



## Start M4 XXL, Start M6 Junior

<b>EN</b> Instructions for use (qualified personnel) .....	3
--	---



# Table of contents

EN

<b>1</b>	<b>Foreword</b> .....	<b>5</b>
<b>2</b>	<b>Intended use</b> .....	<b>5</b>
2.1	Indications for use .....	5
2.2	Indications, contraindications .....	5
2.3	Qualification .....	5
<b>3</b>	<b>Safety</b> .....	<b>6</b>
3.1	Explanation of warning symbols .....	6
3.2	General safety instructions .....	6
3.3	Safety Instructions for Assembly .....	6
3.4	Nameplate .....	7
3.4.1	Start M4 XXL .....	7
3.4.2	Start M6 Junior .....	7
<b>4</b>	<b>Delivery</b> .....	<b>8</b>
4.1	Scope of delivery .....	8
4.2	Options .....	8
4.3	Storage .....	8
<b>5</b>	<b>Preparation for use</b> .....	<b>8</b>
5.1	Assembly .....	8
<b>6</b>	<b>Settings</b> .....	<b>9</b>
6.1	Prerequisites .....	9
6.2	Adjusting the drive wheels .....	9
6.2.1	Setting the drive wheels horizontally .....	9
6.2.2	Adjusting the drive wheels vertically .....	11
6.2.3	Adjusting the quick-release axle .....	12
6.2.4	Adjusting the handrims .....	12
6.3	Adjusting the caster wheels .....	13
6.3.1	Adjusting the caster journal angle .....	13
6.3.2	Changing the installation position of the caster wheels .....	13
6.4	Adjusting the brakes .....	14
6.4.1	Adjusting the wheel locks .....	14
6.4.2	Adjusting the braking force of the drum brake .....	15
6.5	Adjusting the seat .....	15
6.5.1	Adjusting the seat depth .....	15
6.6	Adjusting the back support .....	16
6.6.1	Adjusting the back support height .....	16
6.6.2	Adjusting the back support angle .....	16
6.7	Adjusting the back support upholstery / seat upholstery .....	16
6.7.1	Adjusting the back support upholstery .....	16
6.7.2	Adjusting the seat upholstery .....	17
6.8	Adjusting the leg supports .....	17
6.8.1	Adjusting the lower leg length .....	17
6.8.2	Adjusting the support angle .....	18
6.8.3	Adjusting the posterior lower leg pad of the "elevating" leg support .....	19
6.8.4	Adjusting the amputation leg support .....	19
6.9	Adjusting the side panels .....	20
6.10	Adjusting the anti-tipper .....	21
6.11	Adjusting the swinging anti-tipper .....	22
6.12	Adjusting the lap belt .....	22
6.13	Installing and adjusting the head support .....	23
6.14	Adjusting the transport wheels .....	23
<b>7</b>	<b>Delivery</b> .....	<b>24</b>
7.1	Final inspection .....	24
7.2	Transport to the customer .....	24

7.3	Handing over the product.....	24
<b>8</b>	<b>Maintenance and repair .....</b>	<b>24</b>
<b>9</b>	<b>Disposal .....</b>	<b>24</b>
9.1	Disposal information .....	24
9.2	Information on re-use.....	24
<b>10</b>	<b>Legal information.....</b>	<b>24</b>
10.1	Liability .....	24
10.2	Warranty .....	25
10.3	Service life .....	25
<b>11</b>	<b>Technical data .....</b>	<b>25</b>
<b>12</b>	<b>Appendices .....</b>	<b>29</b>
12.1	Required tools .....	29
12.2	Torque values of the screw connections.....	29

# 1 Foreword

## INFORMATION

Last update: 2020-01-08

- ▶ 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 as well as the declaration of conformity can be obtained at [oa@ottobock.com](mailto:oa@ottobock.com) or from the manufacturer's service department (see inside or outside of rear cover for addresses).
- ▶ Report all serious incidents that have occurred in connection with the product, both to the manufacturer (see rear cover for contact information) and to the relevant authority in your country.
- ▶ You can request this document as a PDF file at [oa@ottobock.com](mailto:oa@ottobock.com) or from the manufacturer's service department (see inside or outside of rear cover for addresses). The PDF file can also be displayed in a larger size.

Initial adjustments to the product were made according to the order form. Nevertheless, fine adjustments and settings may have to be made depending on the medical situation 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 of all optional components is generally described in the service manual.
- The manufacturer reserves the right to make technical changes to the model described in these instructions for use.

## 2 Intended use

### 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 for operation by the patient or another person.

The product is suitable for users whose anatomy (such as body dimensions and weight) permits the intended use of the product.

The wheelchair may only be used with the options listed on 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.

Combinations based on a combination agreement that have been evaluated for effectiveness and safety are an exception to this.

The safe use of the wheelchair can only be ensured if it is used as intended in accordance with the information contained in the instructions for use (user). The user is ultimately responsible for accident-free operation.

### 2.2 Indications, contraindications

See the instructions for use (user) for more information about indications and contraindications.

### 2.3 Qualification

Installation and adjustment tasks as well as repairs and inspections 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 drive 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 drive 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.

**⚠ WARNING**

**Improper assembly of removable wheels**

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

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

**3.4 Nameplate**

The nameplates are found on the crossbrace.

**3.4.1 Start M4 XXL**

Label	Meaning
	<b>A</b> Manufacturer's product name
	<b>B</b> CE marking
	<b>C</b> Maximum load (see section "Technical data")
	<b>D</b> Manufacturer information/address
	<b>E</b> Serial number <sup>1)</sup>
	<b>F</b> Manufacturing date <sup>2)</sup>
	<b>G</b> Symbol for medical device
	<b>H</b> <b>WARNING!</b> Read the instructions for use before using the product. Observe important safety-related information (e.g. warnings, precautions).
	<b>I</b> The product has not been approved by the manufacturer for use as a seat in vehicles for transporting persons with reduced mobility
	<b>J</b> Manufacturer's reference number for the product variant
	<b>K</b> Serial number (PI) <sup>3),1)</sup>
	<b>L</b> Global Trade Item Number (DI) <sup>4)</sup>

1) YYYY = year of manufacture; WW = week of manufacture; PP = production site; XXXX = sequential production number

2) YYYY = year of manufacture; MM = month of manufacture; DD = day of manufacture

3) UDI-PI to GS1 standard; UDI = Unique Device Identifier, PI = Product Identifier

4) UDI-DI to GS1 standard; UDI = Unique Device Identifier, DI = Device Identifier

**3.4.2 Start M6 Junior**

Label	Meaning
	<b>A</b> Manufacturer's product name
	<b>B</b> CE marking
	<b>C</b> Maximum load (see section "Technical data")
	<b>D</b> Manufacturer information/address
	<b>E</b> Serial number <sup>1)</sup>
	<b>F</b> Manufacturing date <sup>2)</sup>
	<b>G</b> Symbol for medical device
	<b>H</b> <b>WARNING!</b> Read the instructions for use before using the product. Observe important safety-related information (e.g. warnings, precautions).
	<b>I</b> Manufacturer's reference number for the product variant
	<b>J</b> Serial number (PI) <sup>3),1)</sup>
	<b>K</b> Global Trade Item Number (DI) <sup>4)</sup>

1) YYYY = year of manufacture; WW = week of manufacture; PP = production site; XXXX = sequential production number

2) YYYY = year of manufacture; MM = month of manufacture; DD = day of manufacture

3) UDI-PI to GS1 standard; UDI = Unique Device Identifier, PI = Product Identifier

4) UDI-DI to GS1 standard; UDI = Unique Device Identifier, DI = Device Identifier

## 4 Delivery

### 4.1 Scope of delivery

The scope of delivery includes:

- Preassembled wheelchair
- Two drive wheels (installed or included)
- Options according to the order (installed or included)
- 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 the wheelchair out or together, 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

- ▶ Before you start using the wheelchair for the first time, check the chosen wheelchair settings with the support of qualified personnel.
- ▶ After every assembly, check for proper mounting of the drive 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 drive 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) Attach the drive wheels to the quick-release axle housings. The quick-release axles must not be removable after releasing the push-button.
- 2) Loosen the safety strap by means of the push button and unfold the wheelchair.
- 3) **If necessary:** Insert the leg supports into the attachment device. Fold the foot supports down.
- 4) **If necessary:** Pull the flap of the seat upholstery forwards and fasten tightly to the seat upholstery.
- 5) Fit the seat cushion.



## 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 section and the "Technical data" section). 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

- ▶ Always firmly re-tighten the mounting screws and nuts after changing settings. Observe the specified torques in doing so.
- ▶ 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).
- ▶ Always replace self-locking screws and nuts with new self-locking screws and 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 adjustments and maintenance tasks as well as the torque values for screw connections are listed in the section "Appendices" (see Page 29).

### 6.2 Adjusting the drive wheels

#### **⚠ WARNING**

##### **Incorrectly adjusted wheelbase**

Tipping over, falling of the user due to unstable settings

- ▶ Please note that with the drive wheel in a more forward mounting 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 drive wheel.
- ▶ Be sure to position the drive wheels towards the rear for transfemoral amputees. This improves the stability of the wheelchair.

#### **⚠ WARNING**

##### **Lack of fine adjustment of the drive 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 drive wheels. Avoid any extreme settings.

#### **INFORMATION**

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

#### **6.2.1 Setting the drive wheels horizontally**

The horizontal position of the drive wheels can be changed.

