ENG

Tilty Vario

Service Record

In the following all individual adjustments of the wheelchair are described. These adjustments require tools and specialised knowledge. Please leave the adjustments to a qualified rehab consultant.

MADE IN GERMANY

Unique people, unique solutions.

Imprint
SORG Rollstuhltechnik GmbH+Co.KG
Benzstraße 3-5
68794 Oberhausen-Rheinhausen / Germany

Tel. +49 7254-9279-0
Fax +49 7254-9279-10
E-Mail info@sorgrollstuhltechnik.de
Web www.sorgrollstuhltechnik.de

Revision status
2019-07-12

Technical status
Technical changes and misprints reserved. The pictures in this Instructions for use can differ from the actual equipment components. However, a corresponding conduction is possible.

Copyright
All texts, pictures and graphics underlie copyright protection. All rights, including copying, publishing, editing and translating, remain reserved. © by SORG Rollstuhltechnik GmbH+Co. KG Benzstraße 3-5, 68794 Oberhausen-Rheinhausen / Germany.

Our terms and conditions can be found on our order forms and at www.sorgrollstuhltechnik.de/impressum.

Table of content

1 Wheelchair overview 5

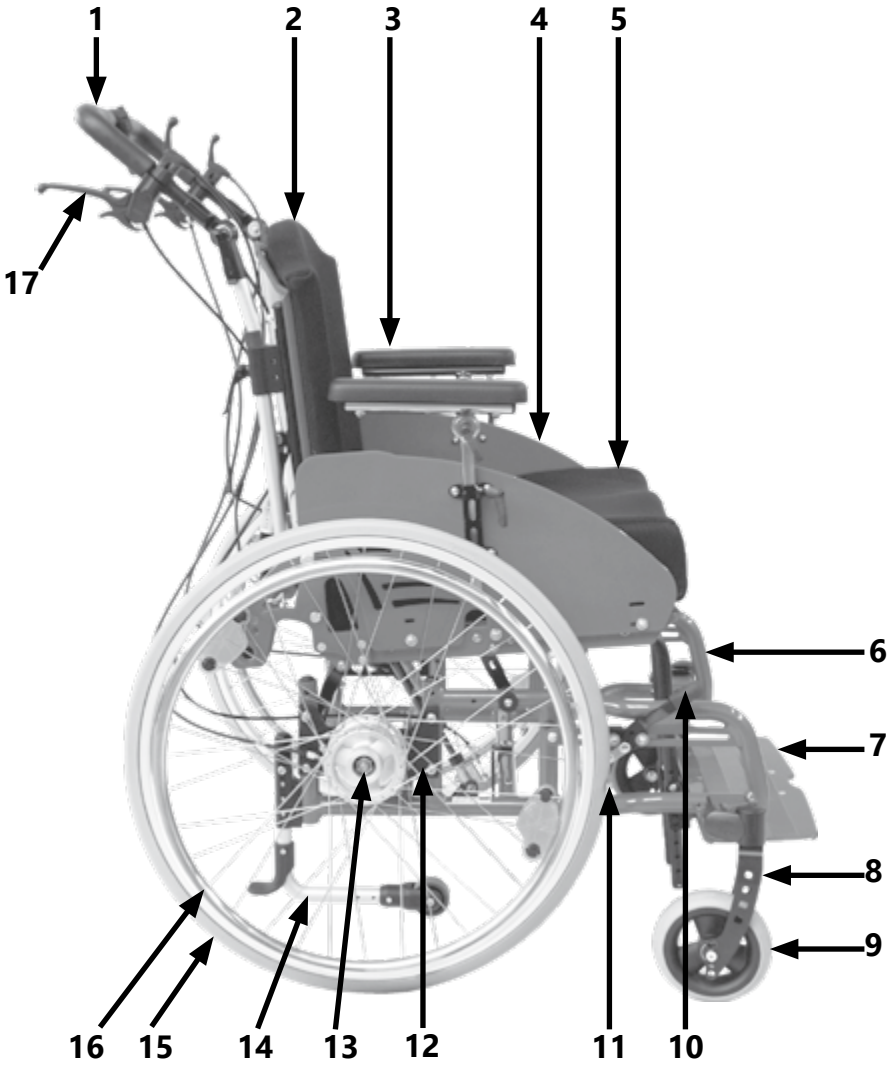
2 General information 6
- **2.1 General indications 6**
- **2.2 Documentation indications 6**
- **2.3 Required torques and tools 6**
- **2.4 Explanation of symbols 7**
- **2.5 General safety instructions 8**

3 Assembly Groups 9
- **3.1 Assembly Group Wheels 9**
  - 3.1.1 Position of the axle plate 9
  - 3.1.2 Position of the rear wheels 10
  - 3.1.3 Camber 11
  - 3.1.4 Casters 12
- **3.2 Assembly Group Seat 13**
  - 3.2.1 Changing the seat depth 13
  - 3.2.2 Changing the seat width 14
- **3.3 Assembly Group Back 16**
  - 3.3.1 Changing the back height 16
  - 3.3.2 Adjusting the back cover 16
- **3.4 Assembly group belt system 17**
  - 3.4.1 Displacing the bottom metal locks 17
  - 3.4.2 Displacing the top metal locks 17
  - 3.4.3 Height setting of the belt holders 17
- **3.5 Assembly group leg support 18**
  - 3.5.1 Standard leg support 18
  - 3.5.2 Foot plate: can be elevated, continuos/ divided 19
  - 3.5.3 Foot plate angle 19
  - 3.5.4 leg rest 20
- **3.6 Assembly group side guard 21**
- **3.7 Assembly group brake 22**
  - 3.7.1 Wheel lock (standard Knee lever brake) 22
  - 3.7.2 Cable brake 23
  - 3.7.3 Drum brake 24
- **3.8 Assembly group anti-tipper 25**
- **3.9 Assembly group truss pads 26**
  - 3.9.1 Classification 26
  - 3.9.2 Vertical setting 26
  - 3.9.3 Horizontal setting 27
  - 3.9.3 Fine adjustment of the truss pad holder 27
  - 3.9.4 Adjusting to the user 27
- **3.10 Assembly group outdoor front end 28**

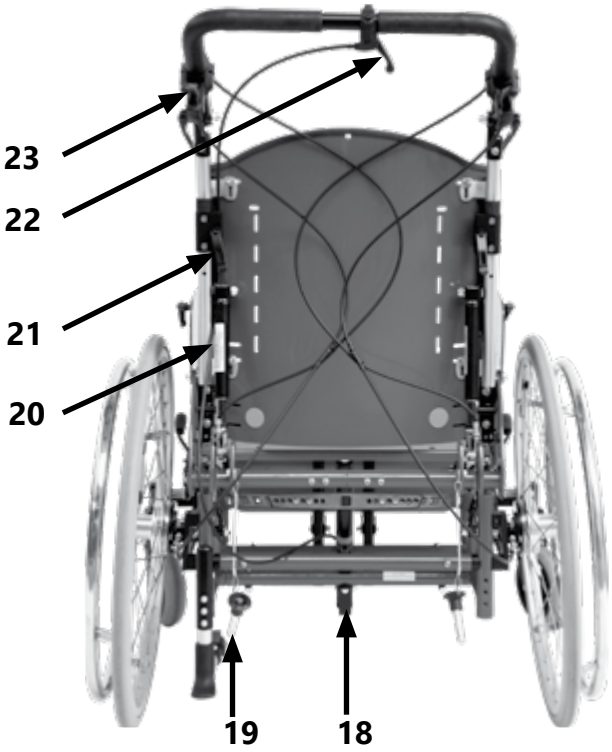
4 Repairs and maintenance 31
- **4.1 Repairs 31**
- **4.2 Spare parts 31**
- **4.3 Maintenance 31**
- **4.4 Disinfection 31**
- **4.5 Storage 31**
- **4.6 Reinstatement 32**
- **4.7 Disposal 32**
- **4.8 Maintenance/ Inspection 32**

5 Technical specifications 34
- **5.1 Data and measurements 34**
- **5.2 Meaning of labels 35**
- **5.3 Konformitätserklärung 35**

1 Wheelchair overview



1 push handle
2 firm curved back plate
3 arm rest
4 side guard
5 anatomic seat cushion
6 frame
7 foot plate
8 caster fork
9 caster
10 brake lever
11 brake block
12 axle plate
13 quick release axle
14 anti-tipper
15 rear wheel
16 handrim
17 brake lever drum brake



18 frame bar
19 Locking pin for locking the back gas pressure spring
20 gas pressure spring
21 Eccentric tensioner for the Height adjustment of the push handle
22 Release lever seat tilt
23 brake lever drum brake

2 General information

2.1 General indications

In the following all individual settings, adjustments and repairs as well as the yearly inspection of the wheelchair are described. These adjustments require tools and specialised knowledge. Please leave the adjustments to a qualified rehab consultant.

Should questions or suggestions come up then please contact your medical supply store or our team (+49 7254 9279-0).

2.2 Documentation indications

Please note:

- Information about before sale can be found in the instructions for use
- Infomation for the user can be found in the instructions for use
- For maintenance instructions see: Chapter 4 (Repair & Maintenance)

2.3 Required torques and tools

For the following screws needed torque:

- M5: 5 Nm;
- M6: 7 Nm;
- M6 (axle plate) 10 Nm
- M8: 20 Nm;
- M10 (nut): 25 Nm; (caster)
- quick release axle fitting 40 Nm

Needed tools:

- torque wrench (5-50 Nm)
- open end wrench
- flex ratchet handle with socket wrench inserts
- hexagon screw driver
- Phillips screw driver
- flat head screw driver
- plastic mallet
- side cutter
- threadlocker (fluid)
- bicycle inner tube repair kit
- work bench/jaw vise with rubber pads

2.4 Explanation of symbols

ATTENTION! Warnings for personal Safety aspects that are of the utmost importance.

CORRECT safety adjustment/ use

WRONG adjustment/ use

NOT ALLOWED

References to additional/continuing reading.

important detail

correct or proper use/setting

incorrect or improper use/setting

(A); (B) reference from text to detail

Use

push/ pull/ insert / move/

Push in specific direction

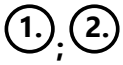
Setting or adjusting the angle

open/ close

Turn clockwise

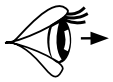
Turn counter-clockwise

steps to be done at the same time



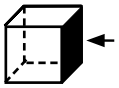
steps to be done after each other

steps to be done on both sides

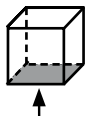


point of view

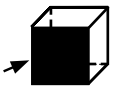
view from top



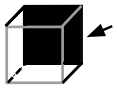
view from the side



view from the bottom



view from the front



view from the back

fasten parts

remove parts

2.5 General safety instructions

⚠ **Before each use be sure to check:**
- frame, back tubes, attachments and accessories for visible damage, bends, cracks or missing/loose scews,
- wheels/quick release axles for firm fit,
- sufficient tire pressure, tire tread,
- functionality of the brakes,
- firm fit of the angle adjustment elements/ eccentric clamps,
- firm fit of the seat plate/ the back/ the foot plate,
- functionality of the anti-tipper/ seat and back straps,
- if all previously disassembled parts are re-inserted or firmly locked.

⚠ There is a risk of injuries (e. g. such as bruising) on all rotating or folding parts, including adjustments, repairs and transport.

⚠ All wheelchair parts are to be handled with care. Do not throw or drop removable parts.

⚠ Before repairs or adjustments are made, clean/didinfect the wheelchair and secure it from tipping over and/or falling down.

⚠ Only use original spare parts.

⚠ Safety nuts may only be used once. Lossened safety nuts must be replaced by new ones.

⚠ Only the regular maintenance of all safety-relevant parts on the wheelchair by a qualified rehab workshop protects against damage and maintains our manufacturer's warranty.

Combination with products from other manufacturers

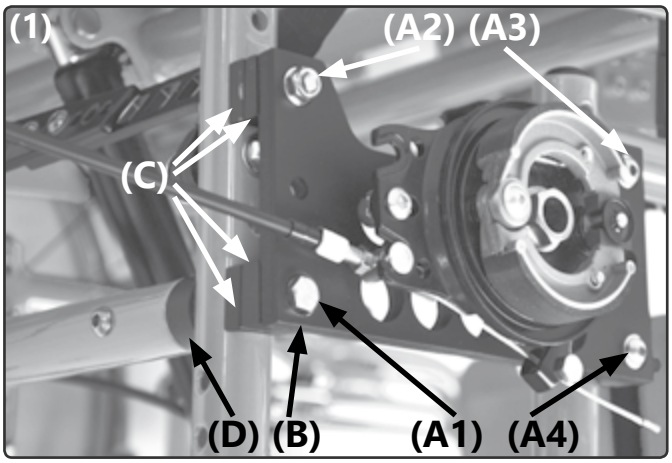
⚠ The wheelchair may only be combined with the electrical auxiliary drives apporved by the manufacturer. Restrictions or adaptations as well as the attachment itself must be done by the supplier of the additional system or the authorized specialist dealer.
Please check the conditions with the manufacturerer of the audiliary drives.

