küschall®
designed for life

küschall® R33

CE

Service Manual

Contents

General

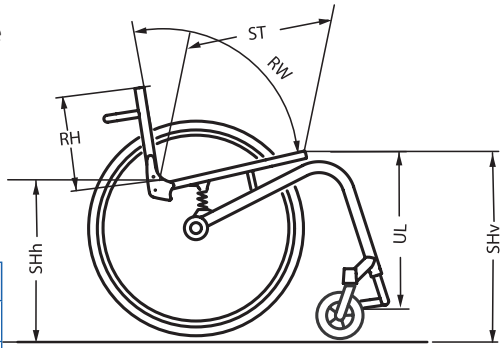
Introduction

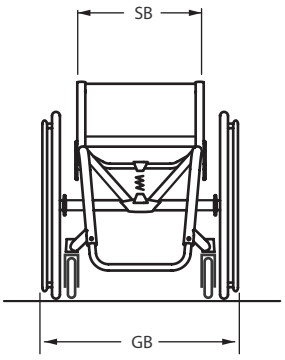
This Service Manual contains all the technical information necessary for the inspection, configuration or repair of a *Küschall*® wheelchair.

To maintain the necessary levels of safety and reliability, every wheelchair must be thoroughly examined once a year.

Some aspects of the assembly and configuration of the wheelchair require a high level of expertise. These assembly instructions therefore break the various tasks down into three categories:

Requirement	Symbol
Easy – technical understanding required	●○○
Medium – technical knowledge required	●●○
Difficult – technical knowledge and expertise in assembling wheelchairs required	●●●





The required tools and their sizes are listed before the instructions. The various torque values with which the nuts are to be tightened are also specified in the instructions. A torque spanner must be used, in order to comply with the specified torque values.

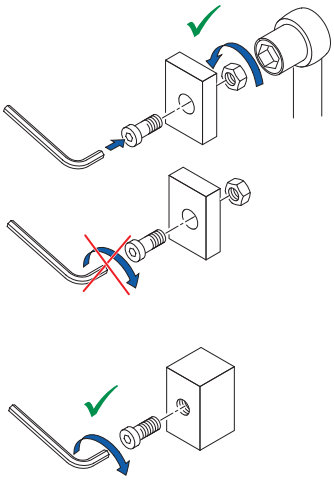
Tool	Symbol
Allen key	⬢ 3, 4, 5,8
Open-end spanner	⊂ 8, 10
Socket spanner/Box spanner	⬡ 8, 10

Spare parts and adaptations

All spare parts may be obtained from the *Küschall*® customer service department. An electronic spare parts catalogue can be found at *www.kueschall.com*. Only original spare parts may be used. The written authorisation of *Küschall*® AG must be obtained before installing additional adaptations on a *Küschall*® wheelchair.

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 must be applied to the nut wherever possible to avoid damaging the bolt.

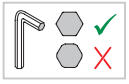


Tightening and undoing

- 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.

Torque

- All bolts must be tightened with the torque specified in the following instructions.

Checks

Visual check

- Check the entire frame for cracks, especially in the vicinity of joints and weld seams.

Check of the bolts

- Check that all bolts have been tightened with the torque specified in the instructions.

⚠ **Several bolts are secured with adhesive. If these are loosened, they have to be cleaned and secured with adhesive again.**

⚠ **Self-locking nuts and screws, once loosened, have to be replaced by new ones.**

Identifying and repairing faults

Fault	Possible cause	Action
The wheelchair does not travel in a straight line	Incorrect tyre pressure on one rear wheel	Correct tyre pressure
	One or more spokes broken	Replace broken spoke(s)
	Spokes tightened unevenly	Tighten loose spokes
	Front wheel bearings are dirty or damaged	Clean or replace the bearings
	Rear wheels are not parallel	Make rear wheels parallel
The wheelchair tips too easily	Backrest angle too large	Reduce backrest angle
	Wrong seat position	Change seat position
The brakes are gripping poorly or asymmetrically	Incorrect tyre pressure in one or both rear tyres	Correct tyre pressure
	Brake setting incorrect	Correct brake setting
The rolling resistance is very high	Tyre pressure in rear tyres is too low	Correct tyre pressure
	Rear wheels are not parallel	Make rear wheels parallel
	Front wheel axles are restrained by dirt or hair	Clean front wheel axles
	Bearings are dirty or faulty	Replace the bearings
The front wheels wobble when moving fast	Too little tension on the clevis pin housing	Tighten the nut on the castor fork slightly
The front wheel is stiff or stuck	Bearings are dirty or faulty	Replace the bearings

Seat

Seat width (SB)

Available seat widths: SB 34 to SB 44, in 20 mm steps.

Once it has been set the seat width cannot be modified easily. It requires replacing the seat module, backrest, axle and footrest. This modification is not described in the Mentor.

Seat depth (ST)

Available seat depths: ST 37.5 to ST 47.5 in 25 mm steps.

Adjusting the seat depth requires replacing the entire seat module including seat upholstery and rail, as well as the seat cushion.

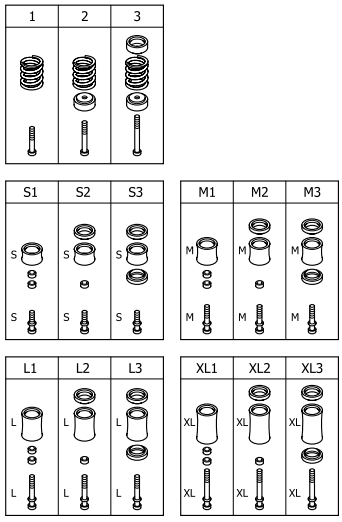
Rear seat-to-floor height (SHh)

Available rear seat heights: SHh 40 to SHh 49 in 10 mm steps.

