contraindications

In view of the wide variety of setting options (e.g. active/passive settings), this wheelchair type is suitable for all user groups.

In certain versions and with certain settings, however, the wheelchair tends to tip backwards due to its design. This is an intentional feature designed to enable users with the corresponding physical prerequisites to manoeuvre

quickly and nimbly. Users lacking the necessary physical or psychological prerequisites must **not** be supplied with such versions/settings.

Due to its dimensions, this wheelchair type should not be used for small children.

2.4 Qualification

The installation and adjustments described below may only be carried out by qualified personnel.

3 Safety

3.1 Explanation of warning symbols

| | |
|------------------|---|
| ⚠ WARNING | Warning regarding possible serious risks of accident or injury. |
| ⚠ CAUTION | Warning regarding possible risks of accident or injury. |
| NOTICE | Warning regarding possible technical damage. |

3.2 General safety instructions

⚠ WARNING
Lack of instruction
Tipping over, falling of the user due to lack of knowledge

- ▶ Instruct the user or the attendant in the proper use of the product when handing it over.

⚠ CAUTION
Use of unsuitable tools
Pinching, crushing or damaging the product due to use of unsuitable tools

- ▶ When completing the tasks, only use tools that are suitable for the conditions at the place of work and for which safety and the protection of health are assured with proper use.
- ▶ Observe the specifications in the section "Required Tools".

NOTICE
Tipping or falling of the product
Damage to product due to lack of attachment

- ▶ When you work on the product, secure it so that it cannot tip over or fall over.
- ▶ Use a clamping fixture to secure the product whenever you work on it at a workbench.

NOTICE
Use of unsuitable packaging
Damage to the product caused by transportation using incorrect packaging

- ▶ Use only the original packaging for delivery of the product.

3.3 Safety Instructions for Assembly

⚠ WARNING
Changed diameter/installation position of the wheels
Tipping, falling over of the user due to blocked wheels

- ▶ Modification of the size and position of the front wheels and of the rear wheel size can lead to wobbling of the front wheels at higher speeds. If changes are required, verify the horizontal alignment of the wheelchair frame (see the section "Adjusting the rear wheels", "Adjusting the caster wheels").

⚠ WARNING

Incorrect installation of the anti-tipper/missing anti-tipper

Tipping over, falling of the user due to failure to observe the installation instructions and because of incorrect adjustment

- ▶ Depending upon the settings of the chassis, the centre of gravity, the back angle and the experience of the user, the use of an anti-tipper may be necessary.
- ▶ For a small wheelbase and a backrest that is tilted far back, an anti-tipper may need to be installed on both sides, depending upon the user's experience.
- ▶ Verify that the anti-tipper has been installed and adjusted properly. Find the appropriate position with the assistance of a helper.

⚠ CAUTION

Incorrect fitting of the rear wheels

Tipping, falling over of the user due to wheels coming off

- ▶ After each assembly, verify the proper fit of the rear wheels. The quick-release axles must be firmly locked in the wheel attachment.

3.4 Nameplate

| Label | Meaning |
|-------|---|
| | A Type designation |
| | B Manufacturer article number |
| | C Maximum load capacity (see section "Technical Data") |
| | D Manufacturer information, address, country of origin |
| | E Serial number/manufacturing date |
| | F European Article Number/Global Trade Item Number |
| | G Read the instructions for use before using the product. |
| | H The product has not been approved by the manufacturer for use as a seat in a wheelchair accessible vehicle |
| | I CE marking – product safety in accordance with EU directives |
| | H Depending on the version of the nameplate: The product has not been approved by the manufacturer for use as a seat in vehicles for transporting persons with reduced mobility |

The nameplate is located on the crossbrace.



See the instructions for use (user) for additional warning labels.

4 Delivery

4.1 Scope of delivery

The wheelchair is delivered preassembled and with the rear wheels removed packed in a crate.

The scope of delivery includes:

- Preassembled wheelchair
- 2 rear wheels
- Options according to the order
- Instructions for use (qualified personnel), instructions for use (user)

The seat cushion is not included in the standard package.

4.2 Options

The functionality and operation of the options are described in more detail in the instructions for use (user).

All of the available options/accessories are listed on the order form.

4.3 Storage

The wheelchair must be stored in a dry place. The ambient temperature must be maintained between -10 °C and +40 °C during transportation and storage.

During extended storage, the knee lever wheel lock on wheelchairs with PU tyres must be released since tyre deformation may otherwise result.

Tyres contain chemical substances that can react with other chemical substances (such as cleaning agents, acids, etc.).

5 Preparation for use

5.1 Assembly

⚠ CAUTION

Exposed pinch points

Crushing, pinching due to incorrect handling

- ▶ When folding out the backrest, only grip by the specified components.

⚠ CAUTION

Failure to verify readiness for use before putting into operation

Tipping, falling due to incorrect adjustment or installation

- ▶ Check the existing settings prior to first use.
- ▶ After every assembly, check for proper mounting of the rear wheels. The quick-release axles must be securely locked in the receiver bushings.
- ▶ Pay particular attention to the stability against tipping, free running of the rear wheels and correct function of the wheel locks.
- ▶ Check the tyre pressure. The correct tyre pressure is printed on the sidewall. Ensure that the pressure is the same in both tyres.

- 1) Push the rear wheels into the wheel brackets. The quick-release axles must not be able to be removed after the push-button has been released.
- 2) If necessary, position the backrest upright and allow the latch to engage.
- 3) Rotate the side panels into position and insert them into the side panel supports.
- 4) If necessary, insert the calf strap.
- 5) Place the cushion on the seat.

6 Settings

6.1 Prerequisites

⚠ WARNING

Incorrect settings

Tipping over, falling or malposition of the user due to incorrect settings

- ▶ Adjustment and installation work may only be completed by instructed, qualified personnel.
- ▶ Only the settings described in these instructions for use may be carried out.
- ▶ Settings may only be changed within the allowable adjustment ranges; otherwise, the stability of the product may be impaired (see this chapter and the chapter "Appendices"). If you have questions, contact the manufacturer's service (see back cover for addresses).
- ▶ Only conduct tests in the presence of an assistant.
- ▶ Unless expressly described, you may not change any settings with a person sitting in the product.
- ▶ Secure the user against falling out during all tests.
- ▶ Before testing setting changes with the user seated, firmly tighten all screw connections.
- ▶ Check for safe function before delivering the product.

⚠ CAUTION**Unsecured screw connections**

Pinching, crushing, tipping over, falling of user due to assembly errors

- ▶ After all adjusting/readjusting work, retighten the mounting screws/nuts firmly. Observe any torque settings which may be specified.
- ▶ Any time you loosen a screw connection with thread lock, replace it with a new screw connection with thread lock or secure the old screw connection with medium strength thread locker (e.g. Loctite® 241).

⚠ CAUTION**Improper use of self-locking nuts**

Tipping, falling over of the user due to screw connections coming loose

- ▶ Always replace self-locking nuts with new self-locking nuts after disassembly.

Adjustments to match the concrete physical and mental condition of the user should always be made in the user's presence.

All parts of the product should be cleaned thoroughly before adjustments are made.

The tools required for configuration and maintenance are summarised in the section "Appendices" (see Page 32 ff.).

6.2 Adjusting the Rear Wheels

⚠ CAUTION**Lack of fine adjustment of the rear wheels**

Tipping over, falling of the user due to incorrect adjustment

- ▶ Check the standard adjustments of the wheelchair for stability against tipping and function of the rear wheels. Avoid any extreme settings.

⚠ CAUTION**Incorrectly adjusted wheelbase**

Tipping over, falling of the user due to unstable settings

- ▶ Please note that with the rear wheel in the front position and with an unfavourable body position, the user may tip backwards even on level ground.
- ▶ Use an anti-tipper for inexperienced users and with extreme settings of the rear wheel.
- ▶ Be sure to position the rear wheels towards the rear for transfemoral amputees. This improves the stability of the wheelchair.

⚠ CAUTION**Incorrect mounting of the camber module**

Tipping over, falling of the user due to lack of adhesion

- ▶ Do not pull the camber module out too far. During installation the whole camber module must be fully enclosed by the clamping fixture.

INFORMATION

Changing the rear wheel position can also change the angle between the caster wheel journal and the ground. However, this must be **approx. 90°**. The knee lever wheel lock also has to be readjusted.

6.2.1 Adjusting the horizontal position of the rear wheels

The horizontal rear wheel position is changed by moving the slider on the frame horizontally. This has the following effects:

| Position of rear wheel | Effects |
|----------------------------------|---|
| Move backwards (passive setting) | <ul style="list-style-type: none"> • Larger wheelbase • Larger turning circle • Greater stability of the wheelchair • Wheelchair is harder to tip backwards when crossing obstacles • Position recommended for inexperienced users |

| Position of rear wheel | Effects |
|--------------------------------|---|
| Move forwards (active setting) | <ul style="list-style-type: none"> • Smaller wheelbase • Less load on caster wheels = greater manoeuvrability • Less stability of the wheelchair • Wheelchair is easier to tip backwards when crossing obstacles <p>INFORMATION: An anti-tipper can be installed if necessary.</p> <ul style="list-style-type: none"> • Position recommended only for experienced users |

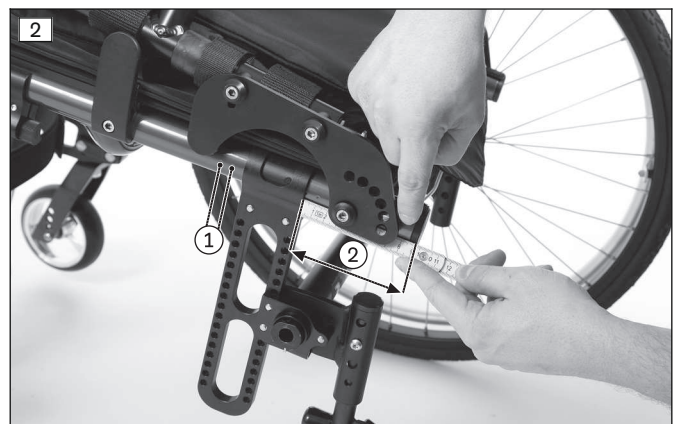
6.2.1.1 Adjusting the sliders on the frame

The sliders can be moved continuously in a horizontal direction along the frame tube. To facilitate adjustment the frame has a grid with 9 positions (see fig. 68).

- 1) Remove the wheels.
- 2) Place the wheelchair upside down.
- 3) Loosen the 2 x 2 Allen head screws on the sliders under the seat bottom (see fig. 1, item 1).
- 4) Move the sliders with the axle unit to the desired position (see fig. 1, item 2):
 - Use the grid as a rough guide (see fig. 2, item 1).
 - For a more accurate guide, measure the distance between the end of the tube and the outer edge of the slider (see fig. 2, item 2).
- 5) Ensure that the depth setting is the same. Once changed, the left and right sliders must both have exactly the same horizontal position on the frame.
- 6) Tighten the Allen head screws to **10 Nm** (see fig. 1, item 1).

INFORMATION

Following adjustment, the track of the rear wheel, the caster journal angle and the knee lever wheel lock must be checked and, if necessary, readjusted (refer to the corresponding section).



6.2.1.2 Adjusting sliders with shock absorber system

Adjustment is done in the same way as for sliders without a shock absorber system.