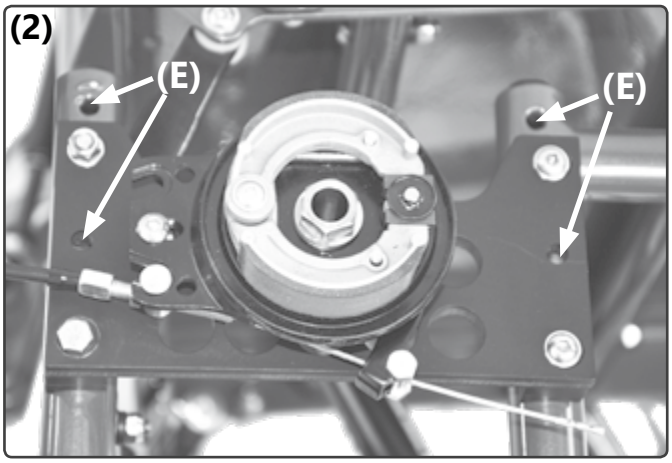
⚠ In combination of wheelchair and electric auxiliary drive, certain strains can occur which can lead to damage to the wheelchair. Slowly approach obstacles and carefully overcome them so that little force is applied to the caster, driving wheel and wheelchair as a whole.

3.1.1 Position of the axle plate

(1) To change the position of the axle plate remove the driving wheels and secure the wheelchair from rolling away.

- With the screws **(A1-4)** remove the axle plate **(B)** incl. all angle parts and half shells **(C)** on one side first.
- The crossbar adapter **(D)** is attached with the screw **(A1)** at delivery. When moving the axle plate, this screw must be replaced with a new shorter one.
- Place the angle parts and half shells **(C)** from the inside of the axle plate in the four screws **(A1-4)**.
- **(2)** Place the axle plate **(B)** incl. the screws **(A1-4)**, angle parts and half shells **(C)** in the holes **(E)** of the frame tubes
- and screw the axle plate tightly to the frame.
- **(1)** Screw the crossbar adapter **(D)** with the new screw to the frame tube.
- Proceed the same on the opposite side.
- The axle plate can be turned vertically 180° in order to reach a higher position. For this, proceed in the same manner.





⚠ After every change on the driving wheels the effectiveness of the knee lever brake must be checked and, if necessary, newly adjusted.

3.1.2 Position of the rear wheels

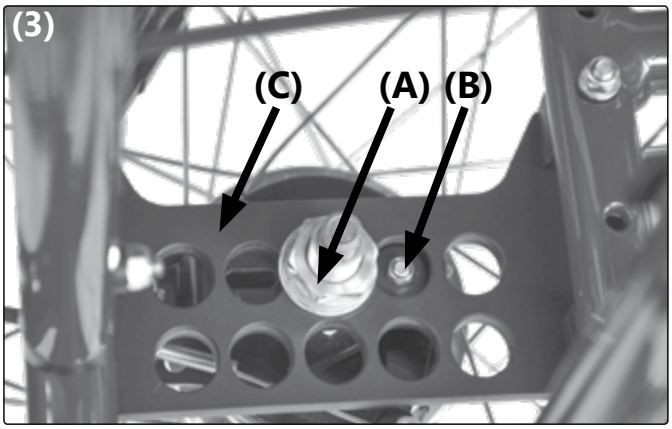
(1) To change the position of the driving wheels remove the driving wheels and secure the wheelchair from rolling away.

- Remove the quick release axle fitting **(A)** completely incl. the drum brake counterpiece **(B)**,
- move the quick release axle fitting **(A)** incl. the drum brake counterpiece **(B)**, in the desired hole of the axle plate **(C)**
- and retighten the quick release axle fitting **(A)** incl. its locking nut.
- Now screw on the drum brake counterpiece **(B)**.
- Proceed accordingly on the opposite side.
- Make sure that both quick release axle fittings are positioned the same on both sides.
- Replace the driving wheels and be sure that the driving wheels have the same distance to the side guards on both sides.

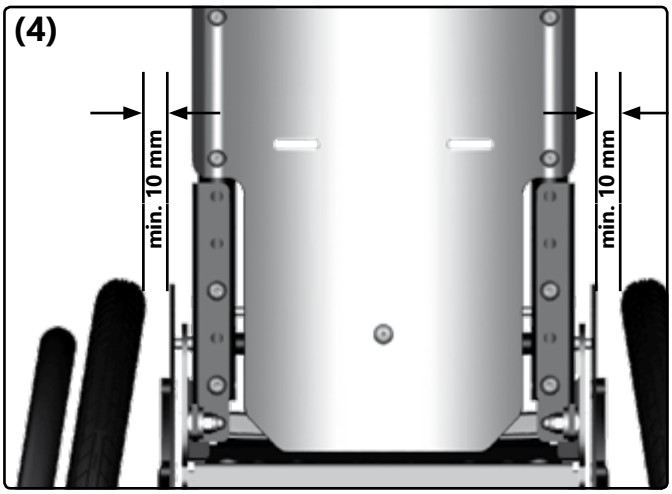
⚠ **(2)** The driving wheels must have a distance of 10 mm at the top from the side guards. If necessary, you must correct the position by turning the quick release axle fitting in or out.

⚠ After every change on the driving wheels the effectiveness of the knee lever brake must be checked and, if necessary, newly adjusted.

(3)



(4)



3.1.3 Camber

(1) The camber is set with different camber parts (spare part). Picture **(1)** shows:

- half shell **(A)**
- camber wedge **(B)**
- axle plate **(C)**
- quick-release axle fitting **(D)**
- drum brake hub **(E)**

(1) In order to change the camber remove the driving wheels and secure the wheelchair from rolling away.

- Remove the axle plate **(C)** as describrd in the previous chapter. The drum brake hub **(E)** with the quick release axle fitting **(D)** do not need to be removed.
- Replace all camber wedges **(B)** with the new ones.

Please note that you remove the back crossbar incl. the crossbar adapter with the screw in the bottom back. (see previous chapter).

(1+2) Applying the new camber wedges:

- Place the four screws **(F)** in the appropriate holes of the axle plate,
- after, „thread" the new camber wedges **(B)** on the screws **(F)**.

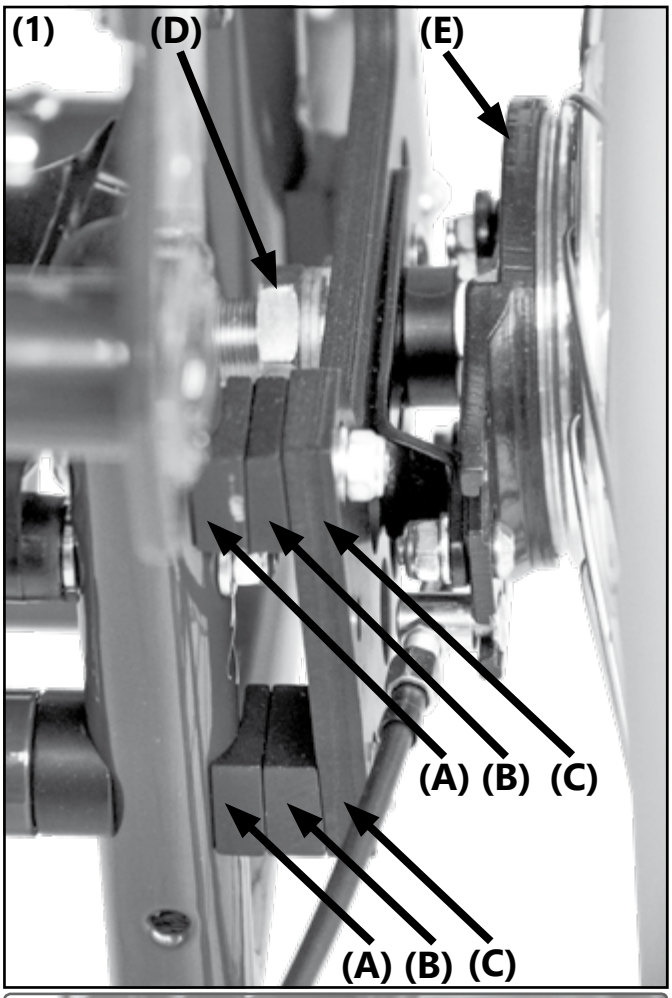
Please note that the camber wedges are not symmetrical and that they have a ,,front" and a „back".

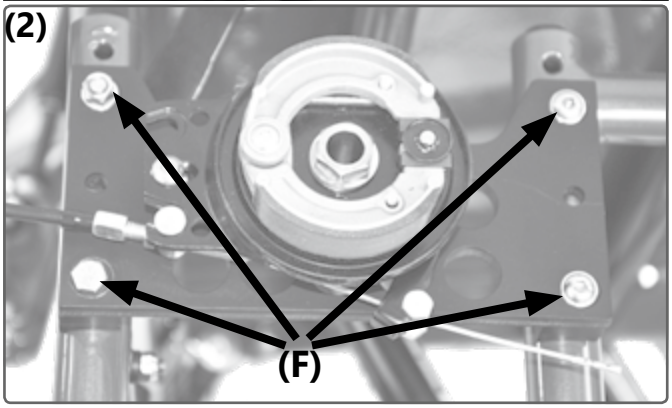
- „Thread" the half shells **(A)** on the screws **(F)**
- and tighten them on the appropriate position on the frame.
- Check the distance from driving wheel to side guard(see previous chapter).

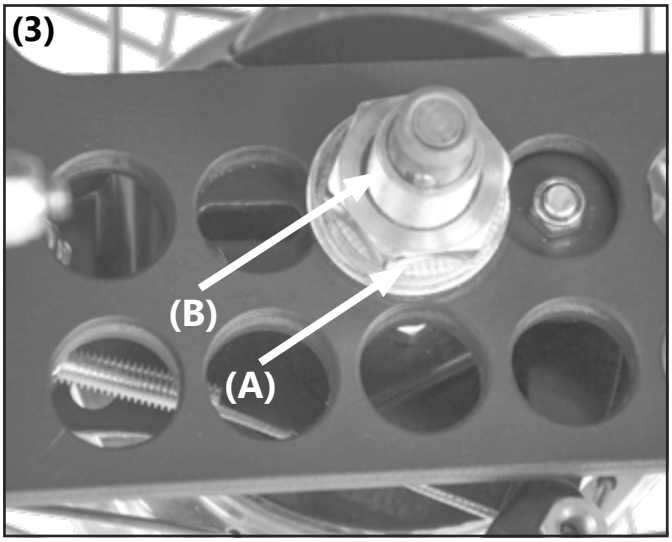
(3) If necessary, correct the quick release axle fitting and turn it as far in or out so that the tire of the wheel has as little distance as possible, however atleast 10 mm from the side guard or the skirt guard.

- Loosen the nuts **(A)**,
- turn the quick release axle fitting **(B)** in or out and
- retighten the nuts **(A)**. (tightening torque nuts M18 fitting 35 Nm)

⚠ After every change on the driving wheels the effectiveness of the knee lever brake must be checked and, if necessary, newly adjusted.







3.1.4 Casters

The caster adapters are attached to the frame tube with two screws each. The (in driving direction) front one goes in a thread in the frame tube, the back one **(3A)** through the adapter and the eccentric plate **(3C)**.

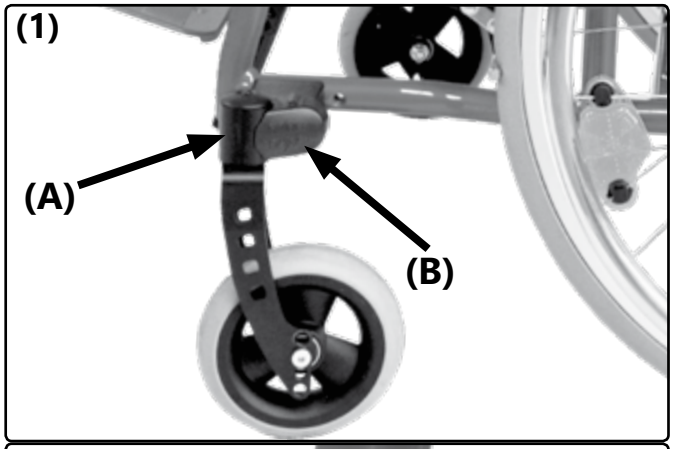
(1+2) To displace the caster adapters **(A)**:
- secure the wheelchair from rolling away.
- Remove the protective cap **(B)** on both sides of the wheelchair.
- **(2)** Remove both screw connections **(A)** on both sides.
- Move the screws **(A)** in the new holes **(B)**.
- Then put on (if available) the spacers **(C)** from the outside
- and then the adapter **(D)** on the screws **(A)**
- and retighten them.
- Proceed in the same manner on the opposite side.

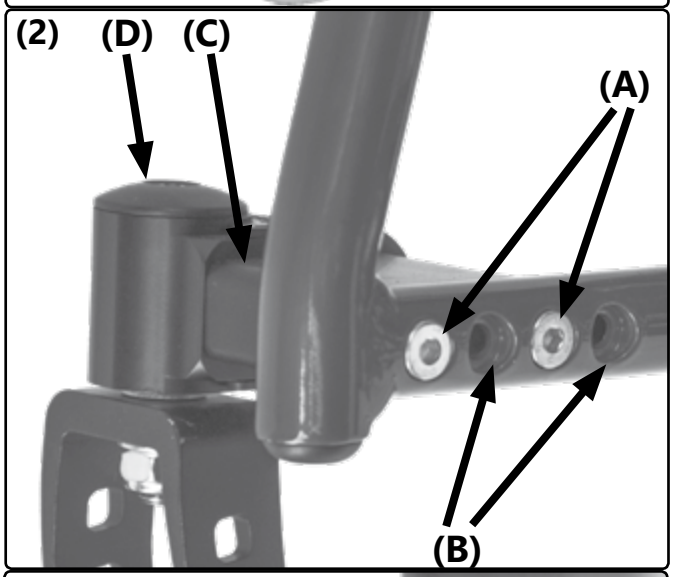
The caster adapter must be aligned to the floor at an angle of 90°. Otherwise the follow-up of the fork creates wave like movements in curves.