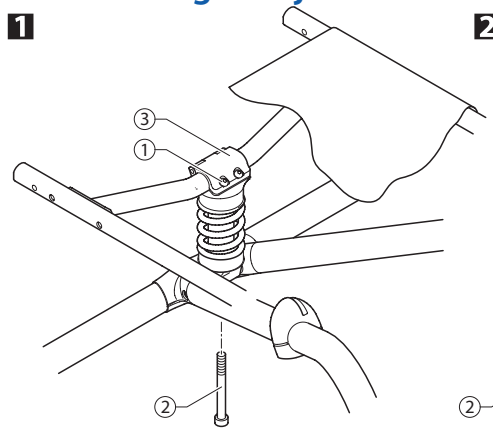
To adjust the rear seat height it is necessary to change the rear suspension configuration of the spring (or fixed connection piece) and distance rings,
→ **Chap. Seat; ‹Rear seat height adjustment with/without „Low-Impact-System“›.**

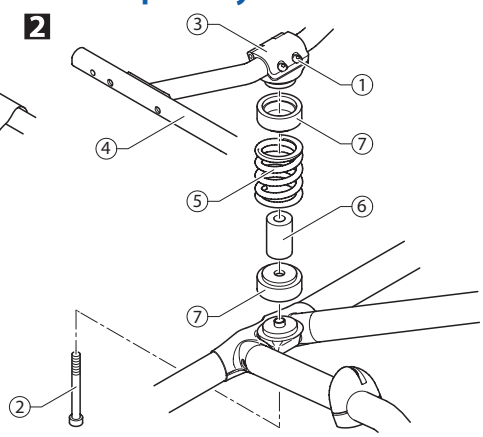
The following configurations are possible:

Rear seat-to-floor height by rear wheel size				
	with ‹low impact system›		*without ‹low impact system›*	
SHh	*24“ wheel*	*25“ wheel*	*24“ wheel*	*25“ wheel*
40	—	—	S1	—
41	—	—	S2	S1
42	—	—	S3 / M1	S2
43	1	—	M2	S3 / M1
44	—	1	M3 / L1	M2
45	2	—	L2	M3 / L1
46	—	2	L3 / XL1	L2
47	3	—	XL2	L3 / XL1
48	—	3	XL3	XL2
49	—	—	—	XL3



Rear seat height adjustment – Low impact system





① → 7 Nm

Difficulty: ●●● *Tool:* ⬢*5,8*

1 Loosen the bolts ① and remove bolt ②.

2 Lift up the seat module ④ and remove the spring ⑤, rubber ⑥ and distance rings ⑦ (if fitted).

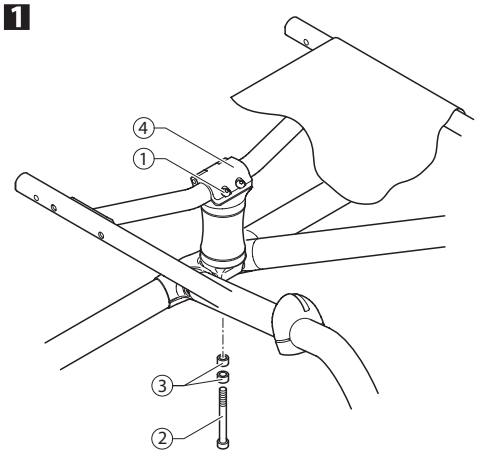
■ Insert spring ⑤, rubber ⑥ and distance rings ⑦ according to the required seat height, → **Table ‹Rear seat-to-floor height by rear wheel size (SHh)›**.

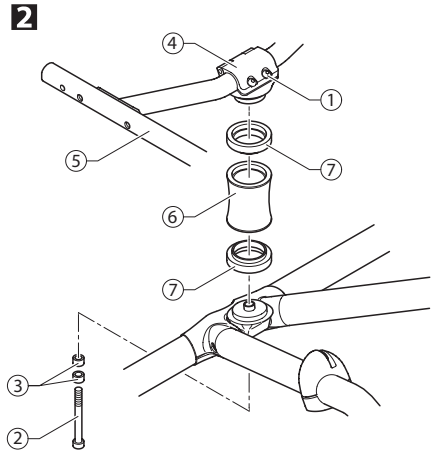
■ Turn the clamp ③ on the seat module ④ against the spring unit, until all parts fit together.

■ Fasten the spring unit with the bolt ② (with adhesive). Make certain to use the correct bolt length, → **Table ‹Rear seat-to-floor height by rear wheel size (SHh)›**.

■ Tighten the bolts ①.

Rear seat height adjustment – without Low impact system





① → 7 Nm

Difficulty: ●●● *Tool:* ⬢*5,8*

1 Loosen the bolts ① and remove bolt ② and rings ③ (if fitted).

2 Lift up the seat module ⑤ and remove the seat-to-frame connection ⑥ and the distance rings ⑦ (if fitted).

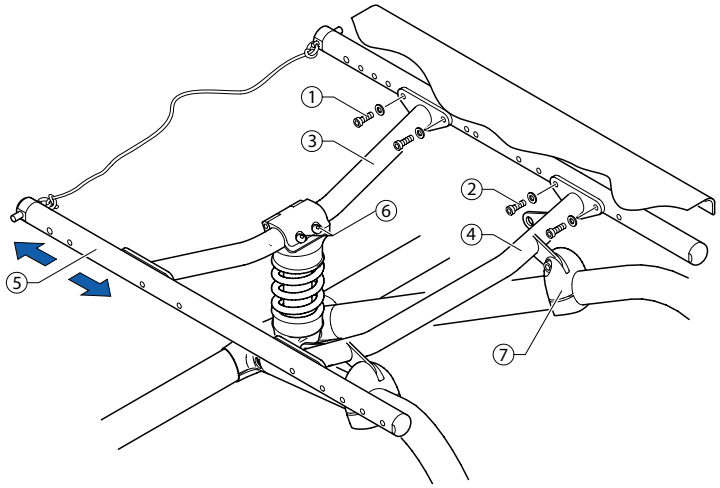
■ Insert seat-to-frame connection ⑥, with or without the distance rings ⑦, according to the requested seat height, → **Table ‹Rear seat-to-floor height by rear wheel size (SHh)›**.