6.2.2 Adjusting the seat height and seat angle

| Position of rear wheel | Effects |
|------------------------|--|
| Move upwards | <ul style="list-style-type: none"> • The higher the rear wheel position, the more the seat surface is tilted to the rear • Wheelchair is easier to tip backwards when crossing obstacles • The change in the centre of gravity results in a lower, more stable seat position in the wheelchair • The seat height can be further adjusted in combination with a height adjustment of the caster wheels. |
| Move downwards | <ul style="list-style-type: none"> • The lower the rear wheel position, the less the seat surface is tilted to the rear • Wheelchair is harder to tip backwards when crossing obstacles • The seat height can be further adjusted in combination with a height adjustment of the caster wheels. |

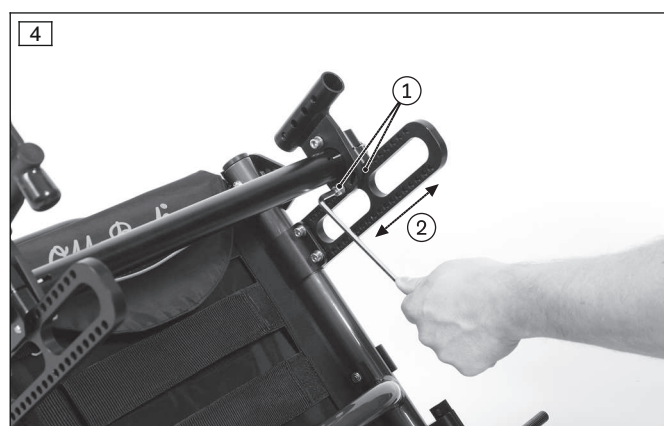
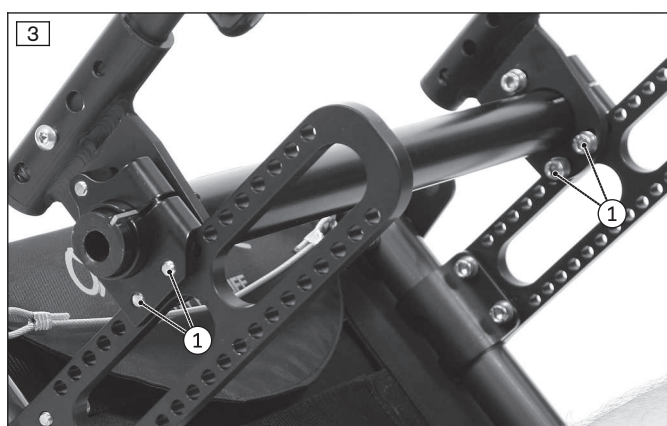
6.2.2.1 Adjusting the height of the rear wheels

The rear wheels can be moved vertically with the "long" slider in 15 height positions (see fig. 68) and with the "medium" slider in 10 height positions (not pictured).

- 1) Remove the wheels.
 - 2) Place the wheelchair upside down.
 - 3) Loosen and remove the 2 Allen head screws on each clamping flange on the slider (see fig. 3, item 1; figure with accessory mount).
 - 4) Move the axle unit to the desired position on the slider (see fig. 4, item 2). Ensure the height settings are the same.
 - 5) Tighten the Allen head screws to **10 Nm** (see fig. 3, item 1).
- Once changed, the clamping flanges on the left and right must both have the same vertical position on the slider.

INFORMATION

Following adjustment, the track of the rear wheel, the caster journal angle and the knee lever wheel lock must be checked and, if necessary, readjusted (refer to the corresponding section).



6.2.2.2 Adjusting the height of the rear wheels in the shock absorber system

The rear wheels can be moved vertically with the "short" shock absorber system in 3 height positions (see fig. 72) and with the "long" shock absorber system in 5 height positions (see fig. 73) (see fig. 5).

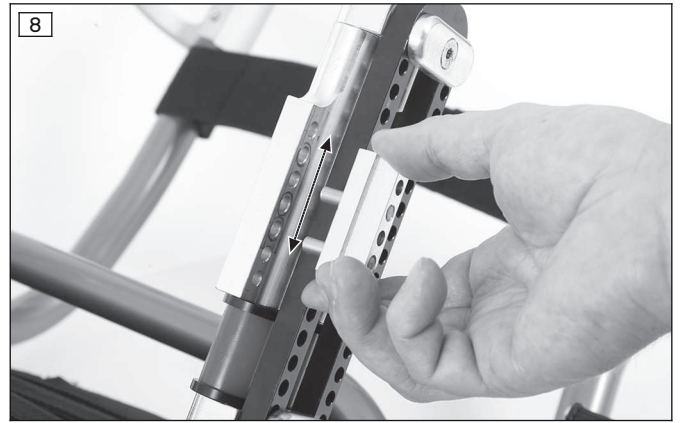
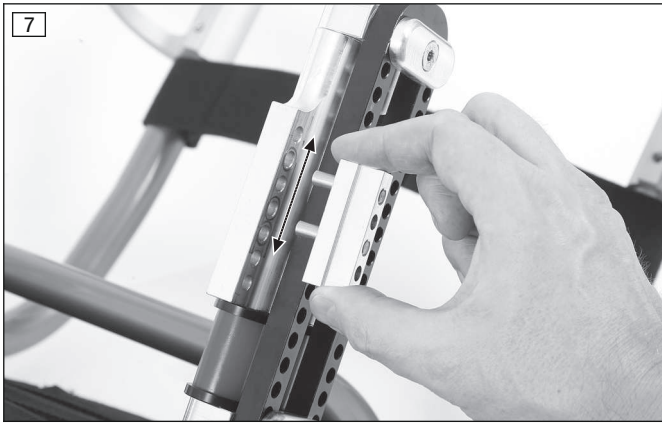
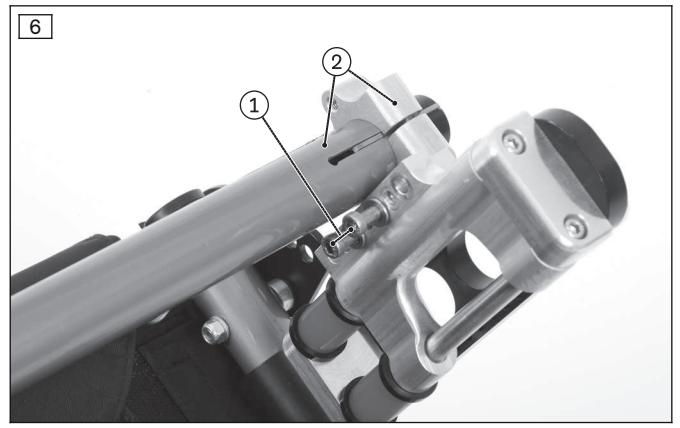
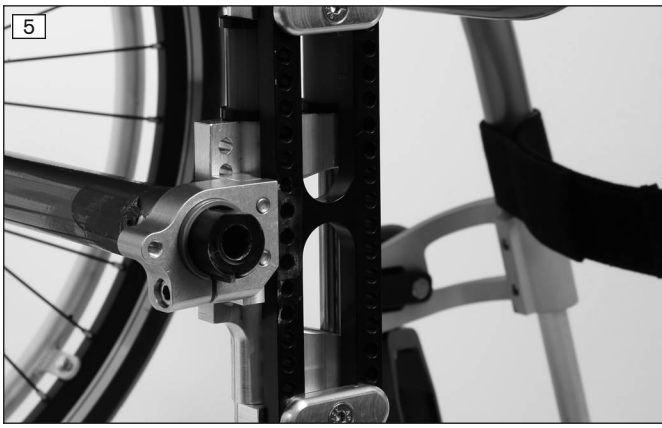
- 1) Remove the wheels.
- 2) Place the wheelchair upside down.
- 3) Loosen and remove the 2 x Allen head screws on each perforated plate from the clamping flange/spacer (see fig. 6, item 1). Remove the axle assembly (see fig. 6, item 2).
- 4) Remove the spacers and place them in the required positions on the perforated plate (see fig. 7). Ensure the height settings are the same.
Only if necessary: Turn the spacers (see fig. 8).
- 5) Hold the axle assembly with clamping flange to the perforated plates at the same height (see fig. 6, item 2).
- 6) Tighten the Allen head screws on each perforated plate from the inside to **10 Nm** (see fig. 6, item 1).
→ Once changed, the clamping flanges on the left and right must both have the same vertical position on the slider.
- 7) Put the wheels back on.

INFORMATION

Following adjustment, the track of the rear wheel, the caster journal angle and the knee lever wheel lock must be checked and, if necessary, readjusted (refer to the corresponding section).

INFORMATION

By disassembling and turning the perforated plate in the "long" shock absorber, additional height adjustments can be implemented. For information on disassembly/assembly, see the 647G829 service manual.

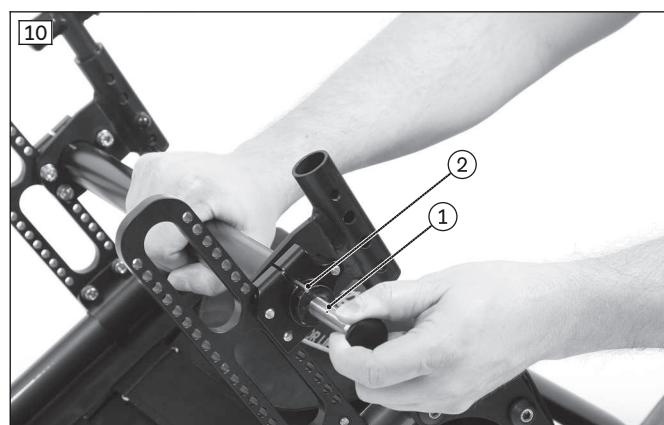
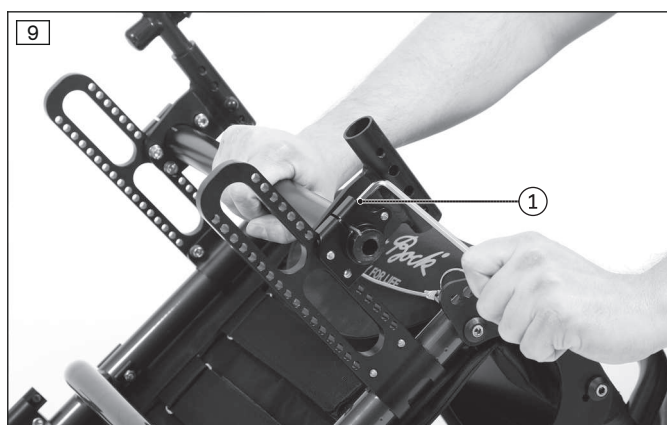


6.2.3 Adjusting the Track Width (additional adjustment)

The 0° and 3° camber modules (see fig. 13, item 1) can slide in the clamping flange for adjusting the track width. With the 6° and 9° camber modules (see fig. 13, item 2), the track is changed by adjusting the screwed in fitting (see fig. 12, item 1).

Adjusting camber module 0°/3°

- 1) Remove the wheels.
- 2) Place the wheelchair upside down.
- 3) Loosen the clamping screw on the clamping flange (see fig. 9, item 1).
INFORMATION: The adjustment must be made on one side first and then on the other.
INFORMATION: The track width must be adjusted symmetrically on both sides.
- 4) Insert the rear wheel's quick-release axle into the camber module to aid removal (see fig. 10, item 1).
- 5) Move the camber module (see fig. 10, item 2) to the desired position outwards with the aid of the quick-release axle or inwards with the help of a soft-faced hammer.
 - Do not pull the camber module out too far. During installation the whole camber module must be fully enclosed by the clamp bracket.
 - Check the position by measuring it afterwards (see fig. 11).
- 6) Clamp the camber module lightly using the clamping screw on the clamping flange.
- 7) Adjust the track width in the same fashion on the other clamping flange. Make sure that both camber modules have been adjusted symmetrically.
- 8) Attach the wheels.
- 9) Make the track adjustments (see Page 15).
- 10) Tighten the clamping screws to **10 Nm** (see fig. 9, item 1).



Adjusting camber module 6°/9°

- 1) Remove the wheels.
- 2) Place the wheelchair upside down.
- 3) Loosen the counter nut on the fitting (see fig. 12, item 2).
- 4) Set the desired track width with the fitting (see fig. 12, item 1). If required, put on the wheel to check that it can rotate freely.

INFORMATION: The track width must be adjusted symmetrically on both sides.

- 5) Slightly tighten the counter nut on the fitting.
- 6) Adjust the track width in the same fashion on the other camber module.
- 7) Attach the wheels.
- 8) Make the track adjustments (see Page 15).
- 9) Tighten the counter nut to **50 Nm** (see fig. 12, item 2).