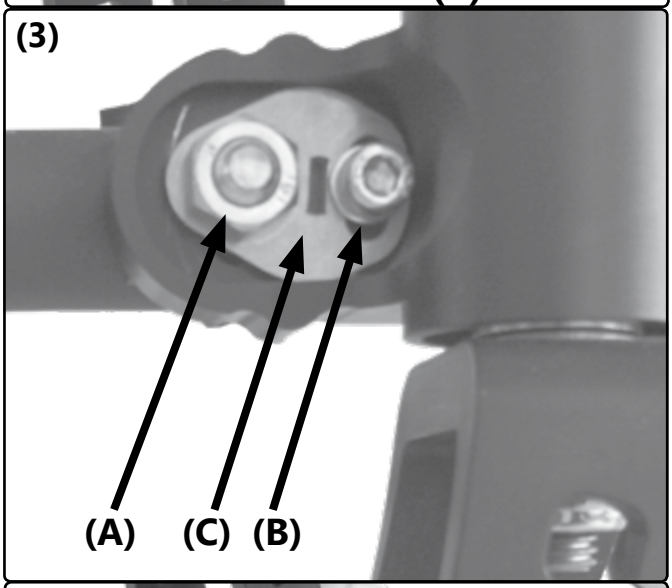
(3) To adjust the caster adapters:
- Place the wheelchair on even ground.
- From the front, place a right angle to the adapter.
- Loosen both nuts **(A+B)**.
- With a screw driver turn the eccentric plate **(C)** in the slot in the appropriate direction until the adapter is in an exact 90° angle.
- Retighten both nuts **(A+B)**.

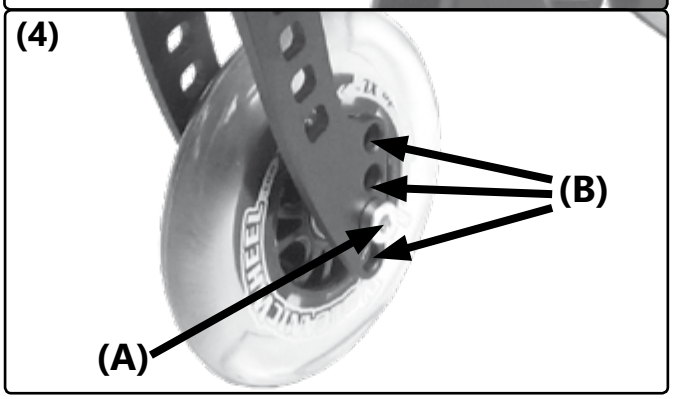
(4) To displace/replace the casters:
- Remove the screw connections **(A)** of the axle completely,
- remove the husks,
- replace the casters,
- guide the husks and wheels, if necessary, in the desired holes **(B)**,
- replace the safety nuts with new ones (!)
- and retighten all screws.

Be sure to check that after moving the casters, the caster adapter is still at a right angle. If necessary, you must adjust the caster adapter as stated above.







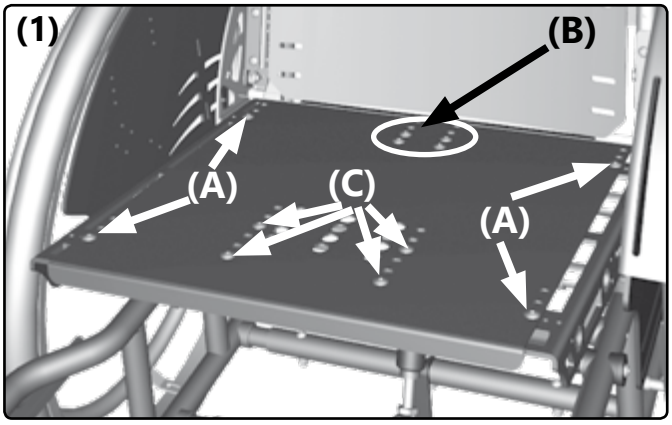


3.2.1 Changing the seat depth

(1) To extend the seat depth:

- Remove the four screws **(A)**,
- the four screws **(B)**
- and the four screws **(C)**.
- Move the seat plate forward to the desired measurement (each hole + 2 cm)
- **(3)** and screw the seat plate back on in the alternate holes **(A+B+C)**.

When moving the seat plate forward, the leg support stays in its original position. To correct this see chapter: leg supports.

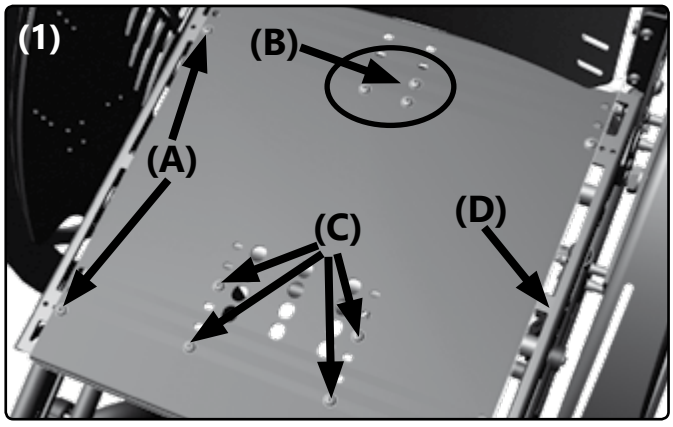


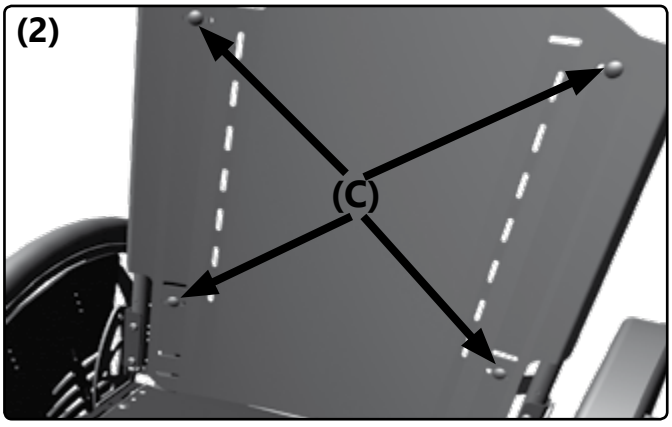
3.2.2 Changing the seat width

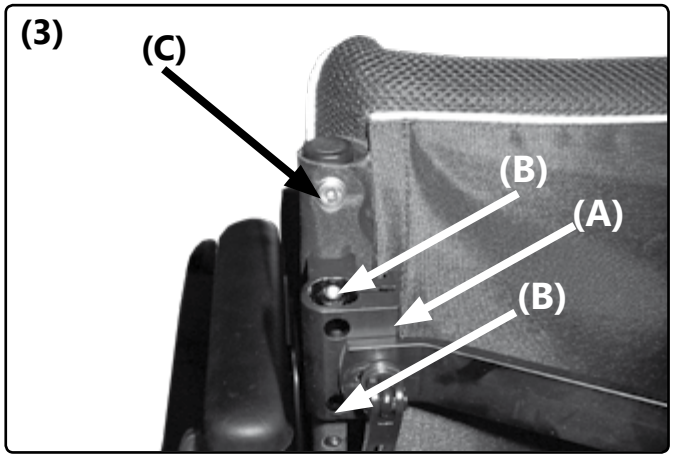
For preparation turn the wheelchair upside down if possible. Remove the driving wheels and the push handles or push bail.

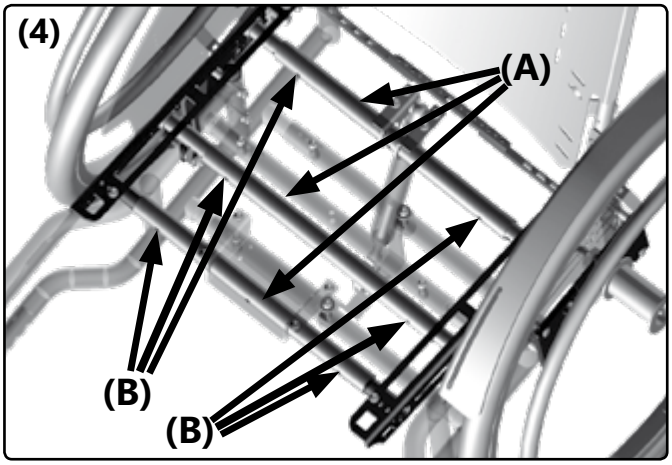
- **(4)** Remove the seat plate with the twelve screws **(A+B+C)** from the seat support frame **(D)** (also see picture 2).
- **(5)** Remove the firm curved back plate with the four screws **(A)**.
- With an adaptable back cover, it is enough to loosen the Velcro connection on the belts.
- **(6)** With a standard back cover, first remove the push handles/bail.
- Remove the clamping profiles for the push handle/ bail holder **(A)** with the screws **(B)**.
- Remove the fixation of the back cover with the screw **(C)** and pull the cover up out of he back tube. **(1)** Remove the three seat crossbars **(A)** with the six screws **(B)** and
- **(2)** remove the bracket **(A)** of the connection between the joints **(B)** with the four screws **(C)**,
- **(3)** Remove the three frame crossbars **(A)**.
- with the six screws **(B)**.
- First displace the frame crossbars **(3A)** in the new holes and screw them on tight.
- Displace the seat crossbars **(1A)** and screw them on tight.
- Screw on the bracket **(2A)** of the Gelenktraverse **(2B)** in the new holes.
- **(4)** Mount the seat plate on its four courners in the alternate holes **(A)** of the seat support frame **(B)**.
- **(5)** Replace the new standard back cover over the back tube and
- fixate it with the screw **(A)**.
- Screw on the push handle/bail holder **(B)** on both sides with the screws **(C)**.
- **(6)** With a firm curved back plate replace the old one with a new one (spare part)
- and screw it on with the four screws **(A)**.

⚠ Be sure to check all screws for a firm fit!

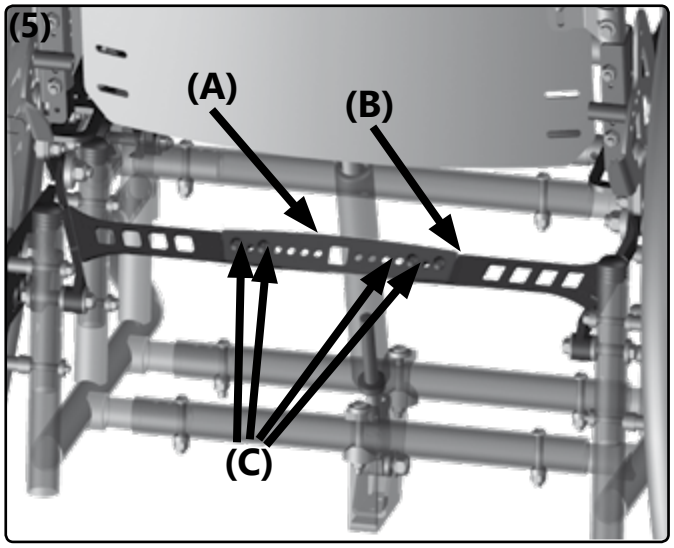




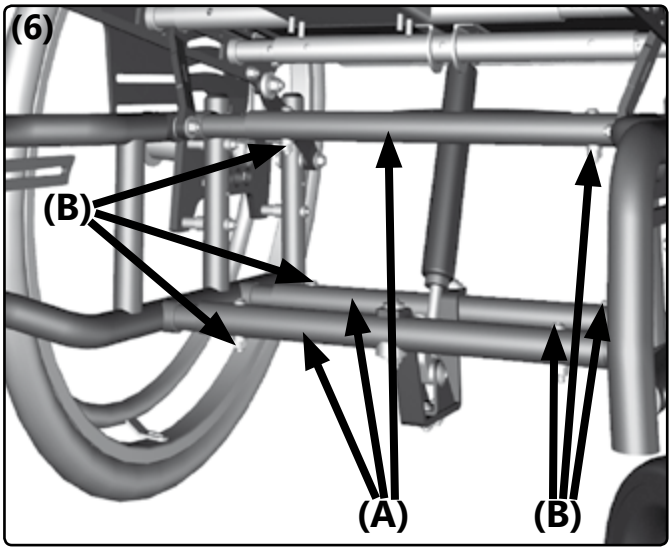




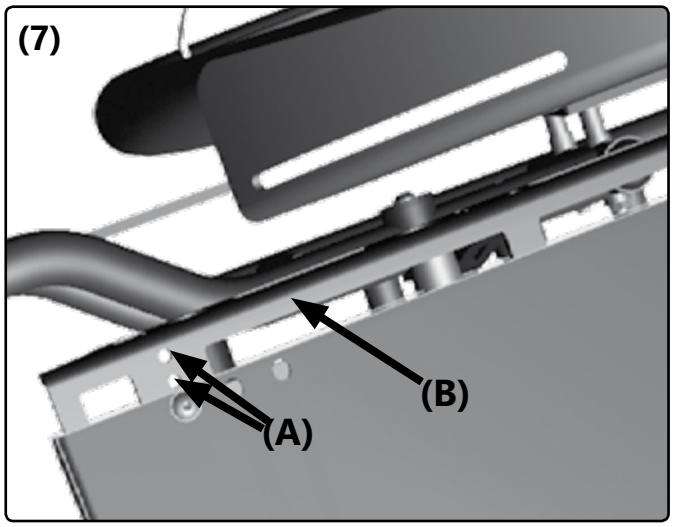
(5)



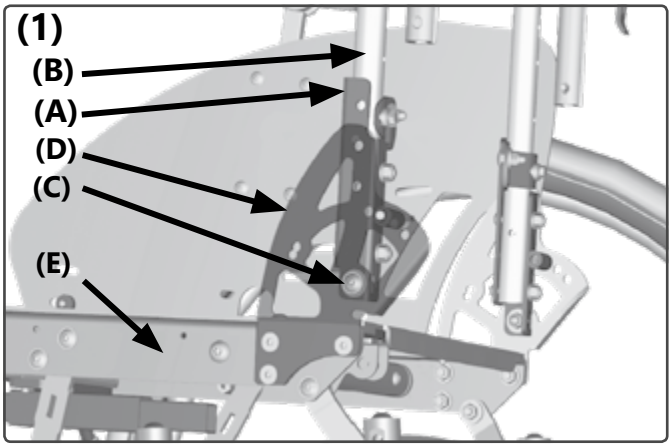
(6)



(7)



(1) The slot **(A)** of the back tubes **(B)** is attached with the screw **(C)** to the locking plate **(D)** which is attached to the seat holder **(E)**. The back tubes can be moved up 50 mm.