Changing the drive wheel position has the following effects:

Position of drive wheel	Effects
Move backwards (passive setting)	<ul style="list-style-type: none"> <li>• Larger wheelbase</li> <li>• Larger turning circle</li> <li>• Greater stability of the wheelchair</li> <li>• Wheelchair is harder to tip backwards when crossing obstacles</li> <li>• Position recommended for inexperienced users</li> </ul>
Move forwards (active setting)	<ul style="list-style-type: none"> <li>• Smaller wheelbase</li> <li>• Less load on caster wheels = greater manoeuvrability</li> <li>• Less stability of the wheelchair</li> <li>• Wheelchair is easier to tip backwards when crossing obstacles</li> <li>• <b>INFORMATION: An anti-tipper should be installed if necessary.</b></li> <li>• Setting recommended only for experienced users</li> </ul>

### Start M4 XXL

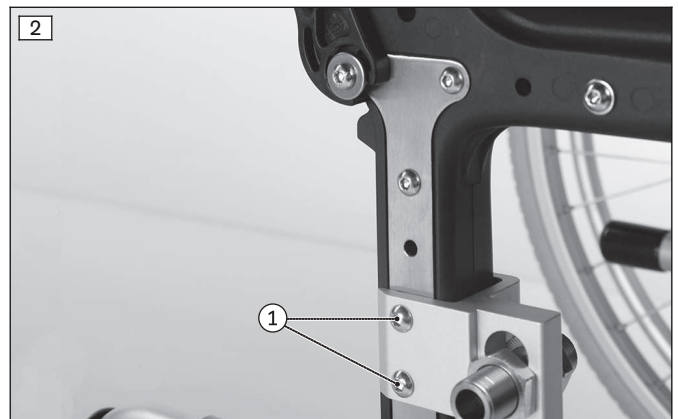
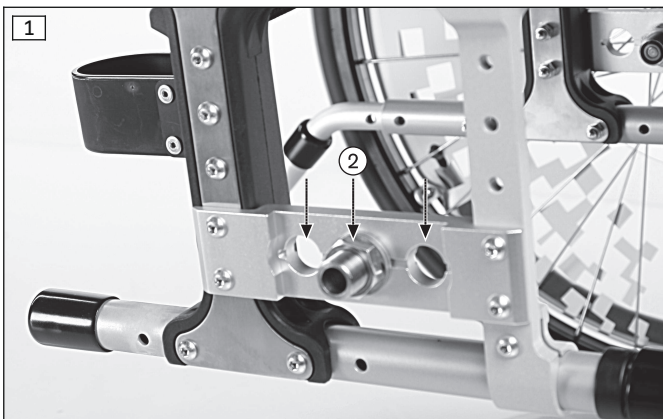
The drive wheel can be installed at three depth positions in the drive wheel adapter.

- 1) Remove the wheels.
- 2) Loosen each hexagon nut (see fig. 1, item 2) from the fitting and remove the fitting towards the inside.
- 3) Slide the fitting back on in the desired position and tighten the hexagon nut slightly.
- 4) **If necessary:** The distance between the drive wheel and the side panel can be continuously adjusted by turning the counter nut on the fitting.
- 5) Tighten each hexagon nut and the counter nut on both sides of the fitting to **50 Nm**.  
**INFORMATION: After adjustment, the distance of the left and right fittings to the side panel must be the same.**
- 6) Check the depth setting. Both sides must be positioned exactly the same. Readjust if necessary.
- 7) **If necessary:** Readjust the height and alignment of the caster attachment device (see Page 13) as well as the brakes (see Page 14).

### Start M6 Junior

The drive wheel can be installed using the drive wheel adapter at two depth positions.

- 1) Remove the wheels.
- 2) Remove both mounting screws on the drive wheel adapter (see fig. 2, item 1).
- 3) Turn the drive wheel adapters forwards or backwards to the desired position.
- 4) Insert the two mounting screws on the drive wheel adapter and tighten to **10 Nm**.
- 5) **If necessary:** The distance between the drive wheel and the side panel can be continuously adjusted by turning the counter nut on the fitting.
- 6) Tighten each hexagon nut and the counter nut on both sides of the fitting to **50 Nm**.  
**INFORMATION: After adjustment, the distance of the left and right fittings to the side panel must be the same.**
- 7) Check the depth setting. Both sides must be positioned exactly the same. Readjust if necessary.
- 8) **If necessary:** Readjust the height and alignment of the caster attachment device (see Page 13) as well as the brakes (see Page 14).



## 6.2.2 Adjusting the drive wheels vertically

The vertical position of the drive wheels can be changed by vertically moving the drive wheel adapter in the frame. Combined with adjusting the height of the caster wheels, this also allows the seat height to be optimally adjusted to individual requirements.

Changing the drive wheel position has the following effects:

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

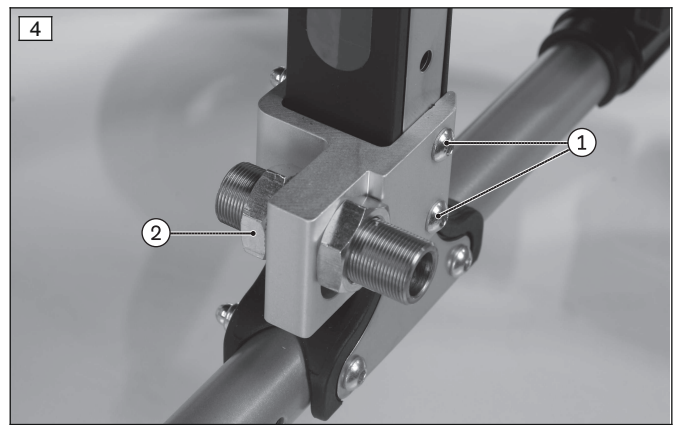
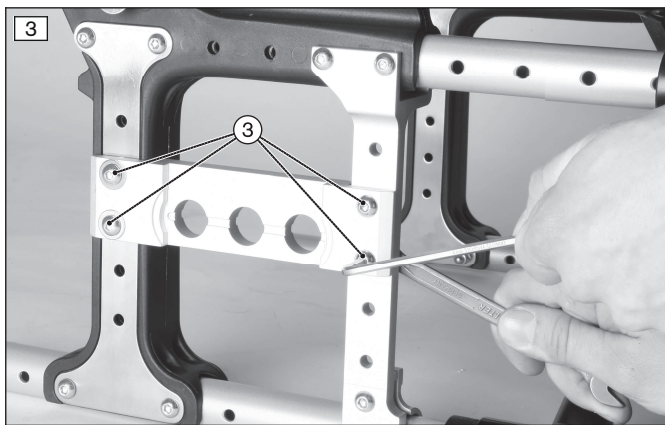
The drive wheel can be set to four height positions.

### Start M4 XXL

- 1) Remove the wheels.
- 2) Remove both mounting screws on the drive wheel adapter (see fig. 3, item 3).
- 3) Slide the drive wheel adapter to the desired height position.
- 4) Reinsert and tighten the mounting screws to **10 Nm**.
- 5) Check the height setting. Once changed, the left and right drive wheel adapters must both have the same vertical position in the frame. Readjust if necessary.
- 6) **If necessary:** Readjust the height and alignment of the caster attachment device (see Page 13) as well as the brakes (see Page 14).

### Start M6 Junior

- 1) Remove the wheels.
- 2) Remove both mounting screws on the drive wheel adapter (see fig. 4, item 1).
- 3) Slide the drive wheel adapter to the desired height position.
- 4) Reinsert and tighten the mounting screws to **10 Nm**.
- 5) **For fine adjustment:** To achieve additional drive wheel positions, the fitting can be moved in the slotted hole of the drive wheel adapter. Loosen the respective hexagon nuts and counter nuts on both sides of the fitting, slide the fitting and tighten the hexagon nuts / counter nuts to **50 Nm**.  
**INFORMATION: After setting, the left and right fittings must be in exactly the same height position.**
- 6) Check the height setting. Once changed, the left and right drive wheel adapters must both have the same vertical position in the frame. Readjust if necessary.
- 7) **If necessary:** Readjust the height and alignment of the caster attachment device (see Page 13) as well as the brakes (see Page 14).



### 6.2.3 Adjusting the quick-release axle

The quick-release axle should be set so the wheel is correctly engaged, with no play on the axle.

- 1) Hold the quick-release axle by the head (wrench size: **19 mm**) and by the tip (wrench size: **11 mm**) with a ring and open-ended wrench respectively.
- 2) Adjust the play by turning the nut on the end of the quick-release axle (see fig. 5, item 1) in or out.



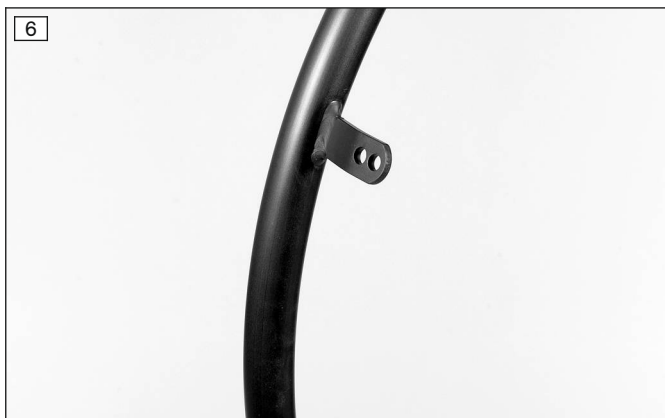
### 6.2.4 Adjusting the handrims

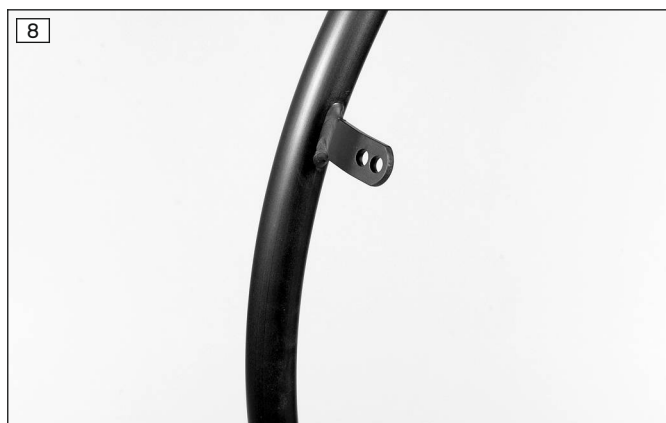
#### INFORMATION

This section does not apply to standard wheels.