6.2.4 Adjusting the Rear Wheel Camber

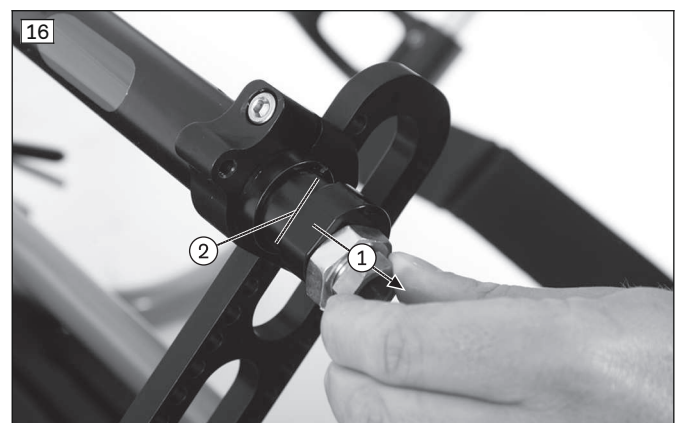
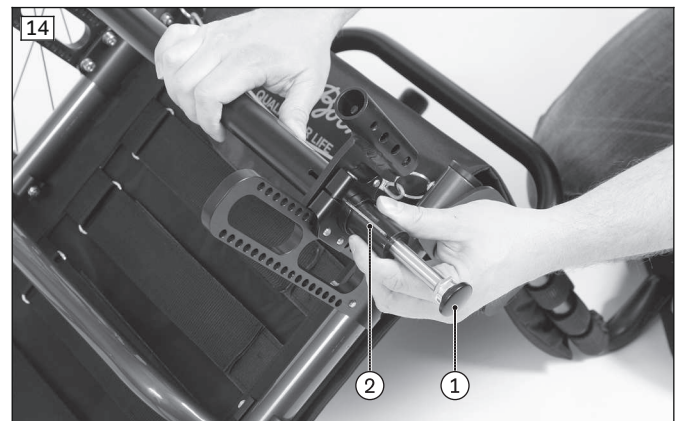
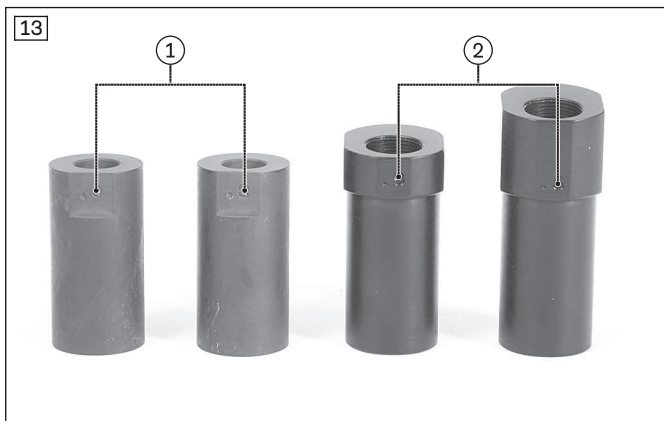
| Position of rear wheel | Effects |
|------------------------|--|
| 0° position | <ul style="list-style-type: none"> • Narrow track, excellent straight-line stability • Low rolling resistance |
| Wheel camber | <ul style="list-style-type: none"> • Wheelchair becomes more manoeuvrable, turns faster and tips less easily to the side • The wheel position protects the hands when turning the push ring • Overall width increases • Increased rolling resistance |

6.2.4.1 Adjusting the 0°/3°/6°/9° rear wheel camber

The modular system of the product offers camber options for different sloped settings of the rear wheels (0° and 3°: see fig. 13, item 1; 6° and 9°: see fig. 13, item 2).

- 1) Remove the wheels.
- 2) Place the wheelchair upside down.

- 3) Loosen the clamping screw on the clamping flange (see fig. 9, item 1, see fig. 15, item 1).
INFORMATION: Note that the exchange can be made on one side first and then on the other or simultaneously.
INFORMATION: The track width must be adjusted symmetrically on both sides.
- 4) **Remove the camber module:**
 - **Only for camber module 0°/3°:** Insert the quick-release axle of the rear wheel into the camber module to assist removal (see fig. 14, item 1/2) and pull it out with the help of the quick-release axle.
 - **Only for camber module 6°/9°:** Remove the camber module including fitting by hand (see fig. 16, item 1).
- 5) Replace and install the camber module.
 - Set the track width so that the slanted rear wheels can run freely (see Page 12).
 - **Only for camber module 0°/3°:** The entire camber module must be fully enclosed by the clamp bracket during installation. Check the position by measuring it afterwards (see fig. 11).
 - **Only for camber module 6°/9°:** During installation, the camber module must be inserted in the clamping flange to the stop (see fig. 16, item 2).
- 6) Clamp the camber module lightly using the clamping screw on the clamping flange.
- 7) Replace the camber module on the other side in the same fashion. Make sure that both camber modules have been adjusted symmetrically.
- 8) Attach the wheels.
- 9) Make the track adjustments (see Page 15).
- 10) Tighten the clamping screws to **10 Nm** (see fig. 9, item 1; see fig. 15, item 1).



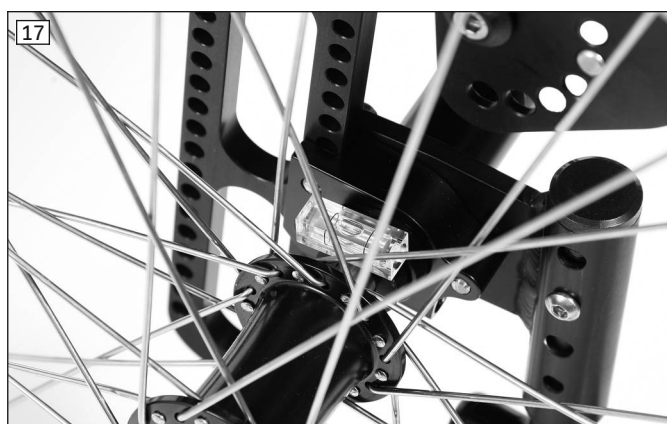
6.2.5 Adjusting the Track

INFORMATION

- ▶ The track must be adjusted after the following adjustments have been made:
 - Adjusting the track width: see Page 12
 - Adjusting the rear wheel camber: see Page 13
- ▶ The track setting must be checked and, if necessary, adjusted after the following adjustments have been made:
 - Adjusting the horizontal position of the rear wheel: see Page 10
 - Adjusting the height of the rear wheel: see Page 11

INFORMATION

- ▶ Always make the track adjustment on both sides and check both sides.
 - ▶ With each track adjustment, always check the symmetry of the track width setting. To do this, measure the distance between the outer side of the camber module and the outer side of the clamping flange on both sides (see fig. 11).
 - ▶ The caster journal angle should be checked immediately after every adjustment to the track (see Page 17 ff.).
- > The clamping screws on the clamping flanges must be loosened until the camber modules and the rear wheel axle are only slightly clamped (see Page 12).
- 1) Place the wheelchair on an even surface. Avoid twisting the axle when doing this.
 - 2) Pull the rear wheel out slightly in order to make room for the installation.
 - 3) Place the spirit level on the camber module (see fig. 17).
 - 4) Carefully twist the camber module until the spirit level is centred (not pictured).
If necessary – after changing the wheel camber, for example – twist the rear wheel axle carefully as well until the spirit level is centred (see fig. 18).
 - 5) Tighten the clamping screws on the clamping flanges to **10 Nm** (see fig. 9, item 1).



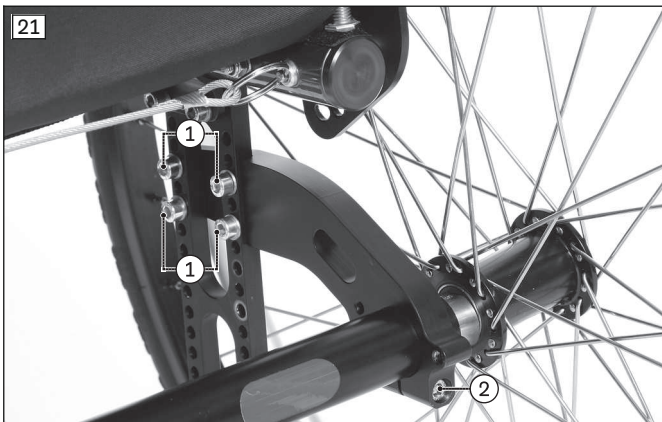
6.2.6 Adjustments in the case of a wheelbase extension

The manufacturer offers a wheelbase extension for this product. This allows the use of the wheelchair with an adaptable handbike (wheelchair with double axle: see fig. 19) or a particularly passive setting for the wheelchair (see fig. 20, item 1). Depending on the order, the wheelbase extension may already be installed when delivered.

All adjustments with the wheelbase extension installed are made in the same way as the adjustments without wheelbase extension:

- Adjusting the horizontal position of the rear wheel: see Page 10
- Adjusting the rear wheel height: see Page 11
Special requirement: During adjustment of the rear wheel height, 4 Allen head screws must be loosened and moved on each slider (see fig. 21, item 1).
- Adjusting the track width: see Page 12
Special requirement: During adjustment of the track width with camber module 0°/3°, the clamps for the wheelbase extension must be loosened (see fig. 21, item 2). Adjusting the track width with camber module 6°/9° is done by adjusting the fitting (see fig. 12).

- Adjusting the rear wheel camber: see Page 13
Special requirement: During exchange of the camber modules, the clamps for the wheelbase extension must be loosened (see fig. 21, item 2).
INFORMATION: For a wheelbase extension with a double axle, only certain camber modules can be combined:
 - Front axle camber modules/rear axle camber modules: 0°/3° or 6°/9°.
 - If 9° camber modules are installed on the front axle, no camber modules can be used on the rear axle.
- Adjusting the knee lever wheel lock: see Page 19
Special requirement: For extreme settings, the wheelbase extension must be used in combination with an "upgrade" knee lever wheel lock (see fig. 20, item 2).
 If necessary, the wheel lock holder must be moved behind the locking mechanism for the side panel supports.
CAUTION: Risk of falling, tipping over. If the wheelbase extension is used in combination with a double axle, there is no braking function available when the rear wheels are moved to the rear axle (e.g. for adaptation to a handbike). Inform the user.



Wheelbase extension and clothing protector

If a wheelbase extension is installed, the side panels can be folded when the user is getting into the wheelchair as follows:

- The "standard" side panel can be folded towards the rear (see fig. 22).
- The "clothing protector" side panel can be swung back (see fig. 23) and folded down (see fig. 24).

Retrofitting

Use the 647G829 service manual if the retrofitting of a wheelbase extension becomes necessary in the course of an initial fitting.



6.3 Adjusting the caster wheels

6.3.1 Adjusting the Caster Wheel Journal Angle

When the rear wheels have been adjusted for the user, the caster journal angle must be adjusted at the caster wheel adapter.

The threaded axle in both caster wheel adapters should be perpendicular to the ground to ensure optimum rolling behaviour of the wheelchair. The caster wheel adapters permit continuous adjustment of this angle.

Adjusting the caster journal angle – "standard" caster fork

- 1) Lift off the plastic cover on the inner side of the frame (see fig. 25).
 - 2) Slightly loosen the Allen head screws on the inner side of the frame (see fig. 26, item 1/2). If necessary, loosen and move the front screw (see fig. 26, item 1).
 - 3) Remove the protective cap (see fig. 27, item 1).
 - 4) Slightly loosen the Allen head screw on the eccentric (see fig. 27, item 2).
 - 5) Position the spirit level (see fig. 27, item 3).
 - 6) Adjust the caster wheel axle with a large flat screwdriver until it is vertical. The bubble in the spirit level must be in the centre position (see fig. 28).
 - 7) Tighten the Allen head screw on the eccentric to **10 Nm** (see fig. 27, item 2).
 - 8) Tighten the Allen head screws on the inner side of the frame to **23 Nm** (see fig. 26, item 1/2).
 - 9) Place the protective cap (see fig. 27, item 1) and the plastic cover on the inner side of the frame (see fig. 25).
- The caster wheel axle on each of the two caster wheel adapters must be positioned vertically.





