Küschall® Compact

Compact SA / Compact FF

en Active Wheelchair Service Manual

CE

PROVIDER: Keep this manual.
The procedures in this manual MUST be performed by a qualified technician.

Küschall®
UNLIMIT YOUR WORLD

Contents

1 General

1.1 Introduction

This document contains important information about assembly, adjustment and advanced maintenance of the product. To ensure safety when handling the product, read this document and the user manual carefully and follow the safety instructions.

Find the user manual on Invacare's website or contact your Invacare representative. See addresses at the end of this document.

Invacare reserves the right to alter product specifications without further notice.

Before reading this document, make sure you have the latest version. You find the latest version as a PDF on the Invacare website.

For pre-sale and user information, see the user manual.

For more information about the product, for example product safety notices and product recalls, contact your Invacare representative. See addresses at the end of this document.

1.2 Symbols in This Manual

Symbols and signal words are used in this manual and apply to hazards or unsafe practices which could result in personal injury or property damage. See the information below for definitions of the signal words.

WARNING
Indicates a hazardous situation that could result in serious injury or death if it is not avoided.

CAUTION
Indicates a hazardous situation that could result in minor or slight injury if it is not avoided.

IMPORTANT
Indicates a hazardous situation that could result in damage to property if it is not avoided.

Tips
Gives useful tips, recommendations and information for efficient, trouble-free use.

Tools
Identifies required tools, components and items which are needed to carry out certain work.

2 Safety

2.1 General Safety Information

WARNING!
Risk of injury or damage to property
– The procedures in this manual must only be performed by a qualified technician.
– Use only original options and spare parts.
– Do not handle this product or any available optional equipment without first completely reading and understanding these instructions and any additional instructional material such as user manuals, installation manuals or instruction sheets supplied with this product or optional equipment.
– After each assembly, check that all fittings are properly tightened and that all parts have the correct function.

WARNING!
Risk of contamination
– Clean and disinfect the product before servicing.

IMPORTANT!
Assembly of optional equipment might not be described in this service manual. Refer to the manual, delivered with the optional equipment.
– Additional manuals can be ordered from Invacare. See addresses at the end of this document.
– Due to regional differences, refer to your local Invacare catalog or website for available optional equipment or contact your local Invacare representative. See addresses at the end of this document.

IMPORTANT!
Some replacement parts are only available as a kit. Always use the complete new kit when replacing a part.
– Spare parts can be ordered from Invacare. Refer to your local Invacare website to access the electronic spare parts catalogue (ESPC).

IMPORTANT!
Refer to the user manual of this product for information on
– Technical data
– Product components
– Labels
– Additional safety instructions

The information contained in this document is subject to change without notice.

2.2 Personal safety information

These safety instructions are intended to help avoid accidents during work and must be observed under all circumstances.

All employees coming into contact with contaminated products must regularly consult a company doctor. Work clothing and personal protective equipment must be available in necessary quantities and be in proper condition. Reliable hand and surface disinfection must be ensured.

WARNING!
Risk of contamination
– Clean and disinfect the product before carrying out repairs.

2.3 General repair information

Repairs require a high level of expertise. These assembly instructions therefore break down the various tasks into 3 categories:

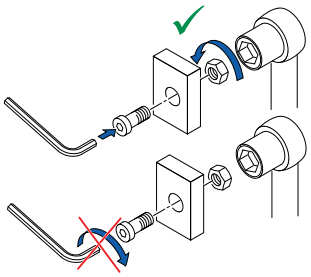
Requirement	Symbol
Easy – technical understanding required	■□□
Medium – technical knowledge required	■■□
Difficult – technical knowledge and expertise in assembling required	■■■

The required tools and their sizes are listed before the instructions.

IMPORTANT!
– If possible, continue to use the old identification label; if this is not possible, the new identification label must contain the same information and the old serial number. (Replacement of spare parts with serial numbers).
– When components are replaced it is necessary to ensure the traceability of the components replaced.
– If screws with thread locker are loosened, these must be replaced with new screws with thread locker. Alternatively, new thread locker must be applied.
– If screws with circlip rings are loosened, these must be replaced with new ones.
– Parts that become damaged during removal must be replaced with new ones.
– All bolts must be tightened with the torque specified in the following instructions. Liquid high-strength and low-strength adhesives are available. After the torque specifications, the adhesive to be used (high-strength or low-strength) is indicated in brackets.

Fastening with hexagon socket bolts

Hexagon socket bolts are not designed to withstand an excessive application of force. When tightening or undoing a hexagon socket bolt, force should be applied to the nut wherever possible to avoid damaging the bolt.

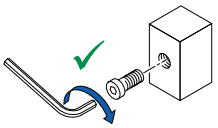


Tightening and undoing

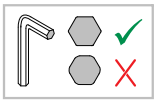
Turn the nut using a socket spanner (only use an open-end spanner if there is insufficient space), using the Allen key simply to stop the bolt turning.

Tightening and undoing when no nut is present

If a hexagon socket bolt is screwed directly into a thread, the bolt must be tightened using the Allen key.

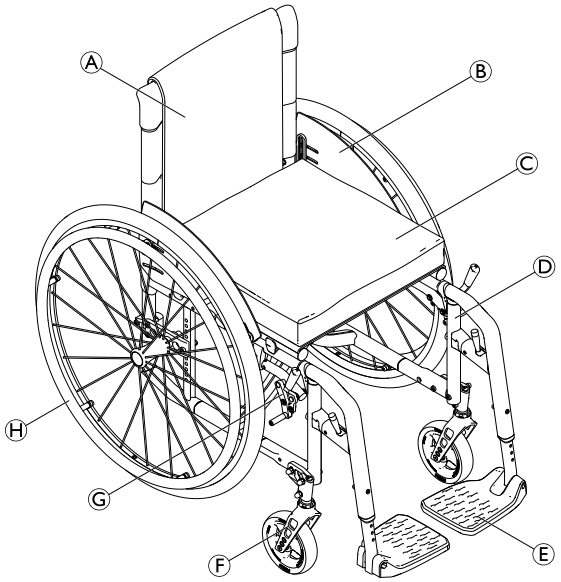


Ensure that the Allen key is of good quality and not worn.



3 Product Overview

3.1 Main parts of the wheelchair



Ⓐ Back

Ⓑ Clothes-guard

Ⓒ Seat

Ⓓ Frame

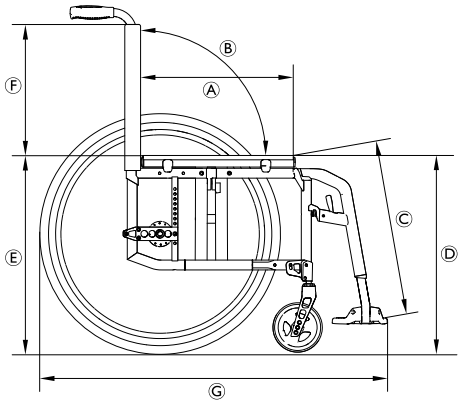
Ⓔ Footrest

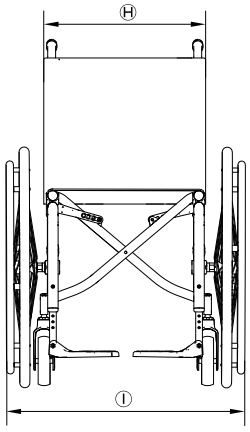
Ⓕ Castor fork with castor wheel

Ⓖ Parking brake

Ⓗ Rear wheel with handrim

3.2 Dimensions





Ⓐ	Seat depth (SD)	320 – 500 mm, in increments of 20 mm
Ⓑ	Backrest angle (BA)	82°/86°/90°/ 94°/98°/102°
Ⓒ	Lower leg length (LLL)	200 – 510 mm, in increments of 10 mm
Ⓓ	Front seat-to-floor height (FSTF)	370 – 530 mm, in increments of 10 mm
Ⓔ	Rear seat-to-floor height (RSTF)	360 – 500 mm, in increments of 10 mm
Ⓕ	Backrest height (BH)	300 – 510 mm, in increments of 15 mm
Ⓖ	Total length (TL)	70° frame angle: approx. 870 – 1220 mm 80° frame angle: approx. 850 – 1200 mm
Ⓗ	Seat width (SW)	280 – 500 mm, in increments of 20 mm
Ⓘ	Total width (TW) Total width, folded	Seat width + 180 mm approx. 290 mm

4 Servicing

4.1 Inspection checklist

General inspection	☺	☹
Is the product in good condition and is it complete (product and optional equipment)?	☐	☐
Is the product free from damage or weaknesses of any kind?	☐	☐
Does the product operate correctly under nominal load?	☐	☐
Is the product fully functional in accordance with the user manual?	☐	☐
Eradication of faults	☺	☹
Have all the faults found been eliminated and have faulty components been replaced?	☐	☐
Are all screws/bolts firmly fitted and is the product securely assembled?	☐	☐
Completion of checks	☺	☹
Is the product technically and functionally safe?	☐	☐
Has the product been cleaned and disinfected?	☐	☐
Is the identification label easily readable and is it securely mounted on the product?	☐	☐
Is the product accompanied by the latest revision of the user manual?	☐	☐

4.2 Spare parts

WARNING!
Original spare parts must be used in all repairs. Otherwise the warranty and product declaration of conformity shall be rendered invalid.

All spare parts must be obtained from the Invacare customer service department. An electronic spare parts catalogue can be found on your local Invacare website.

WARNING!
Risk of injury due to damaged or worn parts
Some replacement parts are only available as a kit.
– Always use the complete new kit when replacing a part.

5 Reconditioning

5.1 Cleaning

IMPORTANT!
– The product does not tolerate cleaning in automatic washing plants, with high-pressure cleaning equipment or steam.

IMPORTANT!
Dirt, sand and seawater can damage the bearings and steel parts can rust if the surface is damaged.
– Only expose the wheelchair to sand and seawater for short periods and clean it after every trip to the beach.
– If the wheelchair is dirty, wipe off the dirt as soon as possible with a damp cloth and dry it carefully.

1. Remove any installed optional equipment (only optional equipment which does not require tools).
2. Wipe down the individual parts using a cloth or soft brush, ordinary household cleaning agents (pH = 6 - 8) and warm water.
3. Rinse the parts with warm water.
4. Thoroughly dry the parts with a dry cloth.

Car polish and soft wax can be used on painted metal surfaces to remove abrasions and restore gloss.

Cleaning upholstery

For cleaning upholstery refer to the instructions on the labels of the seat, cushion and backrest cover.

5.2 Disinfection

Information on recommended disinfectants and methods can be found on https://vah-online.de/en/for-users.

1. Wipe down all generally accessible surfaces with a soft cloth and ordinary household disinfectant.
2. Allow the product to air-dry.

5.3 Materials

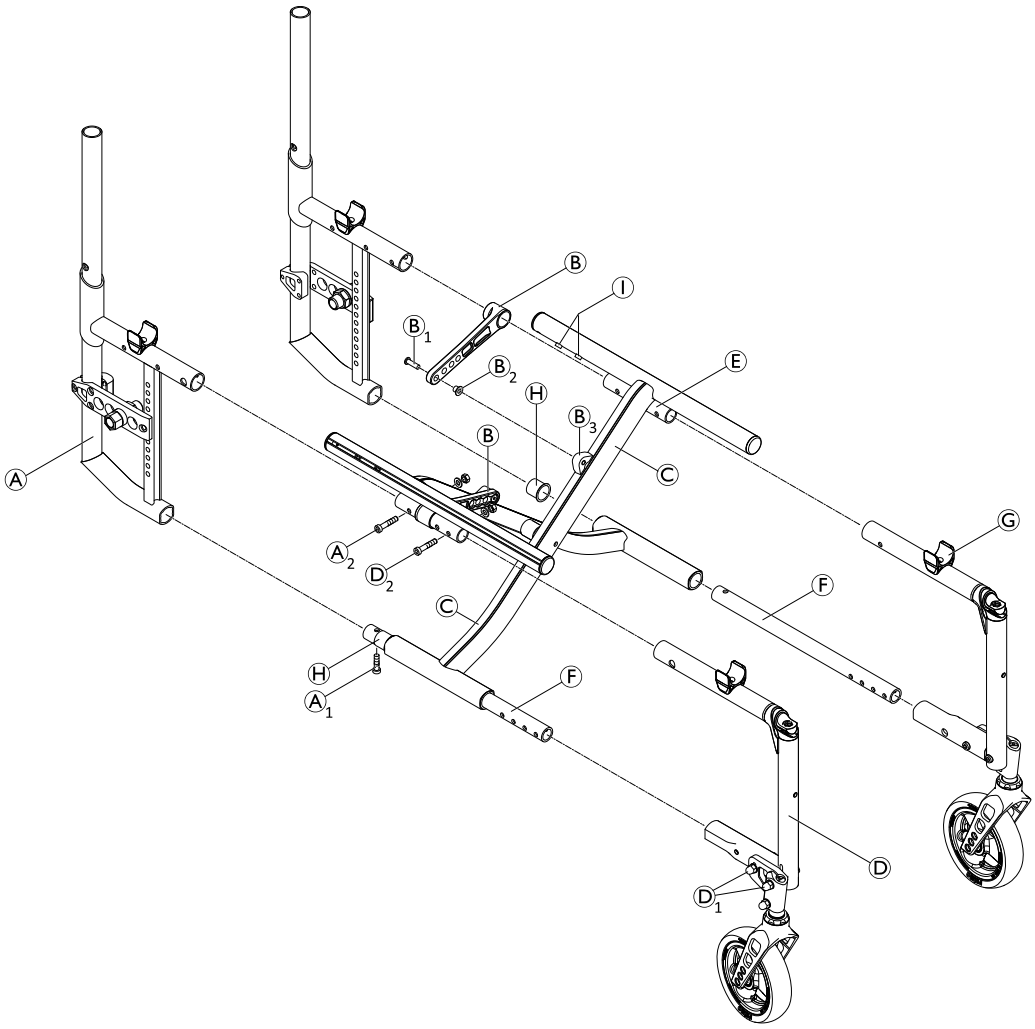
The components used to manufacture Küschall® wheelchairs consist of following materials:

Frame tubes	Aluminum
Backrest tubes	Aluminum
Cross struts	Aluminum
Seat cover / Backrest cover	PA / PE / PVC
Push handles	Aluminum / TPE
Clothes guard / Mudguard	Carbon Fiber or Plastic
Castor forks	Aluminum
Legrest	Aluminum
Footrest	Carbon Fiber or Plastic
Supporting parts / Attachments	Steel / Aluminum
Screws and bolts	Steel

All components have either a protective coating or are corrosion resistant.

6 Instructions

6.1 Frame Overview



Ⓐ Rear frame
Ⓐ$_1$ = 13 Nm
Ⓐ$_2$ = 7 Nm

Ⓑ Retaining lever
Ⓑ$_1$ = 4 Nm

Ⓒ Cross

Ⓓ Front frame
Ⓓ$_1$ = 13 Nm
Ⓓ$_2$ = 7 Nm

Ⓔ Upper connection tube

Ⓕ Lower connecting tube

Ⓖ Seat locking mechanism

Ⓗ Longitudinal stopping bolts

6.1.1 Replacing the Rear Frame

Allen key (5 mm) / Socket spanner (10) ■■□

1. Remove the backrest, see *6.3 Backrest, page 17*.
2. Loosen and remove bolts Ⓐ$_1$ and Ⓐ$_2$.
3. Pull out the rear frame Ⓐ to the back.
4. Push the new rear frame onto the upper and lower connecting tubes Ⓔ and Ⓕ.
5. Reinsert and tighten bolts Ⓐ$_1$ and Ⓐ$_2$.

6.1.2 Replacing the front Frame

Allen key (3 mm, 4 mm, 5 mm) / Socket spanner (10) ■■□

1. Disassemble brakes.
2. Loosen and remove bolts Ⓓ1 and Ⓓ2 on both sides. (On abduction frames, the connecting tube Ⓕ is welded onto the front frame; in this case loosen Ⓐ1 and Ⓓ2.)
3. Pull out front frame Ⓓ to the front.
4. Remove seat locking mechanism Ⓖ with threaded insert from old front frame and fit it on the new front frame, *6.2.6 Turning the Seat Locking Mechanism, page 15*.
5. Push the front frame onto the upper and lower connecting tube.
6. Reinsert and tighten bolts Ⓓ1 and Ⓓ2 on both sides.
7. Set the castor fork angle, *6.7.3 Setting the Steering Error Angle, page 41*.

6.1.3 Replacing the Retaining Lever

Allen key (3 mm, 4 mm, 5 mm) / Socket spanner (10) ■■□

1. With mudguard or clothes guard, fixed: remove Ⓐ1 and Ⓓ2, with mudguard or side rest, insertable and siderest, foldable: remove Ⓐ1 and Ⓐ2.
2. Remove bolt Ⓑ1.
3. Pull the retaining lever Ⓑ from the upper connecting tube Ⓔ.
4. Remove sleeve Ⓑ2.
5. Push the new retaining lever over the upper connecting tube Ⓔ.
6. Position sleeve Ⓑ2 with wide edge in joint Ⓑ3.
7. Secure retaining lever with bolt Ⓑ1.
8. With mudguard or clothes guard, fixed: reinsert and tighten bolts Ⓐ1 and Ⓓ2, with mudguard or side rest, insertable and side rest, flip to back: reinsert and tighten bolts Ⓐ1 and Ⓐ2.

6.1.4 Replacing the central Cross-Brace Pivot Bolt

IMPORTANT!
– The pivot bolt connection must be replaced when the central cross-brace is mounted with the old assembly kit.

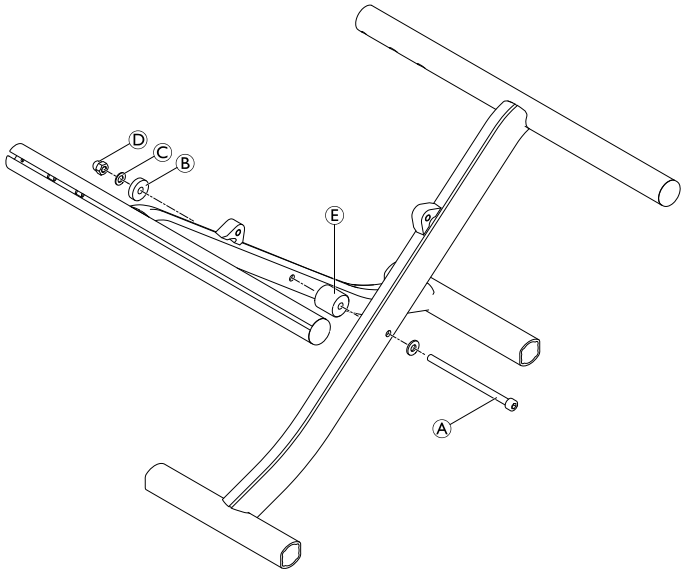
The old assembly kit can be easily identified as follows:

- The spacer Ⓑ is not included.
- Nut Ⓓ is not a cap nut.

Allen key (5 mm) / Socket spanner (10) / Molykote TP42 ■■□

1. Remove the old bolt connection from the cross-brace.
2. Lubricate both sides of distance part Ⓔ slightly with Molykote TP42 and remove excess grease.
3. Re-assemble the cross-brace using only the new assembly kit (SP1537689) containing bolt Ⓐ with washer, spacer Ⓑ, spring washer Ⓒ, safety cap nut Ⓓ and distance part Ⓔ.