All handrims are designed for a spacing from the drive wheel of **15 mm** (standard setting) and **25 mm**.

- 1) Completely remove the tyre.
- 2) Loosen/remove the handrim screw connection from the rim (see fig. 7).
- 3) Tightly screw the handrims onto the rim in narrow or wide installation position.
- 4) Completely reinstall the tyre.





## 6.3 Adjusting the caster wheels

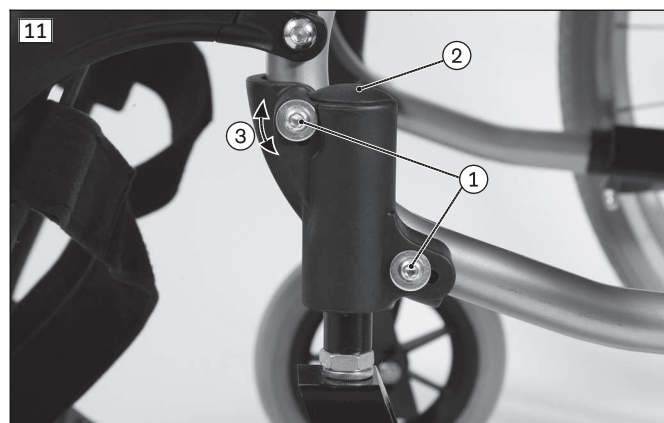
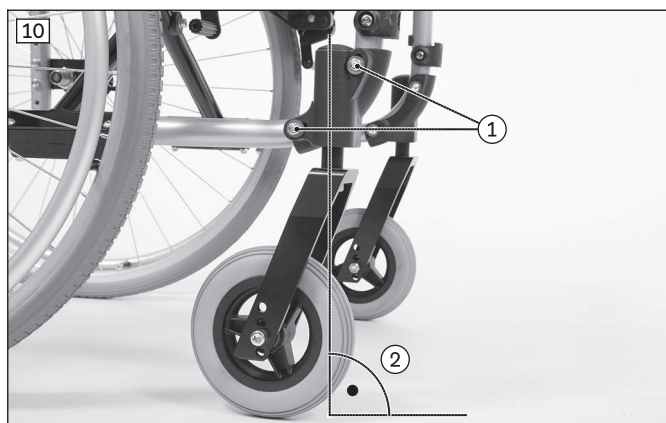
### 6.3.1 Adjusting the caster journal angle

When the drive wheels have been adjusted for the user, the caster journal angle must be readjusted.

The threaded axle in each of the two caster heads should be perpendicular to the ground to ensure optimum wheelchair driving characteristics. The caster journal bearings permit continuous adjustment of this angle.

- 1) Remove the caps (see fig. 10, item 1).
- 2) Below the caps, slightly loosen the Allen head screws between the caster journal bearing and the frame (see fig. 11, item 1).
- 3) Remove the cap at the top of the caster journal bearing (see fig. 11, item 2).
- 4) Place the supplied measuring tool (spirit level) on the top surface of the caster journal bearing in the direction of travel (see fig. 11, item 1).
- 5) Position the continuously variable caster journal bearing perpendicular to the ground (see fig. 11, item 3).
- 6) Tighten the Allen head screws to **8 Nm**.
- 7) Reinstall the caps (see fig. 10, item 1).

→ The caster axle on each of the two caster journal bearings must be positioned vertically (see fig. 10, item 2).



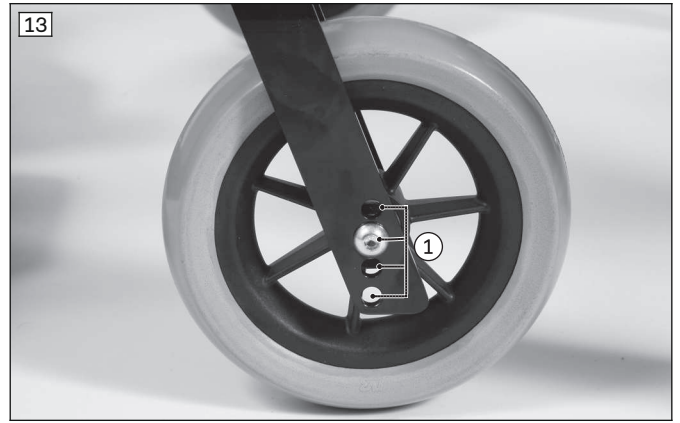
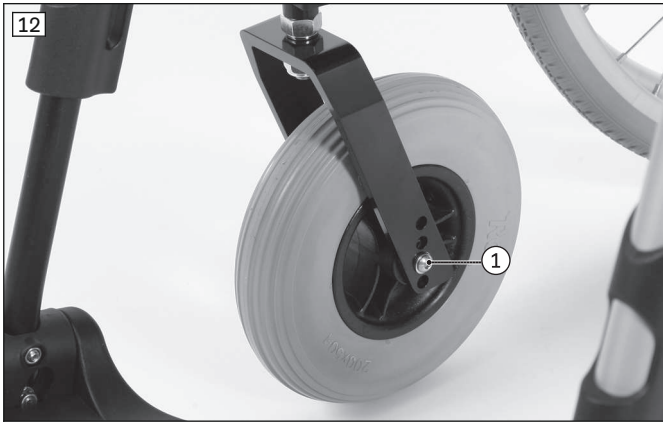
### 6.3.2 Changing the installation position of the caster wheels

The seat height/angle can be subsequently adjusted by changing the position of the casters in the caster forks or using different wheel sizes.

Please refer to the installation matrix in the section "Technical data" for permitted positions and combinations of drive wheels and caster wheels.

- 1) Loosen the screw connection on the threaded axle (see fig. 12, item 1).
- 2) Remove the screw/threaded sleeve, spacers and (if applicable) nuts.
- 3) Remove the caster wheel.
- 4) Insert the screw/threaded sleeve with the first spacer bushing offset in one of the 4 holes (see fig. 13, item 1).
- 5) Install the caster wheel.
- 6) Slide on the second spacer bushing (not pictured).
- 7) Tighten the screw/nut to **8 Nm**.

- Once changed, the left and right caster wheels must have the same vertical position in the caster fork.
- Once the front seat height has been adjusted, the caster journal angle must be checked and if necessary readjusted.



## 6.4 Adjusting the brakes

### 6.4.1 Adjusting the wheel locks

**⚠ WARNING**

**Failure to verify brake functionality**

Accident, user falls due to incorrect adjustment and improperly inflated tyres

- ▶ Check the correct spacing between the wheel lock bolt and tyre (see the following section for details).
- ▶ Check the correct position of the wheel lock bolt relative to the tyre. During braking, the wheel lock bolt has to cover at least half the tyre width.
- ▶ Always carry out adjustments to the wheel lock on both sides.
- ▶ Ensure that the user can operate the wheel lock without great effort. The force required to do so must not exceed 60 N.
- ▶ Check the tyre pressure of the drive wheels. Note the information in the section “Technical data” or on the tyre sidewall.
- ▶ Only use original drive wheels with a verified maximum radial out-of-round of **1 mm**.

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

- 1) Loosen the Allen head screws on the clamp bracket (see fig. 14).
  - 2) The knee lever wheel lock is continuously slidable and adjustable. When the wheel lock is disengaged, the gap between the tyre and wheel lock bolt must not exceed **5 mm** (see fig. 15).
    - The distance between the wheel lock bolt and the drive wheel must be **1–5 mm** in the unbraked condition.
    - It must be possible to operate the brake evenly and easily on both sides.
    - The wheel lock bolt must lock the drive wheel securely when stationary.
  - 3) Tighten the Allen head screws to **16 Nm**.
- After adjustment, the left and right knee lever wheel locks must both have the same braking force.



## 6.4.2 Adjusting the braking force of the drum brake

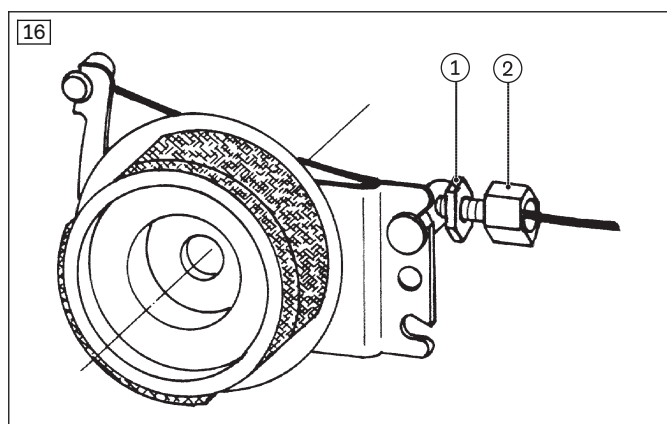
### INFORMATION

After making adjustments, check that activating the manual brake lever creates a sufficient braking effect.

Note that the drum brake must still be able to produce sufficient braking force even when the manual brake lever is locked into a ratchet position.

To achieve an optimum braking effect, the braking force is adjusted using the adjustment screw (see fig. 16, item 2).

- **Increase the braking force:** Back off the adjusting screw.
  - **Reduce the braking force:** Screw in the adjustment screw.
- 1) Loosen the counter nut (see fig. 16, item 1) and back off the adjustment screw until a scraping noise can be heard when the rear wheel is rotated.
  - 2) Screw in the adjustment screw (see fig. 16, item 2) until the scraping noise at the rear wheel disappears and the wheel runs freely.
  - 3) Tighten the counter nut (see fig. 16, item 1) until the adjustment screw is fixed.
- The braking force of both rear wheels must be adjusted equally.