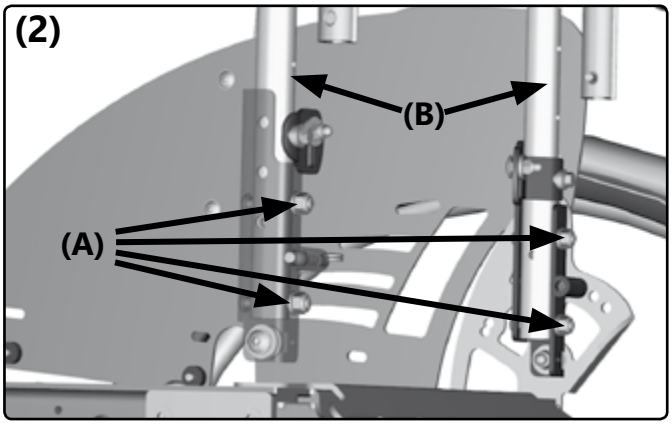


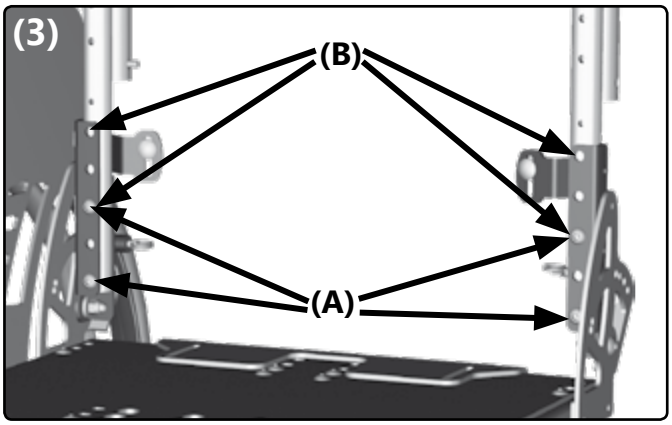
3.3.1 Changing the back height

For easier handling remove the push handles or push bail. It is not mandatory to remove the firm curved back plate or the back cover for this procedure.

To extend the back height:

- **(2)** Remove the four screws **(A)** on both sides
- and move the back tubes **(B)** up.
- **(3)** Place the four screws **(A)** in the new holes **(B)**
- and tighten all the screws.



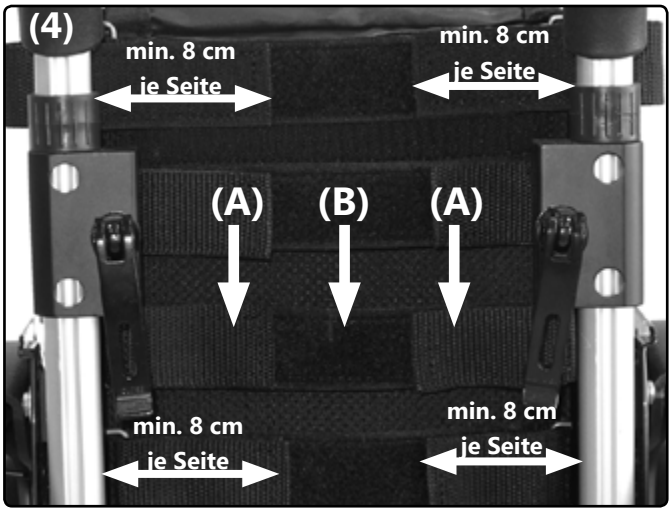


⚠ Should the safety nut **(1C)** be loose even though it was glued, then it must be replaced with a new one and glued immediately. Otherwise the wheelchair is not operable.

3.3.2 Adjusting the back cover

- Open the Velcro connections **(A/B)**
- and place the belts in the desired position.
- Close the connections **(A/B)**.

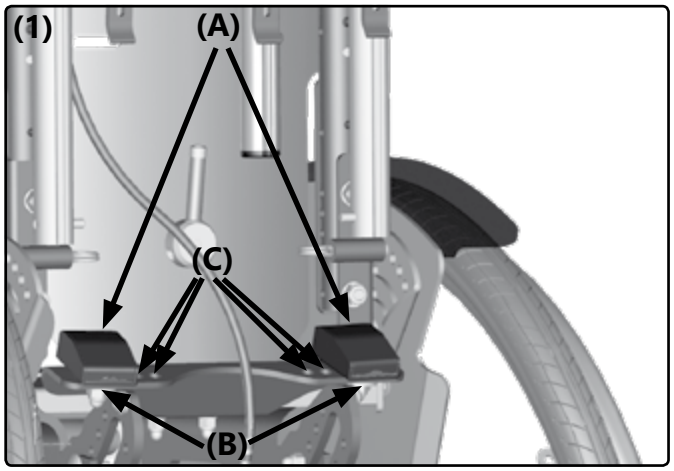
⚠ With an adjustable back cover the fleece **(A)** and Velcro **(B)** parts must always overlap a minimum of 8 cm per side.

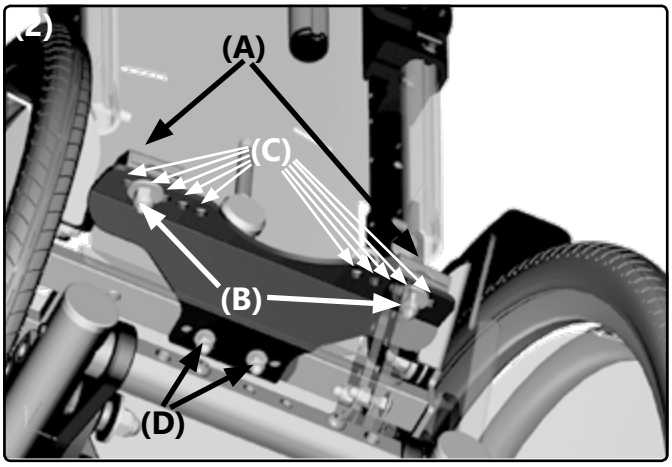


3.4 Assembly group belt system

3.4.1 Displacing the bottom metal locks

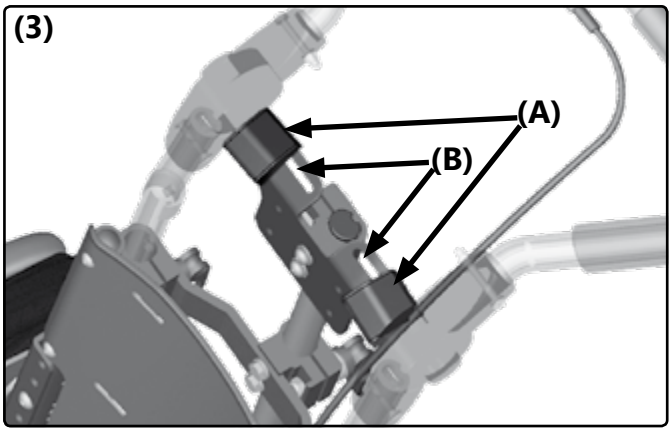
- **(1+2)** Open the metal locks **(A)** and remove the belts,
- remove both screws **(B)** at the bottom of the belt holder,
- displace the metal locks **(A)** in the desired holes **(C)**
- and replace the screws in the metal locks.
- Tighten the screws,
- thread the belts back in
- and close the metal locks.





3.4.2 Displacing the top metal locks

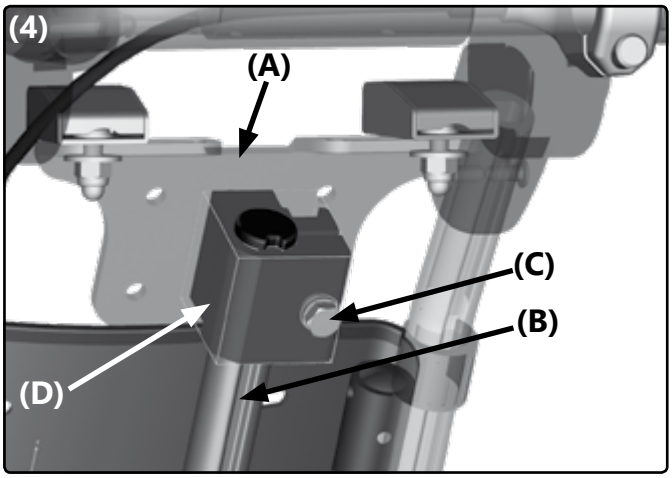
- **(3)** Open the metal locks **(A)** and remove the betls,
- loosen both screws of the metal locks at the bottom of the belt holder,
- displace the metal locks **(A)** along the elongated holes **(B)** to the desired position
- and retighten the screws.
- Thread the belt ends back in and close the metal locks.



3.4.3 Height setting of the belt holders

(4) You can displace the height of the top belt holder **(A)** along the profile tube **(B)** (e.g. if you need the top tube end to attach a headrest).

- Open the screws **(C)** on the clamping profile **(D)**,
- put the belt holder **(A)** in the desired position
- and retighten the screws **(C)**.
- Guide the top belt as far away from the neck of the child/user as possible.
- This is why you need to adjust the height of the top belt holder only with the child/user in the wheelchair.



⚠ Please make sure that the belts do not touch the neck of the child/user - ingury risk.

3.5.1 Standard leg support

The mounting of the leg support takes place in the middle under the seat plate.

Setting the lower leg length (vertical adjustment):
To set the lower lege length you have several possibilities:

- **(1)** Loosen the clamp lever **(A)**,
- place the whole foot plate holder **(B)** in the desired position,
- tighten the clamp lever **(A)**.

(2) You gain additional length:

- 1.) by moving the clamp bracket **(A)** in alternate holes **(B)**.
- Loosen the clamp lever **(C)** far enough so that you can move the clamp bracket **(A)** along the drill pattern **(B)** to the desired position.
- After, tighten the clamp lever **(C)**.

- 2.) by moving the complete foot plate holder **(D)** in alternate holes **(E)**.
- Remove the screws **(F)**,
- move the foot plate holder **(D)** in the alternate holes **(E)**
- and screw the foot plate holder **(D)** tightly in the new position.

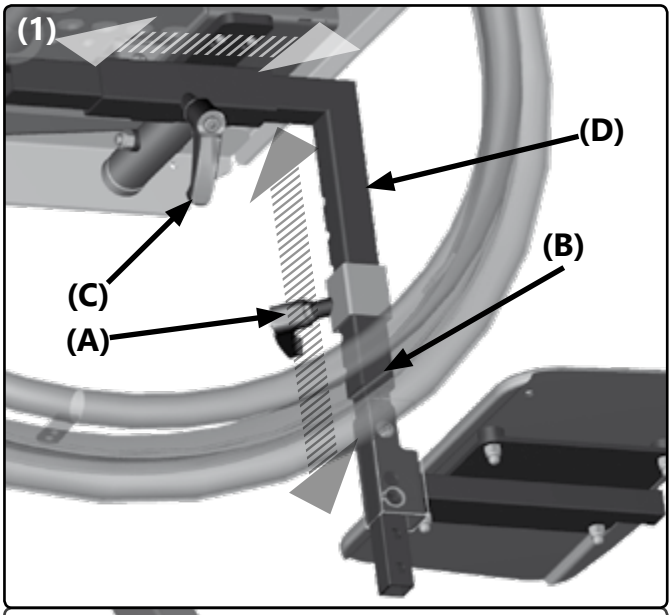
When moving the seat plate forward, the leg support stays in its original position. For balance correct the horizontal distance of the leg support as described below.