■ Turn the clamp ④ on the seat module ⑤ against the seat-to-frame connection, until all parts fit together. Fasten the seat-to-frame connection with the bolt ② (with adhesive). Slide 1 or 2 rings ③ onto the bolt if necessary, → **Table ‹Rear seat-to-floor height by rear wheel size (SHh)›**.

■ Tighten the bolts ①.

Tipping point adjustment

The tipping point of the wheelchair can be adjusted by changing the horizontal position of the seat module.



① → 7 Nm
② → 7 Nm
⑥ → 7 Nm
⑦ → 13 Nm

Making it easier to tip the wheelchair

Difficulty: ●●● *Tool:* ⬢ *4*

- Loosen bolts ⑥.
- Remove bolts ① (=4 bolts that connect the rear brace ③ and the seat module ⑤).
- Move the rear brace ③ forward and use the bolts ① to secure it in the required position.
- Remove bolts ② (=4 bolts that connect the front brace ④ and the seat module ⑤).
- Move the front brace ④ forward and use the bolts ② to secure it in the required position.
- Retighten the bolts ⑥.

Making it more difficult to tip the wheelchair

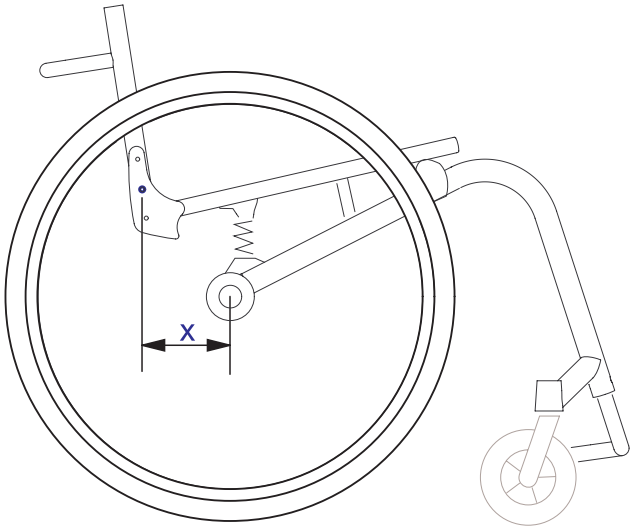
Difficulty: ●●● *Tool:* ⬢ *4*

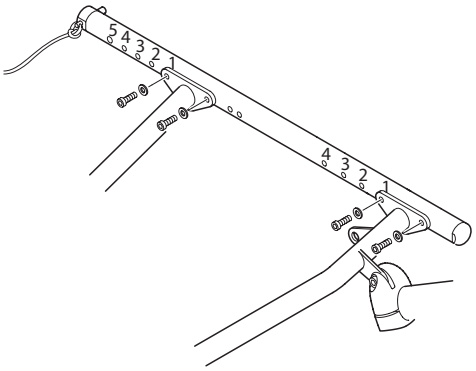
- Loosen bolts ⑥.
- Remove bolts ② (=4 bolts that connect the front brace ④ and the seat module ⑤).
- Move the front brace ④ backwards and use the bolts ② to secure it in the required position.
- Remove bolts ① (=4 bolts that connect the rear brace ③ and the seat module ⑤).
- Move the rear brace ③ backwards and use the bolts ① to secure it in the required position.
- Retighten the bolts ⑥.

Additional positions can be set by turning the front brace ④. In this case, the fastening elements ⑦ must be moved.

When tightening the fastening elements ⑦, it must be ensured that the slots in the fastening elements are parallel to one another and that the distance of both fastening elements from the centre part is identical.

Seat position and tipping point					
Seat position (1=rearmost, 6=frontmost seat position)	**Dimension x** (the larger the value of x, the easier it is to tip the wheelchair)	**Front brace** (1=frontmost, 4=rearmost position of brace at seat module)	**Rear brace** (1=frontmost, 5=rearmost position of brace at seat module)	**Bracket distance** (=distance between brackets of front brace)	**Brace distance** (=distance between rear brace and front brace)
1	154	1	1	small	190
2	131	2	2	small	190
3	108	3	3	small	190
4	85	4	4	small	190
3	108	1	3	large	236
4	85	2	4	large	236
5	62	3	5	large	236
6	39	4	5	large	213



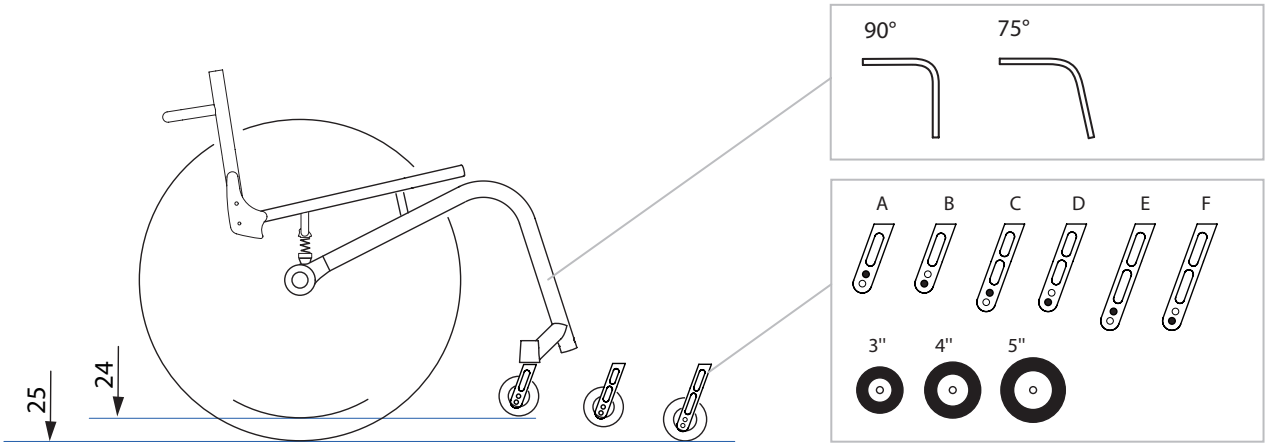


Front seat-to-floor height (SHv)

The front seat height is variable between SHv 48 and SHv 51 (± 10 mm).