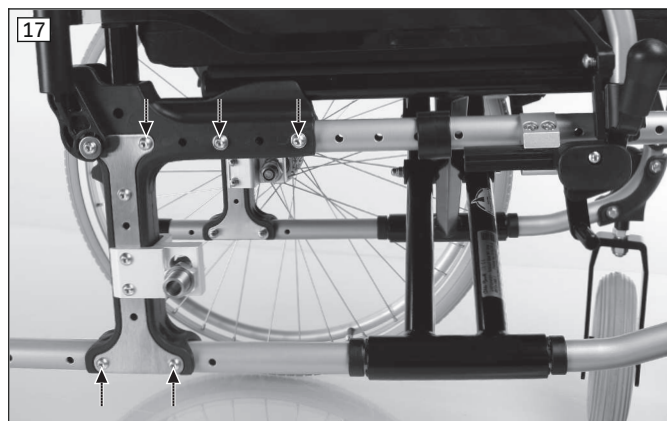


## 6.5 Adjusting the seat

### 6.5.1 Adjusting the seat depth

The seat surface can be moved horizontally by up to **90 mm** in three steps.

- 1) Loosen and remove the seat cushion and back support pad from the hook-and-loop fastener.
- 2) Loosen and remove all Allen head screws between the central unit and frame tubes (see fig. 17).
- 3) Slide the central unit horizontally on the frame tubes. Depending on the design, three different seat depth settings are possible in increments of **30 mm**.
- 4) Mount all Allen head screws and tighten to **8 Nm**.
- 5) Reattach the back support pad on the seat upholstery with hook-and-loop fasteners.
- 6) Secure the seat cushion against sliding by pressing it onto the hook-and-loop fastener.

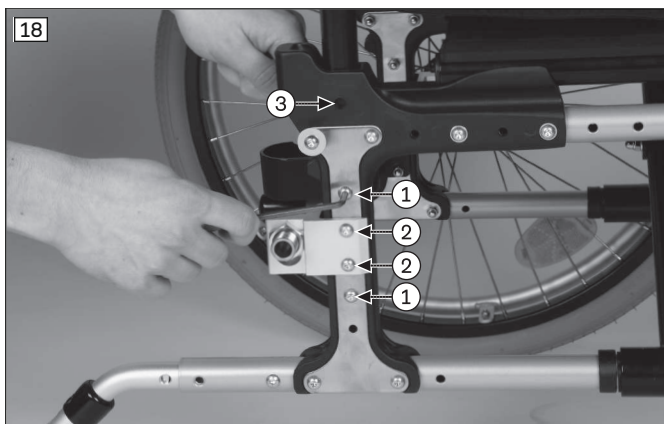


## 6.6 Adjusting the back support

### 6.6.1 Adjusting the back support height

The back support height is adjustable by **75 mm**. The back support height is set by moving the back support tubes in the central unit in increments of **25 mm**.

- 1) Remove the drive wheels and secure the wheelchair by jacking it up.
- 2) Remove all Allen head screws from the vertical attachment device of the central unit (see fig. 18).
- 3) Slide both back support tubes to the desired height. Both back support tubes must be set to the same height.
- 4) Reinsert all Allen head screws on the central unit and tighten them with the following tightening torques:
  - Allen head screws at item 1: **8 Nm**
  - Allen head screws at item 2: **10 Nm**
- 5) When adjusting the maximum back support height, an additional screw connection with plastic spacers has to be mounted in the uppermost bore hole of the central unit (see fig. 18, item 3). This is part of the "481D53=ST170 conversion kit for standard back support tube".



### 6.6.2 Adjusting the back support angle

Adjusting the back angle is described in more detail in the included instructions for use (user).

## 6.7 Adjusting the back support upholstery / seat upholstery

### 6.7.1 Adjusting the back support upholstery

#### INFORMATION

A well-adjusted back support provides lasting comfort for the wheelchair user and reduces the risk of secondary damage and pressure zones.

#### INFORMATION

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

The adjustable back support upholstery can be adapted in segments to the needs of the user.

- 1) Remove the seat cushion.
- 2) Pull the back support pad up and off the hook-and-loop fastener on the back support upholstery.
- 3) Loosen the back support straps and use the hook-and-loop fastener to fasten them with the desired tension (see fig. 19).
- 4) Put on the back support pad and attach it to the hook-and-loop fastener on the back support upholstery.
- 5) Put on the seat cushion and secure it with the hook-and-loop fastener.





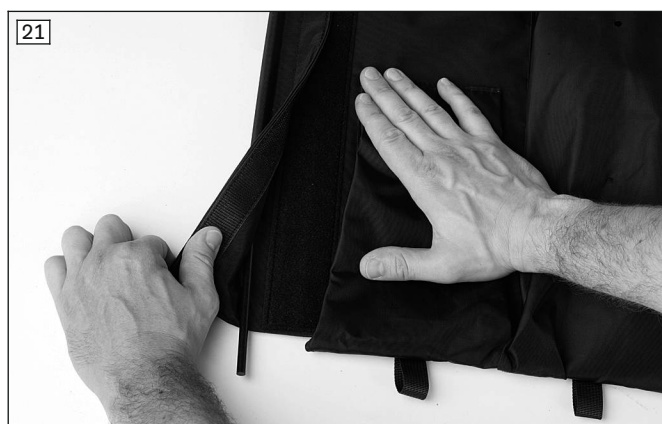
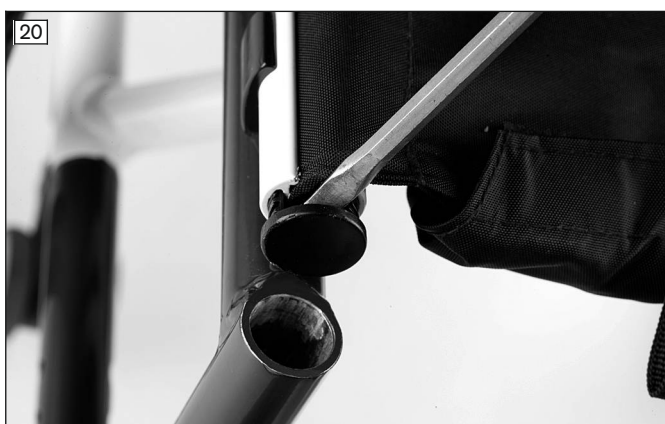
## 6.7.2 Adjusting the seat upholstery

The seat upholstery usually does not need to be adjusted during the initial fitting. However, the tension can be changed.

### INFORMATION

You can slightly correct the centre of gravity by making small changes to the sag of the seat upholstery. However, larger corrections to the centre of gravity must be made by making changes to the settings on the frame, the drive wheel adapter and the caster wheels.

- 1) Fold the wheelchair and remove the seat cushion.
- 2) Remove the protective caps (see fig. 20).
- 3) Remove the seat upholstery from the crossbrace (not illustrated).
- 4) If necessary, tighten the seat upholstery with the aid of the hook-and-loop fastener on the bottom of the seat upholstery (see fig. 21).
- 5) Push the seat upholstery onto the crossbrace.
- 6) Slide on the protective caps.
- 7) Unfold the wheelchair. In doing so, the crossbrace must be seated fully in the support guides.



## 6.8 Adjusting the leg supports

### 6.8.1 Adjusting the lower leg length

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

#### “Segmented, angle-adjustable” leg support, “continuous” leg support, “elevating” leg support

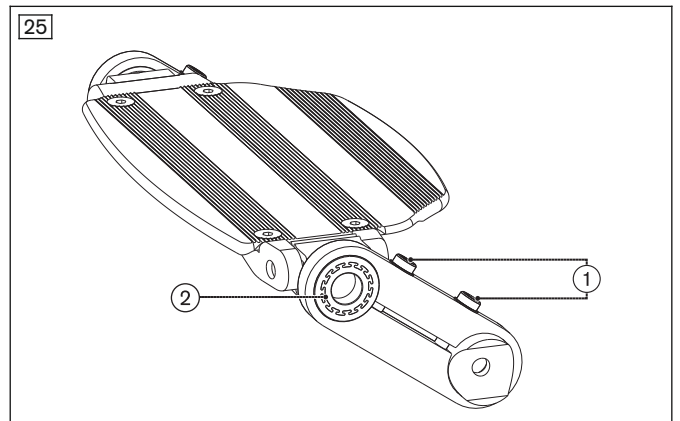
- 1) Loosen the Allen head screw:
  - “Segmented, angle-adjustable” leg support: see fig. 22
  - “Continuous” leg support: see fig. 23
  - “Elevating” leg support: see fig. 24
- 2) Adjust the foot plate bar to match the user’s lower leg length.
 

**INFORMATION: Ensure that the foot plate bar is inserted into the swivel segment by at least 40 mm (to the marking).**

- 3) Tighten the Allen head screw to **6 Nm**.

**Leg support for short lower leg lengths**

- 1) Loosen the clamping screws (see fig. 25, item 1).
- 2) Bring the foot support to the desired height and depth position. Readjust the angle if necessary (see fig. 25, item 2).
- 3) Tighten the clamping screws to **9 Nm**.



**6.8.2 Adjusting the support angle**

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

**“Segmented, angle-adjustable” leg support**

- 1) Loosen the Allen head screws on the foot plate (see fig. 26, item 1).
- 2) Turn the foot support to the desired angle (see fig. 26, item 2).
- 3) Tighten the Allen head screws to **6 Nm**.

**“Continuous” leg support**

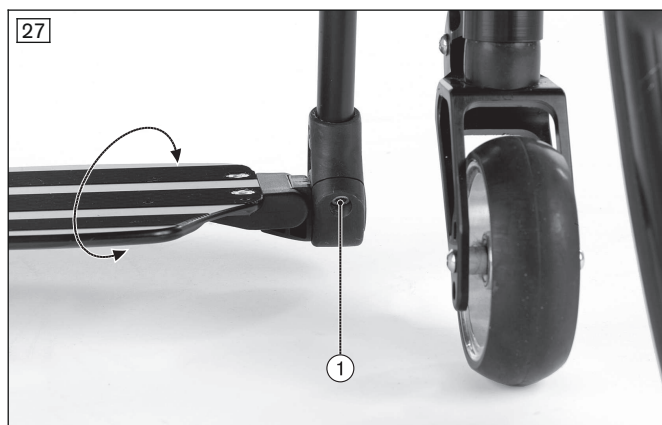
- 1) Loosen the Allen head screw on the rear suspension of the foot plate by several turns (see fig. 27, item 1).
- 2) Turn the foot support to the desired angle.
- 3) Tighten the Allen head screw to **10 Nm**.