Ⓓ = 3 Nm (High strength)

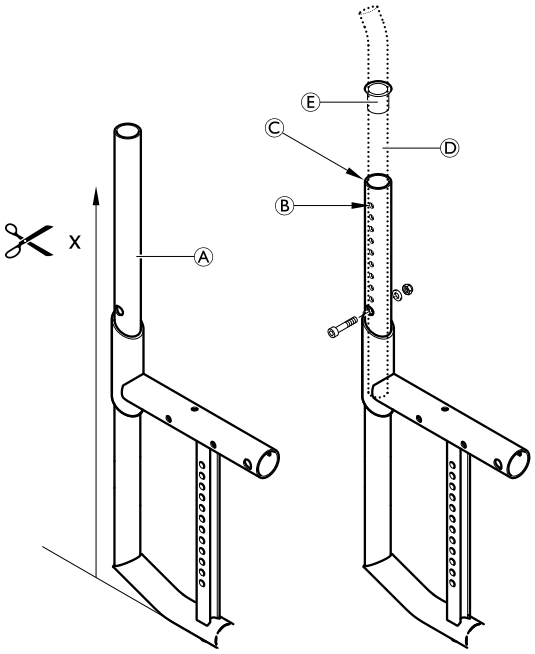


6.1.5 Cutting the rear Frame to Length

Saw, cutting template, tube deburrer ■■□

1. Referring to the table below, cut the rear frame to length measured from the lower edge of the back frame tube Ⓐ.
2. Deburr the outer and inner cut edges at the back frame tube.
3. Attach the plastic guide bushing Ⓔ to the back frame tube and insert the telescopic tube Ⓓ.

WARNING!
Risk of Breakage of the Backrest.
– When mounting the telescopic tubes, always make sure that the uppermost hole Ⓑ of the telescopic tube is positioned at least 10 mm below the upper edge Ⓒ of the rear frame tube.



Rear Frame - Cut off Table in Relation to Backrest Height and mounting Type:

Backrest height (RH)		**300**	**315**	**330**	**345**	**360**	**375**	**390**	**405**	**420**	**435**	**450**	**465**	**480**	**495**	**510**
Standard/mini push handle																
lumbar	x [mm]	420	420	420	435	450	465	480	495	510	525	—	—	—	—	—
Without push handle																
lumbar	x [mm]	405	420	435	450	465	480	495	405	420	435	450	465	480	495	510
Foldable push handle																
lumbar	x [mm]	420	435	450	465	480	495	510	435	450	465	480	495	510	525	—
Height-adjustable push handle, rearset																
straight	x [mm]	405	420	435	450	465	480	495	510	525	—	—	—	—	—	—
lumbar	x [mm]	405	420	435	450	465	480	495	405	420	435	450	465	480	495	510

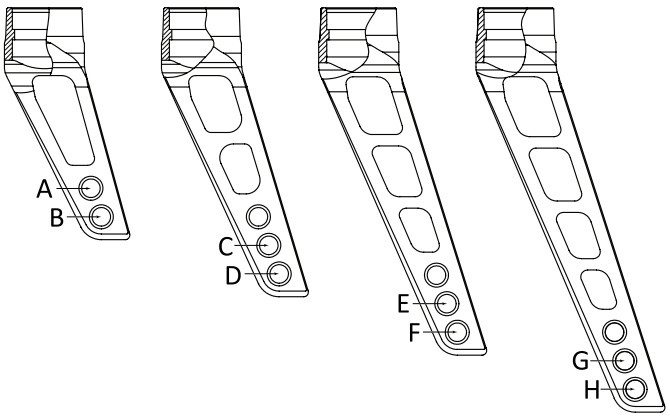
Backrest height (RH)		**300**	**315**	**330**	**345**	**360**	**375**	**390**	**405**	**420**	**435**	**450**	**465**	**480**	**495**	**510**
Height-adjustable push handle, integrated																
straight	x [mm]	390	405	405	405	405	405	405	420	435	450	465	480	495	435	450
lumbar	x [mm]	360	375	390	405	405	405	405	405	405	405	405	405	420	435	450

6.2 Seat

6.2.1 Front Seat-to-Floor Height (FSTF)

Options for changing the front seat height:

- Replace the castor wheel with larger or smaller one or fit it at another position on the castor fork, see *6.7.1 Replacing the Castor Wheel, page 40*.
- Replace castor fork with a larger or a smaller one, see *6.7.2 Replacing the Castor Fork, page 40*.
- Install the castor fork in high or low position, see *6.7.5 Installing/Shifting the Castor Fork Supporter on the Frame, page 42*.



There are four castor fork sizes available:

Seat height front with respect to fork size, castor size and mounting situation															
Frame	high mounted					standard mounted					low mounted				
Castor size	3”	4”	5”	6”	7”	3”	4”	5”	6”	7”	3”	4”	5”	6”	7”
FSTF 380	A	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FSTF 390	B	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FSTF 400	B	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FSTF 410	C	B	—	—	—	A	—	—	—	—	—	—	—	—	—
FSTF 420	D	C	—	—	—	B	—	—	—	—	—	—	—	—	—
FSTF 430	E	C	C	—	—	B	—	—	—	—	—	—	—	—	—
FSTF 440	F	D	C	—	—	C	B	—	—	—	A	—	—	—	—
FSTF 450	G	E	D	—	—	D	C	—	—	—	B	—	—	—	—
FSTF 460	H	F	E	D	—	E	C	C	—	—	B	—	—	—	—
FSTF 470	—	G	F	E	—	F	D	C	—	—	C	B	—	—	—
FSTF 480	—	H	G	F	E	G	E	D	—	—	D	C	—	—	—
FSTF 490	—	—	H	G	F	H	F	E	D	—	E	C	C	—	—
FSTF 500	—	—	—	H	G	—	G	F	E	—	F	D	C	—	—
FSTF 510	—	—	—	—	H	—	H	G	F	E	G	E	D	—	—
FSTF 520	—	—	—	—	—	—	—	H	G	F	H	F	E	D	—
FSTF 530	—	—	—	—	—	—	—	—	H	G	—	G	F	E	—
FSTF 540	—	—	—	—	—	—	—	—	—	H	—	H	G	F	E
FSTF 550	—	—	—	—	—	—	—	—	—	—	—	—	H	G	F

6’’ and 7’’ castor wheels cannot be used on the dynamic frame (80°), if a 2-part angled footrest is installed.

6.2.2 Rear Seat-to-Floor Height (RSTF)

Options for changing the rear seat-to-floor height:

- Replace rear wheel with a larger or a smaller one.
- Change the position of the adapter plate, see *6.8 Rear Wheels, page 43*.

Rear seat-to-floor height with respect to the rear wheels and positioning on the frame					
Rear seat height (RSTF) [mm]	Rear wheel size [inch]				
	22''	24''	25''	26''	
RSTF 370	1	—	—	—	1
RSTF 380	2	—	—	—	2
RSTF 390	3	1	—	—	3
RSTF 400/410	4	2	1	—	4
RSTF 420	5	3	2	1	5
RSTF 430	6	4	3	2	6
RSTF 440	7	5	4	3	7
RSTF 450/460	8	6	5	4	8
RSTF 470	9	7	6	5	9
RSTF 480	10	8	7	6	10
RSTF 390	—	9	8	7	11
RSTF 500	—	10	9	8	12

6.2.3 Seat Width (SW)

The possible seat width range is from 280 – 500 mm.

Once the Seat width is specified, it is very difficult to change it: The cross struts, backrest cover (on standard backs) and, on some configurations, the footrests must be replaced.

6.2.4 Seat depth (SD)

The possible seat depth range is from 320 – 500 mm.

To reduce the seat depth, the cross struts must be shortened and a new appropriately sized seat cover fitted. At a seat depth ≥ 400 mm, the frame can be shortened.

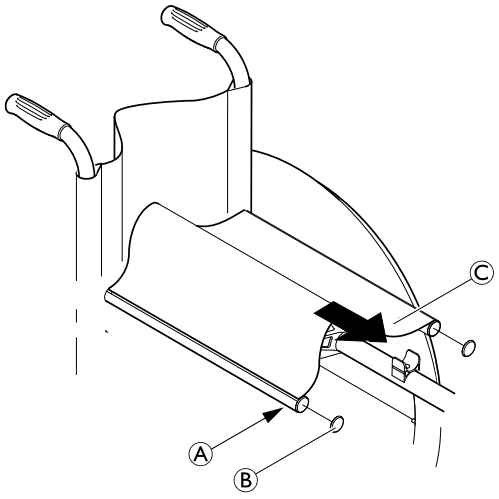
To enlarge the seat depth, new cross struts, a new appropriately sized seat cover and, depending on the seat depth, a new frame must be installed.

6.2.5 Replacing the Seat Cover

Torx screwdriver (10) ■■□

1. Loosen bolts Ⓐ and remove plug Ⓑ.
2. Remove seat cover Ⓒ including plastic rods.
3. Position new seat cover. Adjust seat cover to width (seat width + 25 mm).
4. Retighten bolts and reinsert the plugs.

Ⓐ = 4 Nm



6.2.6 Turning the Seat Locking Mechanism

If the seat edge can be too easily removed from the seat locking mechanisms, either the front two or all four seat locking mechanisms can be rotated by 180°:

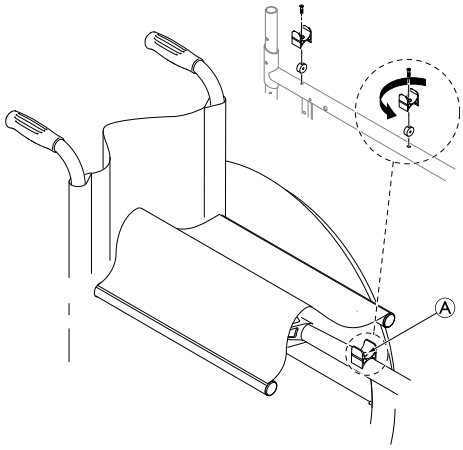
Allen key (3 mm) ■□□

1. Loosen bolt in seat locking mechanism Ⓐ.

   Screw out the bolt only to the extent that the seat locking mechanism can be turned as otherwise the threaded insert can move and is then difficult to re-position.

2. Turn seat locking mechanism by 180°.
3. Secure bolt with adhesive (low-strength).
4. Retighten the bolt.

Ⓐ = 4 Nm (low-strength)



6.3 Backrest

6.3.1 Backrest Height

The backrest height can be changed by installing the telescopic tubes in another position in the backrest tubes. If this setting option is insufficient, the telescopic tubes can be replaced.

6.3.2 Adjusting the Height of standard Backrests

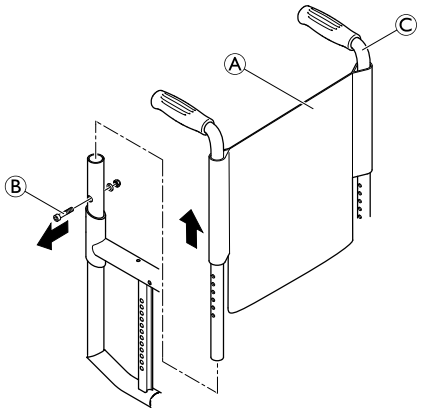
Allen keys (3 mm, 4 mm, 6 mm) / Socket spanner (8, 10) ■■□

1. Push the backrest cover Ⓐ upwards and remove the bolt, washer and nut Ⓑ on both sides.
2. Push the push handles Ⓒ upwards or downwards until you reach the required height. Replace the bolts, washers and nuts and tighten.

Ⓑ = 7 Nm

If this setting range is insufficient, use new push handle tubes.

If the backrest height was changed considerably, a new backrest cover may have to be installed.



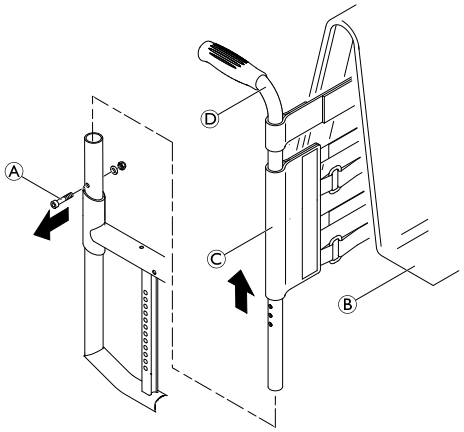
6.3.3 Adjusting the Height of Hook and Loop adjustable Backrests

Allen keys (3 mm, 4 mm, 6 mm) / Socket spanner (8, 10) ■□□

1. Remove the backrest cover Ⓑ and move the hook and loop bands Ⓒ until the bolts Ⓐ are visible on both sides.
2. Remove bolts Ⓐ, washers and nuts and move the push handle tubes Ⓓ to the required height on both sides.
3. Reinsert the bolts into the appropriate holes on both sides and tighten using washers and nuts.

Ⓐ = 7 Nm

If the backrest height is changed considerably, the push handles must be replaced. An additional hook and loop band may have to be installed or one may have to be removed.

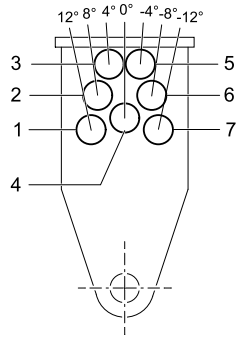


6.3.4 Angle-adjustable Backrest

In order to make the backrest angle adjustable, an angle-adjustable backrest can be fitted.

Possible Backrest Angles:

Position	Deviation from standard backrests	Angle between backrest and seat
1	12°	102°
2	8°	98°
3	4°	94°
4	0°	90°
5	-4°	86°
6	-8°	82°
7	-12°	78°



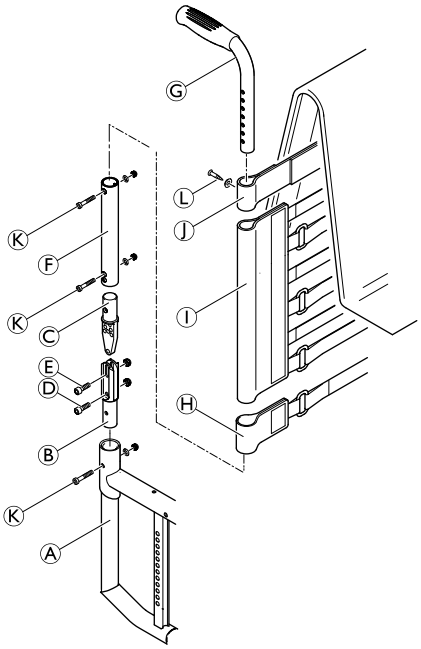
6.3.5 Installing an angle-adjustable Backrest

Allen key (3 mm, 4 mm, 5 mm) / Socket spanner (8, 10) / Open-end spanner (10) ■■□

Shorter rear frame (variant III) required.

1. Push the lower joint pin Ⓑ into the rear frame Ⓐ and fix it using a bolt.
2. Secure backrest tube Ⓕ to the upper joint pin Ⓒ using a bolt.
3. Assemble the upper and lower joint pins (Ⓒ and Ⓑ) and secure with bolt Ⓓ.
4. Set the desired backrest angle and secure in the nearest hole using bolt Ⓔ.
5. Push the single hook and loop band Ⓗ and then the other hook and loop bands Ⓘ and the end band Ⓙ over the backrest tube Ⓕ.
6. Insert the push handle tube Ⓖ into the backrest tube Ⓕ and install at the required height using bolts Ⓚ, washers and nuts.
7. Secure the end band Ⓙ on the push handle tube Ⓖ using washer and screw Ⓛ.

Ⓓ = 13 Nm
Ⓔ = 13 Nm
Ⓚ = 7 Nm
Ⓛ = hand-tight



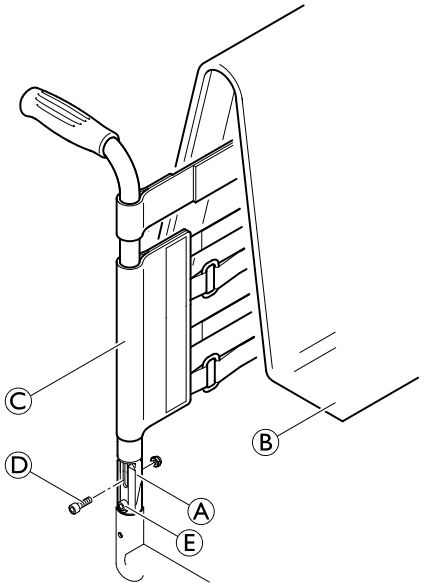
6.3.6 Adjusting the Backrest Angle

Allen key (5 mm) / Socket spanner (10) / Open-end spanner (10) ■■□

1. Remove the backrest cushion Ⓑ and push the hook and loop bands Ⓒ upwards, until the backrest joint Ⓐ is invisible.
2. Remove the bolt Ⓓ.
3. Slightly loosen bolt Ⓔ.
4. Set the desired backrest angle, insert the bolt Ⓓ in the nearest hole and tighten.
5. Retighten bolt Ⓔ.
6. Perform the same settings on both sides.

Ⓓ = 13 Nm

Ⓔ = 13 Nm



Visual Check

By looking from the side check that both backrest tubes are level and thus that the same angle has been set on both sides.

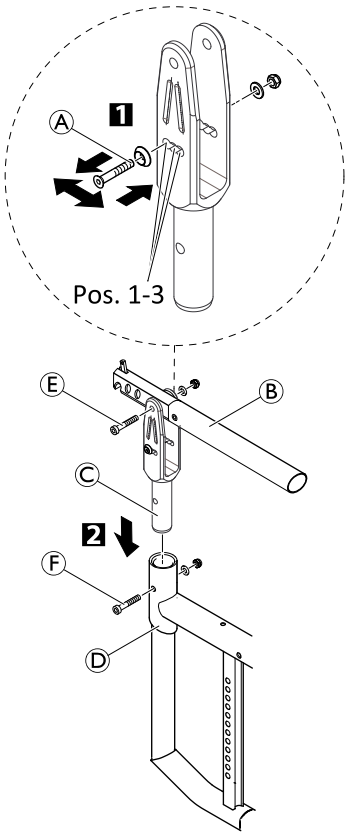
6.3.7 Installing the Joint for a folding Backrest

Allen key (4 mm, 5 mm) / Socket spanner (10) ■■□

Shorter rear frame (variant III) required.

1. Set the desired backrest angle, insert bolt Ⓐ in the nearest position (Pos. 1, 2 or 3) and tighten with washer and nut. (With the curved backrest tubes, other positions can be achieved in addition to the 3 positions specified.)
2. Install the intermediate backrest tube Ⓑ to the joint housing using bolt Ⓔ, washer and nut.
3. Insert the joint housing Ⓒ into the rear frame Ⓓ and secure using bolt Ⓕ, washer and nut.

Ⓐ = 13 Nm
Ⓔ = 13 Nm
Ⓕ = 7 Nm



Possible Backrest Angles

Position 1 (rear position): 82°, with curved backrest tube 90°

Position 2 (mid position): 86°, with curved backrest tube 94°

Position 3 (front position): 90°, with curved backrest tube 98°

6.3.8 Replacing Push Handles / Replacing Push Handles and Backrest

If the push handles are replaced with a different type of push handles, e.g. height-adjustable ones, it can happen that the rear frame must also be replaced.