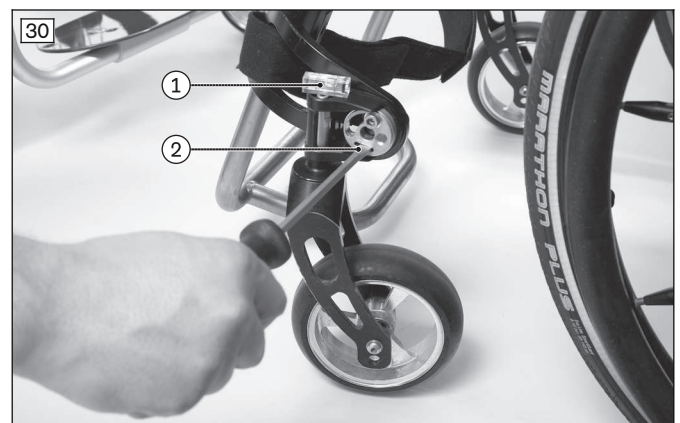
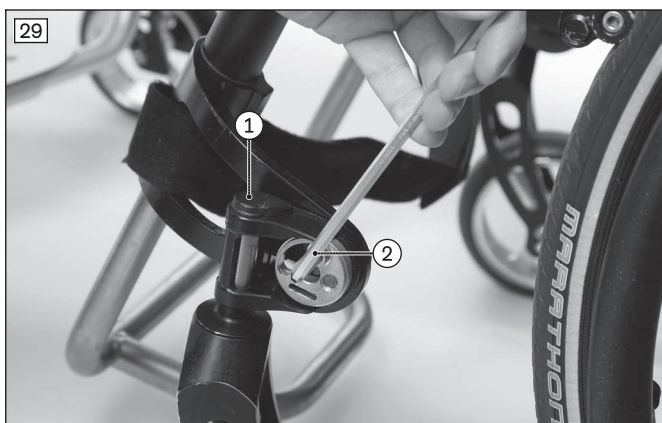
Adjusting the caster journal angle – "design"/"froglegs" castor fork

INFORMATION

Proceed in the same way as in the previous section.

The adjustments for the "design" caster fork (see fig. 70) and the "froglegs" caster fork (see fig. 71) are made in the same fashion.

- 1) Lift off the plastic cover on the inner side of the frame (not pictured).
 - 2) Slightly loosen the Allen head screws on the inner side of the frame (not pictured).
 - 3) Remove the cover of the eccentric (not pictured) and the cap above the caster axle (see fig. 29, item 1).
 - 4) Slightly loosen the Allen head screw on the eccentric (see fig. 29, item 2).
 - 5) Slightly loosen the Allen head screws on the inner side of the frame (not pictured).
 - 6) Position the spirit level (see fig. 30, item 1).
 - 7) Adjust the caster wheel axle with a large flat screwdriver until it is vertical. The bubble in the spirit level must be in the centre position (see fig. 30, item 2).
 - 8) Tighten the Allen head screw on the eccentric to **8 Nm** (see fig. 29, item 2).
 - 9) Tighten the Allen head screws on the inner side of the frame to **23 Nm** (not pictured).
 - 10) Replace all covers (not pictured).
- The caster wheel axle on each of the two caster wheel adapters must be positioned vertically.



6.3.2 Changing the Installation Position of the Caster Wheels

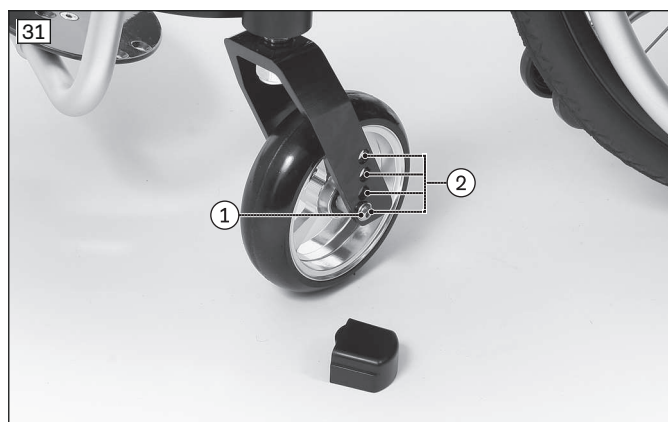
INFORMATION

Observe the seat height table in the "Technical data".

The anterior seat height is adjusted via the row of holes in the fork and via the caster wheel diameter.

- 1) Loosen the screw connection on the threaded axle (see fig. 31, item 1).
- 2) Remove the threaded axle/spacers.
- 3) Remove the caster wheel.
- 4) Insert the threaded axle with the first spacer bushing offset in one of the 4 bore holes (see fig. 31, item 2).

- 5) Install the caster wheel.
 - 6) Slide on the 2nd spacer bush (not pictured).
 - 7) Tighten the threaded axle to **8 Nm**.
- Once changed, the left and right caster wheels must have the same vertical position in the caster fork.
- Once the anterior seat height has been adjusted, the rear wheel tracking (see Page 15) and the caster journal angle (see Page 17) must be checked and adjusted if required.



6.4 Adjusting the brakes

⚠ CAUTION

Failure to verify brake functionality

Accident, falling of the user due to incorrect adjustment and improperly inflated tyres

- ▶ Verify the correct setting of the wheel lock (especially the distance between the wheel lock bolt and tyre).
- ▶ Ensure that the user can operate the wheel lock without great effort. The force required is not permitted to exceed **60 N (~ 6 kg)**.
- ▶ Check the tyre pressure of the rear wheels. Note the information in the section "Technical data" or on the tyre sidewall.
- ▶ Only use original rear wheels with a verified maximum radial out-of-round of **1 mm**.

6.4.1 Adjusting the wheel locks

INFORMATION

If the horizontal rear wheel position is changed (see Page 10) or a different rear wheel size is installed, the 481H25=PK025 knee lever wheel lock must be installed with a seat depth of **< 340 mm** (depending on the horizontal rear wheel position and rear seat height). For more information, see the 647G829 service manual.

This adjustment must be made after the rear wheel has been repositioned or during fine adjustment.

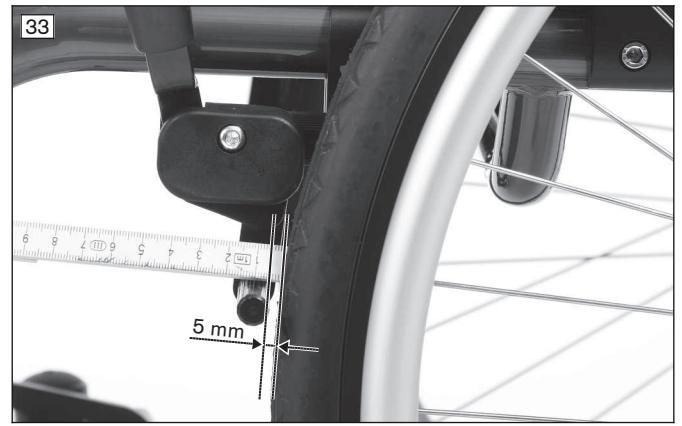
The following brake types are adjusted in the same way: "standard" knee lever wheel lock, "upgrade" knee lever wheel lock, scissor wheel lock.

- 1) Loosen the Allen head screws in the clamp bracket on the underside of the frame (see fig. 32, item 1).
- 2) Adjust/move the support for the knee lever wheel lock (see fig. 32, item 2) to any position in the clamp bracket (see fig. 32, item 3).

When the wheel lock is disengaged, the gap between the tyre and wheel lock bolt must not exceed **5 mm** (see fig. 33).

INFORMATION: For special requirements when adjusting the scissor wheel lock, see the section "Special requirements for adjustments to the scissor wheel lock".

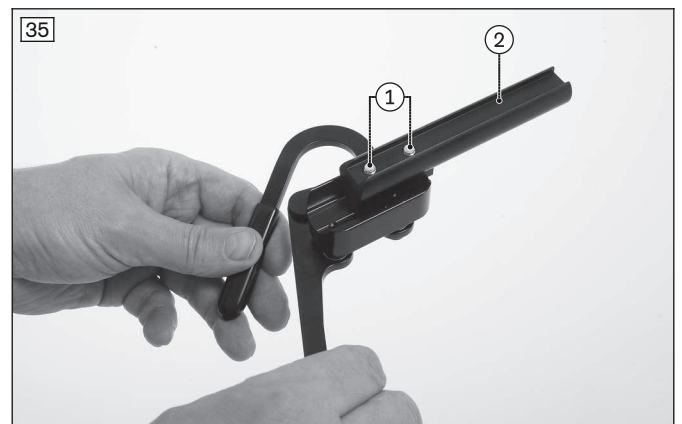
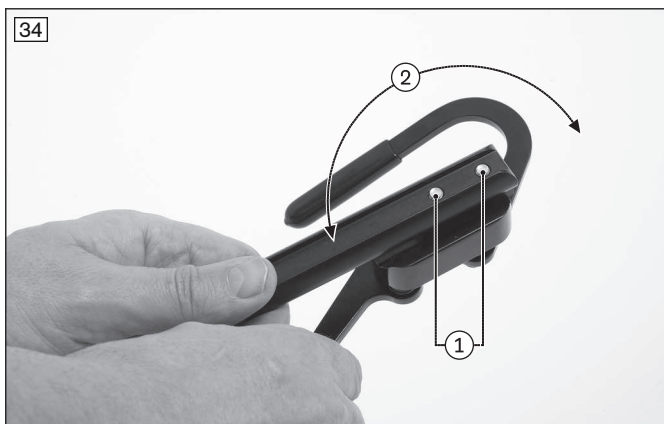
- 3) Tighten the Allen head screws to **10 Nm**.
- After adjustment, the left and right knee lever wheel locks must both have the same braking force.



Special requirements for adjustments (all types of wheel locks)

Depending on the adjustment, it may be necessary to rotate or replace the support for the wheel lock. This makes further wheel lock adjustments possible.

- 1) Loosen the Allen head screws between the wheel lock and the support (example: scissor wheel lock: see fig. 34, item 1; see fig. 35, item 1).
- 2) Rotate and reposition the support as necessary (example: scissor wheel lock: see fig. 34, item 2; see fig. 35, item 2).
- 3) Retighten the Allen head screws between the wheel lock (with spacer in some cases) and the support.



Special requirements for adjustments to the scissor wheel locks

- Install the scissor wheel lock such that it can be guaranteed that the swivelling parts can move freely without colliding (see fig. 36 item 1; see fig. 37, item 1).
- The scissor wheel lock should not hit the frame when it is open.
- For information on using the scissor wheel lock, see the instructions for use (user), reference number 647G828.



6.5 Adjusting the Back

6.5.1 Adjusting the Back Height

The backrest height does not need to be adjusted during the initial fitting.

Back tubes must be retrofitted if the backrest height is to be adjusted. To install these, see the 647G829 service manual.

6.5.2 Adjusting the back angle

⚠ WARNING

Incorrect installation of the anti-tipper/missing anti-tipper

Tipping over, falling of the user due to failure to observe the installation instructions and because of incorrect adjustment

- ▶ Depending upon the settings of the chassis, the centre of gravity, the back angle and the experience of the user, the use of an anti-tipper may be necessary.
- ▶ For a small wheelbase and a backrest that is tilted far back, an anti-tipper may need to be installed on both sides, depending upon the user's experience.
- ▶ Verify that the anti-tipper has been installed and adjusted properly. Find the appropriate position with the assistance of a helper.

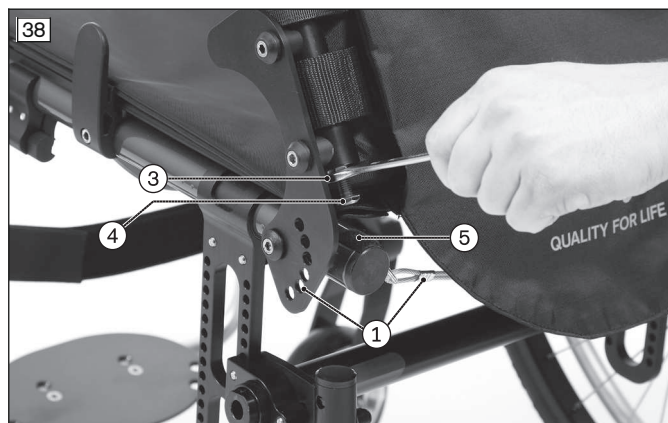
The backrest angle can be adapted to the user's requirements – e.g. after the wheelbase has been adjusted. The angle can be adjusted between **65°–105°**.