**Leg support for short lower leg lengths**

- 1) Loosen the upper clamping screw (see fig. 25, item 1).
- 2) Turn the foot support to the desired angle (see fig. 25, item 2).
- 3) Tighten the clamping screw to **9 Nm**.

**“Elevating” leg support**

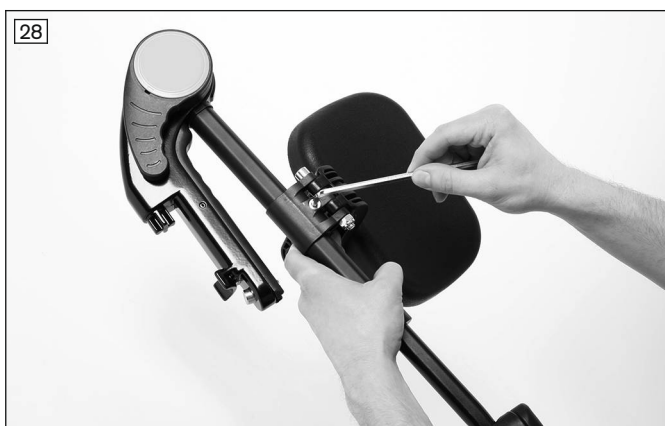
For additional information, see the instructions for use (user).



### 6.8.3 Adjusting the posterior lower leg pad of the "elevating" leg support

The posterior lower leg pad on this leg support is height-adjustable.

- 1) Loosen the clamping unit mounting screw (see fig. 28).
- 2) Slide the posterior lower leg pad to the desired height.
- 3) Re-tighten the mounting screw.



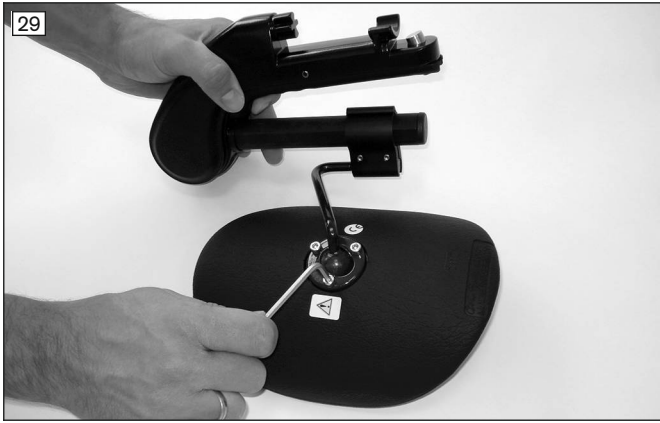
### 6.8.4 Adjusting the amputation leg support

#### Adjusting the support angle of the amputation leg support

The angle adjustment is carried out in the same way as for the "elevating" leg support. For additional information, see the instructions for use (user).

#### Adjusting the pad

- 1) Pad angle: Loosen the three Allen head screws and turn the posterior lower leg pad to the desired angle (see fig. 29). Firmly re-tighten the Allen head screws.
- 2) Pad height: Loosen the Allen head screws on the clamp bracket and adjust the height (see fig. 30). Firmly re-tighten the Allen head screws.



## 6.9 Adjusting the side panels

### “Standard” side panel, “stepped” desk side panel

The forearm support can be adjusted in height by moving the spacers.

- 1) Remove both Allen head screws (see fig. 31).
- 2) Remove the forearm support and place the spacers as required (see fig. 32):
  - Both spacers are located below the side panel tube (see fig. 31).
  - Both spacers are located above the side panel tube (see fig. 32).
  - A spacer is located above the side panel tube. A spacer is located below the side panel tube (not illustrated).
- 3) Place the forearm support on the side panel tube.
 

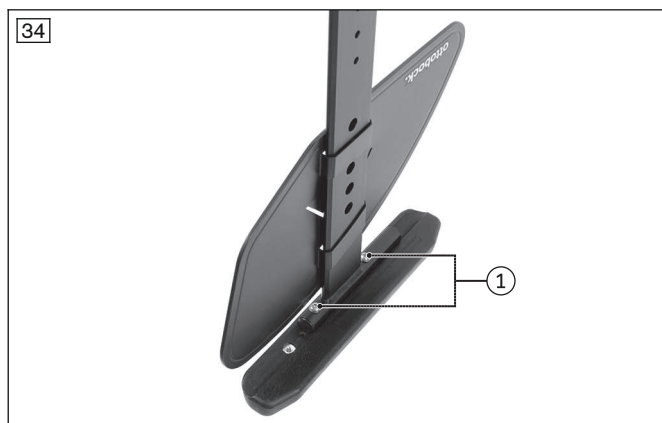
**INFORMATION: In this step the depth of the forearm support can also be adjusted.**
- 4) Insert and firmly tighten both Allen head screws (see fig. 31).



### “Plug-on” side panel

- 1) **Adjusting the height of the forearm support:** Use a ballpoint pen or screwdriver to push in the counter-sunk locking button and slide the side panel to the desired position (see fig. 33).
 

**CAUTION! The locking button is intentionally counter-sunk to prevent accidental operation. Always use an object to press the locking button, never your fingers.**
- 2) **Adjusting the depth of the forearm support:** Loosen the mounting screws under the forearm support, move the forearm support and firmly re-tighten the mounting screws (see fig. 34, item 1).



### “Height-adjustable” side panel

For additional information, see the instructions for use (user).

## 6.10 Adjusting the anti-tipper

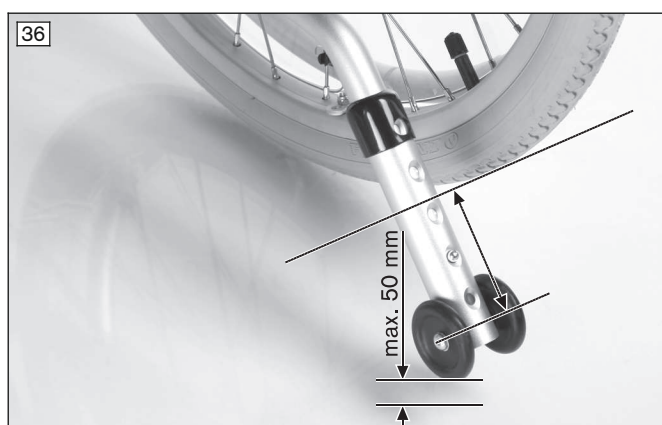
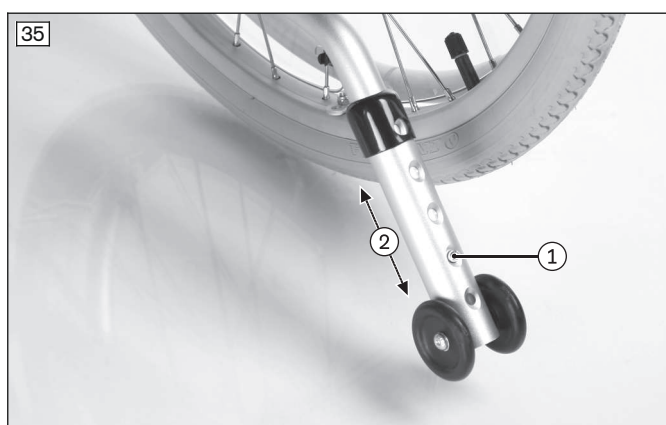
### ⚠ WARNING

#### 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.

- 1) Depress the spring button on the lower tube section of the anti-tipper (see fig. 35, item 1).
- 2) Adjust the length of the anti-tipper (see fig. 35, item 2):
  - The distance between the anti-tipper rollers and the ground must be **50 mm max.** (see fig. 36).
  - As a minimum, the anti-tipper rollers must project beyond the largest diameter of the rear wheel (see fig. 36).
- 3) Allow the spring button to engage.



## 6.11 Adjusting the swinging anti-tipper

### ⚠ WARNING

#### Incorrect installation of the swinging 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 support angle and the experience of the user, the use of a swinging anti-tipper may be necessary.
- ▶ The outer arm of the anti-tipper has to project beyond the largest diameter of the tyre. This basic setting may only be made by the qualified personnel.
- ▶ The space between the floor and lower edge of the anti-tipper must not exceed **50 mm**. This basic setting may only be made by qualified personnel.
- ▶ Verify that the anti-tipper has been installed and adjusted properly. Find the appropriate position with the assistance of a helper.

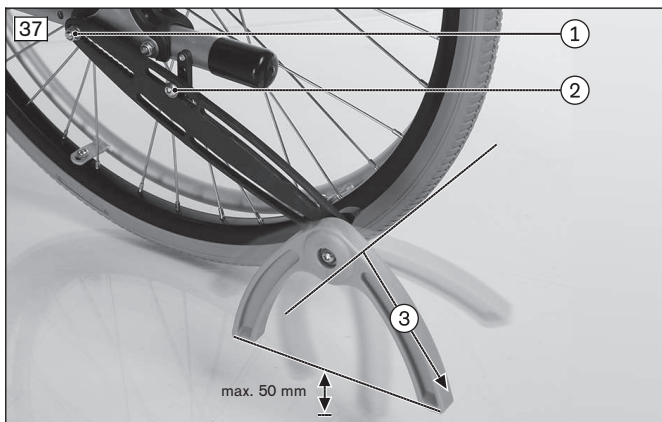
If necessary, the length and height of the swinging anti-tipper must be adjusted to the conditions of the wheelchair.