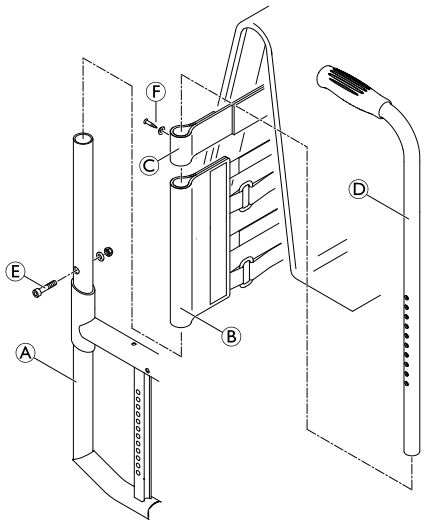
Changing the backrest height can also mean that the configuration of the hook and loop bands must be changed.

6.3.9 Installing standard Push Handles

Allen key (4 mm, 5 mm) / Socket spanner (8, 10) / Phillips screwdriver (4) ■■□

1. Push the end band Ⓒ onto the telescopic tube Ⓓ.
2. Push the backrest bands Ⓑ onto the telescopic tube.
3. Secure end band at the telescopic tube using washer and screw Ⓕ.
4. Secure the telescopic tube Ⓓ to the rear frame Ⓐ at the required height using bolt, washer and nut Ⓔ.

Ⓔ = 7 Nm
Ⓕ = hand-tight



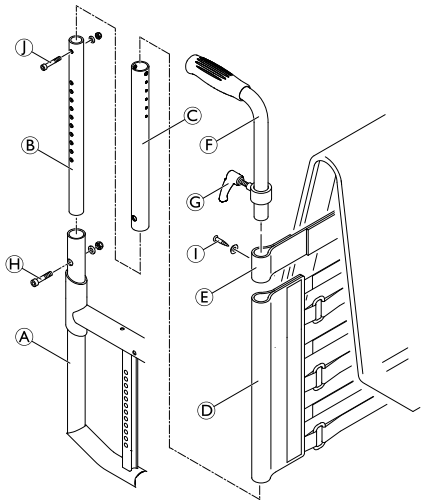
6.3.10 Installing height-adjustable, integrated Push Handles

Allen key (4 mm, 5 mm) / Socket spanner (8, 10) / Phillips screwdriver (4) ■■□

Special rear frame required for RH 300 – 465 (variant II)

1. Push lower telescopic tube Ⓑ and upper telescopic tube Ⓒ into one another, insert bolt Ⓙ, washer and nut and tighten.
2. Secure pre-assembled element (telescopic tubes Ⓑ and Ⓒ) at the required height on the rear frame Ⓐ using bolt Ⓗ, washer and nut.
3. Push the hook and loop bands Ⓓ and end band Ⓔ onto the telescopic tubes.
4. Using the clamp bolt Ⓖ secure the height adjustable push handle Ⓕ through the telescopic tube Ⓒ.
5. Push in push handle completely.
6. Secure end band Ⓔ on the telescopic tube Ⓒ using screw Ⓘ.

Ⓗ = 7 Nm
Ⓘ = hand tight
Ⓙ = 7 Nm



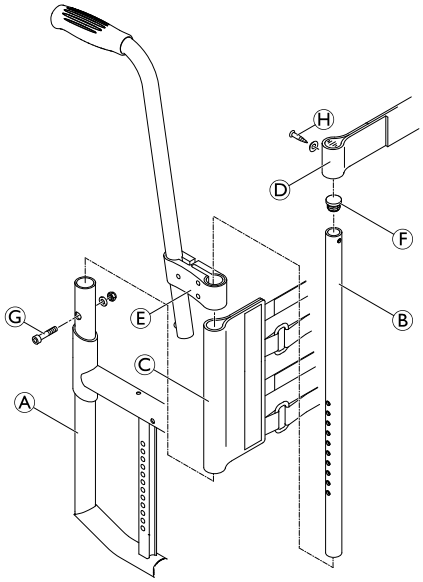
6.3.11 Installing height-adjustable, rear set Push Handles

Allen key (4 mm, 5 mm) / Socket spanner (8, 10) / Phillips screwdriver (4) ■■□

The hook and loop bands may have to be replaced with narrower ones, as space is required to secure the holder on the telescopic tube.

1. Secure the telescopic tube Ⓑ to the rear frame Ⓐ at the required height using bolt Ⓖ, washer and nut.
2. Press the cover cap Ⓕ onto the end of the telescopic tube.
3. Push the hook and loop bands Ⓒ onto the telescopic tube.
4. Push the holder Ⓔ onto the telescopic tube and fix in place by tightening the clamp bolts.
5. Install the end band Ⓓ onto the telescopic tube and secure with screw Ⓗ.
6. Install protective cushion.

Ⓖ = 7 Nm
Ⓗ = hand tight



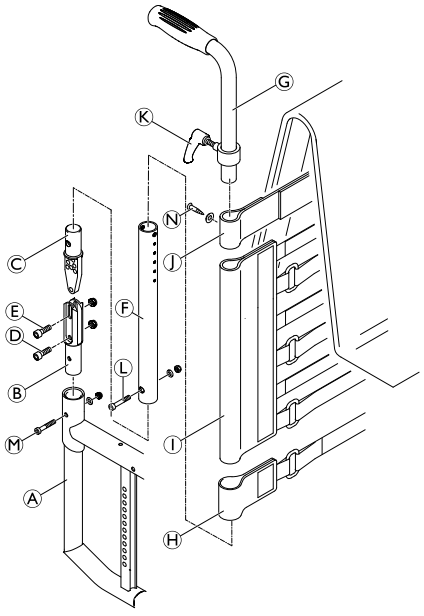
6.3.12 Installing angle-adjustable Backrest with height-adjustable Push Handles

Allen key (4 mm, 5 mm) / Socket spanner (8, 10) / Phillips screwdriver (4) / Open-end spanner (10) ■■□

Shorter rear frame (variant III) required.

1. Push the lower joint pin Ⓑ into the rear frame Ⓐ and fix it using bolt Ⓜ, washer and nut.
2. Fit backrest tube Ⓕ onto the upper joint pin Ⓒ using bolt Ⓛ, washer and nut.
3. Assemble the upper and lower joint pins (Ⓒ and Ⓑ) and secure with a bolt and nut Ⓓ.
4. Set the desired backrest angle and secure in the nearest hole using bolt and nut Ⓔ.
5. Retighten the bolt and nut Ⓓ.
6. Push the single hook and loop band Ⓗ and then the other hook and loop bands Ⓘ and the end band Ⓙ over the backrest tube Ⓕ.
7. Push in the push handle Ⓖ completely.
8. Using the clamp bolt Ⓚ fit the push handles through the telescopic tube Ⓕ.
9. Fix the end band Ⓙ onto the telescopic tube with screw Ⓝ.

Ⓓ = 13 Nm
Ⓔ = 13 Nm
Ⓛ = 7 Nm
Ⓜ = 7 Nm
Ⓝ = hand tight



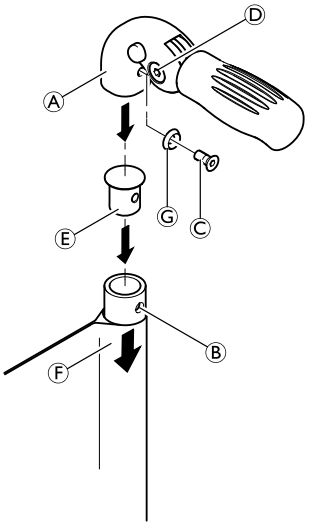
6.3.13 Replacing the foldable Push Handle

Hole punch pliers (6 mm) / Allen key (3 mm, 4 mm) ■□□

1. Remove the old foldable push handle.
2. Pull down the backrest cover Ⓕ on the telescopic tube, until its hole Ⓑ is uncovered.

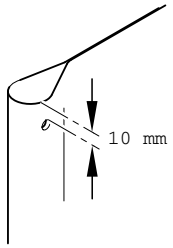
   IMPORTANT!
   – Make sure that the threaded insert Ⓔ (part no. 1580450) supplied with the new push handle is used for assembly.

3. Place the threaded insert Ⓔ in the telescopic tube.
4. Punch a hole through the backrest cover with a distance of 10 mm from the upper edge, using hole punch pliers (see graphic below).
5. Slide the new foldable push handle Ⓐ onto the telescopic tube.
6. Pull up the backrest cover, until it covers completely the rear hole in the push handle.
7. Install the foldable push handle with screw Ⓒ and washer Ⓖ.
8. Check screws Ⓓ on both sides of the push handle and retighten if necessary.
9. Carry out the same steps for the other push handle.



IMPORTANT!
– Make sure that the folding force is approximately 5 N (0.5 kg).

IMPORTANT!
– Fixing screw Ⓒ may only be used once. Alternatively the screw can be cleaned (remove old thread locking adhesive) and reinstalled with new low-strength thread locking adhesive.



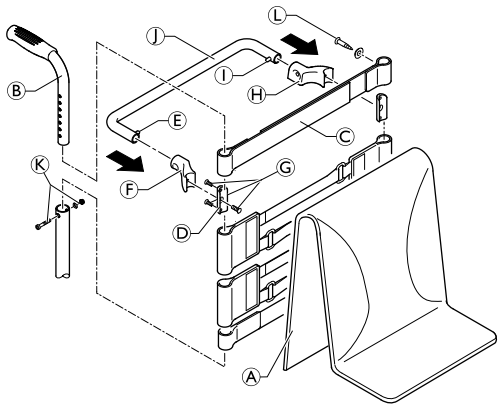
ⓘ The retrofit of foldable push handles requires new tubing.

6.3.14 Installing the Stabilisation Bar

Allen key (3 mm) / Socket spanner (8 mm) / Phillips screwdriver (2) ■■□

With a back height RH405 or larger it is possible to install a stabilisation bar to increase the rigidity of the backrest handles.

1. Remove backrest cover Ⓐ, push handles Ⓑ and the 10 cm backrest band (or end band, if no push handles are assembled).
2. Install a 5 cm backrest band Ⓒ or end band with the screws Ⓛ to the push handles Ⓑ.
3. Install the push handles Ⓑ with bolts and nuts Ⓚ.
4. Attach the clamps Ⓓ together with the right-hand socket Ⓕ and the left-hand socket Ⓗ with the screws Ⓖ below the backrest band Ⓒ to the push handles Ⓑ.
5. Replace the push handle / backrest band / socket assembly.
6. Press pin Ⓔ and slide the stabilisation bar Ⓙ into the right-hand socket Ⓕ then swing the stabilisation bar upwards, press pin Ⓘ and click the stabilisation bar into the left-hand socket Ⓗ.

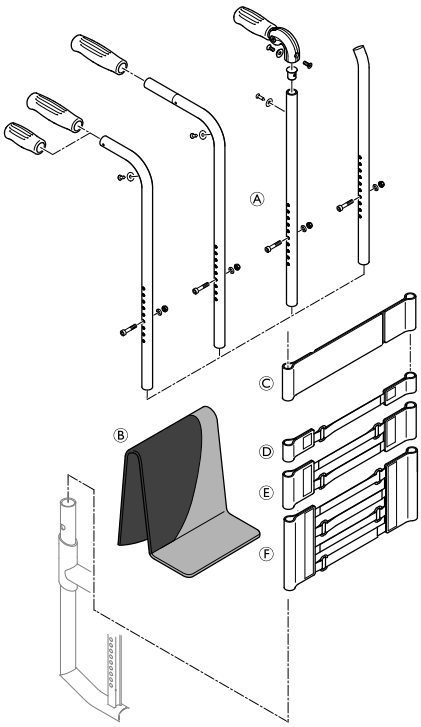


Ⓖ = 4 Nm
Ⓚ = 7 Nm
Ⓛ = hand-tight

6.3.15 Backrest Parts for adjustable Backs with respect to Backrest Height

Fixed Backrest with standard/mini Push Handles, foldable Push Handles* or without Push Handles

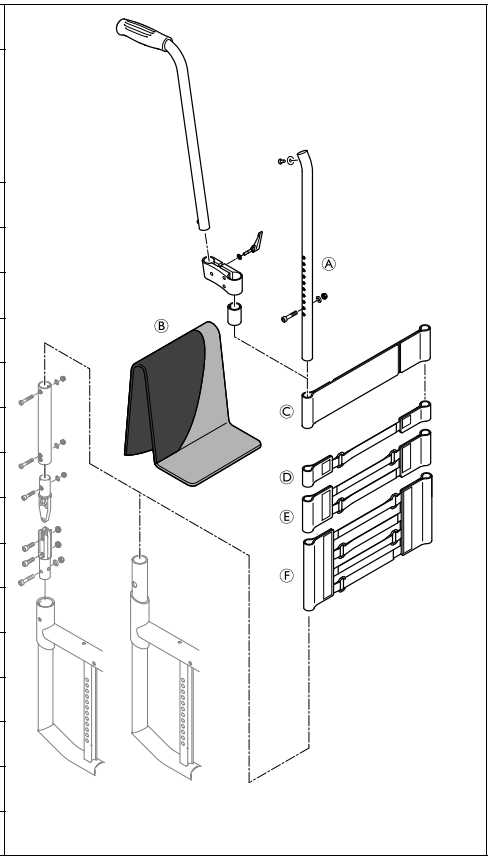
Backrest height (RH) with respect to cover, backrest tubes, bands				
RH [mm]	Cover Ⓑ	Telescopic tube Ⓐ (straight/ lumbar)	Bands (without stabilisation bar, end band Ⓒ = 10 cm)	Bands (with stabilisation bar, end band Ⓒ = 5 cm)
300	S	S	1-band Ⓓ + 2-band Ⓔ	—
315	S	S	1-band + 2-band	—
330	S	S	2x2-band	—
345	M	S	2x2-band	—
360	M	S	2x2-band	—
375	M	S	1-band + 2x2-band	—
390	M	S	1-band + 2x2-band	—
405	M	M	1-band + 4-band Ⓕ	1-band + 2x2-band
420	L	M	1-band + 4-band	2x1-band + 4-band
435	L	M	1-band + 4-band	2x1-band + 4-band
450	L	M	2-band + 4-band	2x1-band + 4-band
465	L	M	2-band + 4-band	1-band + 2-band + 4-band
480	L	M	2-band + 4-band	1-band + 2-band + 4-band
495	L	M	2-band + 4-band	1-band + 2-band + 4-band
510	L	M	1-band + 2-band + 4-band	1-band + 2-band + 4-band



*Stabilisation bar not possible for foldable push handles.

Fixed or angle-adjustable Backrest with height-adjustable Push Handles, rear set

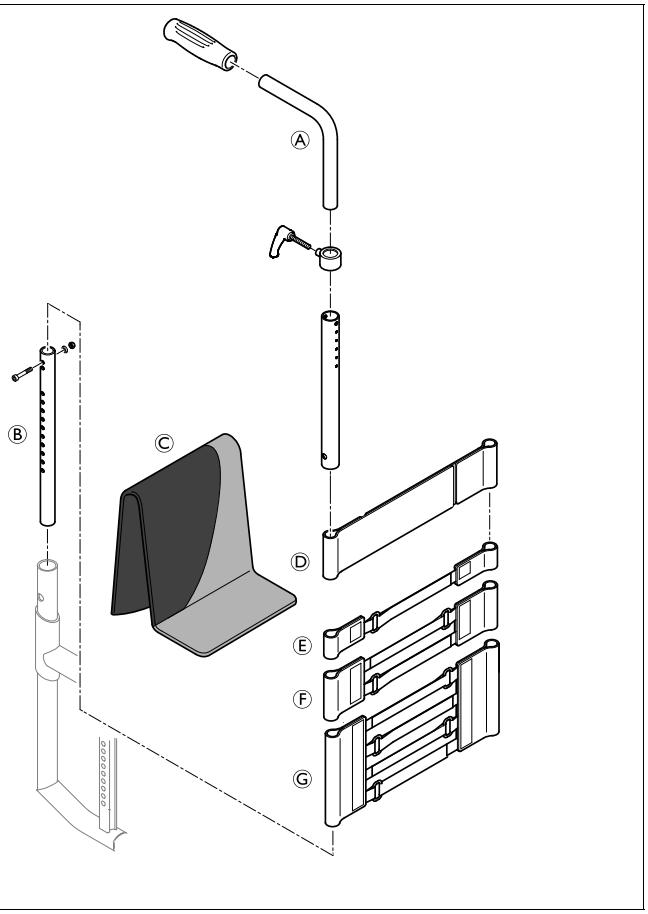
Backrest height (RH) with respect to cover, backrest tubes, bands				
RH [mm]	Cover Ⓑ	Telescopic tube Ⓐ (straight/ lumbar)	Bands (without stabilisation bar, end band Ⓒ = 10 cm)	Bands (with stabilisation bar, end band Ⓒ = 5 cm)
300	S	L	2-band Ⓔ	—
315	S	L	2-band	—
330	S	L	1-band Ⓓ + 2-band	—
345	M	L	1-band + 2-band	—
360	M	L	1-band + 2-band	—
375	M	L	2x2-band	—
390	M	L/XL*	2x2-band	—
405	M	XL	4-band Ⓕ	2x1-band + 2-band
420	L	XL	4-band	1-band + 4-band
435	L	XL	4-band	1-band + 4-band
450	L	XL	1-band + 4-band	1-band + 4-band
465	L	XL	1-band + 4-band	1-band + 4-band
480	L	XL	1-band + 4-band	2-band + 4-band
495	L	XL	1-band + 4-band	2-band + 4-band
510	L	XL	2-band + 4-band	2-band + 4-band



*Telescopic tube XL for angle adjustable backrest.

Fixed Backrest with height-adjustable Push Handles, integrated

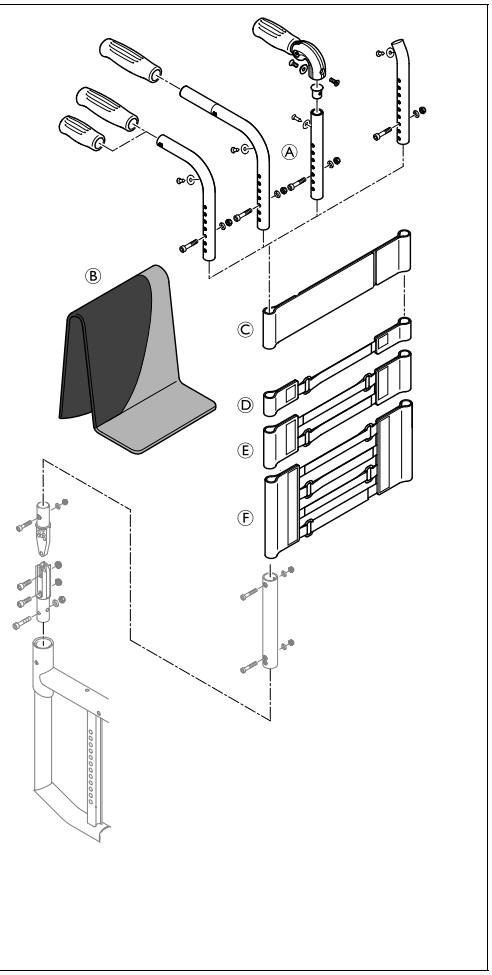
Backrest height (RH) with respect to cover, backrest tubes, bands*					
		Telescopic tube (straight)		Telescopic tube (lumbar)	
RH [mm]	Cover Ⓒ	Backrest tube Ⓑ	Push handle Ⓐ	Backrest tube Ⓑ	Push handle Ⓐ
300	S	S	S	S	S
315	S	S	S	S	S
330	S	S	S	S	S
345	M	S	S	S	S
360	M	S	S	S	S
375	M	S	L	S	S
390	M	S	L	S	S
405	M	S	L	M	S
420	L	S	L	M	S
435	L	S	L	M	L
450	L	S	L	M	L
465	L	S	L	M	L
480	L	S	L	M	L
495	L	M	L	M	L
510	L	M	L	M	L



*For bands configuration, see 1st table „Fixed backrest with standard push handles“.