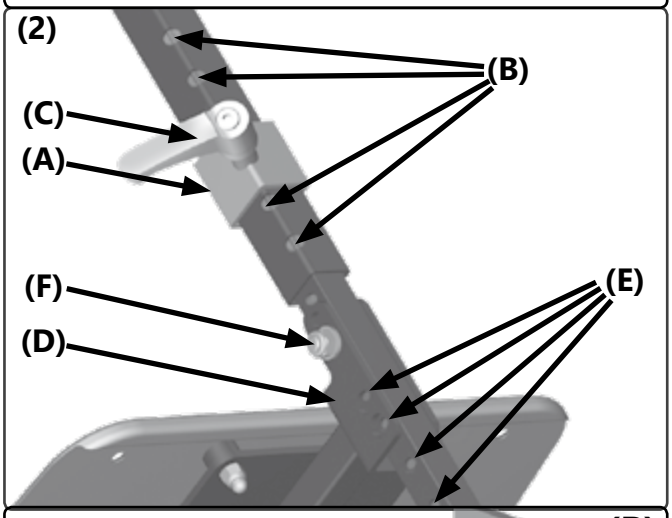
Setting the depth (horizontal adjustment) with a centre mounted leg support:

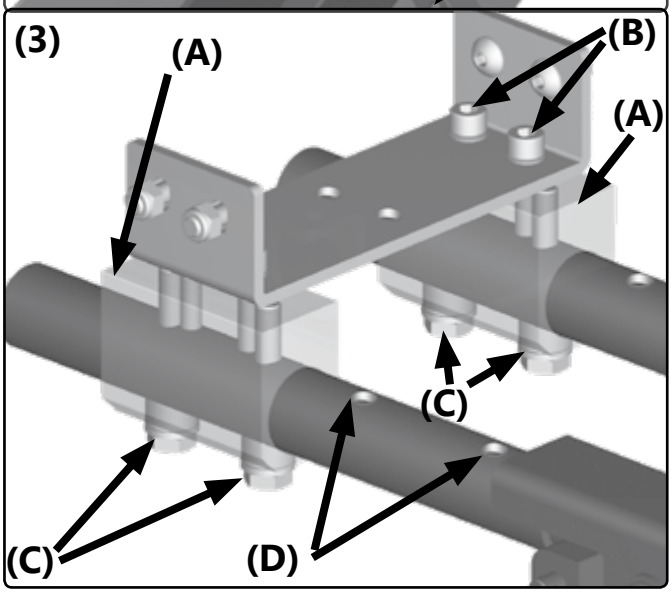
- **(1)** Loosen the clamp lever **(C)**,
- place the whole leg support **(D)** in the desired position,
- retighten the clamp lever **(C)**.

Setting the depth (horizontal adjustment) with dual mounted leg support/s:
(3) The leg supports are connected to the seat plate with both holders **(A)** (here shown transparent) by the screws **(B)**.
To displace:

- Remove on both sides all four screws **(C)**,
- displace the complete leg support in the alternate holes **(D)**,
- replace all four screws **(C)** and
- tighten them.







⚠ Before fixating the foot plate/s in the new position be sure that the casters can still turn 360° under the foot plate with a horizontal seat position without any problems. If necessary, correct the seat height.

3.5.2 Foot plate: can be elevated, continuos/ divided

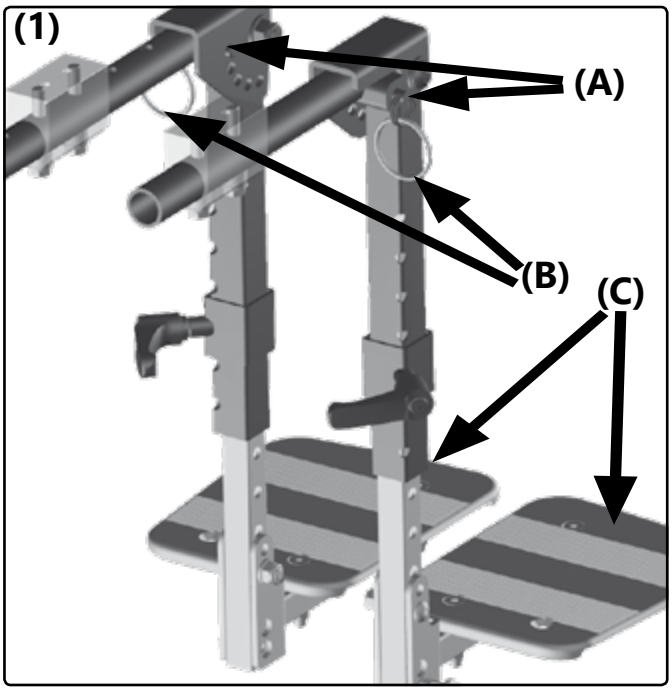
(1) To elevate the leg support:
- Secure the wheelchair from rolling away by tightening the wheel lock and activating the anti-tipper.
- Loosen (if necessary on both sides) the latch **(A)** with the rings **(B)**,
- lift the leg support/s **(C)** in the desired position and
- release the latch/es **(A)**.
- The latch must lock tightly!

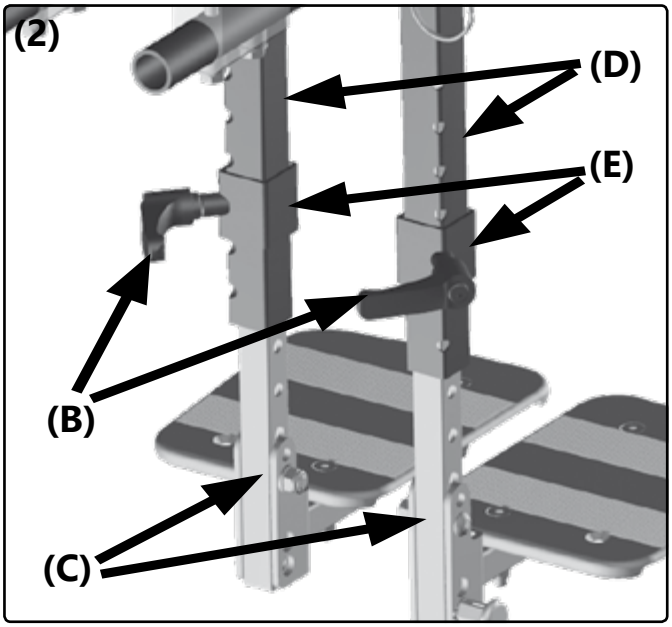
(2) To balance the length proceed as described in the previous chapter or:
- Loosen (if necessary on both sides) the clamp lever **(B)**,
- pull the bottom end **(C)** of the leg support/s to the wanted length
- and retighten the clamp lever/s **(B)**.

(2) Very short lower leg length
For very short lower leg lengths you can saw off the bottom **(C)** or the top square tube **(D)**.

(2) Very long lower leg length
For very long lower leg lengths you can move the holder **(E)** of the clamp lever **(B)** down and pull the square tube out to the wanted length.

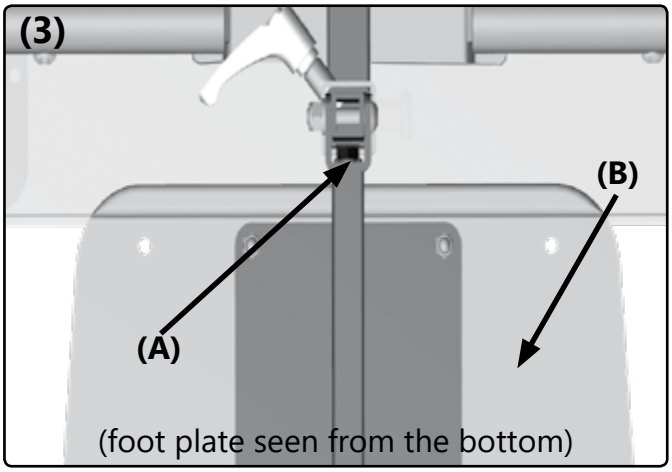
⚠ Before fixating the foot plate/s in the new position be sure that the casters can still turn 360° under the foot plate with a horizontal seat position without any problems. If necessary correct the lower leg length with the seat height.





3.5.3 Foot plate angle

(3) With the setscrew **(A)** you can correct the angle of the foot plate/s.
- fold the foot plate/s **(B)** up,
- turn the screw in or out as needed
- turn out= foot plate angle <90°
- turn in = foot plate angle >90°



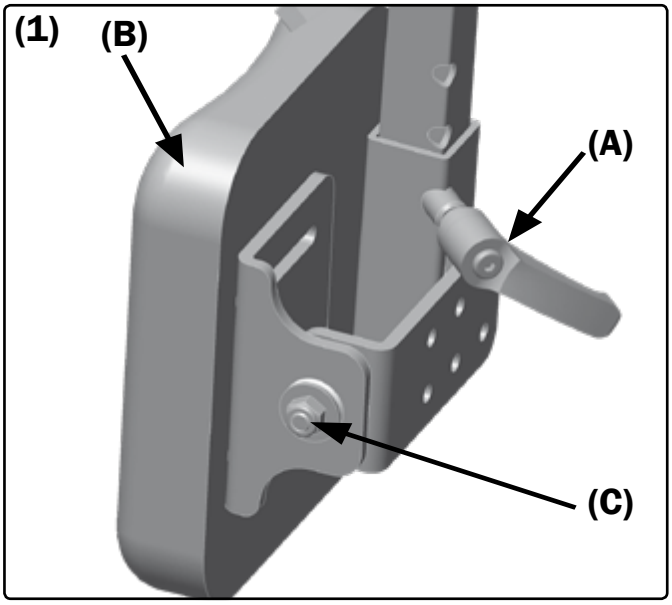
3.5.4 leg rest

(1) Setting the position:

- Loosen the clamp lever **(A)** under the cushion **(B)**, (see picture **4A**),
- place the cushion **(B)** in the desired position
- and retighten the clamp lever **(A)**.

Setting the tilting angle:

- Loosen the screws **(C)** of the cushion holder on both sides inside and outside,
- place the cushion **(B)** in the desired position
- and retighten the screws **(C)**.



3.6 Assembly group side guard

(1) With the standard side guards of Tilty Vario, you do not have to do any adjustment work (except adjusting the arm cushion if necessary). With active side guards with built-in cable brake, please proceed as follows.

Adjusting the skirt guard
(2) The skirt guard **(A)** can be adjusted in height:

- Loosen the screws **(B)** on both sides,
- set the height of the skirt guard **(A)** and retighten the screws **(B)**.

Adjusting the brake lever
(2) It may be that the length of the brake lever **(C)** must be adjusted to the new position of the skirt guard:

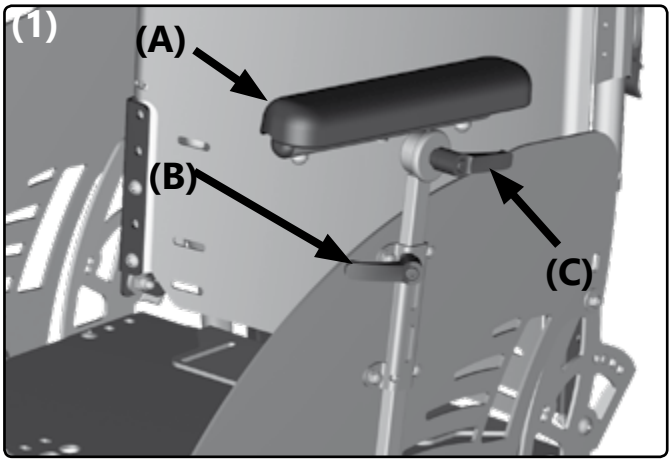
- Loosen both screws **(D)** on both sides,
- realign the brake lever **(C)**
- and retighten all four screws **(D)**.

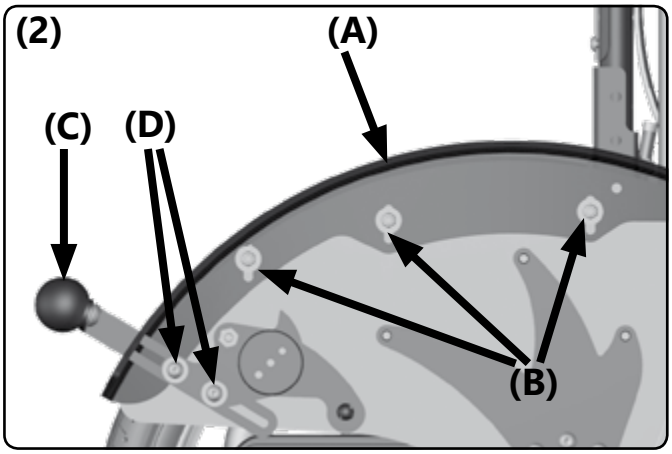
⚠ After, be sure to check that the brakes function properly.

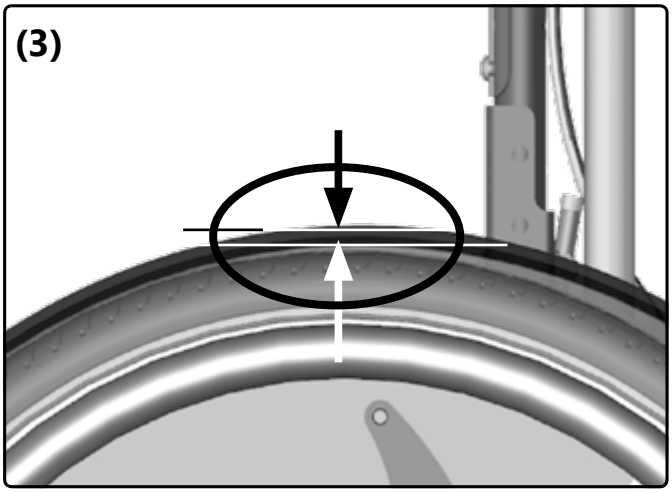
⚠ **(3)** Keep the distance between skrit guard and tire as small as possible - but atleast 10 mm. The user should not be bat to put its fingers in between.