#### Adjusting the length of the swinging anti-tipper

- 1) Loosen the marked Allen head screws (see fig. 37, item 1/2).
- 2) Slide the Allen head screws in the slotted hole of the attachment plate until the pivot point of the anti-tipper clamp is aligned with the outer diameter of the tyre (see fig. 37, item 3).
- 3) Firmly tighten the Allen head screws.

#### Adjusting the height of the swinging anti-tipper

- 1) Loosen the marked Allen head screw (see fig. 37, item 2).
- 2) Move the Allen head screw with the spacer as required in the holes of the locking plate (not illustrated).
- 3) Adjust the underside of the anti-tipper clamp so that it is **approx. 20 to 30 mm (maximum 50 mm)** above the ground (see fig. 37, distance in mm).
- 4) Firmly tighten the Allen head screw.



## 6.12 Adjusting the lap belt

### ⚠ CAUTION

#### Incorrect approach to the adjustment process

Injuries, malpositions, illness of the user due to adjustment errors

- ▶ The qualified personnel is responsible for individual positioning and fitting of the belt system.
- ▶ Excessively tight adjustment of the belt system may lead to unnecessary pain or illness of the user.
- ▶ Adjusting the belt system too loosely can cause the user to slide into a dangerous position. In addition, the fastening snaps could open unintentionally if they slide against hard parts of clothing (e.g. buttons).

**⚠ CAUTION****Lack of instruction**

Injuries, malpositions, illness of the user due to information errors

- ▶ The qualified personnel is responsible for making sure that the user and/or attendant/nursing staff has understood the proper adjustment, use, maintenance and care of the belt system.
- ▶ In particular, ensure that the user and/or attendant/nursing staff knows how to quickly loosen and open the product to avoid delays in case of emergency.

Information on the settings can be found in the manufacturer's instructions for use accompanying each product.

### 6.13 Installing and adjusting the head support

**⚠ CAUTION****Incorrect settings**

Hitting components due to violent head movements of the user

- ▶ Do not position yourself behind the head support during adjustment, but at its side.

#### Installing the mounting kit

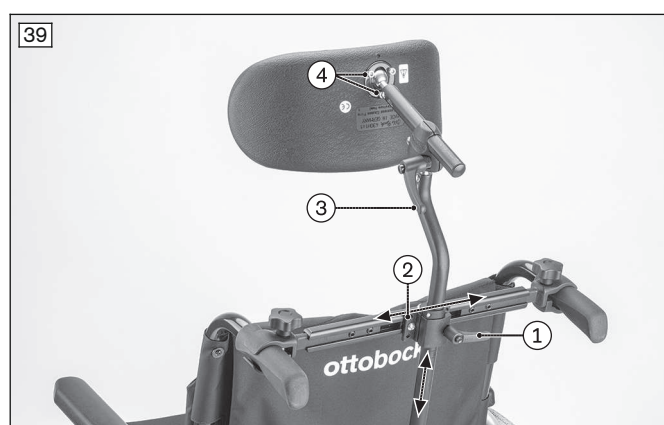
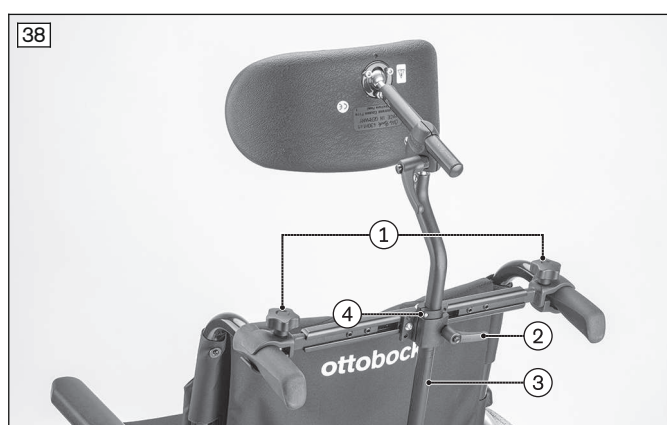
- 1) Adjust both push handles so they are parallel and at the same height (not illustrated).
  - 2) Install the mounting kit to hold the head support on the push handles using the clamping jaws and star handles (see fig. 38, item 1).
- Installation is described in more detail in the supplied instructions for use – reference number 647G367.

#### Attaching the head support

- 1) Open the clamp bracket on the mounting kit (see fig. 38, item 2).
- 2) Insert the adjustment tube of the head support into the clamp bracket (see fig. 38, item 3).

#### Adjusting the head support

- 1) **Height adjustment:** Loosen the clamping lever and adjust the head support height (see fig. 39, item 1).
- 2) **Sideways adjustment:** Loosen the mounting screws on the clamping plate and adjust the head support sideways (see fig. 39, item 2).
- 3) **Depth adjustment:** Loosen the clamping lever and adjust the head support depth (see fig. 39, item 3).
- 4) **Angle adjustment:** Loosen the mounting screws on the head support and adjust the angle (see fig. 39, item 4).
- 5) Once all settings have been adjusted, firmly close the clamping lever and tighten the mounting screws.
- 6) Position the stop on the adjustment tube and tighten (see fig. 38, item 4).



### 6.14 Adjusting the transport wheels

Adjust the height so that the transport wheels are approx. **20 mm** above the ground when the drive wheels are installed.

## 7 Delivery

### 7.1 Final inspection

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

- Are the drive wheels correctly positioned?
- Can the quick-release axles rotate freely?
- **For pneumatic tyres:** Is the tyre pressure correct (see tyre sidewall for information)?
- 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 impair the safety of users or third parties during the period of use.

The relevant product must be thoroughly cleaned and disinfected before re-use. Then have the product inspected with respect to its condition, wear and tear, and damage by authorised, qualified personnel. Worn and damaged parts as well as components that do not fit or are unsuitable for the 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 disregarding the information in this document, particularly due to improper use or unauthorised modification of the product.



## 10.2 Warranty

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

## 10.3 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.

## 11 Technical data

### INFORMATION

- ▶ Much of the technical data below is 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°**.

### INFORMATION

- ▶ Some of the measurements indicated below are values that were theoretically determined.
- ▶ Note that not all adjustment possibilities can be used with all product versions. Furthermore, the adjustment combinations are limited by the compact frame geometry.
- ▶ Technical changes and tolerances are reserved by the manufacturer.

### General information

	Start
Max. load [kg]	M4 XXL: 160; M6 Junior: 90
Max. load with use in a vehicle for transporting persons with reduced mobility [kg]	M6 Junior: 75
Transport weights (for seat width of 430 mm) [kg] <sup>1)</sup>	Frame: from approx. 9.5 Leg support: approx. 1.4 24" drive wheel (pair): approx. 3.5
Overall length (with leg support) [mm]	See table below
Overall width [mm]	See table below
Seat width [mm] <sup>2)</sup>	See table below
Seat height [mm]	See table below
Max. overall height [mm]	<1,200 (complies with recommendations of DIN EN 12183)
Caster wheel size ["]	5 to 8
Ground clearance [mm]	>30 (complies with recommendations of DIN EN 12183)
Min. tyre pressure [bar] <sup>3)</sup>	6
Permissible tyre type – drive wheels	PU tyres, pneumatic tyres
Permissible tyre type – caster wheels	PU tyres, pneumatic tyres, solid rubber
Steering range, approx. [mm] <sup>2) 4)</sup> (for seat width of 430 mm and seat depth of 420 mm)	1,300
Turning radius [mm] <sup>2)</sup>	<1,500 (complies with recommendations of DIN EN 12183)
Maximum permissible inclination [°]/[%] <sup>5)6)7)</sup>	7/12.3

<sup>1)</sup> The specified weights vary according to the selected options and model.

<sup>2)</sup> In accordance with ISO 7176-5, 8.12.

<sup>3)</sup> Varies according to tyre option; see the marking on the tyre wall.

<sup>4)</sup> Three-point turn by 180°.

<sup>5)</sup> Also applies for parking with wheel lock engaged.

<sup>6)</sup> Applies to all directions (upwards, downwards, sideways).

<sup>7)</sup> In accordance with ISO 7176-1.