Angle adjustable Backrest with standard/mini Push Handles, foldable Push Handles* or without Push Handles

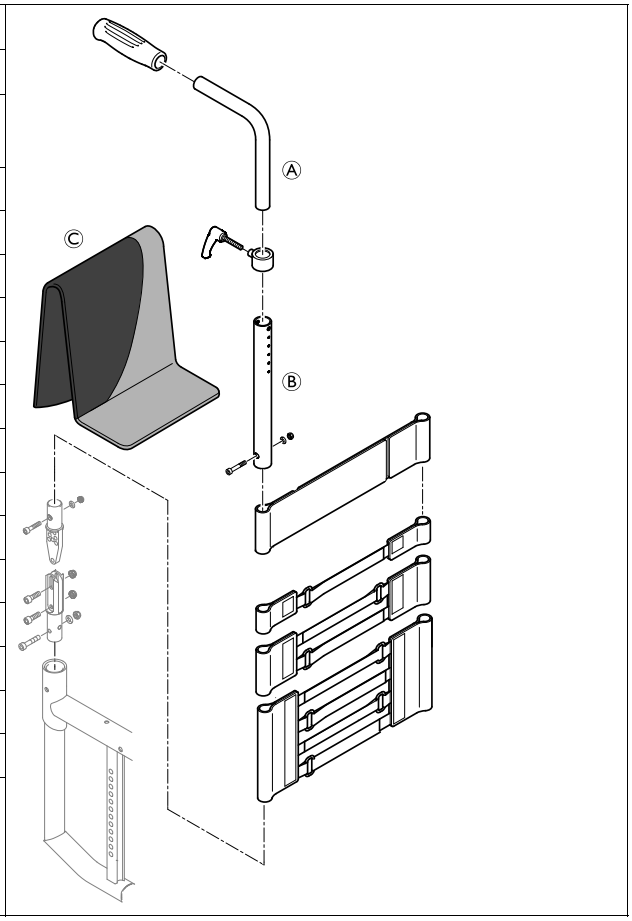
Backrest height (RH) with respect to cover, backrest tubes, bands				
RH [mm]	Cover Ⓑ	Telescopic tube Ⓐ	Bands (without stabilisation bar, end band Ⓒ = 10 cm)	Bands (with stabilisation bar, end band Ⓒ = 5 cm)
300	S	S	1-band Ⓓ + 2–band Ⓔ	—
315	S	S	1-band + 2-band	—
330	S	S	2x2-band	—
345	M	S	2x2-band	—
360	M	S	2x2-band	—
375	M	S	1-band + 2x2-band	—
390	M	L	1-band + 2x2-band	—
405	M	L	1-band + 4-band Ⓕ	1-band + 4-band
420	L	L	1-band + 4-band	2-band + 4-band
435	L	L	1-band + 4-band	2-band + 4-band
450	L	L	2-band + 4-band	2-band + 4-band
465	L	L	2-band + 4-band	2-band + 4-band
480	L	L	2-band + 4-band	1-band + 2-band + 4-band
495	L	L	2-band + 4-band	1-band + 2-band + 4-band
510	L	L	1-band + 2-band + 4-band	1-band + 2-band + 4-band



*Stabilisation bar not possible for foldable push handles.

Angle adjustable Backrest with height-adjustable Push Handles, integrated

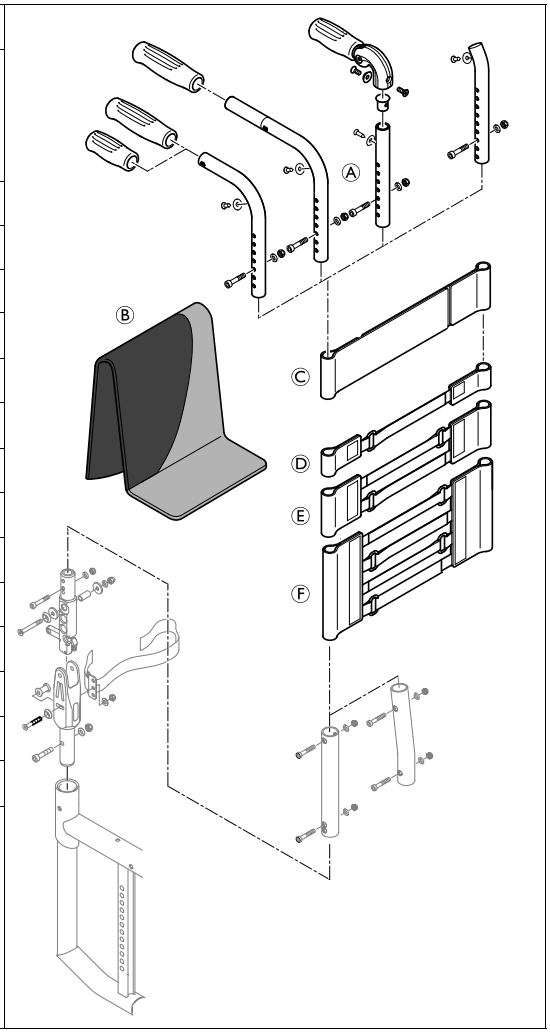
Backrest height (RH) with respect to cover, backrest tubes, bands*			
		Telescopic tube	
RH [mm]	Cover Ⓒ	Backrest tube Ⓑ	Push handle Ⓐ
300	S	S	S
315	S	S	S
330	S	S	S
345	M	M	L
360	M	M	L
375	M	M	L
390	M	M	L
405	M	M	L
420	L	L	L
435	L	L	L
450	L	L	L
465	L	L	L
480	L	L	L
495	L	XL	L
510	L	XL	L



*For bands configuration, see 1st table „Angle adjustable backrest with standard push handles“.

Foldable Backrest with standard/mini Push Handles, foldable Push Handles[1)] or without Push Handles

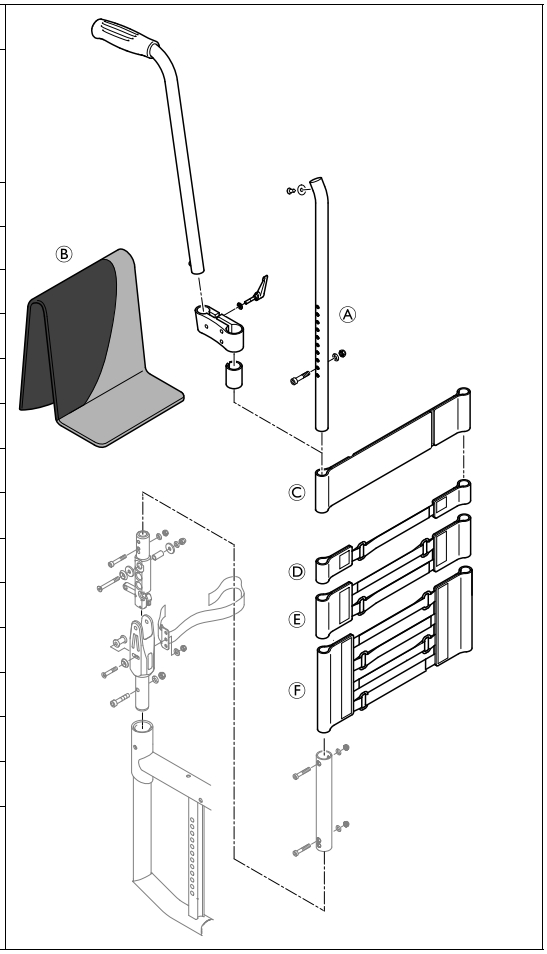
Backrest height (RH) with respect to cover, backrest tubes, bands				
RH [mm]	Cover Ⓑ	Telescopic tube Ⓐ	Bands (without stabilisation bar, end band Ⓒ = 10 cm)	Bands (with stabilisation bar, end band Ⓒ = 5 cm)
300	—	—	—	—
315	—	—	—	—
330	—	—	—	—
345	M	S	2x1-band Ⓓ	—
360	M	S	2x1-band	—
375	M	S	1-band + 2-band Ⓔ	—
390	M	S	1-band + 2-band	—
405	M	S	1-band + 2-band	2x2–band
420	L	S	2x2–band	2x2–band
435	L	L	2x2–band	1-band + 2x2-band
450	L	L	2x2–band	1-band + 2x2-band
465	L	L	1-band + 2x2-band	1-band + 4-band
480	L	L	1-band + 2x2-band	1-band + 4-band
495	L	L	1-band + 4-band Ⓕ	1-band + 4-band
510	L	L	1-band + 4-band	3x2-band



[1)] Stabilization bar not possible for foldable push handles
[2)] Backrest tubes lumbar possible from RH360

Foldable Backrest with height-adjustable Push Handles, rear set

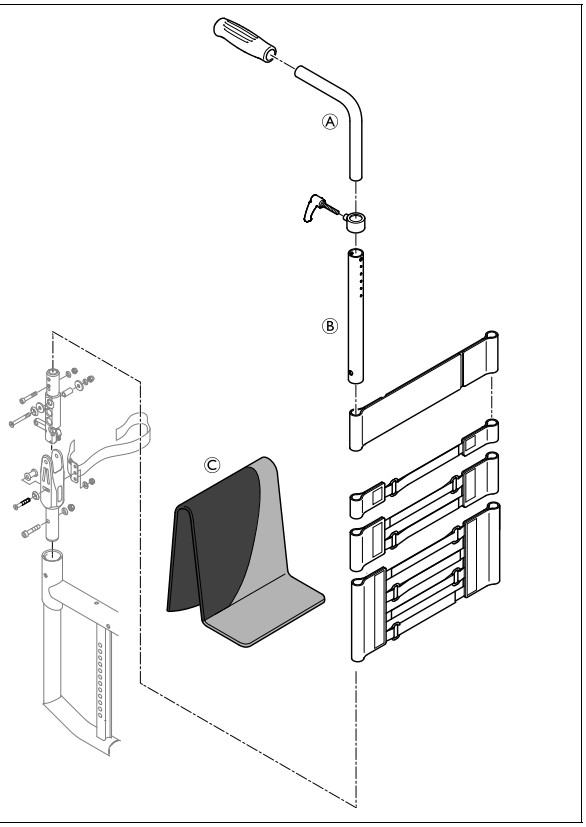
Backrest height (RH) with respect to cover, backrest tubes*, bands				
RH [mm]	Cover Ⓑ	Telescopic tube Ⓐ	Bands (without stabilisation bar, end band Ⓒ = 10 cm)	Bands (with stabilisation bar, end band Ⓒ = 5 cm)
300	—	—	—	—
315	—	—	—	—
330	—	—	—	—
345	M	S	2x1-band Ⓓ	—
360	M	S	2x1-band	—
375	M	S	2x1-band	—
390	M	S	2x1-band	—
405	M	S	1-band + 2-band Ⓔ	1-band + 2-band
420	L	S	1-band + 2-band	1-band + 2-band
435	L	L	1-band + 2-band	1-band + 2-band
450	L	L	2x2–band	2x2–band
465	L	L	2x2–band	2x2–band
480	L	L	2x2–band	2x2–band
495	L	L	1-band + 2x2-band	1-band + 2x2-band
510	L	L	1-band + 2x2-band	1-band + 2x2-band



*Backrest tubes lumbar possible from RH360

Foldable Backrest with height-adjustable Push Handles, integrated

Backrest height (RH) with respect to cover, backrest tubes, bands*				
			Push handle Ⓐ	
RH [mm]	Cover Ⓒ	Backrest tube Ⓑ	Telescopic tube (82°, 86°, 90°)	Telescopic tube (94°, 98°)
300	—	—	—	—
315	—	—	—	—
330	—	—	—	—
345	M	S	S	S
360	M	S	S	S
375	M	S	S	S
390	M	M	L	S
405	M	M	L	S
420	L	M	L	S
435	L	M	L	S
450	L	M	L	L
465	L	L	L	L
480	L	L	L	L
495	L	L	L	L
510	L	L	L	L



*For bands configuration, see 1st table „Angle adjustable backrest with standard push handles“.

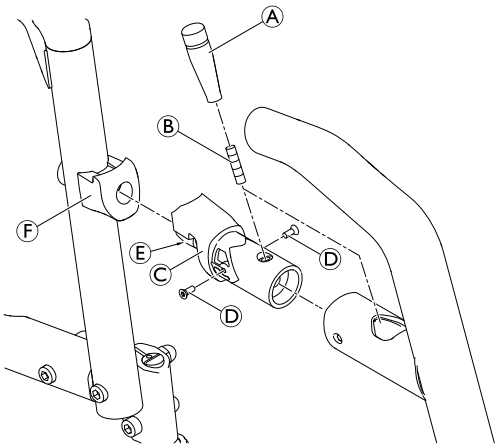
For foldable backrests additionally a band is fixed close to the backrest joint. The band is of different length according to the seat width (SW): SW 280 mm - 360 mm = short / SW 380 mm - 440 mm = medium / SW 460 mm - 500 mm = long

6.4 Legrests

Legrests with angle measurements of 70°, 80° and 90° are available.

6.4.1 Replacing the locking Mechanism

Torx screwdriver (10) / Allen key (3 mm, 5 mm) ■□□



1. Screw off the unlocking lever Ⓐ manually.
2. Remove the hinge pin Ⓑ.
3. Loosen bolts Ⓓ.
4. Remove locking mechanism Ⓒ and replace with a new one.
5. Reinsert bolts Ⓓ and tighten.
6. Screw in the hinge pin Ⓑ again.
7. Screw the unlocking lever Ⓐ back on manually.

Ⓑ = hand-tight
Ⓓ = hand-tight

Adjusting the locking Lever

It must be possible to move the unlocking lever Ⓐ 1-2 mm freely forward and back, without having to move the bolt Ⓔ. This guarantees that the bolt is sitting optimally in the counterpiece Ⓕ. If this free mobility is greater or smaller than specified, the unlocking lever must be readjusted.

1. Screw off the unlocking lever Ⓐ manually.
2. Loosen the hinge pin Ⓑ (do not remove).
3. Screw the bolt Ⓔ in deeper to reduce movement or screw the bolt further out to increase movement.
4. Set it so that the pin can move freely by 1-2 mm.
5. Retighten the hinge pin Ⓑ.
6. Screw the unlocking lever Ⓐ back on manually.

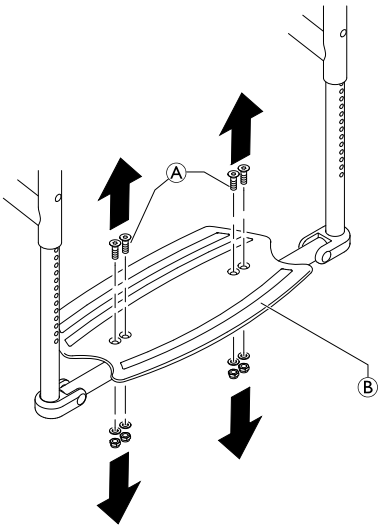
Ⓑ = hand-tight
Ⓓ = hand-tight

6.5 Footrests

One-piece and two-piece footrests are available.

6.5.1 Replacing the Foot Plate (One-piece Footrest)

Allen key (4 mm) / Socket spanner (10 mm) ■□□



1. Remove all bolts Ⓐ, washers and nuts.
2. Remove foot plate Ⓑ and replace with a new one.
3. Reinsert all bolts, washers and nuts and tighten.

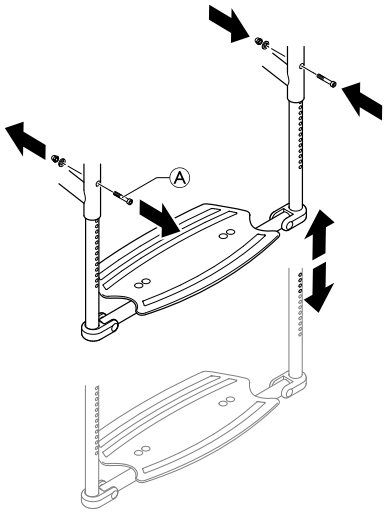
Ⓐ = 10 Nm

6.5.2 Replacing the Footrest (One-piece Footrest)

Allen key (4 mm) / Socket spanner (8 mm) ■□□

1. Remove bolts, washers and nuts Ⓐ on both sides.
2. Pull the footrest out of the frame tubes.
3. Insert new footrest.
4. Insert bolts, washers and nuts Ⓐ on both sides at the same height in the required position and tighten.

Ⓐ = 4 Nm

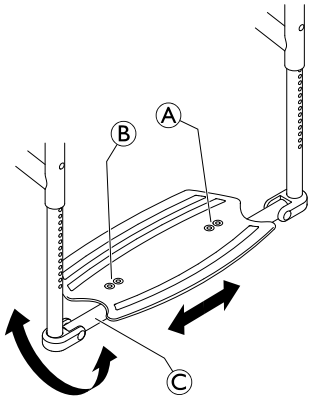


6.5.3 Centring and adjusting the Angle (One-piece Footrest)

Allen key (4 mm) / Socket spanner (10 mm) ■□□

1. Slightly Loosen bolts Ⓐ and Ⓑ.
2. Adjust the distance from the side tube to the foot plate to the same length on both sides.
3. Incline the foot plate to the required position.
4. Retighten bolts Ⓐ (fixed side of the foot plate).
5. Turn the little tube Ⓒ on the moving side of the foot plate such that it engages properly.
6. Tighten bolts Ⓑ.

Ⓐ = 10 Nm
Ⓑ = 10 Nm



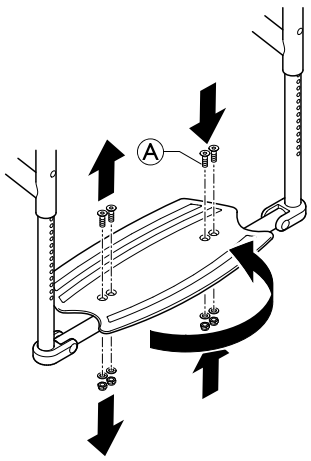
6.5.4 Changing the Footrest Position (One-piece Footrest)

The foot plate can be mounted rear-set or front-set.

Allen key (4 mm) / Socket spanner (10) ■□□

1. Remove bolts Ⓐ.
2. Turn the foot plate with the clamp component.
3. Reinsert bolts Ⓐ and tighten.

Ⓐ = 10 Nm

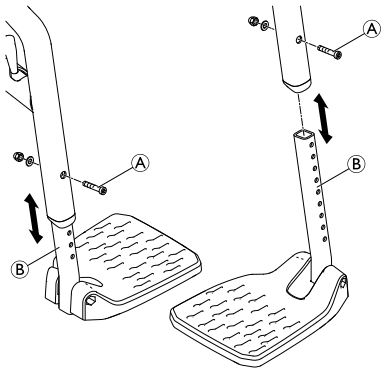


6.5.5 Replacing the Footrest (Two-piece Footrest)

Allen key (4 mm) / Socket spanner (8 mm) ■□□

1. Remove bolts, washers and nuts Ⓐ.
2. Remove the footrests Ⓑ from the frame.
3. Insert new footrests into the frame and position at the required height.
4. Insert bolts Ⓐ into the nearest hole on both sides and tighten with washers and nuts.