Adjusting the arm rest
(1) The arm cushion **(A)** can be adjusted in height and angle.

- To adjust the height loosen the clamp lever **(B)**,
- move the arm cushion to the desired height
- and retighten the clamp lever **(B)**.
- To adjust the angle loosen the clamp lever **(C)**,
- move the arm cushion to the desired position
- and retighten the clamp lever **(C)**.







3.7 Assembly group brake

⚠ Wheel locks only serve the purpose of putting the wheels in a resting position. they are not made to brake the wheelchair while driving

⚠ After every change mad on the driving wheels, be sure to check the proper function of the brakes. The wheelchair with passenger (max. load capacity) must stand securely, with drawn brake, on a ramp with a 12,3% (= 7°) decent.

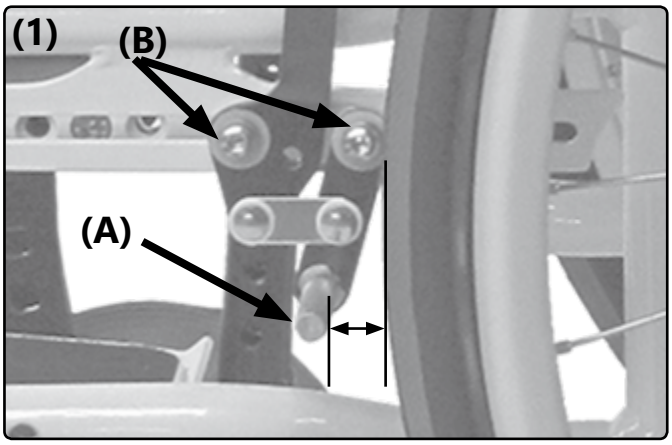
⚠ Possible impairments of the brake force can occur from:
- not enough air pressure in the driving wheels,
- worn tires or brake pressing bolts
- dirty tires (snow, mud, wetness etc.)
- wrongly adjsuted brake pad
- wrongly adjusted traction of the Bowden cable,
- defected Bowden cable,
- dirty brake pads/brake shoes.

When the brake is open, the maximum distance between brake presssing bolt and tire is:
- standard KLB 21 mm
- Pull-to-lock-brake 11 mm
- KLB with rollback blocking ca. 10 mm
- cable brake 6 mm

(technical changes reserved).

3.7.1 Wheel lock (standard Knee lever brake)

(1) To set the distance between the brake pressing bolt **(A)** and wheel cover:
- Loosen the screws **(B)** on both sides,
- move the whole brake pad with opened brake to the needed position (distance see above) and
- retighten all screws **(B)**.



3.7.2 Cable brake

(1) To set the distance between the brake pressing bolt **(A)** and driving wheel:

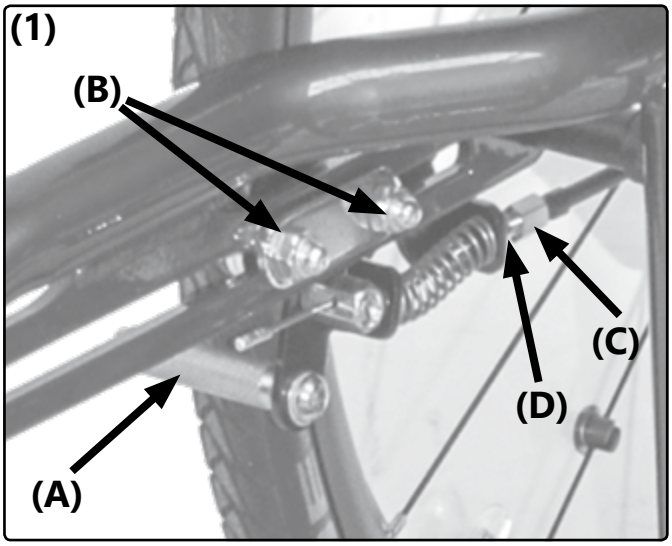
- Loosen both screws **(B)**,
- vmove the whole brake pad with opened brake to the needed position (distance see above)
- and retighten the screws **(B)**.

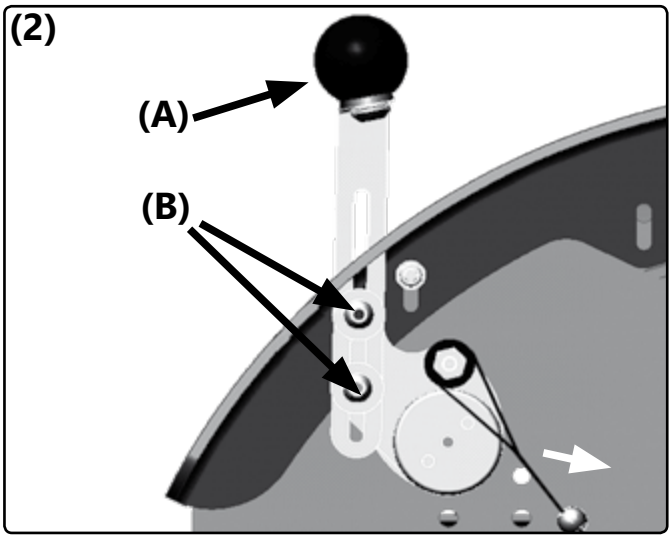
(1) To retention the cable control

- Loosen the lock nut **(C)**
- and turn the setscrew **(D)**:
- clockwise = tighten,
- counterclockwise = loosen.
- Retighten the lock nut **(A)**.

(2) To set the length of the brake lever **(A)**:

- Loosen both screws **(B)**, if necessary on both sides,
- align the brake lever **(A)**
- and retighten all the screws **(B)**.

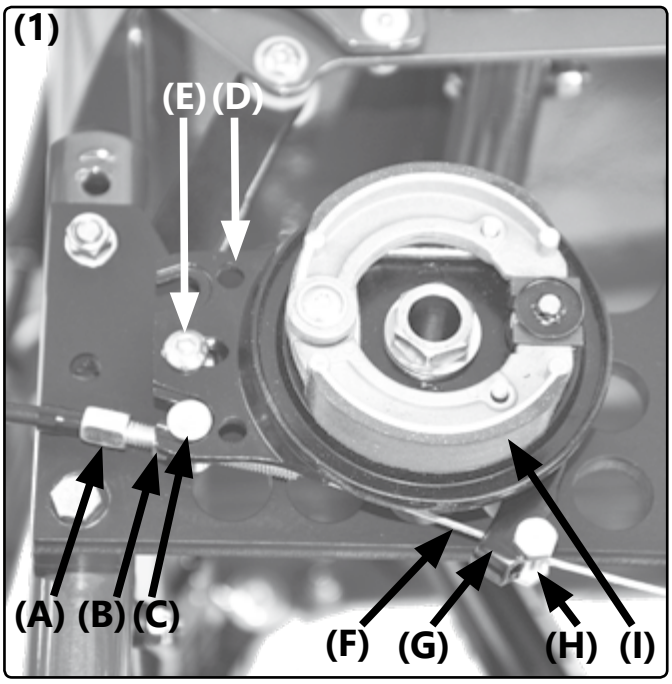




3.7.3 Drum brake

The braking force of the drum brake is ideally set by our technicians.

⚠ Check the functionality of the drum brake in regular intervals (atleast according to the maintenance plan!). Due to permanent use, readjusting the brake force or even a replacement of a Bowden cable may be necessary.



(1) The following parts of the drum brake are of importance in order to adjust the brake force:

- setscrew **(A)**
- lock nut **(B)**
- push-on nipple **(C)**
- holder **(D)**
- attachment screw **(E)**
- inner cable **(F)**
- locking lever **(G)**
- clamp **(H)**
- brake shoe **(I)**

(1) To install the Bowden cable:

- Place the push-on nipple **(C)** with the setscrew **(A)** and the lock nut **(B)** at the bottom end in the holder **(D)**,
- thread the inner cable **(F)** through the clamp **(H)**,
- place the clamp **(H)** in the locking lever **(G)** and
- push the locking lever **(G)** slightly forward toward the push-on nipple **(C)**, so that a slight pull between clamp and push-on nipple occurs.
- Tighten the clamp **(H)**.
- Put the wheel back on and check if the brake shoes **(I)** already grind against the brake pad.
- For this, jack up the wheelchair or tilt it to the side. The wheel must be able to turn unhindered.
- Should the brake shoes **(I)** grind (without using the control leve), loosen the clamp **(H)**
- and give the locking lever **(G)** more room.
- After, tighten the clamp **(H)** and examine.

To set the brake force:

- Loosen the lock nut **(B)** on the setscrew **(A)**,
- tighten/loosen the inner cable **(F)** by turning the setscrew **(A)**,
- test the traction of the brake with the control lever
- and retighten the lock nut **(B)**.

⚠ Possible impairments of the brake force can occur from:

- wrongfully adjusted traction of the Bowden cables,
- defected Bowden cable,
- dirty brake pads/brak shoes.

⚠ The wheelchair with passenger (max. load capacity) must stand securely, with drawn brake, on a ramp with a 12,3% (= 7°) decent.

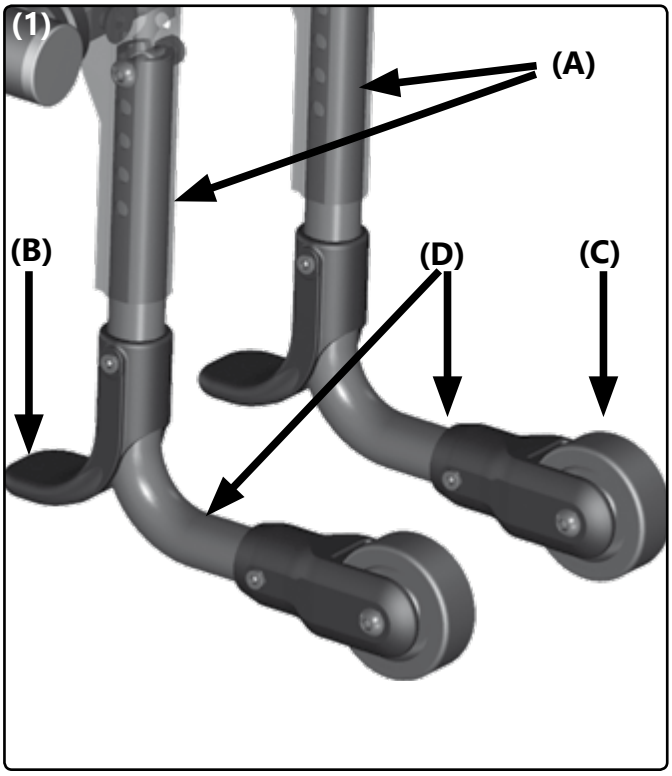
3.8 Assembly group anti-tipper

(1) The anti- tipper consists of 4 parts: anti-tipper holder **(A)**, foot lever **(B)**, anti-tipper wheel **(C)** with holder and the anti-tipper bail **(D)** which can be pulled down and turned 180°(partly sticking in the anti-tipper holder).

(2) The height of the ant-tipper can be changed with the screw **(A)**:

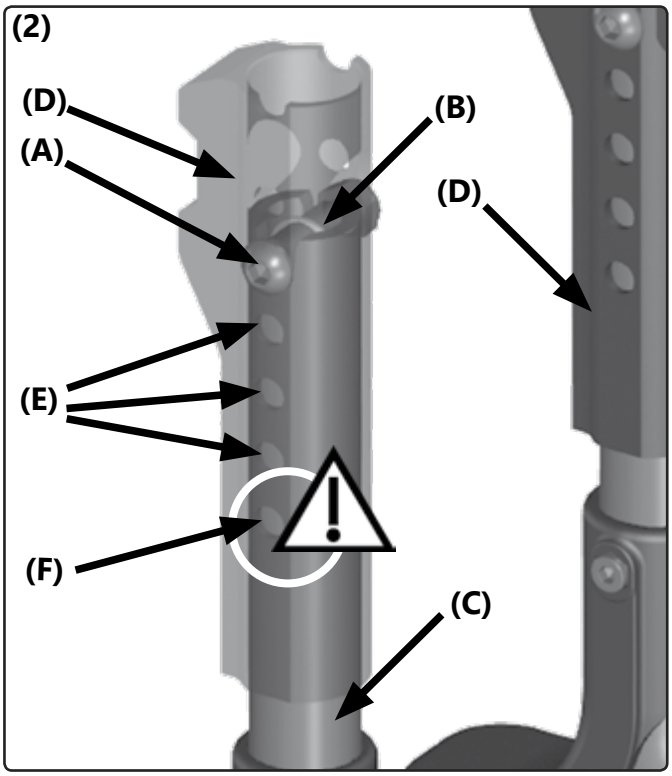
- Remove the driving wheels,
- remove the screws **(A)** along with the bushings **(B)**,
- move the ant-tipper bail **(C)** along the holder **(D)** to the desired position **(E)**,
- replace the bushings **(B)** and the screws **(A)**
- and retighten the screws.