**Additional information**

Start	Minimum	Maximum
Overall length (with leg supports) [mm]	Start M4 XXL: 870 <sup>1)</sup> Start M6 Junior: 800	Start M4 XXL: 1,090 Start M6 Junior: 1,065
Overall width (with standard drive wheels) [mm] <sup>2)</sup>	Start M4 XXL: 645 Start M6 Junior: 495	Start M4 XXL: 795 Start M6 Junior: 620
Overall width (with drive wheels with drum brake) [mm] <sup>2)</sup>	Start M4 XXL: 670 Start M6 Junior: 520	Start M4 XXL: 820 Start M6 Junior: 645
Overall height [mm]	Start M4 XXL: 840 <sup>3)</sup> Start M6 Junior: 840 <sup>4)</sup>	Start M4 XXL: 1,045 Start M6 Junior: 1,040 <sup>4)</sup>
Length (folded, without leg supports) [mm]	Start M4 XXL: 760 Start M6 Junior: 750	Start M4 XXL: 1,090 Start M6 Junior: 950
Width (folded) [mm]	Start M4 XXL: 340 Start M6 Junior: 300	Start M4 XXL: --- Start M6 Junior: ---
Height (folded) [mm]	Start M4 XXL: 840 <sup>3)</sup> Start M6 Junior: 840	Start M4 XXL: 1,045 Start M6 Junior: ---
Total weight (without user) [kg]	Start M4 XXL: 17.5 Start M6 Junior: 12	Start M4 XXL: 20 Start M6 Junior: 14.5
Weight of the heaviest removable component [kg]	---	1.8
Seat inclination [°]	0	5
Effective seat depth [mm]	Start M4 XXL: 430 Start M6 Junior: 310	Start M4 XXL: 490 Start M6 Junior: 370
Effective seat width [mm]	Start M4 XXL: 430 Start M6 Junior: 280	Start M4 XXL: 580 Start M6 Junior: 380
Front seat height [mm]	Start M4 XXL: 400 Start M6 Junior: 400	Start M4 XXL: 510 Start M6 Junior: 490
Rear seat height [mm]	Start M4 XXL: 380 Start M6 Junior: 370	Start M4 XXL: 500 Start M6 Junior: 490
Back support angle [°]	0 (vertical)	Start M4 XXL: 3 <sup>5)</sup> Start M6 Junior: 30 <sup>6)</sup>
Back support height [mm]	Start M4 XXL: 400 Start M6 Junior: 300	Start M4 XXL: 475 Start M6 Junior: 375
Lower leg length [mm]	Start M4 XXL: 270 Start M6 Junior: 160	Start M4 XXL: 470 Start M6 Junior: 450
Angle between leg support and seat surface <sup>7)</sup> [°]	70	80
Angle from foot plate to seat surface [°]	Fully adjustable	
Distance arm support to seat surface [mm]	Start M4 XXL: 200 Start M6 Junior: 200	Start M4 XXL: --- Start M6 Junior: 400
Front position of the arm support [mm]	Start M4 XXL: 220 <sup>9)</sup> Start M6 Junior: 175	Start M4 XXL: 310 Start M6 Junior: 270
Handrim diameter [mm]	470	540
Horizontal position of the quick-release axle [mm]	Start M4 XXL: 30 Start M6 Junior: - 35 <sup>9)</sup>	Start M4 XXL: 90 Start M6 Junior: 35 <sup>9)</sup>
Minimum turning radius [mm] <sup>10)</sup>	Start M4 XXL: 790 <sup>11)</sup> Start M6 Junior: 570	Start M4 XXL: 980 <sup>12)</sup> Start M6 Junior: ---

<sup>1)</sup> With the shortest seat depth and smallest wheelbase.

<sup>2)</sup> Specified for narrow handrim attachment.

<sup>3)</sup> With smallest seat height and smallest back support height.

<sup>4)</sup> Minimum value for 22" drive wheel size and non-height-adjustable push handles; maximum value for height-adjustable push handles.

<sup>5)</sup> With standard back support tubes.

<sup>6)</sup> With back support angle adjustment of 30°.

<sup>7)</sup> With standard leg supports, value does not apply to angle-adjustable leg supports.

- 8) With long forearm support  $\geq 160$  mm.  
 9) Minimum value = setting for active users; maximum value = setting for passive users.  
 10) In accordance with ISO 7176-5.  
 11) With minimum seat depth and seat width.  
 12) With maximum seat depth and seat width.

### Overall length (with leg support) [mm]

Start	Drive wheel size					
	20"		22"		24"	
	Min. <sup>1)</sup>	Max. <sup>2)</sup>	Min. <sup>1)</sup>	Max. <sup>2)</sup>	Min. <sup>1)</sup>	Max. <sup>2)</sup>
<b>M4 XXL</b>	---	---	870	1,060	895	1,090
<b>M6</b>	800	1,015	825	1,040	850	1,065

1) Measured at min. seat depth (SD), smallest standard lower leg length (300 mm), short/active wheelbase

2) Measured at max. seat depth (SD), largest standard lower leg length (470 mm), long/passive wheelbase

### Overall width [mm]

<b>⚠ CAUTION</b>
<b>Exceeding limit values</b>
Risk of injury due to inaccessibility of emergency exits
▶ The recommended overall width for manual wheelchairs in operational condition is <b>700 mm</b> . This specification should ensure unimpeded use of emergency exits and trains, for example.
▶ Please note that the actual wheelchair dimensions may exceed the recommended value in versions with very large seat widths (see table below).

Seat width	Standard drive wheel, max.	Drive wheel with drum brake, max.
280	495	520
305	515	545
330	545	570
355	570	595
380	595	620
405	620	645
430	645	670
455	670	695
480	695	720
505	720	745
530	745	770
555	770	795
580	795	820

1) Specified for narrow handrim attachment (in case of wide attachment: +20 mm). For attachment of a height-adjustable side panel: all overall widths +20 mm.

### Front seat height [mm]<sup>1)</sup> – Start M4 XXL

Caster fork	Caster wheel size				
	5"	5.5"	6"	7"	8"
<b>Short</b>	400–440	420–440	430–450	450–470	---
<b>Long</b>	440–470	440–480	450–490	470–500	480–510

### Front seat height [mm]<sup>1)</sup> – Start M6 Junior

Caster fork	Caster wheel size	
	5"	6"
<b>Short</b>	400–440	430–450

Caster fork	Caster wheel size	
	5"	6"
Long	440-470	450-490

1) Adjustment ranges = Specified at 0° seat angle, without seat cushion:

- Front seat height minus rear seat height <= 35 mm
- Caster wheels depending on front seat height
- Caster forks depending on the front seat height and caster wheels
- Drive wheel size depending on the rear seat height

### Rear seat height [mm]<sup>1)</sup> – Start M4 XXL

Free mounting positions	Drive wheel size	
	22"	24"
1	380	410
2	410	440
3	440	470
4	470	500

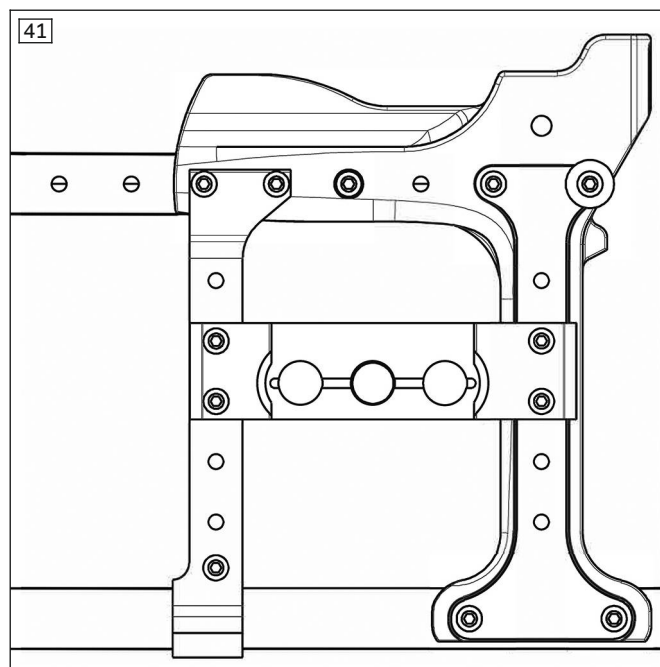
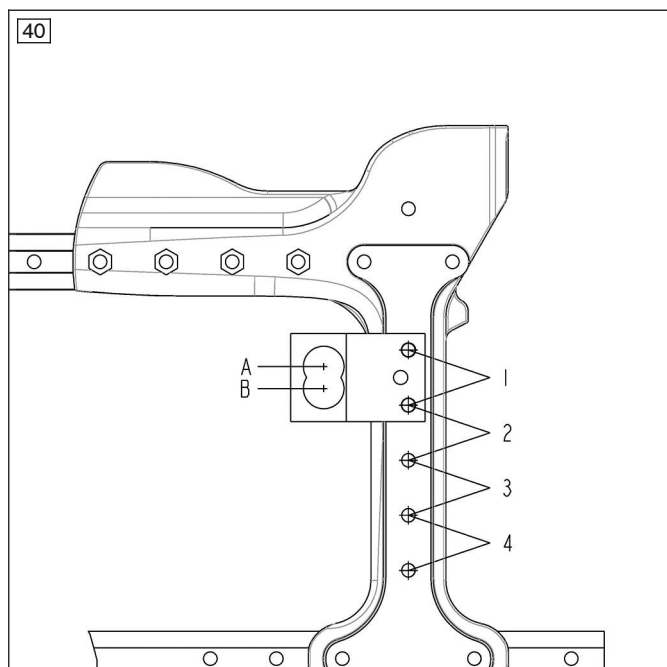
### Rear seat height [mm]<sup>1)</sup> – Start M6 Junior

Drive wheel size	Setting range
20"	370-430
22"	380-450
24"	410-490

1) The values indicated are rounded values which have been theoretically determined. Max. deviation 10 mm. The front seat height depends on the selected wheel size, caster fork and mounting position. Please refer to the seat height table!

Specified without seat cushion at 0° seat inclination. The maximum possible seat inclination is 35 mm.

### Drive wheel adapter – Start M6 Junior (left); Start M4 XXL (right)



### Environmental conditions

Temperatures and relative humidity	
Operating temperature [°C (°F)]	-10 to +40 (14 to 104)
Transport and storage temperature [°C (°F)]	-10 to +40 (14 to 104)

<b>Temperatures and relative humidity</b>	
Relative humidity [%]	45 to 85

## **12 Appendices**

### **12.1 Required tools**

The following tools are required for adjustments and maintenance work:

- Allen key 4 – 6 mm
- Ring and open-ended wrenches in sizes 10, 11, 13, 19 and 24
- Set of screwdrivers
- Torque wrench (measurement range 5-50 Nm)
- Tyre lever
- Tyre pump

### **12.2 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



A series of horizontal lines spanning the width of the page, providing a template for writing.