The front seat height cannot be adjusted independently; it is dependent on the rear seat to floor height, the rear wheel size, the front wheel size, the front fork size and the position of the front wheel within the front fork. It can also be varied by altering the tipping point and the seat angle.

The following combinations of front and rear wheels are possible:



Front and rear wheel combination				
Rear wheel	*Frame*	*Front wheel*		
		⭘3"	⭘4"	⭘5"
24"	75°	D	C	B
	90°	B	A	—
25"	75°	E	D	C
	90°	C	B	—

Only choose wheel and axle combinations specified in the table to ensure that the frame is straight and the axis of the front wheel fork is perpendicular to the ground.

Backrest

Backrest height (RH)

To adjust the backrest height, either adjust the push handles (or telescopic tubes) or replace the backrest tube.

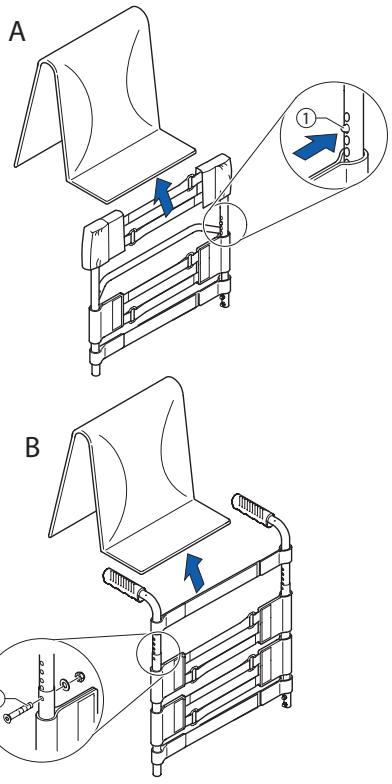
Suitable backrest tubes and push handles per backrest height

RH	Without push handles		Standard push handles		Foldable push handles		Cover
	H	I	H	⅂	H	⅂	
27	S	S	S	S	S	S	S
28.5	S	S	S	S	S	S	S
30	S	S	S	S	S	S	S
31.5	S	S	S	S	S	S	M
33	L	S	S	S	L	S	M
34.5	L	M	L	S	L	S	M
36	L	M	L	S	L	S	M
37.5	L	M	L	S	L	S	L
39	L	M	L	S	L	M	L
40.5	L	M	L	L	L	M	L
42	L	L	L	L	L	M	L
43.5	L	L	L	L	L	M	L
45	L	L	L	L	L	M	L
46.5	L	L	L	L	L	M	L

Backrest height adjustment

Adjustment of the push handles or telescopic tubes

Difficulty: ●○○ *Tool:* ⬢ 3 ▬C 8



A without push handles

- Remove the backrest cover.
- Locate the spring clips ① inside the backrest straps then press them into the tube. Adjust the telescopic tube to the required height and let the spring clips snap into the nearest holes.
- Replace the backrest cover.

B with push handles

- Remove the backrest cover.
- Slide the backrest strap either up or down to locate the fixing bolt ②. Remove nut and bolt from both sides.
- Adjust the push handle to the required height then fit the bolts ② into the nearest holes and secure with the nuts.
- Replace the backrest cover.

If the required height is not achieved, replace either the push handle, the telescopic tube or the backrest tube.

Replacement of backrest tube

Difficulty: ●○○ *Tool:* ⬢ *4,* ▬C *8, 10*

1 Remove the backrest cover.

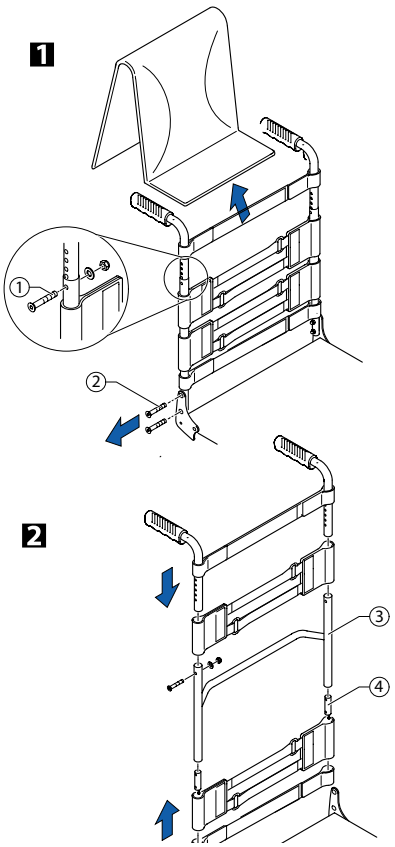
- Slide the backrest strap either up or down to locate the fixing bolt ①. Remove nut and bolt from both sides.
- Remove the push handles and the upper adjustable backrest straps.

  If the wheelchair is fitted without push handles, remove the telescopic tubes and the upper adjustable backrest straps by pressing the spring clips into the tube and then pulling the tubes out of the backrest.
- Remove the bolts ② securing the backrest tube ③ to the seat module.

2 Remove the lower adjustable backrest straps and the sleeve with the stop bolt ④ from the backrest tube ③.

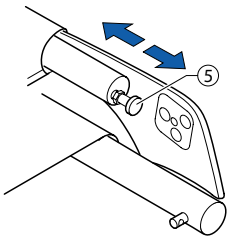
- Assemble the lower adjustable backrest straps and the sleeve with the stop bolt ④ to the new backrest tube ③ then secure the backrest tube to the seat module with the bolts ②.
- Replace the upper adjustable backrest straps and the push handles and secure with the bolts ① and nuts.