Ⓐ = 4 Nm

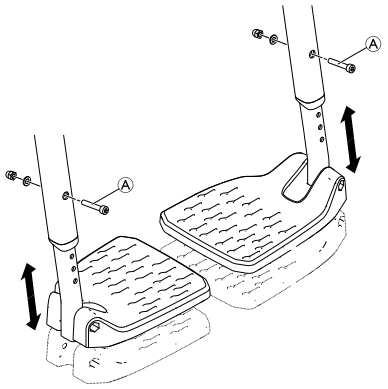


6.5.6 Adjusting the Height of the Footrest (Two-piece Footrest)

Allen key (4 mm) / Socket spanner (8 mm) ■□□

1. Remove bolts, washers and nuts Ⓐ.
2. Adjust the footrests to the required height.
3. Insert bolts Ⓐ into the nearest hole on both sides and tighten with washers and nuts.

Ⓐ = 4 Nm



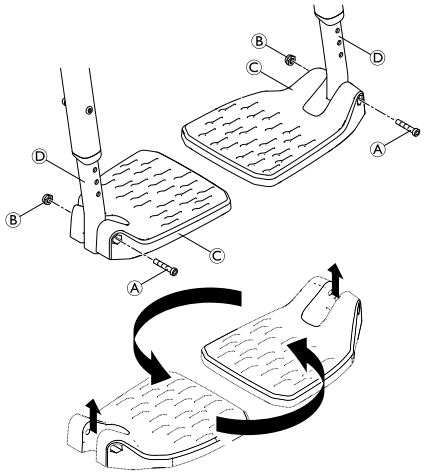
6.5.7 Changing the Footrest Position (Two-piece Footrest)

The footrest can be mounted rear-set or front-set.

Allen key (5 mm) ■□□

1. Remove bolts Ⓐ and nuts Ⓑ.
2. Remove the foot plates Ⓒ from the telescopic tubes Ⓓ, turn both by 180°.
3. Reinstall the foot plates by inserting bolts and nuts and tighten.

Ⓐ = 3 Nm



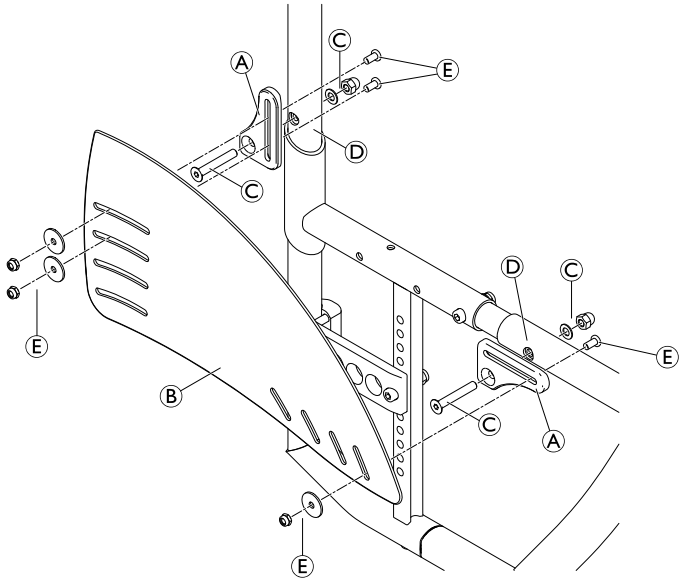
6.6 Sideparts

6.6.1 Installing the Clothes-Guard / Mudguard

Allen key (3 mm) / Socket spanner (8) ■■□

1. Install the side fastenings Ⓐ onto the frame Ⓓ using bolts, washer and nuts Ⓒ.
2. Install clothes-guard/mudguard Ⓑ with bolts, washers and nuts Ⓔ onto the side fastenings.

Ⓒ = 4 Nm
Ⓔ = 4 Nm



CAUTION!
Risk of trapping Fingers
– Install the mudguard such that it is positioned either < 8 mm or > 25 mm above the tyres, to avoid the risk of trapping one's fingers.

6.6.2 Adjusting the Clothes-Guard / Mudguard

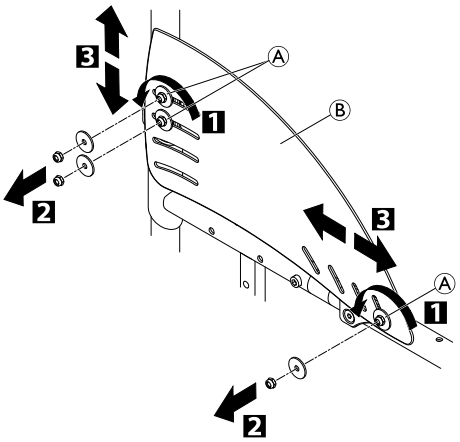
Allen key (3 mm) / Socket spanner (8) ■■□

1. Loosen bolts Ⓐ. Move the clothes-guard/mudguard Ⓑ.
2. Retighten bolts Ⓐ.

or

1. Loosen and remove bolts Ⓐ.
2. Reinstall clothes-guard/mudguard Ⓑ in another position.
3. Retighten bolts Ⓐ.

Ⓐ = 4 Nm



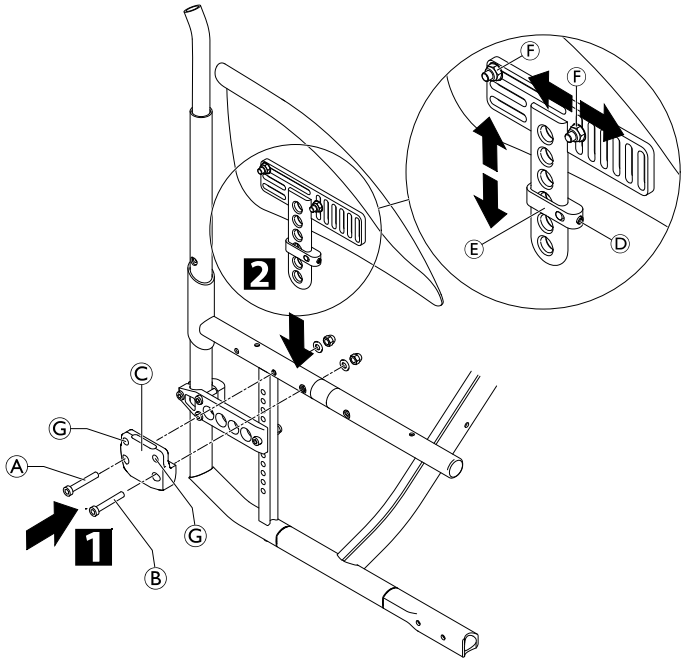
6.6.3 Installing the removable Mudguard

Allen key (3 mm, 4 mm) / Socket spanner (10) / Phillips screwdriver (2) ■■□

Remove the clothes-guard and the mounting elements on the backrest and the seat.

1. Install the holder Ⓒ to the frame using the screw connections Ⓐ and Ⓑ and then reinstall the rear wheel.
2. Slightly loosen the crub screw Ⓓ on the adjustment plate Ⓔ and slide it along the mudguard carrier until the mudguard is at the desired height.
3. The position of the mudguard can also be adjusted: Here, loosen the screw connections Ⓕ, position the mudguard as required and tighten the screw connections Ⓕ again.
4. Tighten the crub screw Ⓓ again.
5. Carry out the same setting on both sides.
6. By tightening or loosening the screws Ⓖ you can adjust how easily the mudguard can be pulled out or pushed in.

Ⓐ = 4 Nm
Ⓑ = 7 Nm
Ⓓ = Hand-tight
Ⓕ = 7 Nm



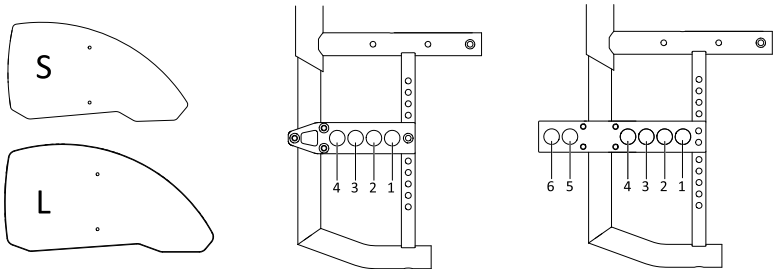
The existing axle may not be sufficiently long for the new configuration with mudguard. In this case, a longer axle must be fitted. See *6.8.5 Changing the Wheel Camber, page 45* and *6.8.7 Adjusting the Removable Axle, page 46*.

CAUTION!
Risk of trapping fingers
– The distance between the mudguard and the wheel must be either < 8 mm or > 25 mm to prevent fingers from becoming caught between the wheel and the mudguard.

6.6.4 Clothes-Guard / Mudguard Sizes

The clothes guard and mudguard can be adjusted to suit the height of the rear wheel exactly. Two sizes of each are available. For the removable carbon mudguard there is an additional size (XL) for the two smallest rear seat-to-floor heights (RSTF).

Clothes-Guard mounted fix

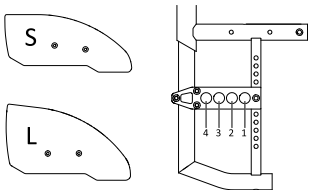


Clothes guard with respect to the position of the rear wheels with standard adapter plate (Pos. 1 to 4) or rear wheel extension (Pos. 5 and 6)

RSTF [mm]	Rear wheel 22''						Rear wheel 24''						Rear wheel 25''						Rear wheel 26''					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
380	L	L	L	S	S	S	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
390	L	L	L	S	S	S	L	L	L	L	L	L	—	—	—	—	—	—	—	—	—	—	—	—
400	L	L	L	S	S	S	L	L	L	L	L	L	—	—	—	—	—	—	—	—	—	—	—	—
410	L	L	S	S	S	S	L	L	L	S	L	L	L	L	L	L	L	L	—	—	—	—	—	—
420	L	L	S	S	S	S	L	L	L	S	L	L	L	L	L	L	L	L	L	L	L	L	L	L
430	L	S	S	S	S	S	L	L	L	S	L	L	L	L	L	S	S	S	L	L	L	L	S	S
440	L	S	S	S	S	S	L	L	L	S	S	S	L	L	L	S	S	S	L	L	L	L	S	S
450	S	S	S	S	S	S	L	L	S	S	S	S	L	L	L	S	S	S	L	L	L	S	S	S
460	—	—	—	—	—	—	L	L	S	S	S	S	L	L	L	S	S	S	L	L	L	S	S	S
470	—	—	—	—	—	—	L	S	S	S	S	S	L	L	S	S	S	S	L	L	L	S	S	S

480	—	—	—	—	—	—	L	S	S	S	S	S	L	L	S	S	S	S	L	L	L	S	S	S
490	—	—	—	—	—	—	—	—	—	—	—	—	L	S	S	S	S	S	L	L	S	S	S	S
500	—	—	—	—	—	—	—	—	—	—	—	—	L	S	S	S	S	S	L	L	S	S	S	S

Mudguard mounted fix



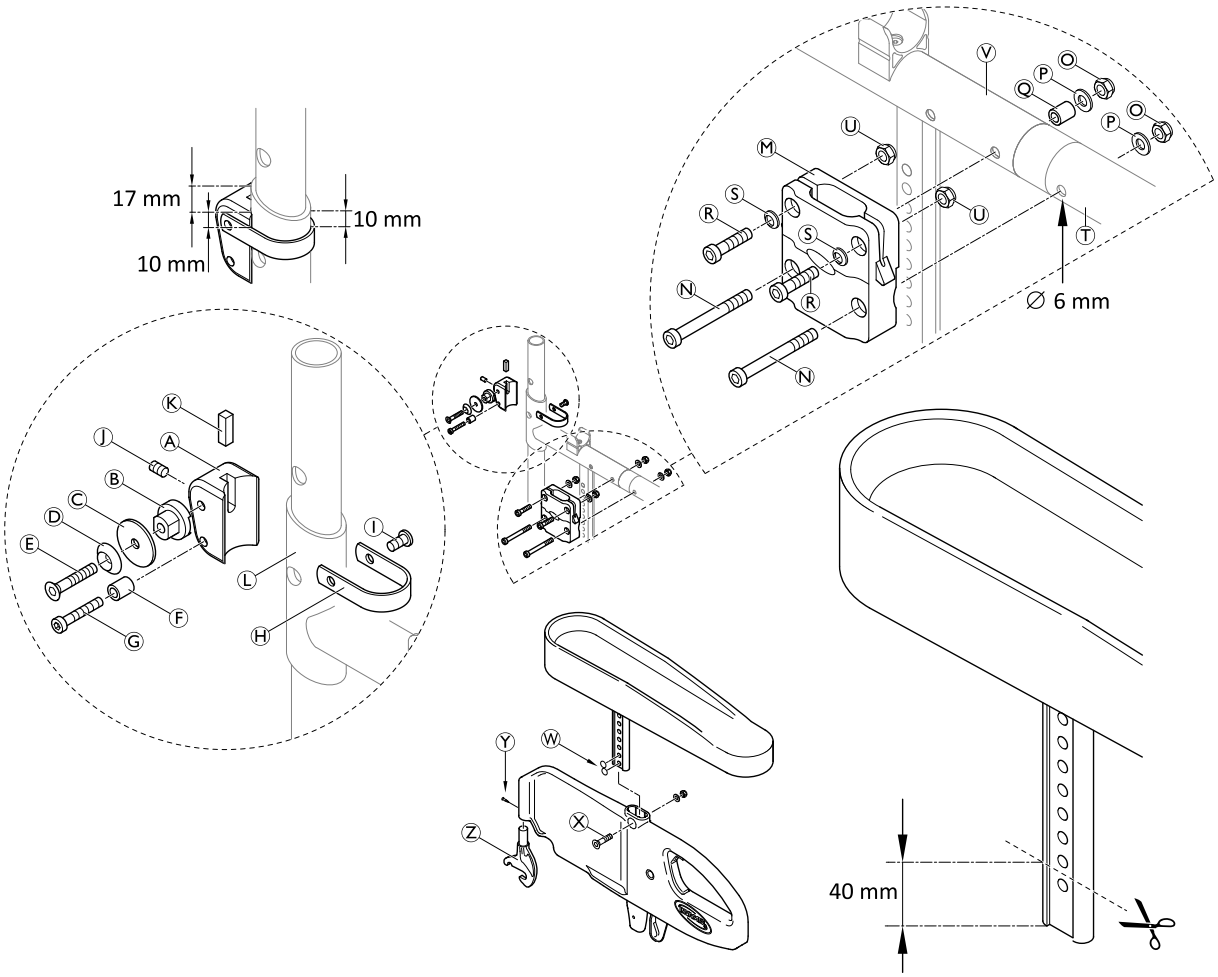
Mudguard (mounted fix) with respect to the position of the rear wheels with standard adapter plate (Pos. 1 to 4)																
RSTF [mm]	Rear wheel 22''				Rear wheel 24''				Rear wheel 25''				Rear wheel 26''			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
410	L	L	S	S	L	L	L	L	L	L	L	L	—	—	—	—
420	L	L	S	S	L	L	L	L	L	L	L	L	L	L	L	L
430	L	S	S	S	L	L	L	L	L	L	L	L	L	L	L	L
440	L	S	S	S	L	L	L	S	L	L	L	L	L	L	L	L
450	S	S	S	S	L	L	S	S	L	L	L	L	L	L	L	L
460	—	—	—	—	L	L	S	S	L	L	L	S	L	L	L	L
470	—	—	—	—	L	S	S	S	L	L	S	S	L	L	L	S
480	—	—	—	—	S	S	S	S	L	S	S	S	L	L	L	S
490	—	—	—	—	—	—	—	—	S	S	S	S	L	L	S	S
500	—	—	—	—	—	—	—	—	S	S	S	S	L	L	S	S

Mudguard removable

Mudguard (removable) with respect to the position of the rear wheels with standard adapter plate (Pos. 1 to 4) or rear wheel extension (Pos. 5 and 6)																								
RSTF [mm]	Rear wheel 22''						Rear wheel 24''						Rear wheel 25''						Rear wheel 26''					
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
380	L	L	L	L	S	S	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
390	L	L	L	L	S	S	XL	XL	XL	XL	L	L	—	—	—	—	—	—	—	—	—	—	—	—
400	L	L	L	L	S	S	XL	XL	XL	XL	L	L	—	—	—	—	—	—	—	—	—	—	—	—
410	L	L	S	S	S	S	XL	L	L	L	L	L	XL	XL	XL	XL	L	L	—	—	—	—	—	—
420	L	L	S	S	S	S	L	L	L	L	L	L	XL	XL	XL	XL	L	L	XL	XL	XL	XL	L	L
430	L	S	S	S	S	S	L	L	L	L	L	L	XL	L	L	L	S	S	XL	XL	XL	XL	S	S
440	L	S	S	S	S	S	L	L	L	S	S	S	L	L	L	L	S	S	XL	XL	XL	XL	S	S
450	S	S	S	S	S	S	L	L	S	S	S	S	L	L	L	L	S	S	XL	XL	XL	L	S	S
460	—	—	—	—	—	—	L	L	S	S	S	S	L	L	L	S	S	S	XL	XL	XL	L	S	S
470	—	—	—	—	—	—	L	S	S	S	S	S	L	L	S	S	S	S	L	L	L	S	S	S
480	—	—	—	—	—	—	S	S	S	S	S	S	L	S	S	S	S	S	L	L	L	S	S	S
490	—	—	—	—	—	—	—	—	—	—	—	—	S	S	S	S	S	S	L	L	L	S	S	S
500	—	—	—	—	—	—	—	—	—	—	—	—	S	S	S	S	S	S	L	L	S	S	S	S

6.6.5 Installing the Hemi Armrest with Holder

Allen key (3 mm, 4 mm, 5 mm) / Socket spanner (10) / Drill with drill bit (Æ 6 mm) / Saw / Deburring tool / Coating spray black ■■■



Installing the guiding part

1. Install the retaining bracket Ⓗ around the rear frame Ⓛ to the clamping block Ⓐ using bolt Ⓘ.
2. Install the guiding part Ⓑ to the clamping block using washer Ⓒ, sunk sleeve Ⓓ and bolt Ⓔ.
3. Insert the wedge Ⓚ from above into the clamping block and press the assembly against the rear frame using the grub screw Ⓙ.

   ⓘ Make sure that the retaining bracket is exactly horizontal and meets the indicated distances of 10 mm resp. 17 mm to the upper frame edge.

4. Install the stop sleeve Ⓕ using bolt Ⓖ.

Ⓘ / Ⓔ / Ⓖ = 7 Nm

Installing the armrest holder

1. Remove the rear frame parts, see *6.1.1 Replacing the Rear Frame, page 10*.
2. Drill a hole with a diameter of 6 mm through the upper frame connecting tube for installing the front bolt Ⓝ.
3. Place the distance sleeve Ⓠ from the inside into the frame hole for the rear bolt Ⓝ.
4. Install the armrest holder Ⓜ to the frame Ⓥ using bolts Ⓝ washers Ⓟ, lock nuts Ⓞ.