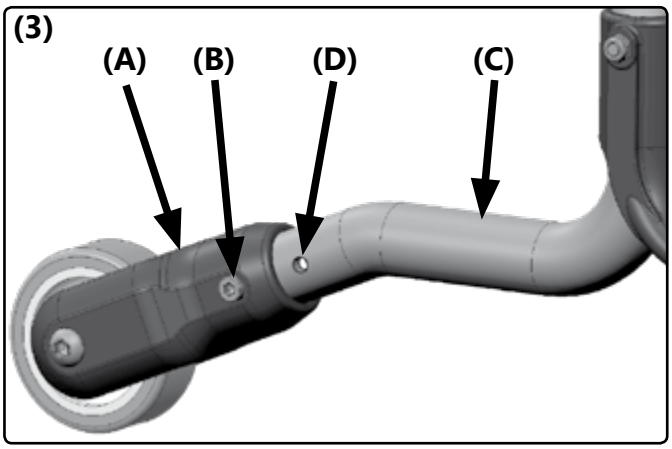
⚠ The bottom hole **(F)** is design related and cannot be used. the anti-tipper bail could fall out of the holder when turning/ activating the ant-tipper.



(3) If the wheelchair is set very active and the activated anti-tipper sticks out too far back, then the anti-tipper bail can be shortened.

- Remove the screw **(B)**
- remove the anti-tipper wheel and holder **(A)**,
- shorten the anti-tipper bail **(C)** with a suitable saw to the length needed,
- replace the anti-tipper wheel and holder back on the anti-tipper bail **(C)**,
- place the screw **(B)** in the hole **(D)**
- and tighten the screw **(B)**.



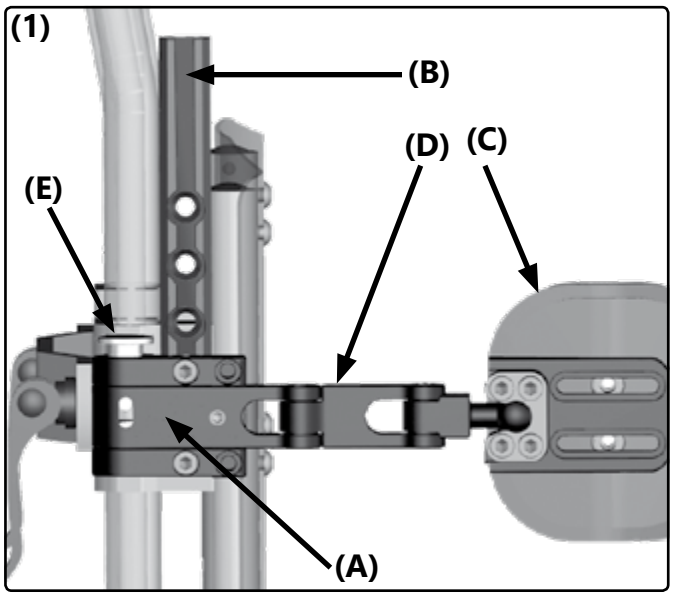


3.9 Assembly group truss pads

3.9.1 Classification

(1) The truss pads consist of the following parts:

- **(A)** locking joint
- **(B)** connection (C-bar)
- **(C)** truss pad cushion
- **(D)** truss pad holder
- **(E)** release button

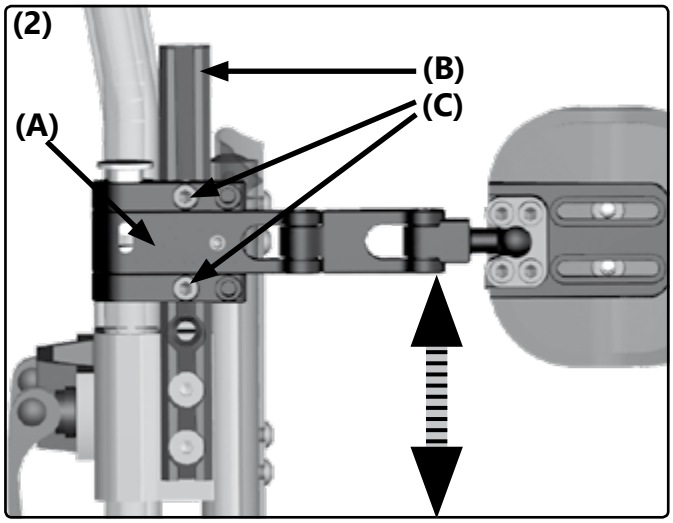


3.9.2 Vertical setting

(2) The vertical setting of the truss pads occurs on the one hand by moving the locking joint **(A)** in the C-bar **(B)**:

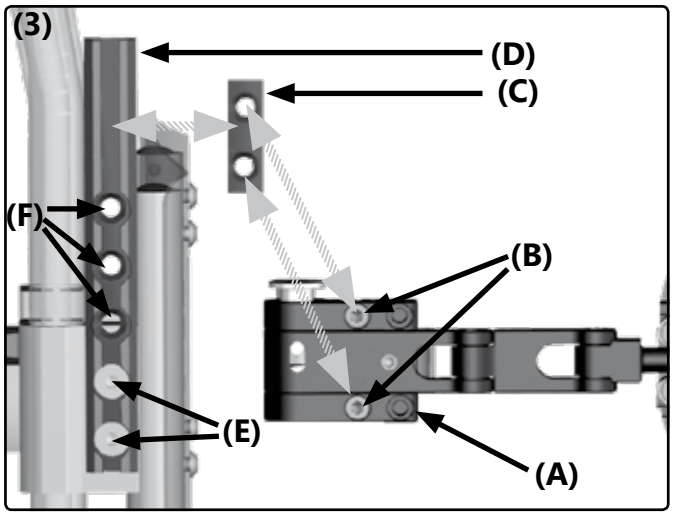
- Loosen both screws **(C)**,
- move the locking joint **(A)**,
- and retighten the screws **(C)**.

(3) The locking joint **(A)** is clamped into the C-bar through the connection of the wird durch die Verbindung der Metallzunge **(B)** mit den beiden Schrauben **(C)** in die C-Schiene **(D)** geklemmt.



(3) On the other hand, the truss pads can be adjusted by moving the C-bar **(D)** along the back tube holder:

- Loosen both screws **(B)** if necessary and thread the truss pad holder **(A)** out of the C-bar **(D)**.
- Remove the screws **(E)**
- and displace the C-bar **(D)** along the alternate holes **(F)**,
- replace the screws **(E)**
- and tighten them.
- Thread the truss pad holder **(A)** into the C-bar **(D)**,
- put it to the desired height
- and retighten all the screws **(B)**.



(4) Additionally, with truss pad size II the height can be adjusted by displacing the cushions:

- Remove the cover,
- remove both screws **(A)**,
- displace the cushions **(B)** into the alternate holes **(C)**,
- replace the screws **(A)**
- and tighten them.
- After, replace the covers.

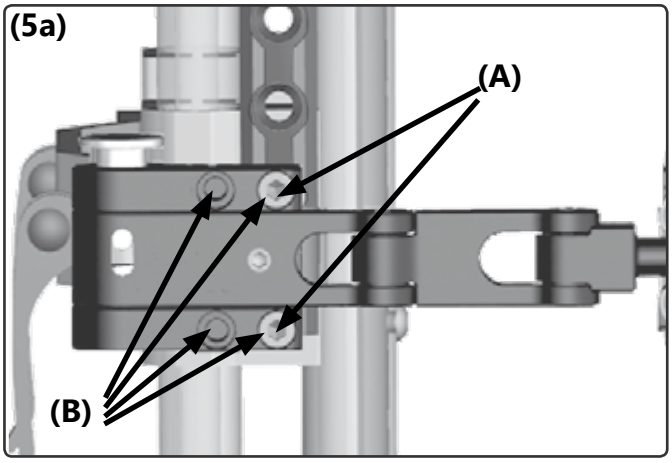
3.9.3 Horizontal setting

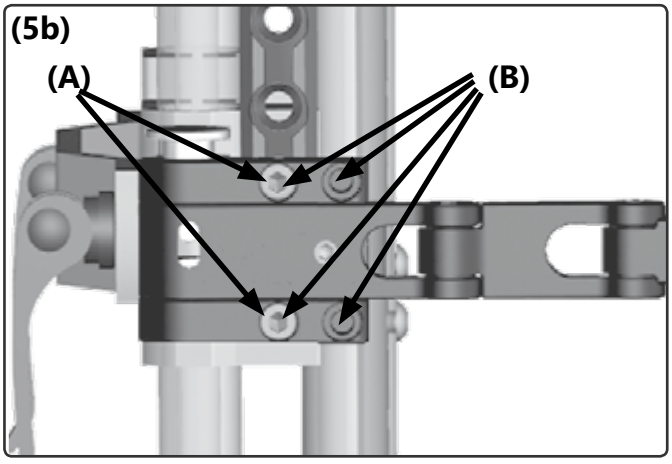
(5a+b) The horizontal setting occurs on the one hand by displacing the locking joint.

- Remove both screws **(A)**,
- place the locking joint in the alternate holes **(B)**,
- place the screws **(A)** in the metal tongue **(picture 3C, previous page)**,
- set the height
- tighten the screws **(A)**.

Horizontal extension:
(7) For the horitontal extension add an extension piece (spare part):

- Remove the screws **(A)**,
- ad the extension piece
- and screw it together on both ends.

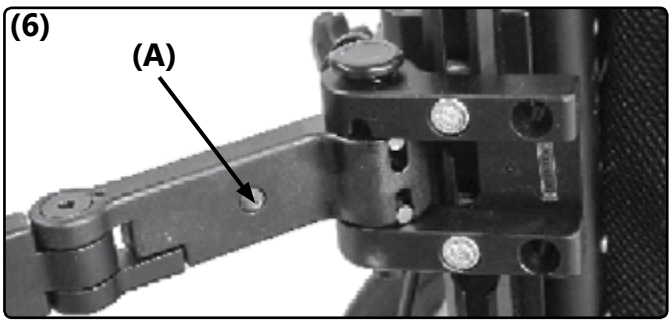




3.9.3 Fine adjustment of the truss pad holder

(6) The fine adjustment of the room between locking joint and truss pad holder occurs with the adjustment screw **(A)**.

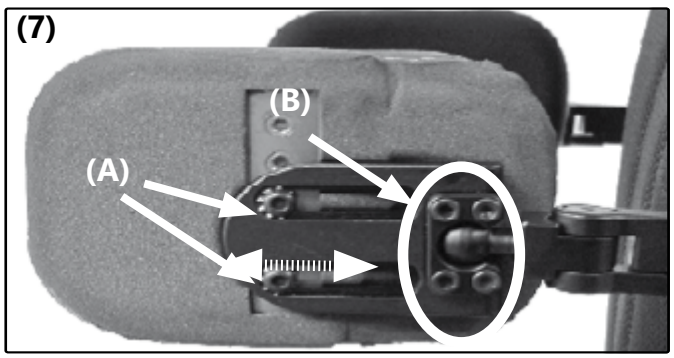
- Close the locking joint
- and turn the adjustment screw **(A)** from the outside, as needed, either open or closed.

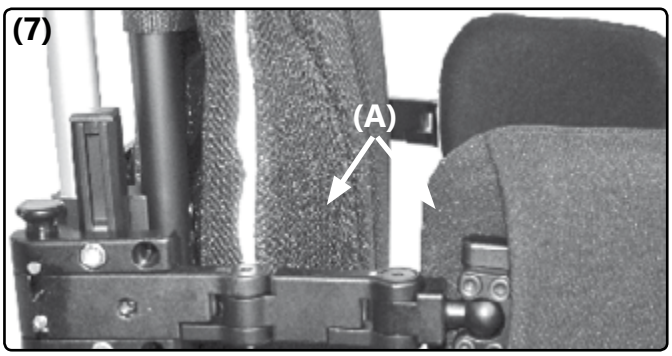


3.9.4 Adjusting to the user

When all positioning and extension work has been completed:

- Place the truss pads around the user,
- adjust the joints to the needed position
- and tighten all joint screws **(7A)**.
- The ball joint is then fixated by tightening the four screws **(6B)**.





3.10 Assembly group outdoor front end

Length of the Outdoor Front End
With the length of the Outdoor Front End you can set the driving and pushing comfort:

- Long Outdoor Front End = very large impact absorption, soft comfort, less strain, large turning circle.
- Short Outdoor Front End = good impact absorption, very little strain, good for active driving, small turning circle.

(1) To telescope the length:

- Remove the screws **(A)** on both sides,
- displace the front part **(B)** of the outdoor front end together with the screws **(A)** forward or backward to the desired holes **(C)**
- Replace the screws **(A)** on both sides and tighten them.

⚠ Telescoping the tubes must be symmetrical on both sides.