  If the wheelchair is fitted without push handles, replace the telescopic tubes and the upper adjustable backrest straps by pressing the spring clips into the tube and then sliding the tubes to the required position until the spring clips snap into the nearest holes.
- Replace the backrest cover.



Functional check:

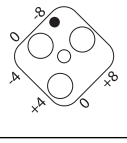
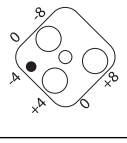
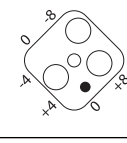
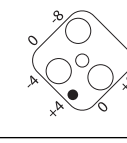
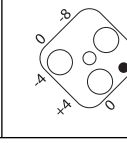
With the backrest in the upright position, check the adjustment of the backrest stop bolt ⑤. The bolt head may only slightly touch the seat module when the backrest clicks into its upright position. Adjust if necessary by loosening the lock nut and moving the stop bolt either in or out as required. Tighten the lock nuts.



Backrest angle

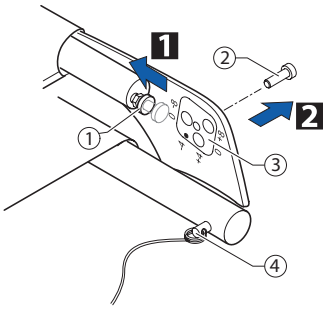
To adjust the backrest angle re-position the eccentric plate in the backrest joint.

The following angles can be set (in relation to the seat):

Angle:	74°	78°	82°	86°	90°
Setting:	-8˚	-4˚	0˚	+4˚	+8˚
					

Backrest angle adjustment

Difficulty: ●●○ *Tool:* ⬢ 3, ▬C 10



1. Fold the backrest onto the seat and loosen the lock nut of the stop bolt ①. Tighten the adjustment bolt completely.
2. Remove the bolt ② of the eccentric plate ③. Remove the eccentric plate and reinsert it in the required position.

Verify that both eccentric plates are in the same position.

- Reinsert bolt ② and tighten.
- Unfold the backrest to the upright position until the spring pins ④ engage in the eccentric plate. Loosen the stop bolt ① until it slightly touches the frame and the backrest joint no longer has any free movement.
- Tighten the lock nuts.

Functional check:

Unfold the backrest.The spring pins must lock into the hole in the eccentric plate.

Footrests

Knee-to-heel length (UL)

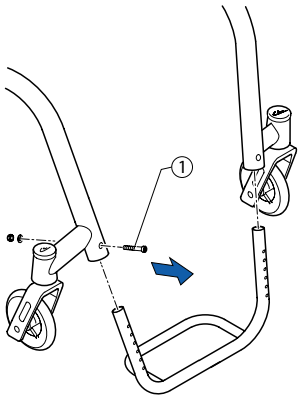
The footrest must be attached in a higher or lower position to adjust the knee-to-heel length (UL).

The UL can be adjusted from 39 cm to 46 cm. For shorter knee-to-heel lengths a high mounted footrest must be fitted,
→ **Chap. Footrests; ‹Footrest mounted in high position›.**

Footrest replacement

Difficulty: ●○○ *Tool:* ⬢ *4,* ▬C *8*

- Remove the bolts ① on both sides of the frame.
- Remove the footrest from the frame and insert the new one.
- Replace the bolts ① on both sides of the footrest and tighten.



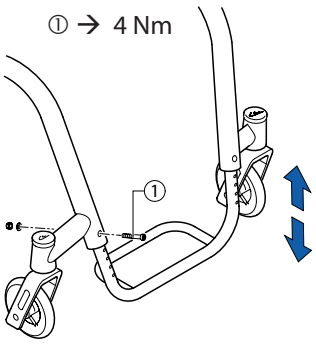
Footrest height adjustment

Difficulty: ●○○ *Tool:* ⬢ *4,* ▬C *8*

The footrest height can be adjusted in 10 mm steps.

- Remove the bolts ① on both sides of frame.
- Slide the tube into the correct position.
- Replace the bolts ① on both sides of the footrest and tighten.

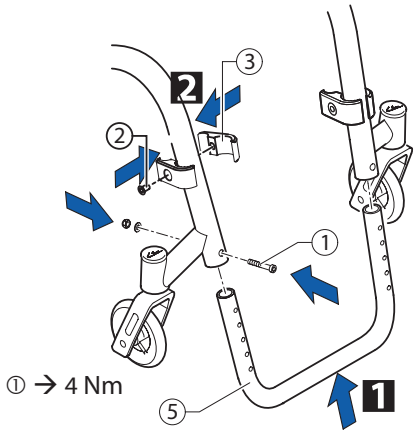
The footrest must be firmly attached in the frame tube. A high-mounted footrest may be required if the knee-to-heel length cannot be achieved with the standard footrest.

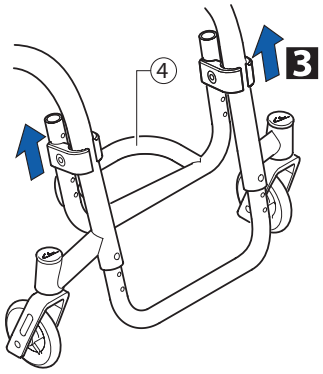


Footrest mounted in high position

Difficulty: ●○○ *Tool:* ⬢ *4,* ▬C *8*

1. Slide the frame connector ⑤ for the high-mounted footrest into the frame and attach with bolt ① on both sides.
2. Fasten the clamp set ③ with bolt ② to both sides of the frame, tighten slightly.
3. Slide the high-mounted footrest ④ in the clamp set to the required height.
- Tighten bolt ②.





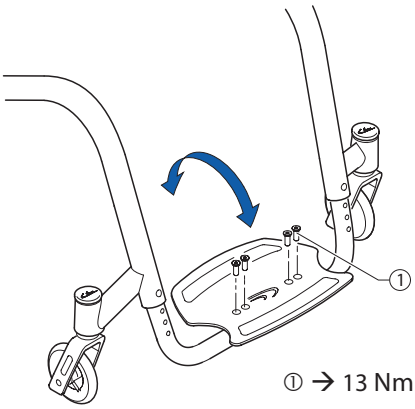
Footplate angle adjustment

Difficulty: ●○○ *Tool:* ⬢ *4,* ▬C *10*

The footplate angle can only be adjusted if the footrest is angle adjustable.