Preliminary adjustment (20° steps)

- 1) Using the cable, pull out the locking bolts from the locking points (see fig. 38, item 1).
- 2) Rotate the counter nuts against the head of the set screw (see fig. 38, item 3).
- 3) Screw in the set screws by hand (see fig. 38, item 4).
- 4) Pull the backrest rearwards until the locking bolts lock into the desired locking points.
- 5) Unscrew each set screw until the screw head hits against the hook-and-loop patch (see fig. 38, item 5).
- 6) Retighten the counter nuts (see fig. 38, item 3). Use an open-end wrench to hold the head of the set screws still (see fig. 38, item 4).

Fine adjustment (10° steps)

- 1) Remove the upper mounting screw on both sides (see fig. 39, item 1).
- 2) Slightly loosen the lower mounting screw on both sides (see fig. 39, item 2).
- 3) Rotate the counter nuts against the heads of the set screws (see fig. 38, item 3).
- 4) Screw in the set screws by hand (see fig. 38, item 4).
- 5) Adjust the back plate on both sides. Two settings are available (see fig. 39, item 3).
- 6) Reattach the mounting screws and tighten them (see fig. 39, item 1/2).
- 7) Unscrew each set screw until the screw head hits against the hook-and-loop patch (see fig. 38, item 5).
- 8) Retighten the counter nuts (see fig. 38, item 3). Use an open-end wrench to hold the head of the set screws still (see fig. 38, item 4).



6.5.3 Adjusting the push handles

The "standard" push handle (see fig. 40) and the "folding" push handle (not pictured) cannot be adjusted in height.

The height of the "height-adjustable" (see fig. 41) and "height-adjustable/removable" push handles (not pictured) can be adjusted for easier pushing by an attendant.

- 1) Release the clamping lever.
- 2) Adjust the height of the push handle.
- 3) Close the clamping lever tightly.

INFORMATION: Both push handles must be adjusted to the same height.



6.6 Adjusting the Back/Seat Upholstery

6.6.1 Adjusting the Back Upholstery

INFORMATION

A well-adjusted backrest provides lasting comfort for the wheelchair user and reduces the risk of secondary damage and pressure zones. Do not create too much pressure.

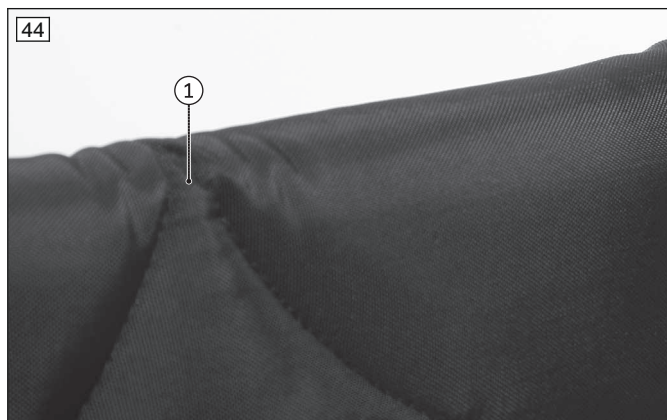
INFORMATION

Ensure that the user's pelvis is positioned as far back in the wheelchair as possible, i.e. between the backrest tubes.

The backrest cover can be adjusted in segments to the needs of the user.

- 1) Remove the seat cushion.
- 2) Fold the seat pad forwards away from the hook-and-loop fastener (see fig. 42, item 1).
- 3) Pull the flap of the backrest pad off the hook-and-loop fastener (see fig. 42, item 2) and let it hang down.
- 4) Remove the backrest pad.
- 5) Loosen the backrest straps and then fasten together with the desired tension (see fig. 43).
- 6) Fit the backrest pad and secure it with the hook-and-loop fastener to the back and seat upholstery:
 - Place the kink in the backrest pad at the top. The "V" in the pad (see fig. 44, item 1) shows exactly where the kink is.
 - Pull the backrest pad flap tightly downwards (see fig. 45).
 - Pull the part of the flap that can be fastened forwards and fasten tightly to the seat upholstery (see fig. 42, item 2).

INFORMATION: The part of the flap that can be fastened prevents sliding or falling through the gaps between the straps and protects against draughts.
- 7) Fasten the seat pad (see fig. 42, item 1) and the seat cushion.



6.6.2 Adjusting the Seat Upholstery

INFORMATION

You can slightly correct the centre of gravity by making small changes to the sag of the seat upholstery. Larger corrections, however, need to be made through adjustment of the frame, slider and caster wheels.

"Standard" seat upholstery

This seat upholstery does not need to be adjusted during the initial fitting. If the upholstery sags significantly after longer periods of use, it must be replaced. To exchange it, see the 647G829 service manual.

"Adaptable" seat upholstery

This seat upholstery can be adjusted in segments to the needs of the user.

- 1) Remove the seat cushion.
- 2) Pull the seat pad off the hook-and-loop fastener (see fig. 46).
- 3) Pull the flap of the backrest pad off the hook-and-loop fastener (see fig. 42, item 2) and let it hang down.
- 4) Loosen the backrest straps and then fasten together with the desired tension (see fig. 47).
- 5) Secure the backrest pad to the seat upholstery with the hook-and-loop fastener. To do this, pull the part of the flap that can be fastened forwards and fasten to the seat upholstery (see fig. 42, item 2).

INFORMATION: The part of the flap that can be fastened prevents sliding or falling through the gaps between the straps and protects against draughts.

- 6) Fasten the seat pad (see fig. 42, item 1) and the seat cushion.



6.7 Adjusting the footrests

6.7.1 Adjusting the Lower Leg Length

The required footrest height depends on the lower leg length of the user and the thickness of the seat cushion.

"Angle-adjustable" footrest and "fixed" footplate

- 1) Slightly loosen the four clamping screws on the inner side of the caster attachment device (see fig. 48, item 1).
- 2) Adjust the lower leg length (continuously adjustable). The foot stirrups must be slid at least **60 mm** into the frame tube.
- 3) Tighten the clamping screws to **7 Nm**.

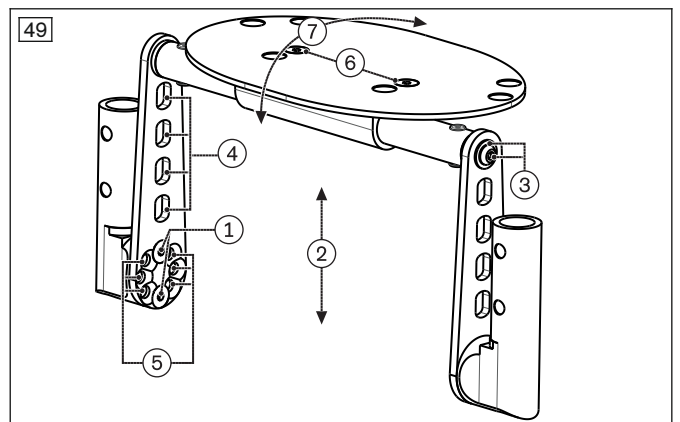
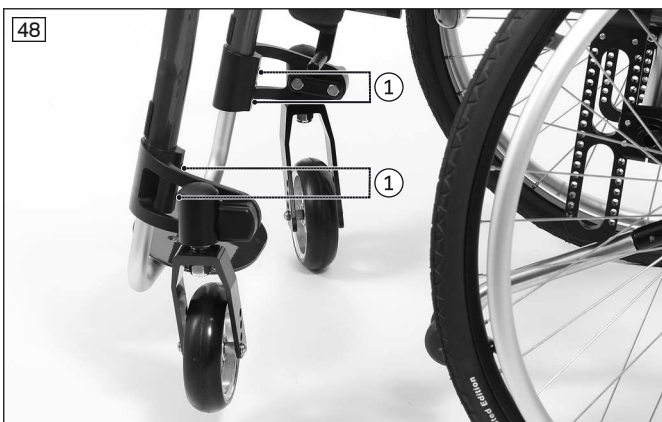
Footrest for short lower leg lengths – adjusting the height

- 1) Loosen the lower mounting screws on both sides (see fig. 49, item 1).
- 2) Remove the footplate unit (see fig. 49, item 2).
- 3) Loosen the upper mounting screws on both sides (see fig. 49, item 3).
- 4) Move the footplate in the perforated plate to the desired height position (see fig. 49, item 4).
- 5) Tighten the upper mounting screws (with washers) to **7 Nm** (see fig. 49, item 3).
- 6) Insert the footplate unit.
- 7) Tighten the lower mounting screws to **5 Nm** (see fig. 49, item 1).

Footrest for short lower leg lengths – adjusting the horizontal position

- 1) Loosen the lower mounting screws on both sides (see fig. 49, item 1).
- 2) Select the right holes on the adjustment circle for the desired positioning (see fig. 49, item 5).
- 3) Tighten the lower mounting screws to **5 Nm** (see fig. 49, item 1).

INFORMATION: After every adjustment to the horizontal position, the angle of the plate must be adapted.



6.7.2 Adjusting the Support Angle

The footrest angle setting should be chosen so that the ankle is in a relaxed, comfortable position.

"Angle-adjustable" footrest

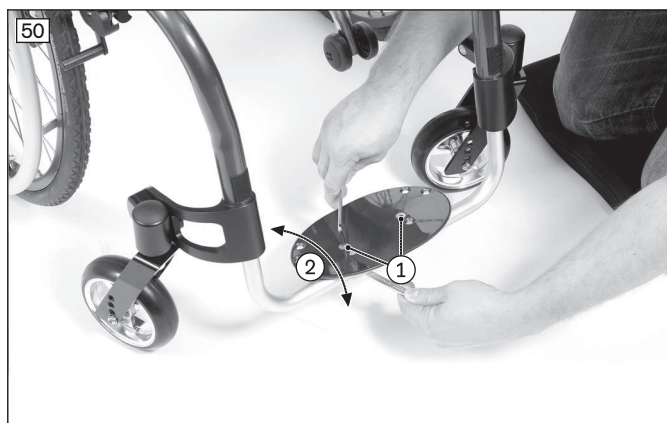
- 1) Loosen the Allen head screws on the clamp bracket (see fig. 50, item 1).
- 2) Rotate the footplate to the desired angle (see fig. 50, item 2).
- 3) Tighten the Allen head screws to **10 Nm**.

Footrest for short lower leg lengths

- 1) Loosen the Allen head screws on the clamp bracket (see fig. 49, item 6).
- 2) Rotate the footplate to the desired angle (see fig. 49, item 7).
- 3) Tighten the Allen head screws to **10 Nm**.

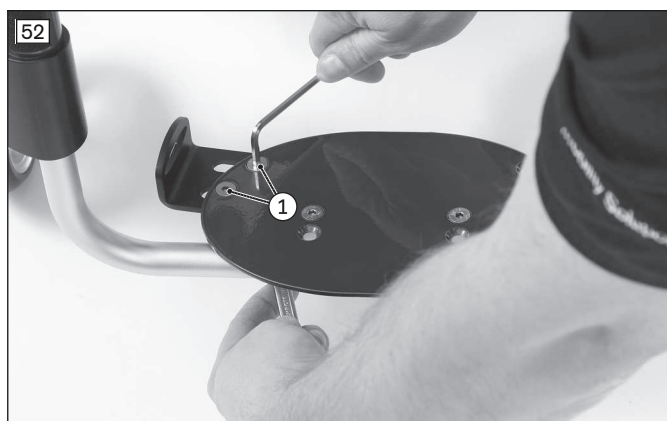
"Fixed" footplate

The angle of the plate cannot be changed (see fig. 51).

**6.7.3 Installing/adjusting the lateral heel block**

The lateral heel block can be installed using the pre-drilled holes on the footplate.

- 1) Install the lateral heel block using the Allen head screws on the underside of the footplate (see fig. 52, item 1).
- 2) Before tightening, slide the lateral heel block in the slot to the desired foot width (see fig. 53).
- 3) Tighten the Allen head screws.