5. Reinstall the rear frame parts, see *6.1.1 Replacing the Rear Frame, page 10*.
6. Insert nuts Ⓤ into the armrest holder and install bolts Ⓡ with spring washer Ⓢ.

   Adjust the bolts Ⓡ so that the armrests engages optimally.

Ⓞ = 7 Nm

Installing the Hemi armrest to the side rest

1. Install the hook bracket Ⓩ to the side rest using screw Ⓨ.
2. Cut off 40 mm from the Hemi armrest profile.
3. Deburr the cutting edge and coat it black with a spray.
4. Press 2 plastic caps Ⓦ into the two lower holes of the profile.
5. Carefully insert the Hemi armrest into the side rest and secure in the profils' second hole from above using bolt, washer and nut Ⓧ.

Ⓧ = 4 Nm

To enlarge the distance between the wheels additionally, a different adapter sleeve, which is mounted from the inside, has to be installed.

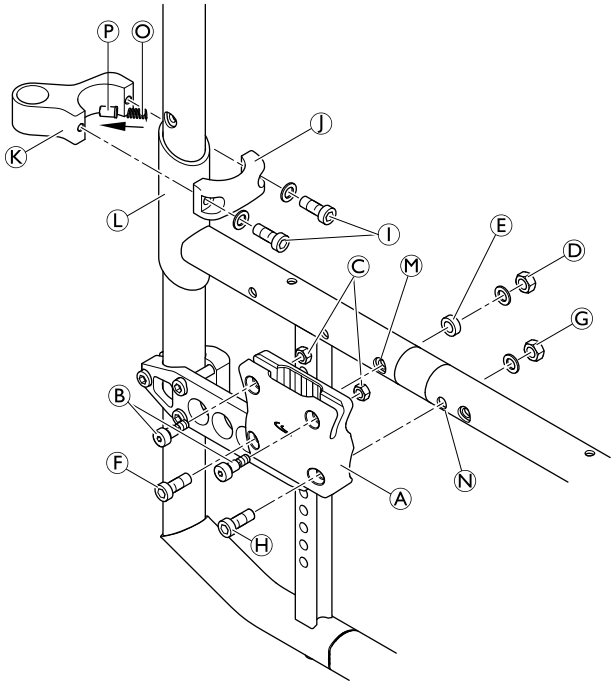
6.6.6 Installing the Küschall Armrest

Mounting the Armrest Hardwear

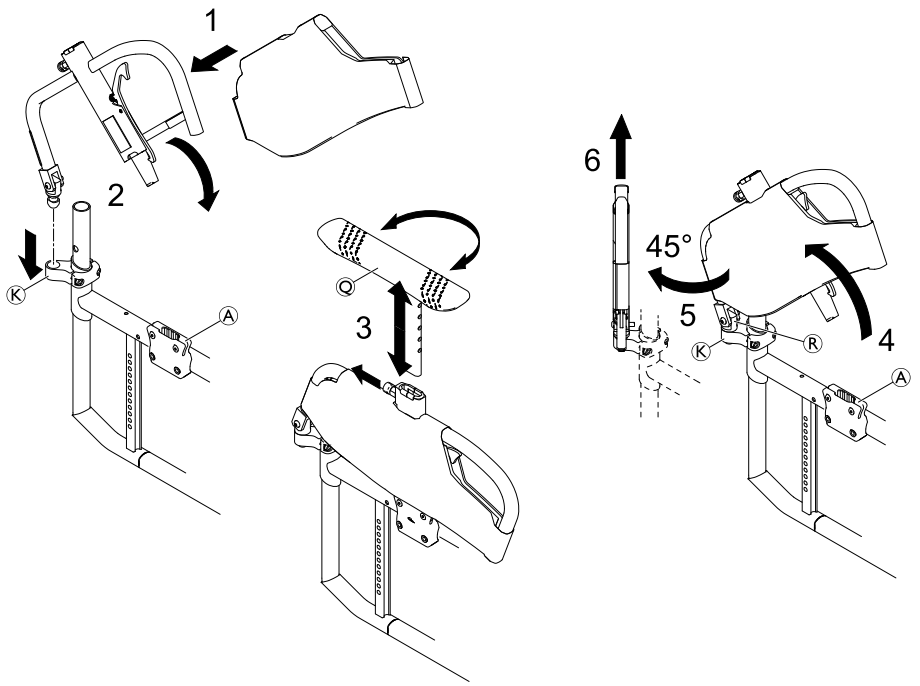
Allen key (3 mm, 4 mm, 5 mm) / Socket spanner (10) ■■■

1. Insert nuts Ⓒ and bolts Ⓑ into the upper holes of the armrest holder Ⓐ and carefully tighten. Do not squeeze the holder.
2. Mount the armrest holder Ⓐ to the rear frame hole Ⓜ using bolt Ⓕ, sleeve Ⓔ, washer and nut Ⓓ.
3. Drill holes Ⓝ with a diameter of 6 mm through the front frame by inserting the drill bit through the free hole of the pre-mounted armrest holder Ⓐ.
4. Insert bolt Ⓗ and tighten with washer and nut Ⓖ.
5. Grease the pin Ⓟ and Insert it with the spring Ⓞ into the inner hole of clamping part Ⓚ and place it around the reinforced part Ⓛ of the rear frame.
6. Place the mating clamping part Ⓙ around the rear frame and fix in true alignment with washers and bolts Ⓘ.

Ⓓ = 7 Nm
Ⓖ = 7 Nm
Ⓘ = 4 Nm



Installing/Removing the Armrest, T-Armrest Pad and Cover



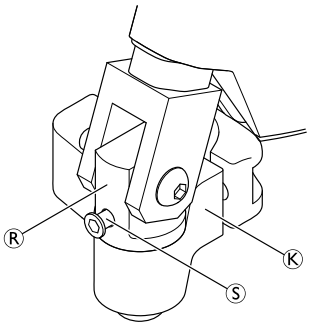
Installing

1. Install the armrest cover to the armrest assembly.
2. Insert the armrest assembly into the joint Ⓚ and swivel it downwards so that it engages into the armrest holder Ⓐ.
3. Install the T-armrest pad Ⓠ to the armrest assembly.

Removing

1. Remove the T-armrest pad from the armrest assembly.
2. Swivel the armrest assembly upwards out of the armrest holder Ⓐ.

   On the backside of the joint pin Ⓡ there is a tapped hole with a M5 stop screw Ⓢ to define the stop of the armrest assembly when swivelling backwards. Adjust the stop screw as required.



3. Swivel the armrest assembly 45° outwards.
4. Lift the armrest assembly out of joint Ⓚ.

6.6.7 Installing the Side Rest insertable, stepless height-adjustable

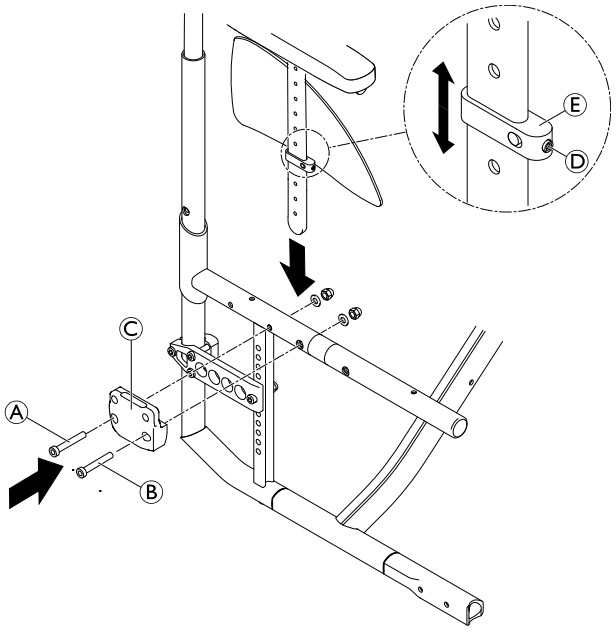
Allen key (4 mm, 5 mm) / Socket spanner (10) ■■□

1. Fit the side fastening element Ⓒ with bolts Ⓐ and Ⓑ.
2. Insert side rest into the fastening element.

Adjusting the height

1. Slightly loosen the crub screw Ⓓ on the adjustment plate Ⓔ and slide it along the armrest carrier until the armrest is at the desired height.
2. Retighten the crub screw Ⓓ.

Ⓐ = 4 Nm
Ⓑ = 7 Nm
Ⓓ = Hand-tight

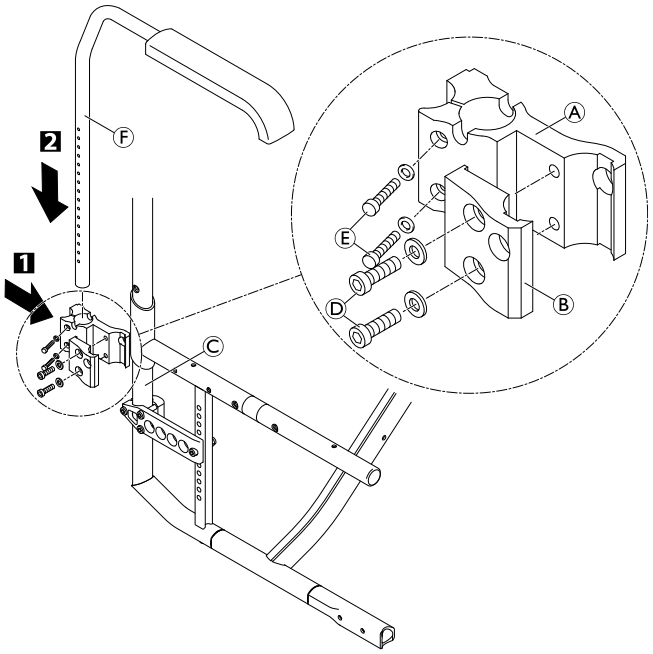


6.6.8 Installing the tubular Armrest (swivelling)

Allen key (4 mm, 5 mm) ■■□

1. Install the rear fastening elements Ⓐ and Ⓑ around the frame tube Ⓒ using bolts and washers Ⓓ.
2. Insert the armrest tube Ⓕ and set to the required height.
3. Secure the armrest tube in the fastening element by tightening bolts with washers Ⓔ.

Ⓓ = 4 Nm
Ⓔ = 4 Nm



6.7 Castors

6.7.1 Replacing the Castor Wheel

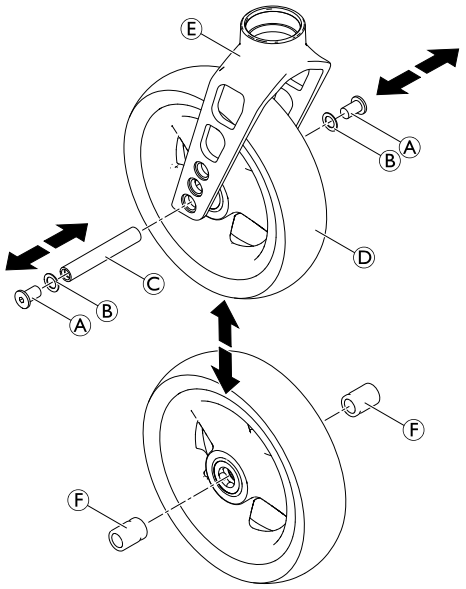
Allen key (3 mm) ■■□

1. Remove the bolts Ⓐ with washers Ⓑ and pull out the wheel axle Ⓒ.
2. Remove castor wheel Ⓓ from the castor fork Ⓔ and replace with a new one or move to a new position.

   In the case of the Starec wheel, skater wheel, 3'' sports wheel and the 5'' soft roll wheel, 2 sleeves Ⓕ must be pushed onto the axle. These sleeves are already in place on the low-resistance wheel, the sports wheels and the pneumatic wheels.

3. Reinsert washers and bolts and tighten.

Ⓐ = 4 Nm



Function Check

There must be no play in the castor wheel but it must turn easily.

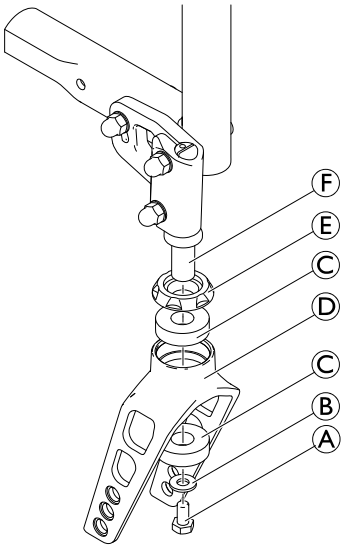
6.7.2 Replacing the Castor Fork

Socket spanner (10 mm) / Flat head screwdriver (4 mm) ■■□

1. Remove the castor wheel, see *6.7.1 Replacing the Castor Wheel, page 40*.
2. Remove bolt Ⓐ, washer Ⓑ, the castor fork Ⓓ with bearings Ⓒ and part Ⓔ from the clevis pin Ⓕ.
3. Replace the castor fork with bearings and reinstall in revers order.

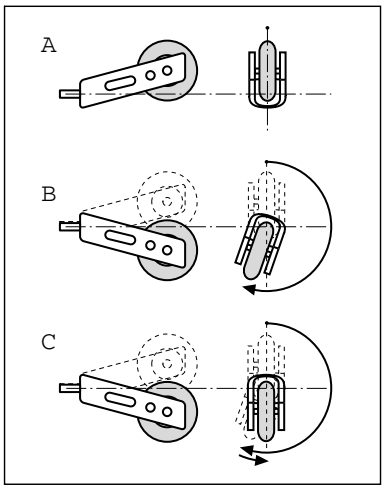
   IMPORTANT!
   Risk of damaging the castor fork bearing
   – Do not overtighten the bolt Ⓐ.

4. Reinstall the castor wheel.



Function Check

Tip the wheelchair backwards by 90° so that it is lying on the backrest and the rear wheels. Make sure that the clevis pin is as horizontal as possible. Turn the fork upwards (position A) and let it tip downwards. The fork has been correctly adjusted if it easily turns to slightly beyond the bottommost point (position B) and then maximally turns back to the bottommost point (position C). If the fork turns back over the bottommost point or even swings back and forth, it has not been sufficiently tightened. There is a risk that the castor wheels will start to wobble at high speeds.



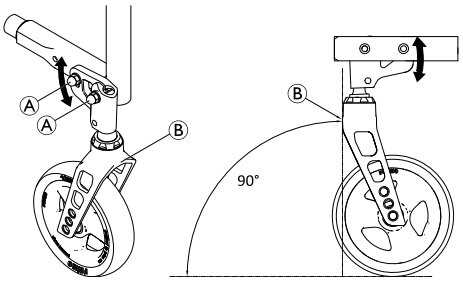
6.7.3 Setting the Steering Error Angle

Allen key (5 mm) / Socket spanner (10) ■■□

1. Position the wheelchair on a flat surface.
2. Loosen nuts Ⓐ.
3. Hold spirit level against the front edge of the castor fork Ⓑ and position it exactly vertical.
4. Retighten nuts Ⓐ.

Ⓐ = 10 Nm

IMPORTANT!
– The settings on the left and right side must be precisely the same.



6.7.4 Setting the Trial Angle

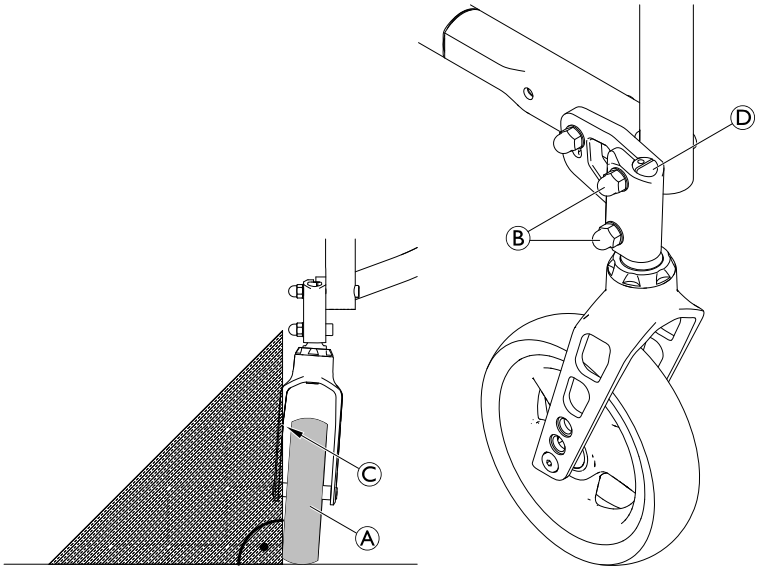
Allen key (5 mm) / Socket spanner (10 mm) / Flat head screwdriver (4 mm) ■□□

1. Position the wheelchair on a flat surface.
2. Turn the castor wheel Ⓐ in driving direction, parallel to the rear wheels.
3. Apply a 90° ruler on the castor wheel and check if it is in a 100% vertical position to the floor.

   It shows immediately whether the castor is in 90° to the floor or not. If there is a gap Ⓒ between the ruler and the castor on the upper or lower rim of the wheel, it clearly indicates that the castor angle is not 90° (see image to the right).

4. If the castor wheel is not vertical, loosen nuts Ⓑ.
5. Adjust the trial angle by turning the clevis pin Ⓓ until the castor wheel is 100% parallel to the vertical side of the ruler.
6. Retighten nuts Ⓑ.
7. Check the steering error angle and adjust if necessary, see chapter *6.7.3 Setting the Steering Error Angle, page 41*.
8. Perform the same adjustment on both sides.

Ⓑ = 10 Nm



6.7.5 Installing/Shifting the Castor Fork Supporter on the Frame

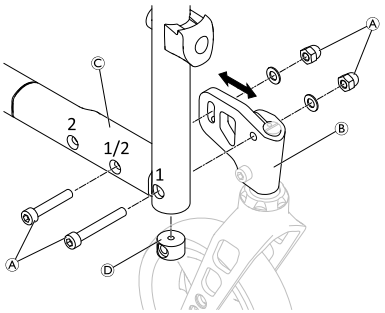
Allen key (5 mm) / Socket spanner (8 mm) ■□□

Compact SA

Low-mounted supporter:

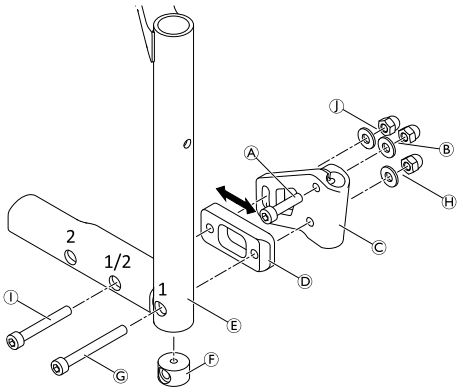
1. Remove nuts, washers and bolts Ⓐ.
2. Remove round nut Ⓓ from the frame tube.
3. Shift the castor fork supporter Ⓑ on the frame Ⓒ to the required position 1 or 2.
4. Reinsert round nut Ⓓ into the frame tube.
5. Reinsert nuts, washers and bolts and tighten.

Ⓐ = 10 Nm



High-mounted supporter:

1. Remove nuts and washers Ⓗ and Ⓙ, bolts Ⓖ and Ⓘ, distance peace Ⓓ, sleeve insert Ⓙ and the castor fork supporter Ⓒ from the frame Ⓔ.
2. Remove round nut Ⓕ from the frame tube.
3. Replace bolt Ⓐ and washer with nut Ⓑ on the castor fork supporter if necessary.
4. Reinstall the castor fork supporter in position 1 or 2 by following steps 2 to 1 in reverse order.