- Loosen all four bolts ① until the footplate can be moved.
- Pivot the footplate to the required position and then tighten the bolts ①.

⚠ **The footplate must be firmly secured to the wheelchair with no room for movement.**



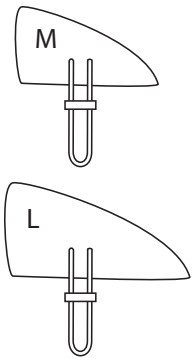
Side parts

Clothes guard / Mudguard

The standard clothes guard can be replaced by a mudguard.

Suitable sizes of clothes-guard / mud guard

	Rear wheels	
SHh	*24"*	*25"*
40	L	L
41	L	L
42	L	L
43	M	L
44	M	L
45	M	L
46	M	L
47	M	M
48	M	M
49	M	M



Clothes-guard assembly

The clothe-guard fixation piece ① must be already fitted on the backrest tube.

Difficulty: ●●○ *Tool:* ⬢ *3, 4* ▬C *8*

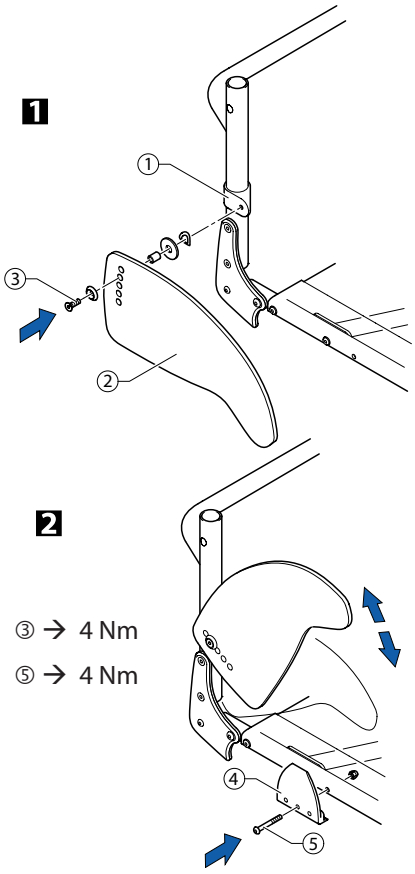
1 Remove existing clothes guard by removing bolt ③.

■ Align the clothes-guard to the rear wheel. Locate the required position to fasten the clothes guard ② to the fixation piece ① before removing the rear wheels.

■ Fasten the clothes-guard ② to the fixation piece ① with bolt ③.

2 If the seat module fixation piece ④ needs to be replaced, remove the bolt ⑤.

When unfolded, the tip of the clothes-guard must be below the seat module and the upper rim must run parallel to the rear wheel.



Mudguard assembly

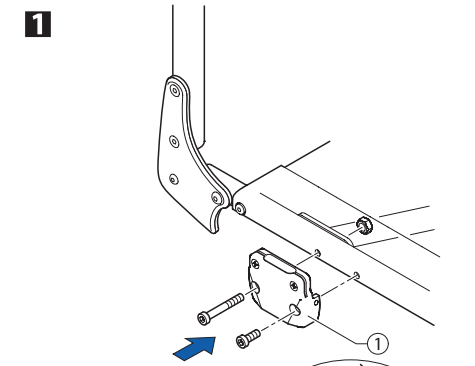
Difficulty: ●●○ *Tool:* ⬢ 4, ▬C 8

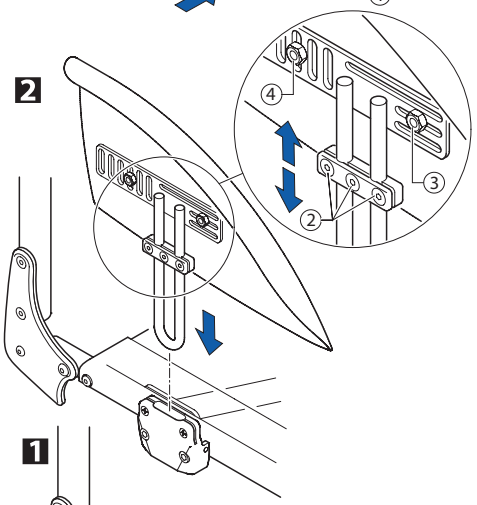
If replacing a clothes-guard with a mudguard, first remove the clothes-guard and the bracket attached to the seat module.

- Remove the rear wheels.
1. Attach the bracket ① to the seat module and remount the rear wheels.
2. Slightly loosen the three bolts ② on the adjustment plate and move it along the mounting bracket until the mudguard is in position.
- The position of the mudguard can also be altered by loosening the nuts ③ and ④ and adjusting the mudguard as required so that it runs parallel to the rear wheel.
- Tighten the bolts.

The distance between the mudguard and wheel must be at least 20 mm if the wheelchair is equipped with the low impact system.

① → 4 Nm
② → 7 Nm
③ → 7 Nm
④ → 7 Nm





Siderest

The standard clothes guard can be complemented with a siderest.
A siderest cannot be fitted together with a mudguard.

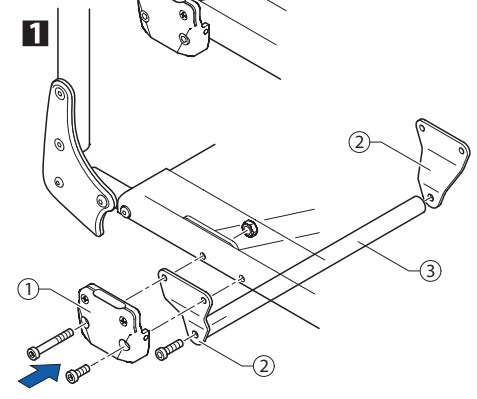
Siderest assembly and adjustment

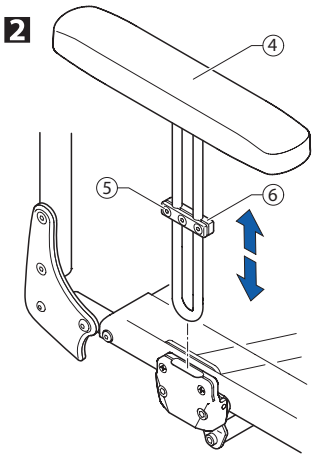
If replacing mudguards with siderests, first remove the mudguards and the brackets attached to the seat module.