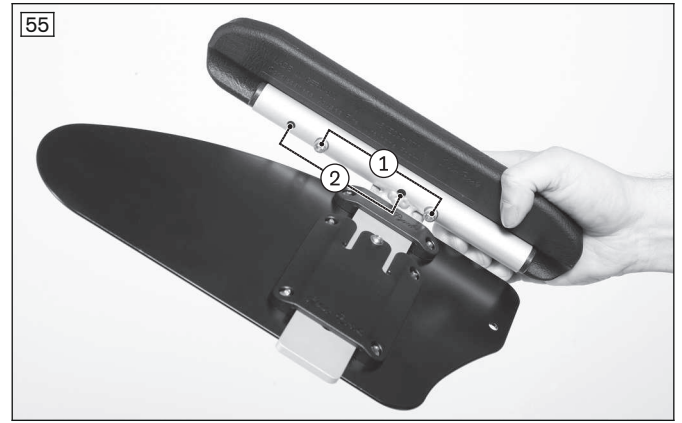
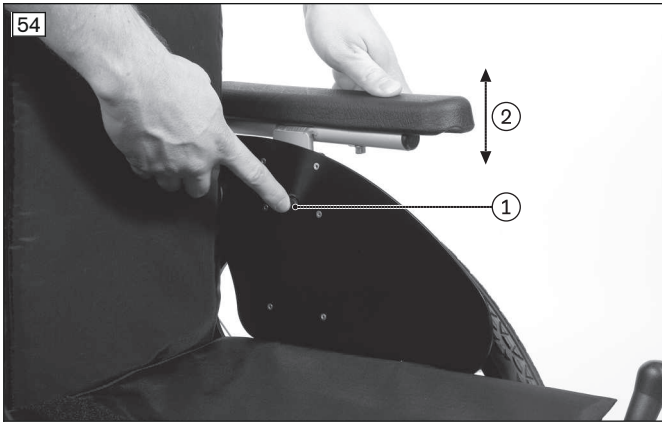
**6.8 Adjusting the Side Panels****6.8.1 Adjusting the "height-adjustable" armrest****Adjusting the height**

- 1) Press in the release button on the inner side of the side panel (see fig. 54, item 1).
- 2) Slide the armrest to the desired position (see fig. 54, item 2).
- 3) Let go of the release button.
 - The armrest locks into place automatically.

Adjusting the depth of the armrest

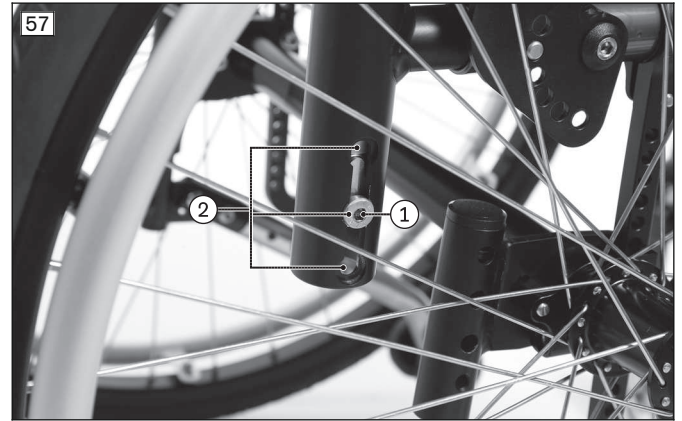
- 1) Loosen the mounting screws (see fig. 55, item 1).

- 2) Remove the armrest and move it (see fig. 55, item 2).
- 3) Screw in the armrests again.



6.8.2 Adjusting the "padded" armrest

- 1) Loosen the mounting screw on the locking point (see fig. 57, item 1).
- 2) Slide the armrest to the desired position (see fig. 57, item 2).
- 3) Tighten the mounting screw.



6.8.3 Adjusting the "Standard" and "Clothing Protector" Side Panels

Adjusting the "standard" side panels

It is not possible to make an adjustment. If a large change to the positions or sizes of the rear wheels has been made, the side panels must be exchanged.

- 1) Loosen the Allen head screw on the support bracket (see fig. 58 and see fig. 59, item 1).
- 2) Remove and replace the side panel.
- 3) Tighten the Allen head screw on the support bracket.

Adjusting the "clothing protector" side panels

INFORMATION

Note that the side panels may have to be replaced after major changes to the rear wheel position or size (see above).

Adjustments can be made.

- 1) Loosen the Allen head screw on the support bracket (see fig. 59, Pos. 1).
- 2) Remove and, if necessary, replace the side panel.
- 3) Position the side panel. In order to do so, pass the Allen head screw through one of the 5 bore holes (see fig. 59, Pos. 1) and tighten it on the support bracket.

INFORMATION: Choose the bore hole so that the lip of the clothing protector is close enough to or far enough away from the tyre to exclude the risk of crushing.

INFORMATION: Note that the side panel mounting may also have to be repositioned after adjusting the "clothing protector" side panel (see the 647G829 service manual).



6.8.4 Mounting/adjusting the channel forearm pad with swivel unit

The subsequent installation is made to the "height-adjustable" armrest.

- 1) Loosen 2 x Allen head screws on the bottom of the armrest (see fig. 55, item 1).
- 2) Remove the armrest.
- 3) Mount the swivel unit on the tube of the side panel.
The assembly is described in more detail in the instructions for use included with the swivel unit – reference number 647G411.
- 4) Mount the channel forearm pad on the swivel unit.
The assembly is described in more detail in the instructions for use included with the swivel unit – reference number 647G411.
- 5) Adjust the swivel unit.

Adjusting the channel forearm pad with swivel unit is described in more detail in the supplied instructions for use (user).

6.9 Installing / adjusting the anti-tipper and tip-assist

⚠ WARNING

Incorrect installation of the anti-tipper/missing anti-tipper

Tipping over, falling of the user due to failure to observe the installation instructions and because of incorrect adjustment

- ▶ Depending upon the settings of the chassis, the centre of gravity, the back angle and the experience of the user, the use of an anti-tipper may be necessary.
- ▶ For a small wheelbase and a backrest that is tilted far back, an anti-tipper may need to be installed on both sides, depending upon the user's experience.
- ▶ Verify that the anti-tipper has been installed and adjusted properly. Find the appropriate position with the assistance of a helper.

6.9.1 Installing the accessory mount

The manufacturer offers an accessory mount for this product. This enables the installation of the anti-tipper and the tip-assist.

Depending upon the order, the accessory mount (see fig. 64) may be installed when delivered. It is available in two versions:

- Accessory mount for anti-tipper for maximum load of up to 100 kg as well as for tip-assists
- Accessory mount for anti-tipper for maximum load of up to 140 kg

It may be necessary to retrofit the accessory mount in the course of an initial fitting. To install these, see the 647G829 service manual.

When using the "long" slider, the 481A25=SK035 retrofit kit must be installed for subsequent seat height adjustments. To install these, see the 647G829 service manual.

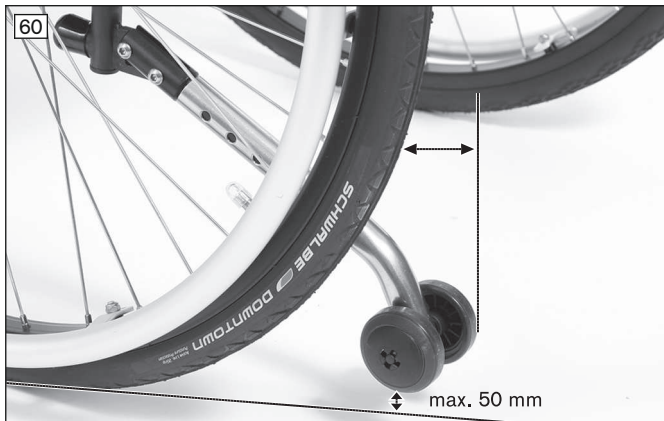
| Rear wheel size | Axle with camber | Rear seat height [mm] |
|-----------------|------------------|-----------------------|
| 22" | 0°/3° | <= 420 |
| | 6° | <= 410 |
| | 9° | <= 400 |

| Rear wheel size | Axle with camber | Rear seat height [mm] |
|-----------------|------------------|-----------------------|
| 24" | 0°/3° | </= 460 |
| | 6° | </= 450 |
| | 9° | </= 440 |
| 25" | 0°/3° | </= 470 |
| | 6° | </= 460 |
| | 9° | </= 460 |

6.9.2 Installing the anti-tipper

Depending upon the order, the anti-tipper (see fig. 60) may already be installed when delivered.

It may be necessary to retrofit or reposition the anti-tipper in the course of an initial fitting. To install and adjust this, see the 647G829 service manual.



6.9.3 Adjusting the Anti-Tipper

INFORMATION

In order to adjust the anti-tipper correctly, it may be necessary to combine the steps to adjust the length and angle.

Adjusting the length of the pivot arm

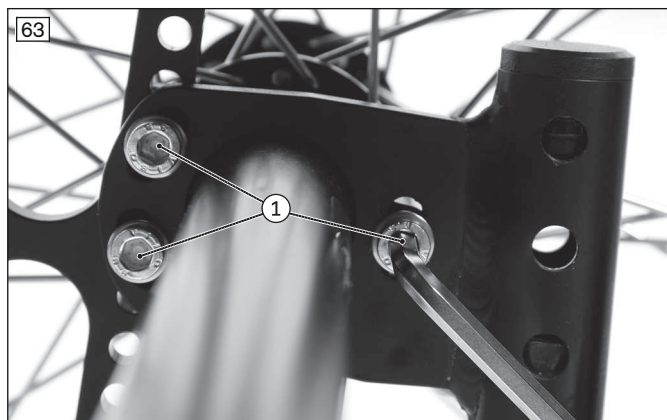
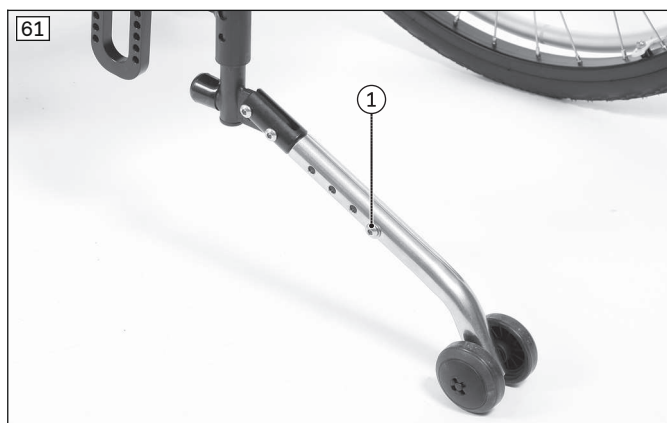
- 1) Remove the Allen head screw on the pivot arm (see fig. 61, item 1).
- 2) Adjust the length of the pivot arm.
- 3) Bolt down the pivot arm. The outer edge of the anti-tipper roller has to project beyond the largest diameter of the tyre (see fig. 60).

Adjusting the angle of the pivot arm – option 1

- 1) Remove the Allen head screw between the anti-tipper tube and the angle adjuster (see fig. 62, item 1).
- 2) Loosen the second Allen head screw on the angle adjuster (see fig. 62, item 2).
- 3) Set the angle of the pivot arm.
- 4) Bolt down the pivot arm. The max. distance between the anti-tipper rollers and floor is **50 mm** (see fig. 60).

Adjusting the angle of the accessory mount – option 2

- 1) Remove the 3 Allen head screws between the accessory mount and the clamping flange (see fig. 63, item 1).
- 2) Set the angle of the accessory mount (3 settings at intervals of 10°: see fig. 64).
- 3) Tighten the accessory mount to **10 Nm**. The max. distance between the anti-tipper rollers and floor is **50 mm** (see fig. 60).



6.9.4 Installing/adjusting the tip-assist

The tip-assist can be installed on the accessory mount in the installation position provided (see fig. 65, item 1).

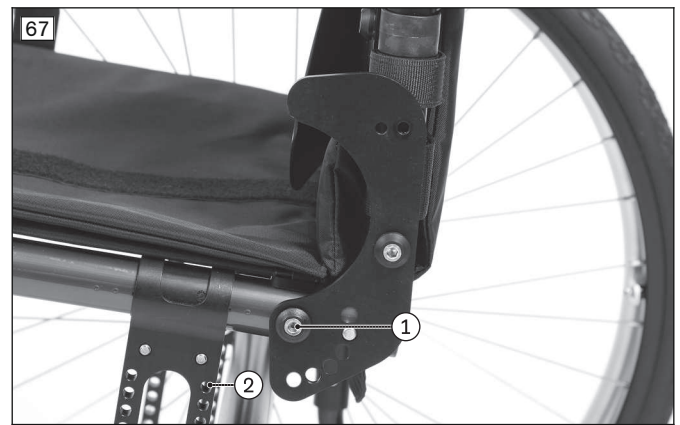
- 1) Press the spring on the tip-assist (see fig. 65, item 2).
- 2) Insert the tip-assist into the accessory mount (see fig. 65, item 1).
- 3) Allow the spring to lock in.