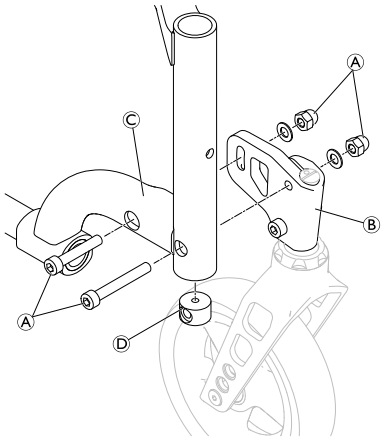


Compact SA Hemi

Low-mounted supporter:

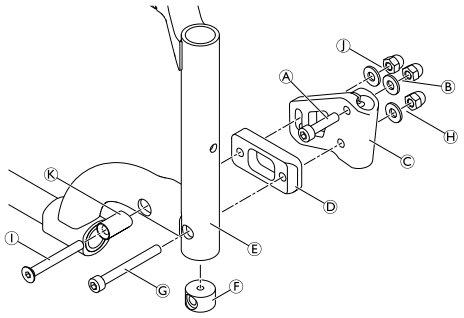
1. Remove nuts, washers and bolts Ⓐ.
2. Remove round nut Ⓓ from the frame tube.
3. Replace the castor fork supporter Ⓑ on the frame Ⓒ.
4. Reinsert round nut Ⓓ into the frame tube.
5. Reinsert nuts, washers and bolts and tighten.

Ⓐ = 10 Nm



High-mounted supporter:

1. Remove nuts and washers Ⓗ and Ⓙ, bolts Ⓖ and Ⓘ, distance piece Ⓓ, sleeve insert Ⓚ and the castor fork supporter Ⓒ from the frame Ⓔ.
2. Remove round nut Ⓕ from the frame tube.
3. Replace bolt Ⓐ and washer with nut Ⓑ on the castor fork supporter if necessary.
4. Reinstall the castor fork supporter by following steps 2 to 1 in reverse order.

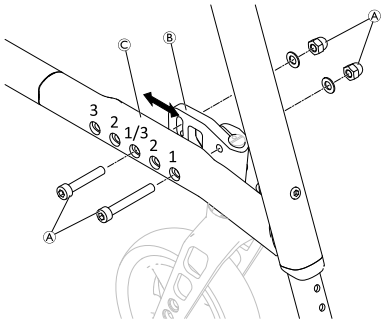


Compact FF

Low-mounted supporter:

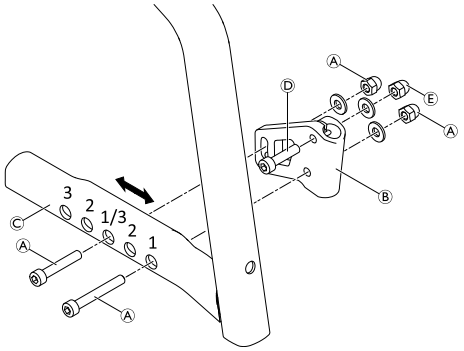
1. Remove nuts, washers and bolts Ⓐ.
2. Shift the castor fork supporter Ⓑ on the frame Ⓒ to the required position 1, 2 or 3.
3. Reinsert nuts, washers and bolts and tighten.

Ⓐ = 10 Nm



High-mounted supporter:

1. Remove nuts, washers and bolts Ⓐ.
2. Shift the castor fork supporter Ⓑ on the frame Ⓒ to the required position 1, 2 or 3.
3. Replace bolt Ⓓ and washer with nut Ⓔ on the castor fork supporter if necessary.
4. Reinsert nuts, washers and bolts and tighten.



ⓘ Set the steering error angle and reset if necessary, see *6.7.3 Setting the Steering Error Angle, page 41*.

6.8 Rear Wheels

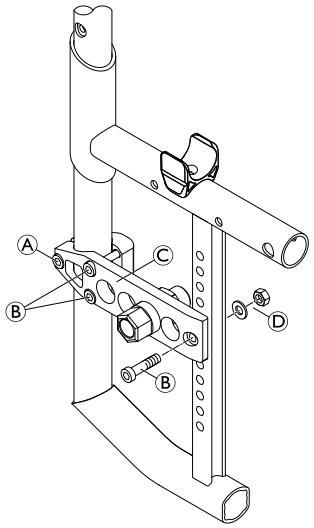
WARNING!
Risk of accidents to the wheelchair user
– Check and adjust the antitipper and parking brake settings after each change on the rear wheel position.

6.8.1 Adjusting the rear Seat-to-Floor Height (RSTF)

Allen key (5 mm) / Socket spanner (10) ■□□

1. Loosen bolt Ⓐ.
2. Remove bolts Ⓑ, washer and nut Ⓓ and move the adapter plate Ⓒ to the required position.
3. Insert bolts Ⓑ, washer and nut Ⓓ at the required height.
4. Tighten bolts Ⓐ and Ⓑ respectively nut Ⓓ.
5. Perform the same setting on both sides.

Ⓐ = 13 Nm
Ⓑ = 13 Nm
Ⓓ = 13 Nm



After the RSTF is changed, the steering error angles must be checked, see chapters *6.7.3 Setting the Steering Error Angle, page 41* and *6.7.4 Setting the Trial Angle, page 41*. With a wheel camber of 3° the angle of the rear wheels must also be checked, see *6.8.6 Ensuring the Rear Wheels are parallel, page 45*.

After the RSTF is changed, distance sleeves may also have to be installed in order to increase the distance to the rear wheels.

6.8.2 Tipping Stability

The tipping stability is influenced by the rear wheel being installed further forward or further backward on the adapter plate. The further back the adapter sleeve is installed, the greater the tipping stability of the wheelchair.

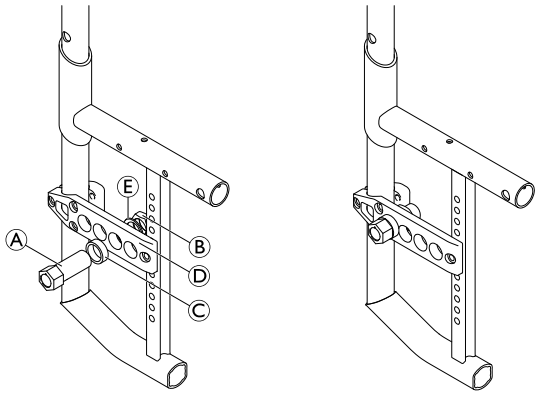
If the rear wheel is to be installed even further back, a rear wheel extension can be installed to increase the tipping stability even more.

6.8.3 Adjusting the rear Wheel Position on the Adapter Plate

Socket spanner (19, 22) ■□□

1. Remove the adapter sleeve Ⓐ with distance sleeve Ⓒ by removing nut Ⓑ and washer Ⓔ from the adapter plate Ⓓ.
2. Install the adapter sleeve with the distance sleeve at the required position in the adapter plate using washer and nut.
3. Perform the same setting on both sides.

Ⓐ = 33 Nm

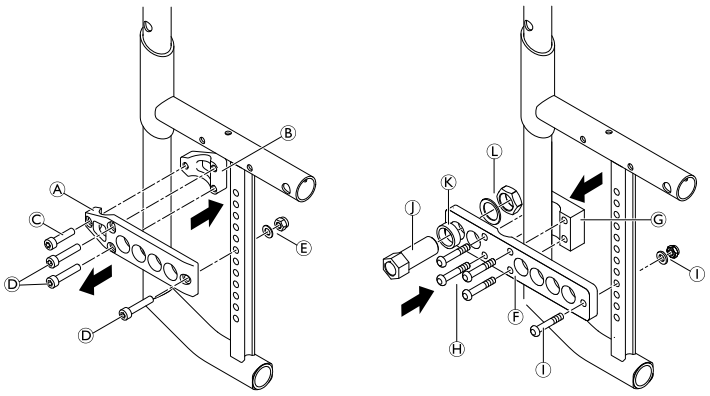


Parking brakes and mudguard must be repositioned if the position of the rear wheel is changed.

6.8.4 Installing the Rear Wheel Extension

Allen key (5 mm) / Socket spanner (10, 19, 22) ■□□

1. Remove the standard adapter plate Ⓐ and counterpiece Ⓑ by removing bolt Ⓒ, bolts Ⓓ, washer and nut Ⓔ from the rear frame.
2. Position the adapter plate for the rear wheel extension Ⓕ at the required height and tighten securely on the counterpiece Ⓖ using bolts Ⓗ and bolt, washer and nut Ⓘ.
3. Install the adapter sleeve Ⓙ (with distance sleeve Ⓚ if necessary) at the required position in the adapter plate and tighten the nut Ⓛ.



Ⓒ = 13 Nm
Ⓓ = 13 Nm
Ⓔ = 13 Nm
Ⓗ = 13 Nm
Ⓘ = 13 Nm
Ⓛ = 33 Nm

Parking brakes and mudguard must be repositioned if the position of the rear wheel is changed.

6.8.5 Changing the Wheel Camber

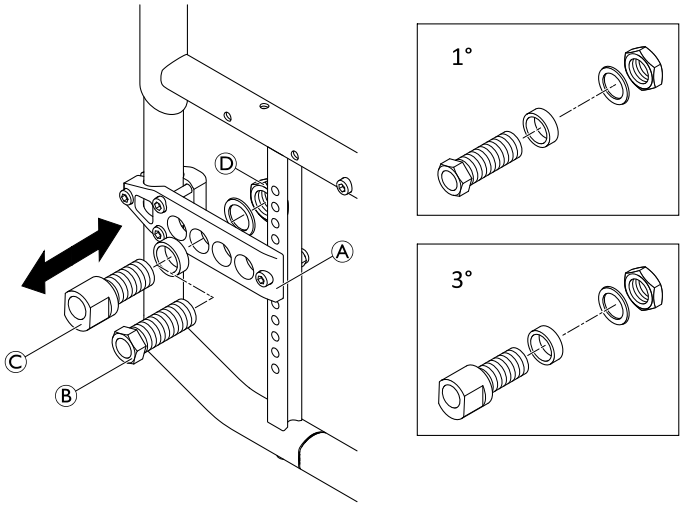
A wheel camber of either 1° or 3° is possible.

Open-end spanner (18) / Socket spanner (19, 22) ■■□

The wheel camber is changed by replacing the adapter sleeve:

1. Remove adapter sleeves Ⓑ or Ⓒ on both sides.
2. Insert new adapter sleeves and on both sides at the required, identical position in the adapter plate Ⓐ.
3. Fasten securely with nut Ⓓ.

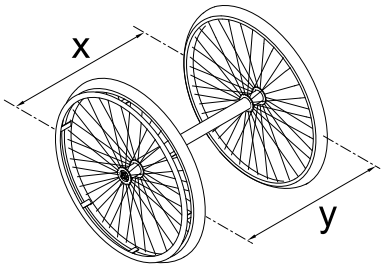
Ⓓ = 33 Nm



6.8.6 Ensuring the Rear Wheels are parallel

Open-end spanner (18) / Socket spanner (19, 22) ■■■

1. Loosen the nut of the adapter sleeve on both sides, see *6.8.5 Changing the Wheel Camber, page 45*.
2. At the height of the center of the axle, measure the distance between the rear wheels at the front and back (x, y).



Distance, back > distance, front (y > x)	Turn adapter sleeve towards rear (viewed from above)
Distance, front > distance, back (x > y)	Turn adapter sleeve towards front (viewed from above)

3. In accordance with the table, turn the adapter sleeves so that the distance between the rear wheels is the

same at the front and the back (x = y) – measured at the height of the center of the axle.

ℹ At the same time, the distance between the individual wheels and the relevant side frame can be checked for conformity and adjusted if necessary.

4. Retighten nut of adapter sleeves on both sides.

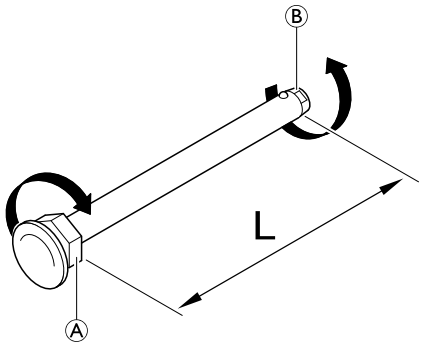
Ⓓ = 33 Nm

6.8.7 Adjusting the Removable Axle

Open-end spanner (19) / Straddle spanner (11) ■■□

1. Remove the rear wheel.
2. Hold the end of the removable axle Ⓑ using the straddle spanner.
3. Adjust the length L of the removable axle by turning the nut Ⓐ. The length is correctly adjusted if the removable axle engages correctly when installing the wheel and the wheel has just minimal clearance.

ℹ The wheels must be exchanged (left to right side and vice versa) after adjusting both removable axles. The adjustment must now be checked or carried out again to ensure the wheels can be switched.

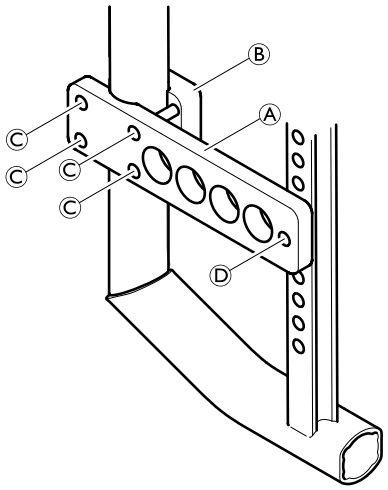


6.8.8 Installing the Adapter Plate for the Drum Brake

Allen key (5 mm) / Socket spanner (10) ■□□

1. Remove the standard adapter plate.
2. Position the adapter plate Ⓐ for the drum brake at the required height on the frame tube and install it with the counterpiece Ⓑ using bolts Ⓒ and Ⓓ
3. Install the drum brake, see *6.9.3 Installing/Adjusting the Drum Brake, page 49*.

Ⓒ / Ⓓ = 13 Nm



6.8.9 Distance Sleeves for Rear Wheels

If new side parts are fitted on a wheelchair (side rests, arm rests, clothes guard or mudguard), the gap between the rear wheels must be increased by attaching additional distance sleeves. Likewise, distance sleeves may also have to be fitted if other rear wheels are fitted or if the seat height rear is altered.

6.8.10 Repairing or Changing an inner Tube

Tyre lever ■■□

1. Remove the rear wheel and release any air from the inner tube.
2. Lift one tyre wall away from the rim using a bicycle tyre lever. Do not use sharp objects such as a screwdriver which could damage the inner tube.
3. Pull the inner tube out of the tyre.
4. Repair the inner tube using a bicycle repair kit or, if necessary, replace the tube.
5. Inflate the tube slightly until it becomes round.
6. Insert the valve into the valve hole on the rim and place the tube inside the tyre (the tube must lie right round the tyre with no creases).
7. Starting close to the valve, push the tyre wall over the edge of the rim using both hands. When doing this, check all the way round to ensure that the inner tube is not trapped between the tyre and the rim.
8. Inflate the tube to its maximum operating pressure. Check that no air is escaping from the tyre.

6.8.11 Replacing a solid tire

Removing a solid tire

Lever bar ■□□

1. Push on the side wall of the tire while inserting a lever bar.

   Some solid tires are quite a bit smaller than the rim so this can be difficult.

2. Once one lever is in, insert a second lever and push the tire over the rim until it comes off.

   If you are unable to push off the tire, it needs to be cut off. Make sure not to damage the rim.

Installing a solid tire

Installing solid tires on a rim can only be accomplished with the right tools. Most of these tires are smaller than the rim they fit and need to be stretched to be installed. Follow the instructions that come with the tools for the process.

6.8.12 Replacing rear wheel spokes

We recommend having the spokes replaced by a qualified technician.

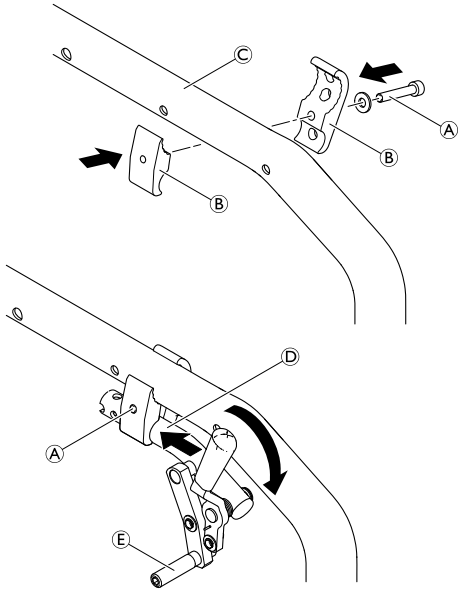
6.9 Parking brakes

6.9.1 Installing the parking brake

Allen key (5 mm) ■■□

1. Position the brake holder Ⓑ around the front frame tube Ⓒ.
2. Place the brake Ⓓ in the brake holder.
3. Screw the bolt Ⓐ with washer into the brake assembly but do not tighten.
4. Rotate the brake holder assembly around the frame tube to adjust the lateral distance of the brake.
5. Rotate the brake in the brake holder to achieve a horizontal position of the brake rod Ⓔ to the tyre.
6. Fully apply the brake and slide it towards the tyre until the brake rod bears flush against the tire.
7. Release the brake and slide it 3 mm backwards and tighten the bolt.

Ⓐ = 13 Nm



6.9.2 Adjusting the parking brake

Allen key (5 mm) ■■□

WARNING!
Risk of injury
– The parking brakes must be readjusted whenever the rear wheels are replaced or the wheel camber is changed.
– The parking brake function is only guaranteed if the tyre has the corresponding inflation pressure.

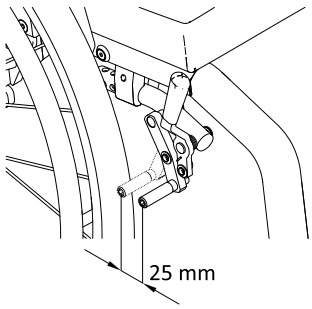
1. Check the tyre pressure in the rear wheels and correct if necessary.
2. Slightly loosen bolt Ⓐ of the brake holder.
3. Change the position of the brake assembly as described in chapter *6.9.1 Installing the parking brake, page 48*.
4. Tighten the bolt Ⓐ.

IMPORTANT!
– The force to apply the parking brake must be 60 N (maximum).

Very little force is required for activating and deactivating the brake. If necessary, a brake lever extension can be mounted.

Visual check

Check that the parking brakes are positioned correctly. The brake is set correctly if the brake rod depresses the tire by no more than 4 mm when the brake is applied. (In the case of push/pull and standard brakes this will be the case when the brake shoe is approx. 25 mm away from the tire when released.)