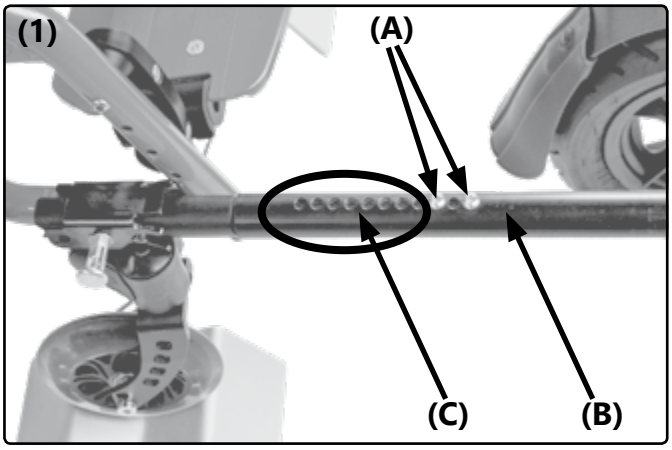
(2) To telescope the width:

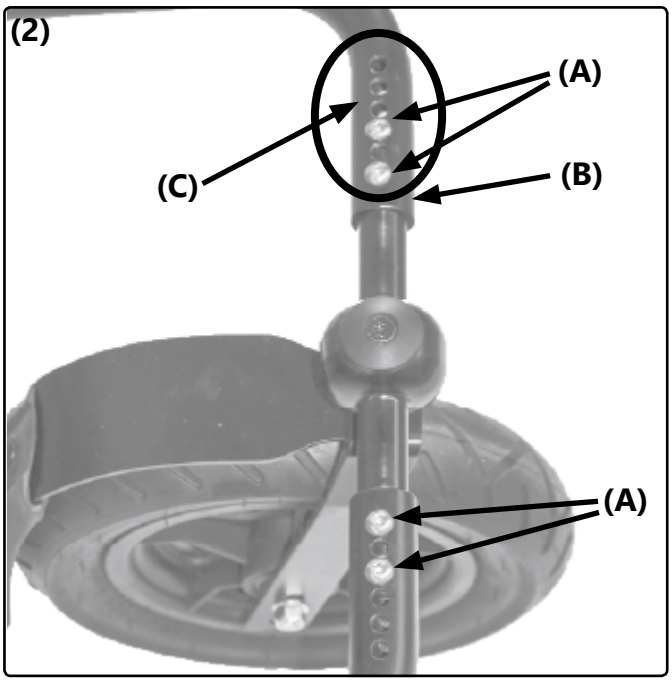
- Remove the screws **(A)** on both sides,
- displace both tubes **(B)** of the outdoor front end together with the screw **(A)** forward or backward to the desired holes **(C)**
- Replace the screws **(A)** on both sides and tighten them.

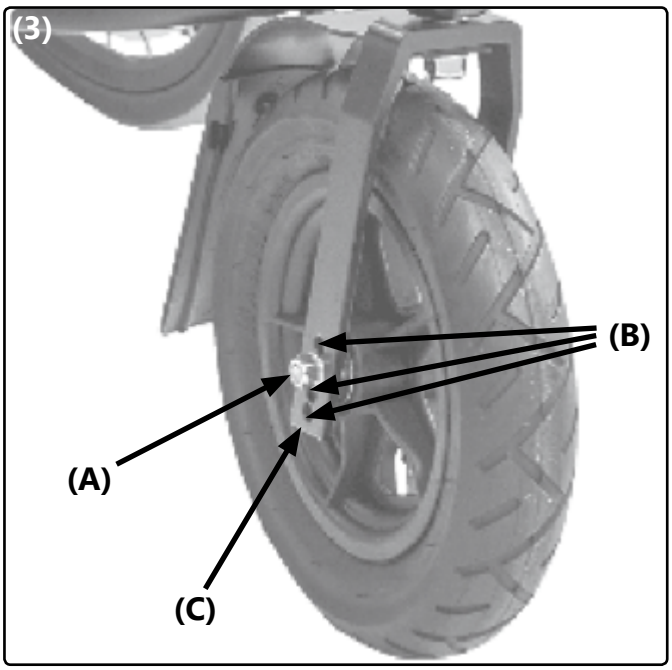
(3) Adjusting the height with the caster:

- Remove the axle **(A)** from the large caster,
- displace the caster to the desired hole **(B)** on the fork **(C)**
- replace the axle and retighten all screws

⚠ With this, the tilting behaviour of the wheelchair and the follow-up of the large caster are massively affected, which can cause unwanted wave like movements in curves (which has a similar affect as track fixation).







4.1 Repairs

⚠ Repairs are to be done by your specialized retailer.

4.2 Spare parts

Only original spare parts can be used! They are available at your medical supply store.

The spare parts list can be downloaded at www.sorgrollstuhltechnik.de or can be requested directly from us.

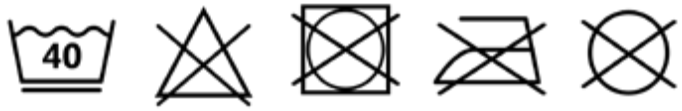
For a correct delivery of spare parts the appropriate serial number of the wheelchair is to be stated. You will find the number on the type label on the wheelchair's frame.

4.3 Maintenance

Clean the wheelchair and all components regularly with a mild household water-based cleaner and then dry it thoroughly.

In addition, clean the rear wheels and the casters and free the axles of dirt and impurities e.g. hair etc.).

Wash textile parts:
care directions:



Wipe off pleather, straps and other upholstery:
Care directions:

4.4 Disinfection

Before each disinfection the parts should be cleaned off first. For disinfection use a household water-based agent. Observe the instructions of the respective manufacturer.

4.5 Storage

- Carry out cleaning
- Fold foldable wheelchair (if available)
- Adjust seat tilt to 90° (if available)
- If necessary, pack removable textile parts in foil or similar
- Secure the wheelchair from rolling away and getting dirty
- Store in a dry environment without aggressive environmental influences.

4.6 Reinstatement

Before reuse, a full inspection according the the checklist must be carried out by a specialized retailer. All disinfection measures for reuse must be carried out according to a validated hygiene plan.

4.7 Disposal

The wheelchair my only be disposed of with the approval of the benefactor. Disposal of the wheelchair mus be in accordance with the applicable national regulations

4.8 Maintenance/ Inspection

For safety reason and to maintain product liability, an inspection by your retailer is required at least once a year. This must be carried out and documented according to the following checklist.

Checklist maintenance and care (user)

⚠ A poor or neglected maintenance of the wheelchair represents a significant safety risk.

Before each use:
Please check:

- frame, back tubes, mounting parts and accessories for visible damages, deflections, crakcs or missing/loose screws,
- wheels/quick release axles for firm fit,
- the airpressure of the tires, tire tread,
- the function of the brakes,
- firm fit of the angle adjustements/eccentric clamps,
- firm fit of seat plate/back/foot plate,
- the function of the anti-tipper/seat and back straps,
- if all previously dismantled parts are put on again or firmly locked.

Every 3 months:
(depending on use, earlier)
Please check:

- screws for firm fitting
- welds, attachments and accessories for hidden damages, deflections or cracks
- tire tread
- the firm fit of third-party systems (if available)

Clean the wheelchair and oil all moving parts.

⚠ If you notice any defects during maintenance, please contact your specialist retailer immediately and do not use the wheelchair anymore.

Checklist yearly inspection (specialized retailer)

Template (available for download at www.sorgrollstuhltechnik.de/downloadportal)

Preparatory Work
- ☐ cleaning done

Check:
- ☐ Frame, back, mounted parts and accessories checked for damage, bends, cracks and corrosion,
- ☐ all fixing screws checked for firm fit and completeness,
- ☐ casters and rear wheels as well as the associated attachments checked for good condition, functionality and proper running qualities,
- ☐ spokes checked for firm fit and completeness,
- ☐ brakes cleaned and maintained,
- ☐ Locking mechanisms (tripod springs of push handles, quick-release axles, eccentric clamps, etc.) checked for functionality,
- ☐ anti-tipper checked for firm fit and fuctionality.

Oiling:
- ☐ moving parts and bearings oiled

Final check:
- ☐ functional check of all mechanical adjusting devices carried out.

5 Technical specifications

5.1 Data and measurements

Model: Tilty Vario
Type: 602
German Aid Indix Nr.: 18.99.02.1013

All measurements ± 5%

Indication	Measurements		Comment
seat width (SW)	20-mm-steps	280 bis 440 mm	+40 mm growable
seat depth (SD)	20-mm-steps	300 bis 440 mm	+40 mm growable
back height (BH)	50-mm-steps	300 bis 450 mm	+50 mm growable
Leg rest	80° bis 120°		mechanically
tilt angle	90° bis 115°		gas pressure spring
camber	3° oder 7°		
upper edge seat to upper edge footrest	rear wheel 22" caster 4" caster 5" caster 6"	 min. 380 max. 470 mm min. 385 max. 475 mm min. 415 max. 490 mm	without cushion
	rear wheel 24" caster 4" caster 5" caster 6"	 min. 380 max. 480 mm min. 390 max. 480 mm min. 415 max. 500 mm	without cushion
Width wheelchair absolut	min.	SB + 270 mm,	depending on the camber
	max.	SB + 350 mm	
lenght wheelchair absolut	bei 22"	min. 675 mm max. 785 mm	depending on the camber
	bei 24"	min. 750 mm max. 915 mm	
height wheelchair absolut	min.	745 mm	without push handles
	max.	1050 mm	
incline	max. zulässig	12,3% = 7°	
descent	max. zulässig	12,3% = 7°	
stability	max. zulässig	12,3% = 7°	

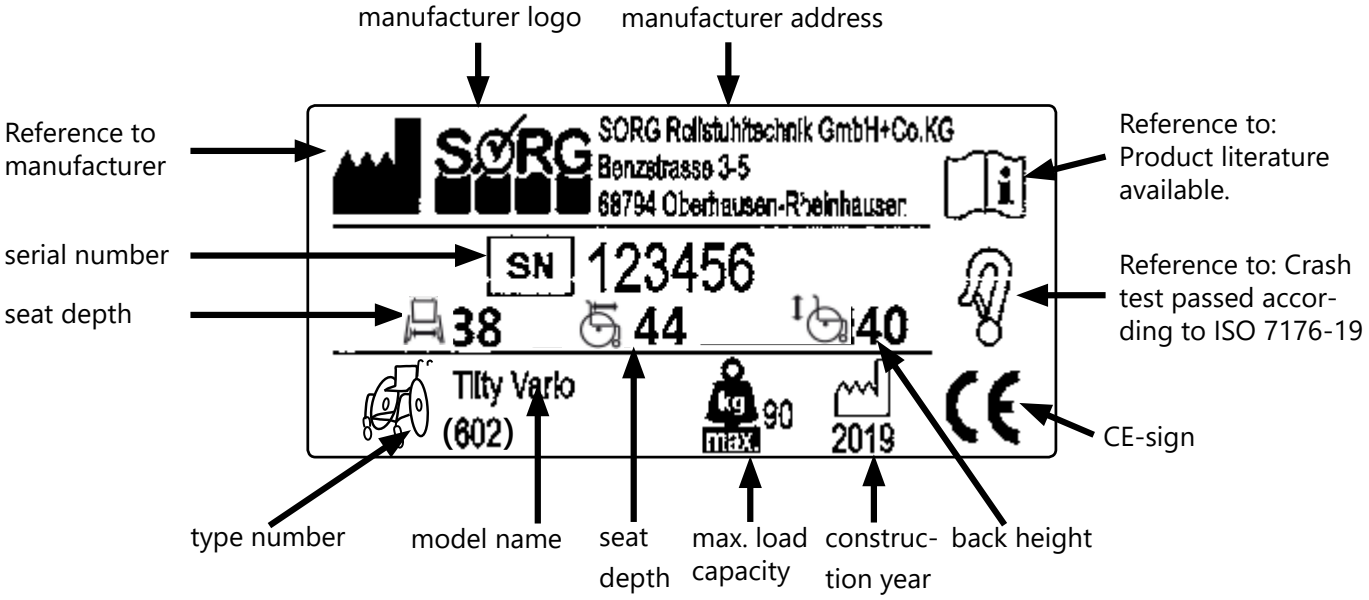
load capacity/ weight Test-dummy	max. 90 kg	inkl. user and seat shell
tare min. bei SW 28, SD 300 mm, 22" rear wheel, 5" PU caster	ab 18,3 kg	equipped with: frame, rear wheel, handrim, caster, cable brake, leg support, side guard, skirt guard und anti-tipper.
wheels:	Standard and profile wheels, smooth running wheels	optional smooth-running drum brake wheels
caster:	4", 5", 5,5", 6"	transparent with LED, solid rubber black with aluminum wheels, PU gray with plastic rims
air pressure:	6-8 bar	Information on the tires
wheel:	Commercially available pneumatic tires (1 "or 1 3/8") or puncture-proof tires	optional Schwalbe Marathon Plus, pneumatic tires with puncture proof insert
wear points	frame bar	
heaviest piece:	rear wheel 1,2-2,2 kg	
length of use of the wheelchair	3 years	at not excessive demand
life cycle of the wheelchair	5 years	
Normative requirements	The wheelchair meets the requirements of ISO 7176-8 and the requirements against ignition.	

5.2 Meaning of labels

The meaning of the individual labes is explained in the texts at the respective place.

If the type plate is damaged or gets lost, a new one can be ordered from SORG Rollstuhltechnik.

Type plate:



5.3 Konformitätserklärung

SORG Rollstuhltechnik declares that the product Tilty Vario a class 1 device is and it complies with the EG Directive 93/42/EWG Annex VII on medical devices.

This was confimred by a conformity assessment procedure according to the medical Pruoduct Guidelines Annex VII.

If the product is not modified with SORG wheelchair technology, this declaration will lose its validity.

Service Record Tilty Vario

company stamp

SORG Rollstuhltechnik GmbH + Co. KG
Benzstraße 3-5
68794 Oberhausen-Rheinhausen
Germany
Fon +49 7254 9279-0
Fax +49 7254 9279-10

info@sorgrollstuhltechnik.de
www.sorgrollstuhltechnik.de

MADE IN GERMANY