6.10 Installing and adjusting the safety belt

Depending upon the fitting situation and the settings, the safety belt can be installed on the lower securing point on the back plate (see fig. 67, item 1) or on the topmost free securing point on the slider (see fig. 67, item 2).

- 1) Fasten the safety belt to the securing points with the supplied mounting screws.
- 2) Tighten the mounting screws to **7 Nm**.
- 3) Adjust the safety belt. Information on the settings can be found in the manufacturer's instructions for use accompanying each product.



6.11 Installing/adjusting the headrests and neckrests

Additional information on installing the assembly kit and on the adjustments of headrests or neckrests can be found in the manufacturer's instructions for use accompanying each product.

7 Delivery

7.1 Final inspection

A final check must be carried out before the wheelchair can be handed over:

- Are all options installed according to the order form?
- Are the rear wheels correctly positioned?
- Have the tyres been correctly inflated?
INFORMATION: The correct tyre pressure is printed on the tyre sidewall. For rear wheels with high-pressure tyres, the minimum air pressure is 7 bar.
- Has the axle unit been fastened to the slider and tightened to the specified torque?
- Can the quick-release axles rotate freely?
- Only after adjustment: Have the brakes (wheel locks) been adjusted correctly?
- Only after adjustments: Has the respective caster journal angle been adjusted vertically?
- Only after adjustments: Has the anti-tipper been adjusted correctly?

7.2 Transport to the customer

The wheelchair should be transported to the user in disassembled state using the outer packaging.

7.3 Handing over the product

The following steps must be performed for the safe delivery of the product:

- Conduct a sitting test with the user of the product. Pay special attention to proper positioning according to medical considerations.
- The user and any attendants must be instructed in the safe use of the product. In particular, the enclosed instructions for use (user) are to be used.
- The instructions for use (user) must be issued to the user/attendant during handover of the wheelchair.

8 Maintenance and repair

The manufacturer recommends regular maintenance of the product every **12 months**.

More information on cleaning, disinfection, maintenance and repair can be found in the instructions for use (user).

The service manual contains detailed information on repairs.

9 Disposal

9.1 Disposal Information

All components of the product must be disposed of properly in accordance with the respective national environmental regulations.

9.2 Information on Re-use

CAUTION

Used seat padding

Functional and/or hygienic risks due to re-use

- ▶ Replace the seat padding if the wheelchair is to be re-used.

The product is suitable for re-use.

Similar to second-hand machines or vehicles, products that are being re-used are subject to increased strain. Features and functions must not change in a way that could endanger users or other persons within the product's lifespan.

The product must first be thoroughly cleaned and disinfected before it can be re-used. Then the product must be examined by an authorised specialist to check the condition and to look for wear and possible damage. All worn and damaged parts as well as components which do not fit or are unsuitable for the new user must be replaced.

Detailed information on replacing components as well as information on the required tools and the prescribed service intervals can be found in the service manual.

10 Legal information

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

10.1 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.

10.2 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.

10.3 Warranty

Further information on the warranty terms and conditions is available from the manufacturer's service (see inside back cover for addresses).

10.4 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.

10.5 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.

11 Appendices

11.1 Technical data

INFORMATION

- ▶ Many of the technical data below are given in mm. Please note that product settings – unless otherwise specified – cannot be adjusted in the mm range but only in increments of approx. **0.5 cm** or **1 cm**.
- ▶ Note that the values achieved during adjustment may deviate from the values specified below. The deviation can be **±10 mm** and **±2°**.

General information

| | Ventus |
|--|--|
| Maximum load capacity [kg] | 100 (for seat width 280–440) 140 (for seat width 460–500) |
| Weight [kg] ¹⁾ (for seat width 440 mm; 4" full rubber caster wheels, 24" hollow rim) | approx. 12.5 |
| Transport weights [kg] ¹⁾ ; (for seat width: 440 mm; 4" full rubber caster wheels) | Frame: 7.5–8.8 24" rear wheel: 3.7 |
| Seat width [mm] | 280–440 (max. load capacity 100 kg) 280–500 (max. load capacity 140 kg) |
| Seat depth [mm] ²⁾ | 300–500 |
| Max. total height [mm] (for rear seat height: 500 mm; back height 500 mm; push handle) | 1050 |
| Min. tyre pressure [bar] ³⁾ | 7 |
| Steering range approx. [mm] ⁴⁾ (for seat width 440 mm; seat depth 500 mm) | 1150 (without wheelbase extension) 1250 (with wheelbase extension) |
| Max. permissible inclination [°] ⁵⁾ | 10 |
| Max. permissible inclination [%] ⁵⁾ | 17 |

¹⁾ The specified weights vary according to the selected options and model.

²⁾ With wheelbase extension: rear axle position + 80 mm

³⁾ Varies according to tyre option; see the print on the tyre wall

⁴⁾ Turning range/turning circle in accordance with ISO 7176-5, 8.11/8.12

⁵⁾ The anti-tipper is mandatory for an inclination of more than 10°.

Additional information

| Ventus | Minimum | Maximum |
|---|-----------------------------------|---------|
| Mass of the heaviest component [kg] | --- | 7.5 |
| Overall length with footrests [mm] | 755 | 970 |
| Overall width [mm] | 450 | 850 |
| Seat bottom angle | Depends on seat height front/rear | |
| Effective seat depth [mm] | 300 | 500 |
| Effective seat width [mm] | 280 | 500 |
| Front seat height [mm] | 450 | 540 |
| Rear seat height [mm] | 330 | 530 |
| Backrest angle [°] | 65 | 105 |
| Backrest height [mm] | 300 | 500 |
| Distance footrest to seat [mm] | 170 | 500 |
| Distance armrest to seat [mm] | 215 | 310 |
| Angle footrest to seat bottom [°] | 0 | 30 |
| Push ring diameter [mm] | 470 | 560 |
| Minimum turning radius [mm] ¹⁾ | 440 | --- |
| Positioning of the armrest [mm] | 240 | 270 |

| Ventus | Minimum | Maximum |
|-------------------------------|---------|---------|
| Horizontal axle position [mm] | 62 | 142 |

¹⁾ In accordance with ISO 7176-5

Overall length [mm]

| Seat depth | Lower leg length min./max. | 22" rear wheel | | 24" rear wheel | | 25" rear wheel | |
|------------|----------------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|
| | | Front axle position | Rear axle position | Front axle position | Rear axle position | Front axle position | Rear axle position |
| 300 | 170 | 590 | 670 | 615 | 695 | 625 | 705 |
| | 500 | 665 | 745 | 690 | 770 | 700 | 780 |
| 320 | 170 | 610 | 690 | 635 | 715 | 645 | 725 |
| | 500 | 685 | 765 | 710 | 790 | 720 | 800 |
| 340 | 170 | 630 | 710 | 655 | 735 | 665 | 745 |
| | 500 | 705 | 785 | 730 | 810 | 740 | 820 |
| 360 | 170 | 650 | 730 | 675 | 755 | 685 | 765 |
| | 500 | 725 | 805 | 750 | 830 | 760 | 840 |
| 380 | 170 | 670 | 750 | 695 | 775 | 705 | 785 |
| | 500 | 745 | 825 | 770 | 850 | 780 | 860 |
| 400 | 170 | 690 | 770 | 715 | 795 | 725 | 805 |
| | 500 | 765 | 845 | 790 | 870 | 800 | 880 |
| 420 | 170 | 710 | 790 | 735 | 815 | 745 | 825 |
| | 500 | 785 | 865 | 810 | 890 | 820 | 900 |
| 440 | 170 | 730 | 810 | 755 | 835 | 765 | 845 |
| | 500 | 805 | 885 | 830 | 910 | 840 | 920 |
| 460 | 170 | 750 | 830 | 775 | 855 | 785 | 865 |
| | 500 | 825 | 905 | 850 | 930 | 860 | 940 |
| 480 | 170 | 770 | 850 | 795 | 875 | 805 | 885 |
| | 500 | 845 | 925 | 870 | 950 | 880 | 960 |
| 500 | 170 | 790 | 870 | 815 | 895 | 825 | 905 |
| | 500 | 865 | 945 | 890 | 970 | 900 | 980 |

With wheelbase extension: rear axle position +80 mm

Overall width with rear wheel with hollow rim [mm]

| Seat width | Overall width |
|------------|---------------|
| 280 | 450 |
| 300 | 470 |
| 320 | 490 |
| 340 | 510 |
| 360 | 530 |
| 380 | 550 |
| 400 | 570 |
| 420 | 590 |
| 440 | 610 |
| 460 | 630 |
| 480 | 650 |
| 500 | 670 |

Applicable to push ring attachment, narrow and a 0° camber of the rear wheels (push ring attachment, wide: +20 mm)

Increase of the overall width because of the wheel camber setting of the rear wheels [mm]

| Wheel camber | 22" rear wheel | 24" rear wheel | 25" rear wheel |
|--------------|----------------|----------------|----------------|
| 3° | < 60 | 60 | > 60 |
| 6° | < 120 | 120 | > 120 |
| 9° | < 180 | 180 | > 180 |

Lower leg length [mm]

| | |
|-------------------------------|---------|
| Short lower leg length | 170–320 |
| Lower leg length | 320–500 |

Measured from top of seat upholstery to top of footrest (lower leg length minus height of the seat cushion used)

Anterior seat height¹⁾ [mm]

| Caster wheel size | "Standard" caster fork (see fig. 69) | | | Available positions | | |
|-------------------|--------------------------------------|---------|---------|---------------------|---------|---------|
| | extra short | short | long | extra short | short | long |
| 3" | 400–420 | 450–460 | 480–500 | 1/2 | 1/2 | 1/2 |
| 4" | 420–440 | 450–480 | 490–520 | 1/2 | 1/2/3 | 1/2/3 |
| 5" | --- | 450–490 | 490–530 | --- | 1/2/3/4 | 1/2/3/4 |
| 5.5" | --- | 470–490 | 500–530 | --- | 1/2/3 | 1/2/3/4 |
| 6" | --- | 470–490 | 500–530 | --- | 1/2/3 | 1/2/3/4 |

| Caster wheel size | "Design" caster fork (see fig. 70) | | | Available positions | | |
|-------------------|------------------------------------|---------|---------|---------------------|---------|---------|
| | extra short | short | long | extra short | short | long |
| 3" | 400–420 | 460–470 | 500–510 | 1/2 | 1/2 | 1/2 |
| 4" | 420 | 460–490 | 500–530 | 1 | 1/2/3 | 1/2 |
| 5" | --- | 460–500 | 500–530 | --- | 1/2/3/4 | 1/2/3/4 |
| 5.5" | --- | 480–510 | 510–540 | --- | 1/2/3 | 1/2/3/4 |
| 6" | --- | 500–510 | 510–540 | --- | 1/2 | 1/2/3/4 |

| Caster wheel size | "Froglegs" caster fork (see fig. 71) | | Available positions | |
|-------------------|--------------------------------------|---------|---------------------|-------|
| | short | long | short | long |
| 3" | 480–490 | 500–510 | 1/2 | 1/2 |
| 4" | 480–500 | 500–520 | 1/2/3 | 1/2/3 |
| 5" | 500–510 | 520–530 | 1/2 | 1/2 |
| 6" | 510–520 | 530–540 | 1 | 1 |

Posterior seat height¹⁾ [mm]

| Rear wheel size | Axle with camber | Slider | |
|-----------------|------------------|---------|---------|
| | | medium | long |
| 22" | 0°/3° | 350–440 | 350–490 |
| | 6° | 340–430 | 340–480 |
| | 9° | 330–420 | 330–470 |
| 24" | 0°/3° | 380–470 | 380–520 |
| | 6° | 370–460 | 370–510 |
| | 9° | 360–450 | 360–500 |
| 25" | 0°/3° | 390–480 | 390–530 |
| | 6° | 380–470 | 380–520 |
| | 9° | 370–460 | 370–510 |