If complementing clothes guards with a siderests, remove only the bracket attached to the seat module.

Difficulty: ●●○ *Tool:* ⬢ 4, ▬C 8

- Remove the rear wheels.
1. Attach the brackets ① and ② to the seat module on both sides then fix the connecting tube ③ between the two brackets ② with the bolts.
2. Slightly loosen the three bolts ⑤ on the height adjustment bracket ⑥ then fit the siderest ④ into the bracket ①.
- With the height adjustment bracket ⑥ touching the seat module bracket ①, slide the siderest ④ up or down to the required height then tighten the bolts ⑤.



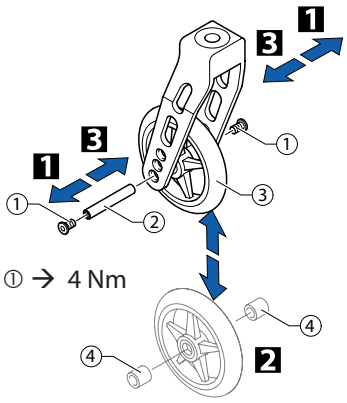


Front wheels

Front wheel replacement

Difficulty: ●○○ *Tool:* ⬢ *3*

1. Remove the bolts ① and washers and then remove the front wheel axle ②.
2. Remove the front wheel ③.
3. Position the two bushings ④ between the new wheel ③ and fork.
4. Guide the front wheel axle ② through the fork, bushings ④ and wheel ③, replace and tighten the bolts ①.



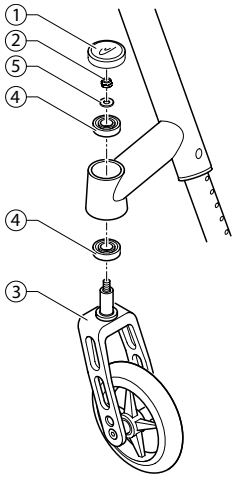
Functional check:

The wheel must be secured firmly, but still be able to spin easily.

Front fork replacement

Difficulty: ●●○ *Tool:* *8*

- Remove the bearing block cap ① by inserting two boltdrivers into the grooves and pushing it upward.
- Remove the nut ② and washer ⑤.
- Remove the front fork ③.
- Check the ball bearing blocks ④ and replace if necessary.
- Attach the new front fork with the washer ⑤ and nut ② and tighten.
- Perform functional check (see below).
- Replace the bearing block cap ①.

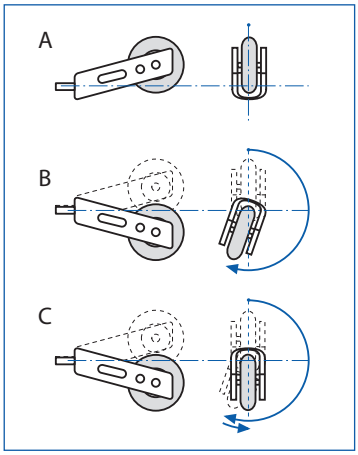


Functional check:

Tip the wheelchair 90° backwards, so that the chair is lying on the backrest and rear wheels. Turn the fork upwards (position A) and let it tip downwards.

The fork is tightened correctly when it turns slightly over the lowest point and stays there (position B).

The fork hasn't been tightened sufficiently if it turns back into the lowest position (position C). If tightened wrongly, there is a possibility for the front wheels to start fluttering at high speeds.



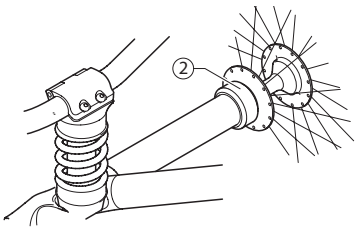
Rear wheels

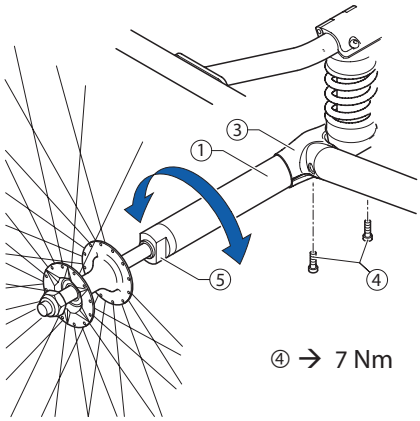
Control of rear wheel parallelism

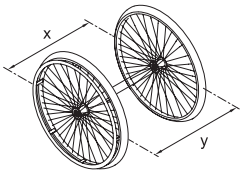
Difficulty: ●●● *Tool:* ⬢ *5*

- Loosen the two bolts ④ that clamp the centrepart ③ to the axle ①.
- Remove the wheels then remove the axle protection rings ② from the ends of the axle ① (if fitted). Replace the rear wheels.
- Remove one of the rear wheels slightly to create a gap between the axle and the hub of the rear wheel, wide enough for a spirit level. Hold the spirit level against the flat part at the end of the axle ⑤. This flat must be exactly vertical, if adjustment is necessary it can be achieved by turning the axle ① within the centrepart ③.
- Drehen Sie das Achsrohr im Centerpart bis die Fläche exakt vertikal ist.
- Tighten the two centrepart bolts ④, then replace the axle protection rings ② (if fitted).
- Replace the rear wheels.
- check the track of the wheels by measuring distances x and y.