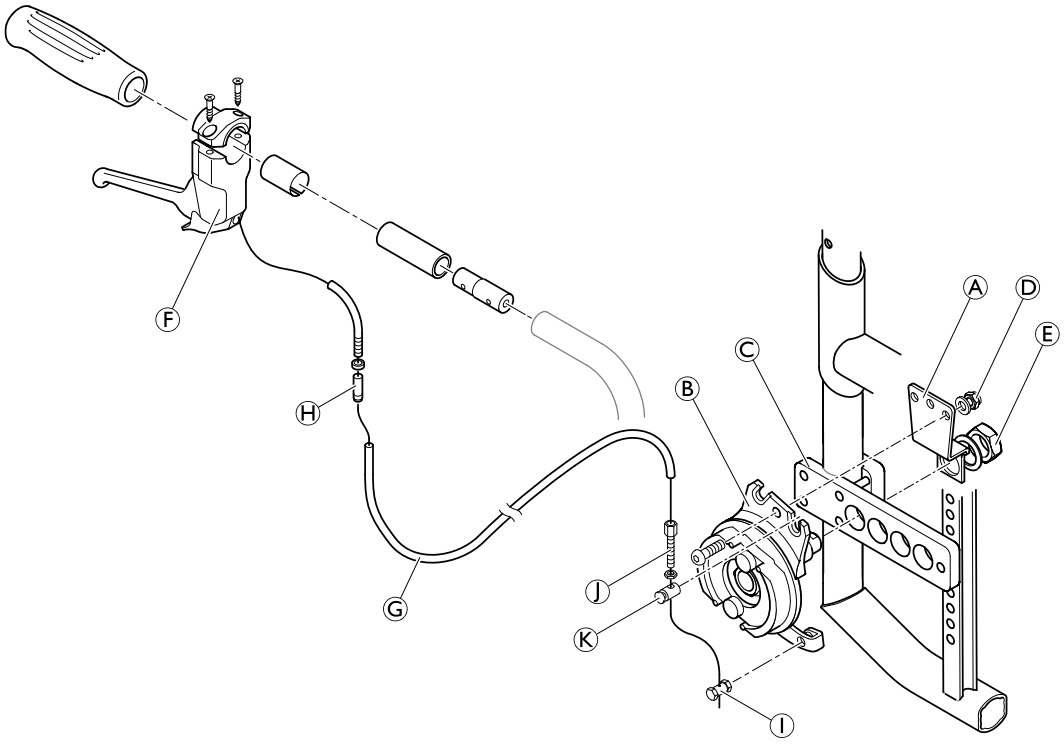


Function check

Place a weighted wheelchair with parking brake engaged facing uphill and then facing downhill on a ramp with an incline of 7°. The wheelchair must not move.

6.9.3 Installing/Adjusting the Drum Brake

Allen key (4 mm) / Phillips screwdriver / Open-end spanner (9 mm) / Socket spanner (10 mm, 22 mm) / Wrench (4 mm) ■■■



1. Remove standard adapter plate and replace with adapter plate for drum brake, see *6.8.8 Installing the Adapter Plate for the Drum Brake, page 46*.
2. Install the drum brake plate Ⓐ and rotary fixing Ⓑ to the adapter plate Ⓒ using bolt, washers and nut Ⓓ as well as adapter sleeve nut Ⓔ with washer.
3. Install the brake lever Ⓕ on the push handle and secure the Bowden cable Ⓖ with the installation set.
4. Adjust the tension of the Bowden cable by turning the setting sleeve Ⓗ.
5. If the setting sleeve cannot be turned any further, unhinge the brake cable Ⓘ from the rotary fixing and slightly unscrew the clamp bolt Ⓙ from part Ⓚ and refasten the little nut.
6. Hook the cable Ⓘ back in the rotary fixing.
7. Repeat steps 4 to 6 until the brake setting is correct.

Ⓓ = 7 Nm
Ⓔ = 33 Nm

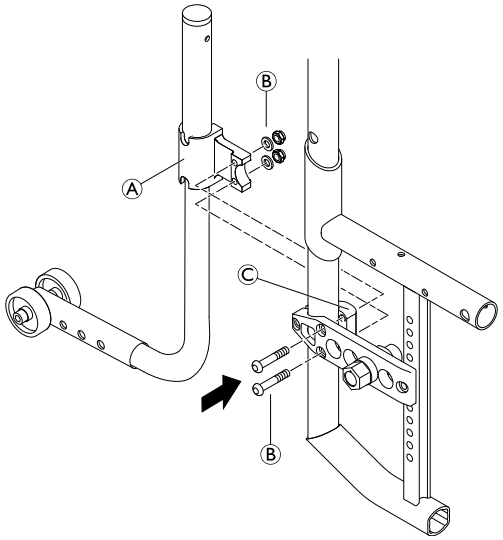
6.10 Options

6.10.1 Installing the antitipper

Allen key (5 mm) / Socket spanner (10) ■□□

1. Install the adaptation support Ⓐ with bolts, washers and nuts Ⓑ to the adapter plate Ⓒ.

Ⓑ = 13 Nm

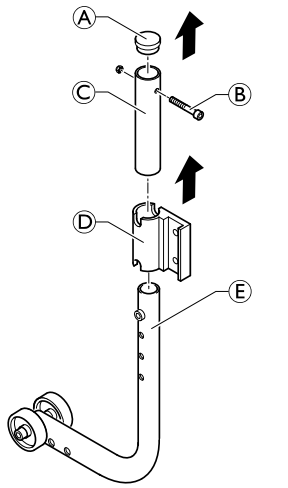


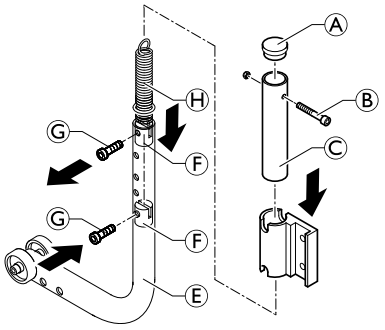
6.10.2 Adjusting the height of the antitipper

Allen key (4 mm) / Socket spanner (8) ■□□

1. Loosen bolt Ⓑ and remove the upper end Ⓒ of the antitipper and the holder Ⓓ. Remove the sealing cap Ⓐ (e.g. push it out through the tube using the screwdriver).
2. Loosen bolt Ⓖ of the antitipper tube and push the sleeve Ⓕ into the correct position.
3. Screw bolt Ⓖ in half way, position spring Ⓗ in sleeve Ⓕ and tighten bolt Ⓖ.
4. Put all the parts of the antitipper back together; in doing so pull spring Ⓗ apart, e.g. using a wire hook, and secure it with the top bolt Ⓑ.
5. Set the antitipper parallel to the wheelchair and tighten the bolts.

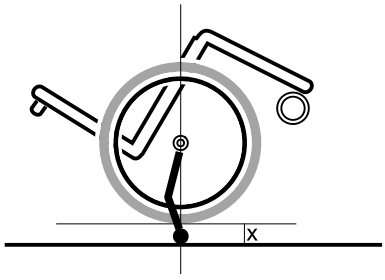
Ⓖ = 7 Nm
Ⓑ = 4 Nm





Function check

The distance between the antitipper and the ground must be 50 - 70 mm. It must be easy to fold up the antitipper. Tip the wheelchair backwards using the antitipper until the axle is perpendicular to the antitipper's point of contact with the ground. In this position, the distance between the rear wheel and the ground must be at least 50 mm.

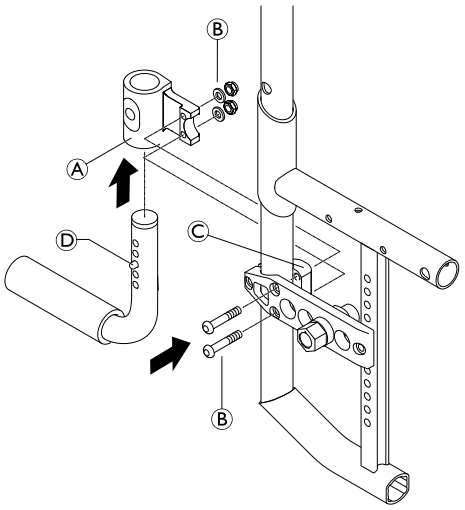


6.10.3 Installing the tipper aid

Allen key (5 mm) / Socket spanner (10) ■□□

1. Install the adaptation support Ⓐ with bolt Ⓑ to the adapter plate Ⓒ.
2. Push in spring clip Ⓓ and push the tipper aid into the adaptation support.
3. Make sure that the spring clip is correctly engaged in the adaptation support.

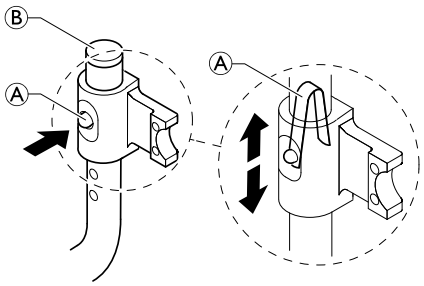
Ⓑ = 13 Nm



6.10.4 Adjusting the height of the tipper aid

Flat-head Screwdriver ■□□

1. To adjust the height, remove cap Ⓑ and, e.g. using a screwdriver, compress the spring Ⓐ inside the tube and push into the required position.

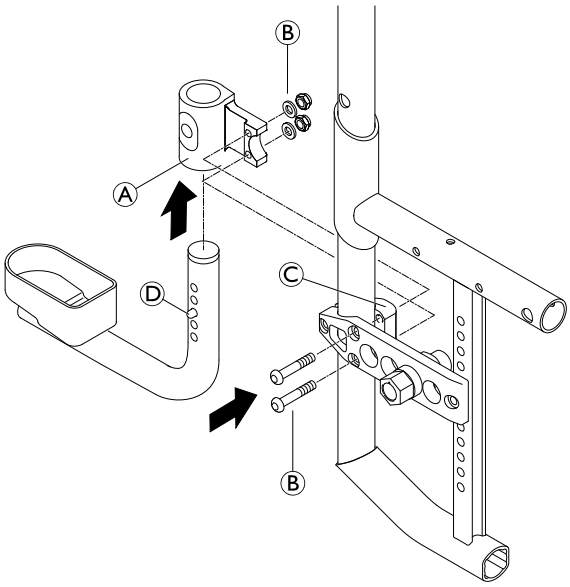


6.10.5 Installing the cane holder

Allen key (5 mm) / Socket spanner (10) ■□□

1. Mount the adaptation support Ⓐ with bolt Ⓑ onto the adapter plate Ⓒ.
2. Push in spring clip Ⓓ and push the cane holder into the adaptation support.
3. Make sure that the spring clip is correctly engaged in the adaptation support.

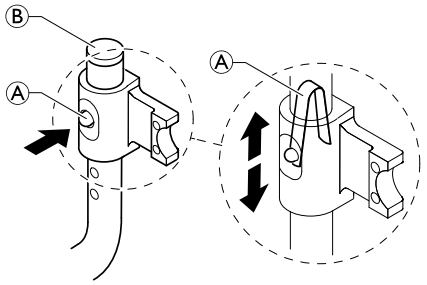
Ⓑ = 13 Nm



6.10.6 Adjusting the height of the cane holder

Flat-head Screwdriver ■□□

1. To adjust the height, remove cap Ⓑ and, e.g. using a screwdriver, compress the spring Ⓐ inside the tube and push into the required position.

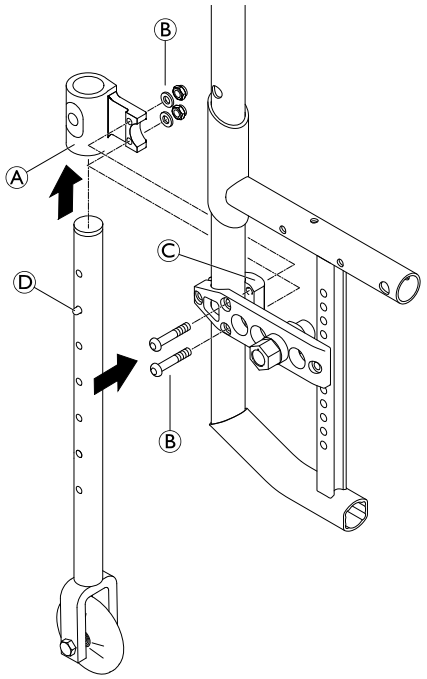


6.10.7 Installing the transit wheels

Allen key (5 mm) / Socket spanner (10) ■□□

1. Mount the adaptation support Ⓐ with bolt Ⓑ onto the adapter plate Ⓒ.
2. Push in spring clip Ⓓ and push the transit wheel into the adaptation support.
3. Install the second transit wheel on the other side.
4. Make sure that the spring clips are correctly engaged in the adaptation supports.

Ⓑ = 13 Nm

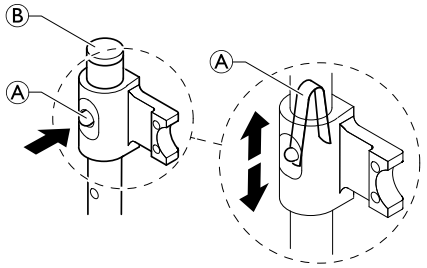


6.10.8 Adjusting the height of the transit wheels

— ■□□

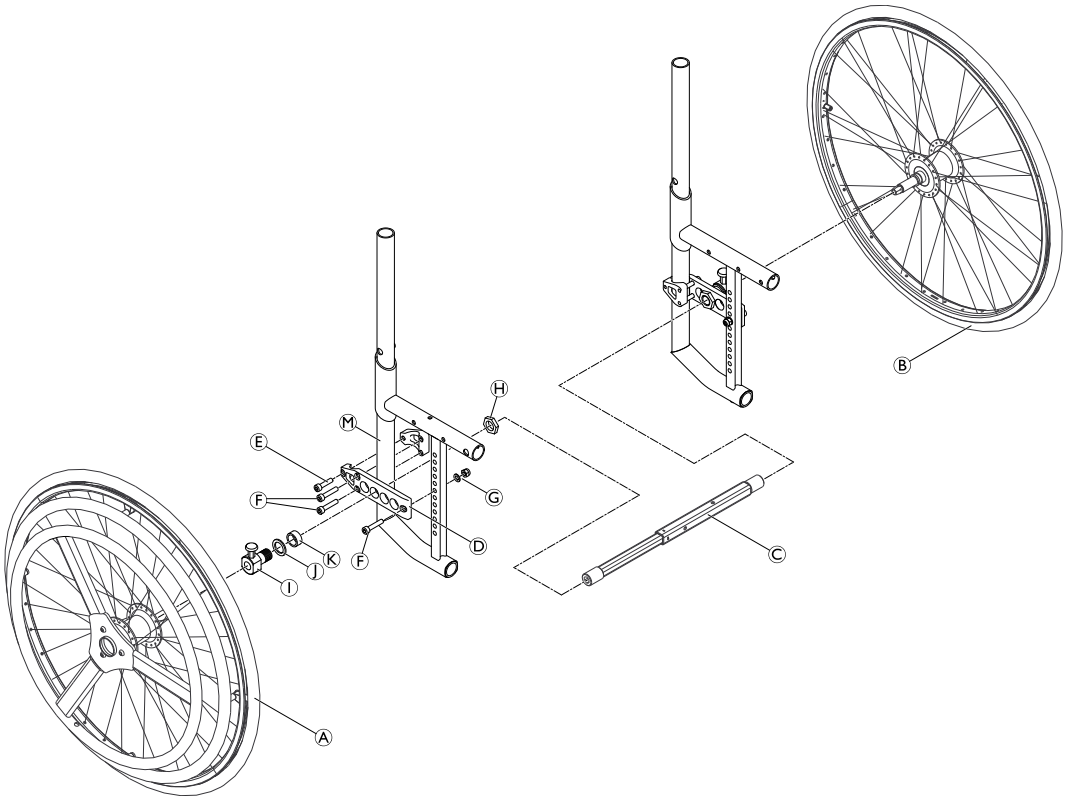
1. To adjust the height, remove cap Ⓑ and, e.g. using a screwdriver, compress the spring Ⓐ inside the tube and push into the required position.
2. Adjust the height of the second transit wheel accordingly.

To bring the transit wheels into the upper or lower position, the spring clip must be pressed in.



6.10.9 Installing the One-Arm-Drive

Allen key (5 mm) / Socket spanner (10, 22) / Wrench (19) ■■□



1. Install the adapter plate Ⓓ to the frame Ⓜ using bolt Ⓔ and bolts Ⓕ with washer and nut Ⓖ.
2. Install the quick-release adapter Ⓘ with washer Ⓙ, sleeve Ⓚ and nut Ⓗ to the adapter plate on both sides.
3. Install the telescopic shaft Ⓒ between the adapter sleeves.
4. Install the active one hand drive wheel Ⓐ to the quick-release adapter.
5. Install the passive one hand drive wheel Ⓑ to the quick-release adapter on the other side.

Ⓔ = 13 Nm
Ⓕ = 13 Nm
Ⓖ = 13 Nm
Ⓗ = 33 Nm

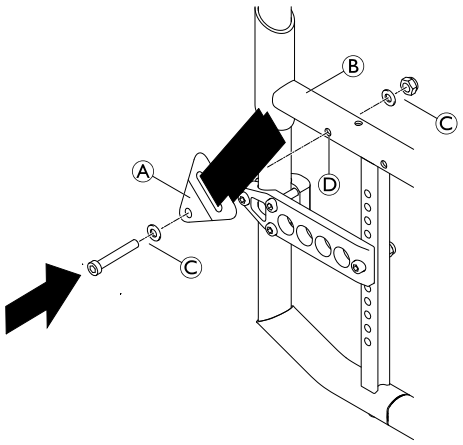
6.10.10 Installing the Posture Belt

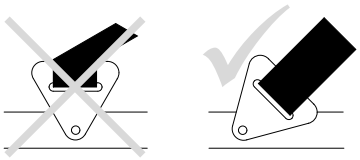
Allen key (5 mm) / Socket spanner (10) / Drill, drill bit = Æ 6 mm ■■□

1. If not present, drill a hole Ⓓ on both sides through the frame Ⓑ.
2. Mount the steel strap Ⓐ using bolts, washers and nuts Ⓒ through the holes Ⓓ on both sides.

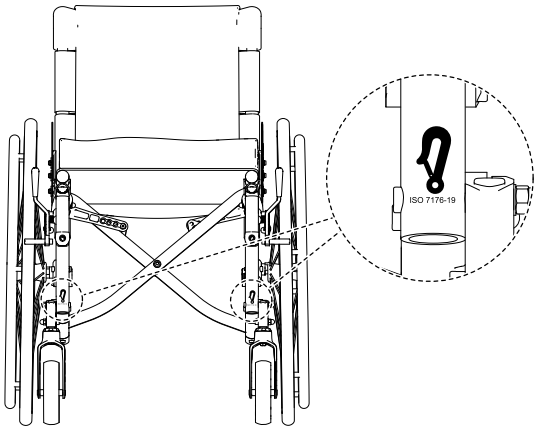
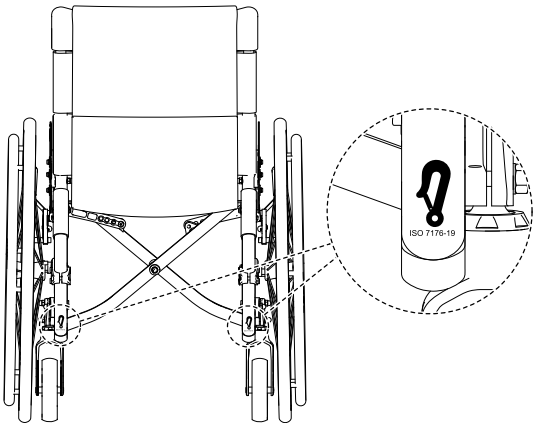
Ⓒ = 4 Nm

WARNING!
Risk of injury due to incorrect installation
– Ensure that the webbing of the posture belt is not twisted during assembly and the locking mechanism shows towards the front.





6.10.11 Attaching the snap hook symbol labels

Front side	Rear side
	

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