Posterior seat height¹⁾ - with shock absorber system [mm]

| Rear wheel size | Axle with camber | Shock absorber (short: see fig. 72, long: see fig. 73) | | |
|-----------------|------------------|--|--------------------|--------------------|
| | | short | long ²⁾ | long ³⁾ |
| 22" | 0°/3° | 410–430 | 410–450 | 450–490 |
| | 6° | 400–420 | 400–440 | 440–480 |
| | 9° | 390–410 | 390–430 | 430–470 |
| 24" | 0°/3° | 430–450 | 430–470 | 470–510 |
| | 6° | 420–440 | 420–460 | 460–500 |
| | 9° | 410–430 | 410–450 | 450–490 |
| 25" | 0°/3° | 440–460 | 440–480 | 480–520 |
| | 6° | 430–450 | 430–470 | 470–510 |
| | 9° | 420–440 | 420–460 | 460–500 |

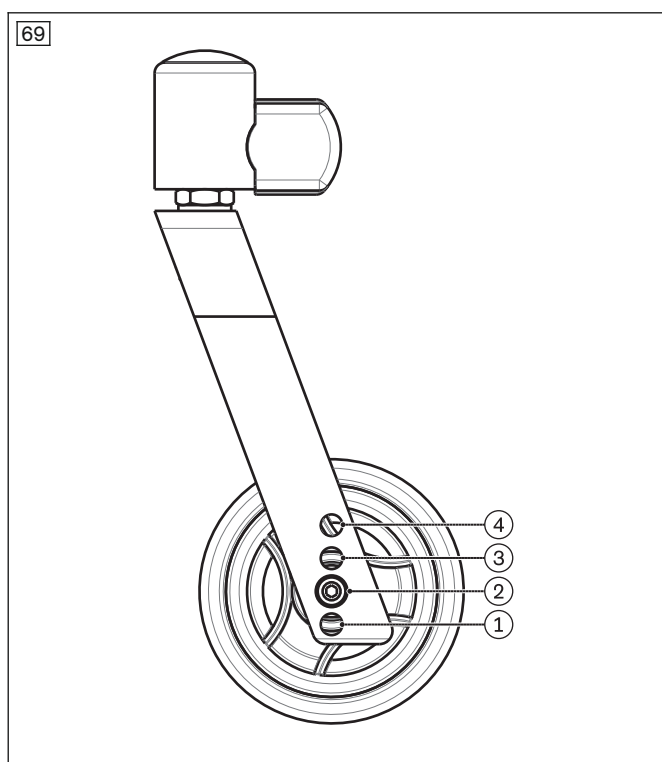
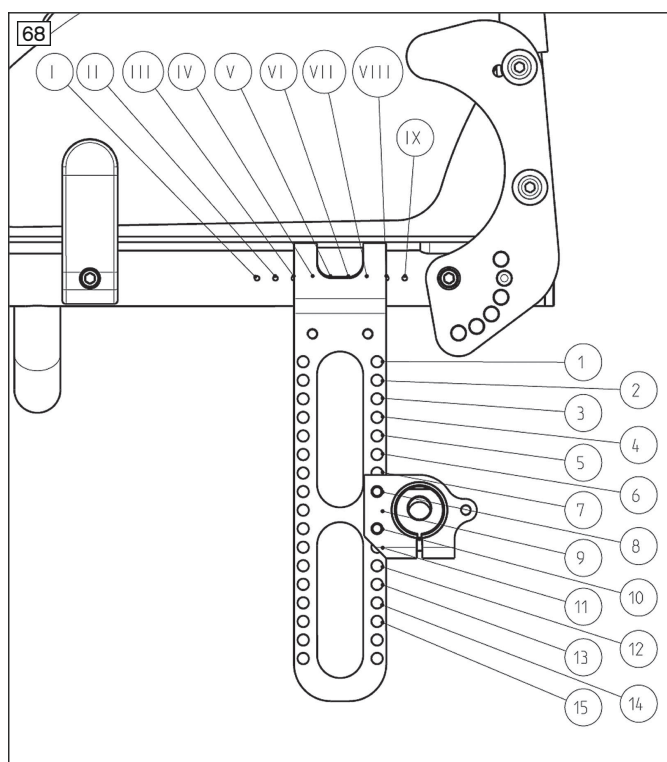
¹⁾ The anterior seat height depends on the selected wheel size, caster fork and mounting position.

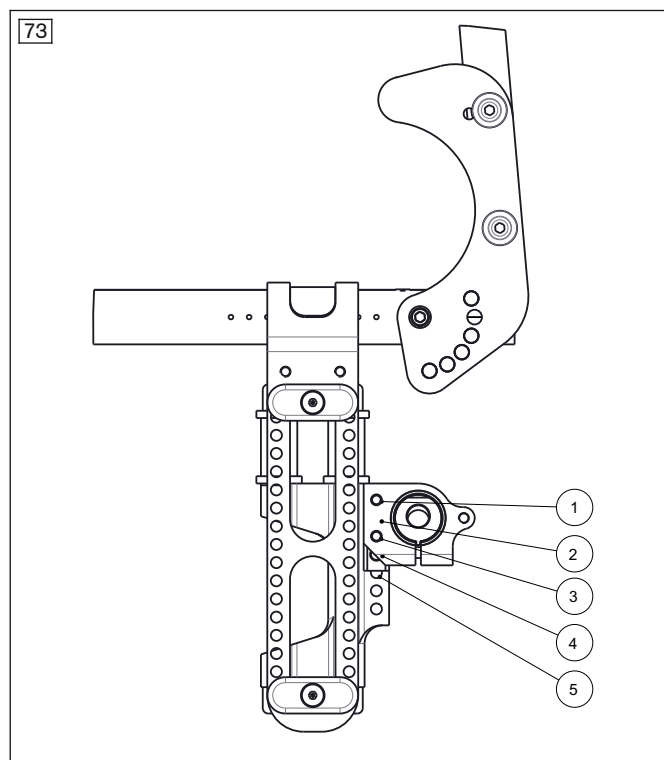
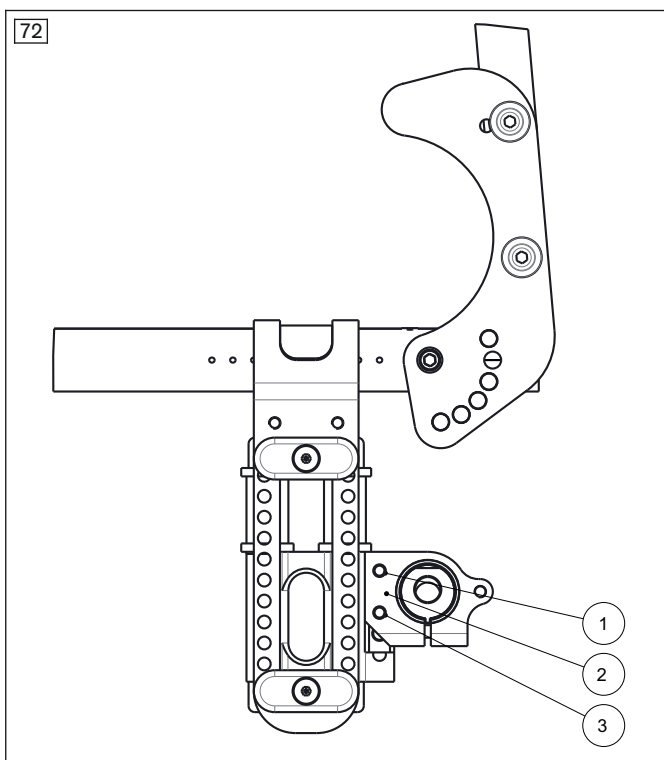
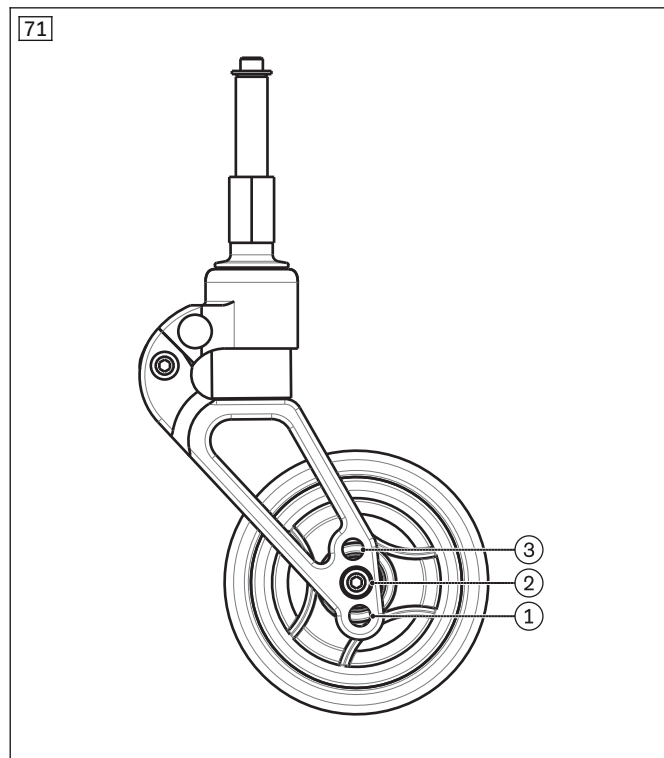
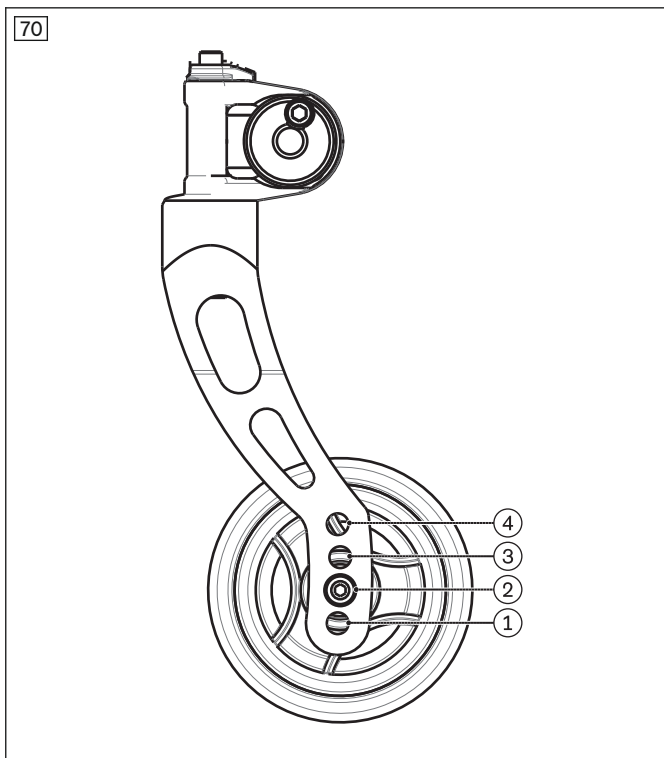
Specified at 0° seat angle, without seat cushion

The values indicated are theoretically determined values (max. deviation: 10 mm)

²⁾ Perforated plate installed at the top in the shock absorber (see fig. 73)

³⁾ Perforated plate installed at the bottom in the shock absorber (not pictured)





11.2 Required Tools

The following tools are required for adjustments and maintenance work:

- Allen keys in sizes 3, 4, 5
- Ring and open-end wrenches in sizes 10, 13, 19, 24 and 27
- Socket wrenches in sizes 10, 13 and 19
- Phillips head screwdriver (size: 2)
- Flat screwdriver
- Torque wrench (measurement range 5-50 Nm)
- Measurement equipment: yardstick, spirit level, back square

- Liquid thread lock, "medium" and "strong"

11.3 Torque values of the screw connections

Unless otherwise specified, screw connections are tightened with the following torque values:

- Thread diameter M4: 3 Nm
- Thread diameter M5: 5 Nm
- Thread diameter M6: 10 Nm
- Thread diameter M8: 25 Nm



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Kundenservice/Customer Service

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