# Kundenservice/Customer Service

## Europe

Otto Bock HealthCare Deutschland GmbH  
Max-Näder-Str. 15 · 37115 Duderstadt · Germany  
T +49 5527 848-3433 · F +49 5527 848-1460  
healthcare@ottobock.de · www.ottobock.de

Otto Bock Healthcare Products GmbH  
Brehmstraße 16 · 1110 Wien · Austria  
F +43 1 5267985  
service-admin.vienna@ottobock.com · www.ottobock.at

Otto Bock Adria d.o.o. Sarajevo  
Ramiza Salčina 85  
71000 Sarajevo · Bosnia-Herzegovina  
T +387 33 255-405 · F +387 33 255-401  
obadria@bih.net.ba · www.ottobockadria.com.ba

Otto Bock Bulgaria Ltd.  
41 Tzar Boris III<sup>rd</sup> Blvd. · 1612 Sofia · Bulgaria  
T +359 2 80 57 980 · F +359 2 80 57 982  
info@ottobock.bg · www.ottobock.bg

Otto Bock Suisse AG  
Luzerner Kantonsspital 10 · 6000 Luzern 16 · Suisse  
T +41 41 455 61 71 · F +41 41 455 61 70  
suisse@ottobock.com · www.ottobock.ch

Otto Bock ČR s.r.o.  
Protetická 460 · 33008 Zruč-Senec · Czech Republic  
T +420 377825044 · F +420 377825036  
email@ottobock.cz · www.ottobock.cz

Otto Bock Iberica S.A.  
C/Majada, 1 · 28760 Tres Cantos (Madrid) · Spain  
T +34 91 8063000 · F +34 91 8060415  
info@ottobock.es · www.ottobock.es

Otto Bock France SNC  
4 rue de la Réunion · CS 90011  
91978 Courtaboeuf Cedex · France  
T +33 1 69188830 · F +33 1 69071802  
information@ottobock.fr · www.ottobock.fr

Otto Bock Healthcare plc  
32, Parsonage Road · Englefield Green  
Egham, Surrey TW20 0LD · United Kingdom  
T +44 1784 744900 · F +44 1784 744901  
bockuk@ottobock.com · www.ottobock.co.uk

Otto Bock Hungária Kft.  
Tatai út 74. · 1135 Budapest · Hungary  
T +36 1 4511020 · F +36 1 4511021  
info@ottobock.hu · www.ottobock.hu

Otto Bock Adria d.o.o.  
Dr. Franje Tuđmana 14 · 10431 Sveta Nedelja · Croatia  
T +385 1 3361 544 · F +385 1 3365 986  
ottobockadria@ottobock.hr · www.ottobock.hr

Otto Bock Italia Srl Us  
Via Filippo Turati 5/7 · 40054 Budrio (BO) · Italy  
T +39 051 692-4711 · F +39 051 692-4720  
info.italia@ottobock.com · www.ottobock.it

Otto Bock Benelux B.V.  
Mandenmaker 14 · 5253 RC  
Nieuwkuijk · The Netherlands  
T +31 73 5186488 · F +31 73 5114960  
info.benelux@ottobock.com · www.ottobock.nl

Industria Ortopédica Otto Bock Unip. Ltda.  
Av. Miguel Bombarda, 21 - 2º Esq.  
1050-161 Lisboa · Portugal  
T +351 21 3535587 · F +351 21 3535590  
ottobockportugal@mail.telepac.pt

Otto Bock Polska Sp. z o. o.  
Ulica Koralowa 3 · 61-029 Poznań · Poland  
T +48 61 6538250 · F +48 61 6538031  
ottobock@ottobock.pl · www.ottobock.pl

Otto Bock Romania srl  
Șos de Centura Chitila - Mogoșoaia Nr. 3  
077405 Chitila, Jud. Ilfov · Romania  
T +40 21 4363110 · F +40 21 4363023  
info@ottobock.ro · www.ottobock.ro

OOO Otto Bock Service  
p/o Pultikovo, Business Park „Greenwood”,  
Building 7, 69 km MKAD  
143441 Moscow Region/Krasnogorskiy Rayon  
Russian Federation  
T +7 495 564 8360 · F +7 495 564 8363  
info@ottobock.ru · www.ottobock.ru

Otto Bock Scandinavia AB  
Koppargatan 3 · Box 623 · 60114 Norrköping · Sweden  
T +46 11 280600 · F +46 11 312005  
info@ottobock.se · www.ottobock.se

Otto Bock Slovakia s.r.o.  
Röntgenova 26 · 851 01 Bratislava 5 · Slovak Republic  
T +421 2 32 78 20 70 · F +421 2 32 78 20 89  
info@ottobock.sk · www.ottobock.sk

Otto Bock Sava d.o.o.  
Industrijska bb · 34000 Kragujevac · Republika Srbija  
T +381 34 351 671 · F +381 34 351 671  
info@ottobock.rs · www.ottobock.rs

Otto Bock Ortopedi ve  
Rehabilitasyon Tekniği Ltd. Şti.  
Mecidiyeköy Mah. Lati Lokum Sok.  
Meriç Sitesi B Blok No: 30/B  
34387 Mecidiyeköy-Istanbul · Turkey  
T +90 212 3565040 · F +90 212 3566688  
info@ottobock.com.tr · www.ottobock.com.tr

## Africa

Otto Bock Algérie E.U.R.L.  
32, rue Ahcène Outaleb - Coopérative les Mimosas  
Mackle-Ben Aknoun · Alger · DZ Algérie  
T +213 21 913863 · F +213 21 913863  
information@ottobock.fr · www.ottobock.fr

Otto Bock Egypt S.A.E.  
28 Soliman Abaza St. Mohandessein · Giza · Egypt  
T +20 2 37606818 · F +20 2 37605734  
info@ottobock.com.eg · www.ottobock.com.eg

Otto Bock South Africa (Pty) Ltd  
Building 3 Thornhill Office Park · 94 Bekker Road  
Midrand · Johannesburg · South Africa  
T +27 11 564 9360  
info-southafrica@ottobock.co.za  
www.ottobock.co.za

## Americas

Otto Bock Argentina S.A.  
Av. Belgrano 1477 · CP 1093  
Ciudad Autónoma de Buenos Aires · Argentina  
T +54 11 5032-8201 / 5032-8202  
atencionclientes@ottobock.com.ar  
www.ottobock.com.ar

Otto Bock do Brasil Tecnica Ortopédica Ltda.  
Alameda Maria Tereza, 4036, Bairro Dois Córregos  
CEP: 13.278-181, Valinhos-São Paulo · Brasil  
T +55 19 3729 3500 · F +55 19 3269 6061  
ottobock@ottobock.com.br · www.ottobock.com.br

Otto Bock HealthCare Canada  
5470 Harvester Road  
Burlington, Ontario, L7L 5N5, Canada  
T +1 800 665 3327 · F +1 800 463 3659  
CACustomerService@ottobock.com  
www.ottobock.ca

Oficina Ottobock Habana  
Calle 3ra entre 78 y 80.  
Edificio Jerusalem · Oficina 112 · Calle 3ra.  
Playa, La Habana. Cuba  
T +53 720 430 69 · +53 720 430 81  
hector.corcho@ottobock.com.br  
www.ottobock.com.br

Otto Bock HealthCare Andina Ltda.  
Calle 138 No 53-38 · Bogotá · Colombia  
T +57 1 8619988 · F +57 1 8619977  
info@ottobock.com.co · www.ottobock.com.co

Otto Bock de Mexico S.A. de C.V.  
Prolongación Calle 18 No. 178-A  
Col. San Pedro de los Pinos  
C.P. 01180 México, D.F. · Mexico  
T +52 55 5575 0290 · F +52 55 5575 0234  
info@ottobock.com.mx · www.ottobock.com.mx

Otto Bock HealthCare LP  
11501 Alterra Parkway Suite 600  
Austin, TX 78758 · USA  
T +1 800 328 4058 · F +1 800 962 2549  
USCustomerService@ottobock.com  
www.ottobockus.com

## Asia/Pacific

Otto Bock Australia Pty. Ltd.  
Suite 1.01, Century Corporate Centre  
62 Norwest Boulevard  
Baulkham Hills NSW 2153 · Australia  
T +61 2 8818 2800 · F +61 2 8814 4500  
healthcare@ottobock.com.au · www.ottobock.com.au

Beijing Otto Bock Orthopaedic Industries Co., Ltd.  
B12E, Universal Business Park  
10 Jiuxianqiao Road, Chao Yang District  
Beijing, 100015, P.R. China  
T +8610 8598 6880 · F +8610 8598 0040  
news-service@ottobock.com.cn  
www.ottobock.com.cn

Otto Bock Asia Pacific Ltd.  
Unit 1004, 10/F, Greenfield Tower, Concordia Plaza  
1 Science Museum Road, Tsim Sha Tsui  
Kowloon, Hong Kong · China  
T +852 2598 9772 · F +852 2598 7886  
info@ottobock.com.hk · www.ottobock.com

Otto Bock HealthCare India Pvt. Ltd.  
20th Floor, Express Towers  
Nariman Point, Mumbai 400 021 · India  
T +91 22 2274 5500 / 5501 / 5502  
information@indiaottobock.com · www.ottobock.in

Otto Bock Japan K. K.  
Yokogawa Building 8F, 4-4-44 Shibaura  
Minato-ku, Tokyo, 108-0023 · Japan  
T +81 3 3798-2111 · F +81 3 3798-2112  
ottobock@ottobock.co.jp · www.ottobock.co.jp

Otto Bock Korea HealthCare Inc.  
4F Agaworld Building · 1357-74, Seocho-dong  
Seocho-ku, 137-070 Seoul · Korea  
T +82 2 577-3831 · F +82 2 577-3828  
info@ottobockkorea.com · www.ottobockkorea.com

Otto Bock South East Asia Co., Ltd.  
1741 Phaholyothin Road  
Kwaeng Chatuchark · Khet Chatuchark  
Bangkok 10900 · Thailand  
T +66 2 930 3030 · F +66 2 930 3311  
obsea@ottobock.co.th · www.ottobock.co.th

## Other countries

Ottobock SE & Co. KGaA  
Max-Näder-Straße 15 · 37115 Duderstadt · Germany  
T +49 5527 848-1590 · F +49 5527 848-1676  
reha-export@ottobock.de · www.ottobock.com

Ihr Fachhändler | Your specialist dealer



Otto Bock Mobility Solutions GmbH  
Lindenstraße 13 · 07426 Königsee/Germany  
[www.ottobock.com](http://www.ottobock.com)