This adjustment must be carried out on a perfectly horizontal surface. The track of the rear wheel is correct if (measured at height of hub) the distance between the rear wheels is the same at the front and back (x=y).







Rear wheel axle replacement

A new axle has to be fitted if a different rear wheel camber is required.

Difficulty: ●●● *Tool:* ⬢ *5*

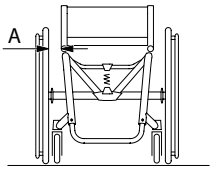
- Remove the antitipper (if fitted),→ **Chap. Options and accessories; ‹Antitipper assembly and adjustment›.**
- Remove the rear wheels and the axle protection rings ② (if fitted).
- Remove the two bolts ④ that clamp the centrepart ③ to the axle ①.
- Remove the axle ① by sliding it out of the centrepart ③.

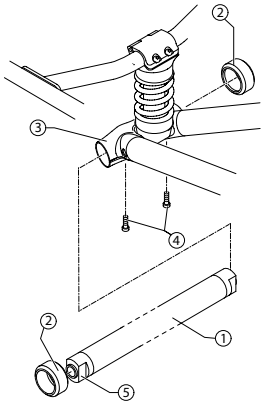
It may be necessary to gently prise the centrepart apart slightly with a boltdriver to remove or replace the axle without scratching it. This must be done very carefully to prevent cracking the coating of the centrepart.

- Slide the new axle ① into the centrepart ③. The centrepart must be approximately in the middle of the axle and the two flats ⑤ at the ends of the axle must be vertical.
- Loosely replace the two bolts ④, then replace the rear wheels.
- Check that the axle is exactly in the middle by measuring the distance from the inside of the wheel to the edge of the seat module (distance A). Both sides must have the same measurement. If adjustment is necessary, slide the axle to the appropriate side.
- Check that the rear wheel parallelism is correct by referring to control of rear wheel parallelism,
  → **Chap. Rear wheels; ‹Control of rear wheel parallelism›.**
- Tighten the two centrepart bolts ④.
- Replace the axle protection rings ② (if fitted)

The bore of the axle protection ring is slightly larger at one end to make it easier to fit it to the end of the axle.

- Replace the antitipper (if fitted).



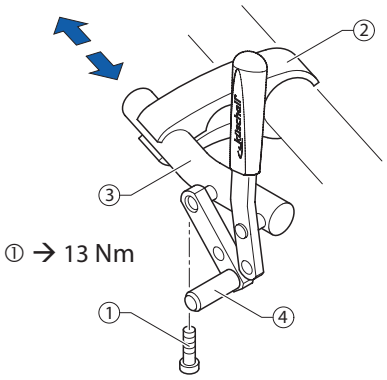


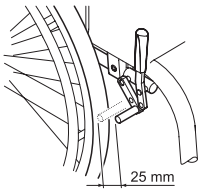
④ → 7 Nm

Brakes

Parking brakes assembly and adjustment

Difficulty: ●●○ *Tool:* ⬢ *5*





The parking brakes must be readjusted after alterations to the rear wheels are made or the axle is changed.

- Ensure sufficient air is in the tyres.
- Loosen the hexagon socket bolt ① holding the brake assembly ③ to the frame clamp ②.
- Slide the brake assembly ③ to the required position and tighten the hexagon socket bolt ①.

The brake is adjusted correctly if the distance between the wheel and brake shoe ④ is 25 mm when the brake is disengaged. When engaged the brake shoe may not sink into the tyre more than 4 mm.

Visual check

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

Functional 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 may not move.

Options & accessories

Antitipper assembly and adjustment

Difficulty: ●●● *Tool:* ⬢ 5

1 Remove the existing (short) pivot pin ① and replace with the longer pivot pin ②. (Please note that the pivot pin is secured with strong adhesive.)

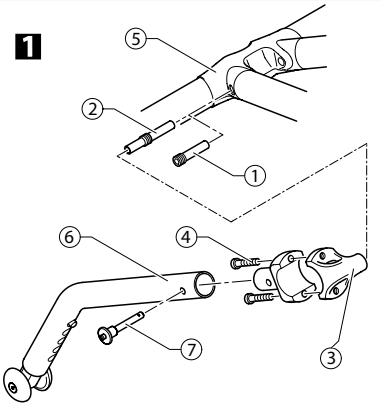
■ Loosely assemble the 2 parts of the clamp ③ onto the axle with the bolts ④.

■ Slide the clamp ③ as close as possible to the centerpart ⑤ and onto the pivot pin ②.

⚠ **The pivot pin must be fully engaged in the clamp to prevent the antitipper from turning on the axle.**

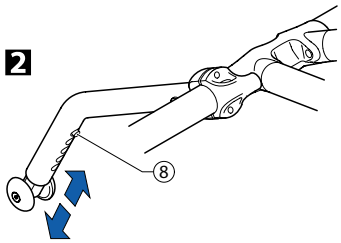
■ Tighten the bolts ④.

■ Slide the antitipper ⑥ onto the clamp ③ and secure with the QuickPin ⑦.



Adjusting the height of the antitipper

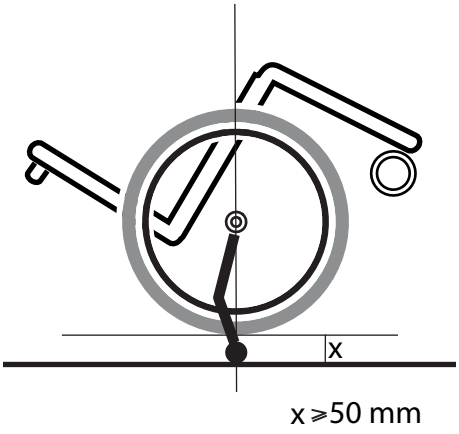
2 The height of the antitipper ⑥ can be adjusted by pressing the spring pin ⑧ and sliding the inner part of the antitipper to the required position until the spring pin locates in the correct hole.



Function check:

The distance between the antitipper and the ground must be 40 - 60 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.



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