



USER'S MANUAL

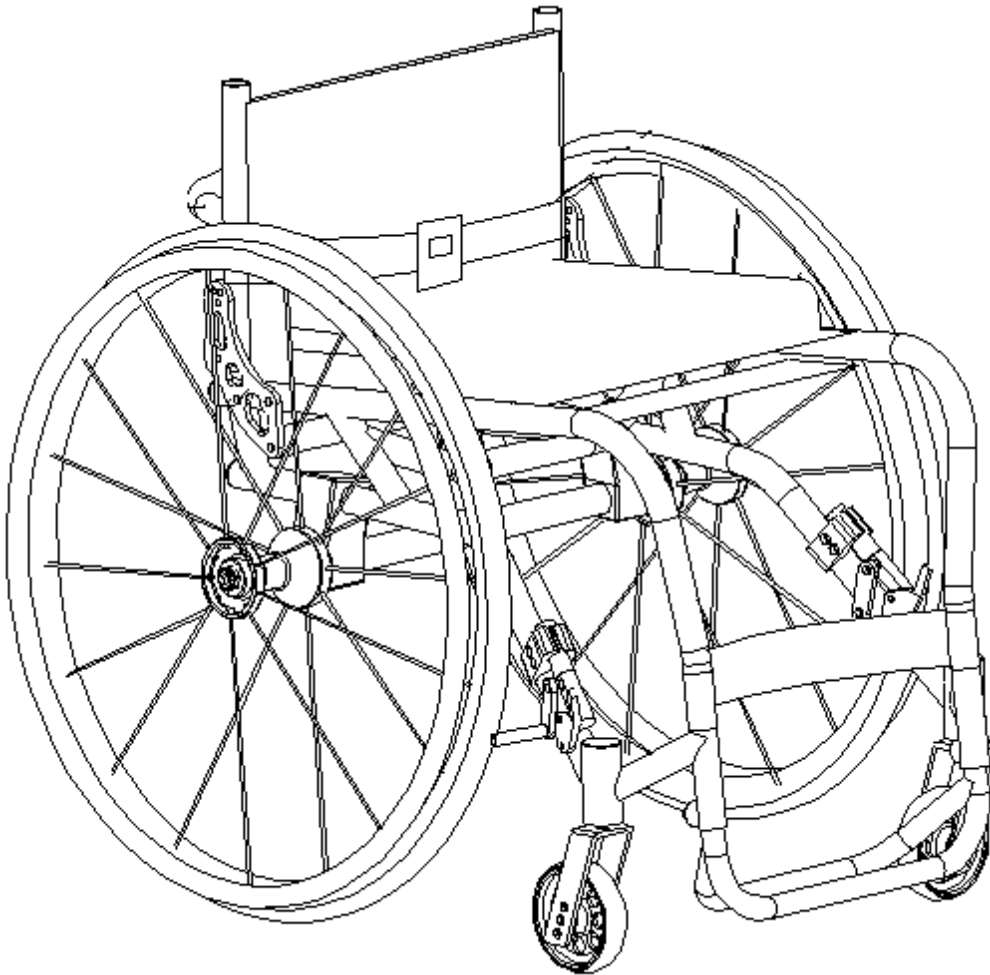




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Usage of GTM 1 and GTM HAMMER VARIO

GTM 1 and GTM HAMMER VARIO active wheelchairs are used for individual transport by people with spinal cord injury, cerebral palsy and lower limbs impairments.

BASIC INFORMATION

GTM 1 and GTM HAMMER wheelchairs have been made for these users, who want to be active in their daily life. After a proper training a minimal size of the wheelchair and proper adjustment of the centre of gravity allows maneuvering around frequently encountered architectural barriers (e.g. curbs etc.). It is easy to put the wheelchair into the car because of its lower weight (5,3kg) and minimal dimensions after folding a backrest, removing side guards and rear wheels. It is very important to adjust the wheelchair strictly to the individual needs of the user.

!!!! WARNING !!!!

Do not lean in any direction to reach heavy objects as this may cause the wheelchair to tip over.

Do not lean over the top of the back upholstery to reach the objects behind.

Do not use an escalator to move a wheelchair between floors. Serious body injury may occur.

Regulation of footrest and upholstery tension may cause instability because of transition of the center of gravity.

Before transferring to the wheelchair make sure that the quick releases are blocked properly and that the casters are in backward-rolling position as it causes the increase of stability.

Do not climb, go up or down ramps or transverse slopes greater than 10°.

Do not attempt to move up or down an incline with a water, ice or oil film.

Do not use accessories designed by other manufactures that have not been tested by GTM Mobil Technology.

Do not attempt to lift the wheelchair by any removable (detachable) parts. Lifting by means of any removable (detachable) parts of a wheelchair may result in injury to the user or damage to the wheelchair.

Do not use your wheelchair unless it has the proper tire pressure – equal in both wheels. Do not overinflate the tires. Failure to follow these suggestions may cause the tire to explode and cause bodily harm. The recommended tire pressure is on the sidewall of the tire. The proper pressure should be between 4-6 bar.

The GTM 1 wheelchair should not be used in team sports (e.g. basketball, rugby, tennis, etc).

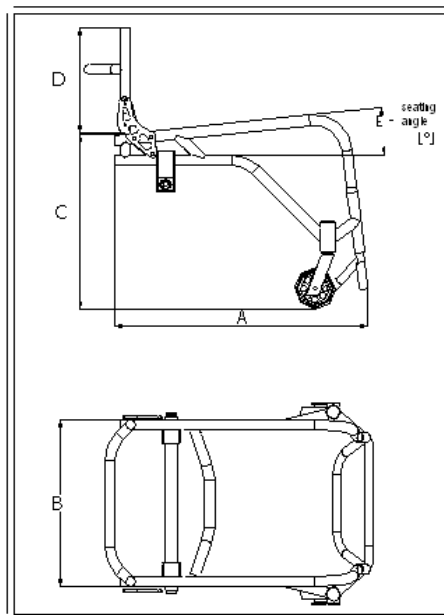




Appendix 1

Dimensions of GTM 1 and GTM HAMMER VARIO wheelchairs, types A/B/C/D/E.

frame length	frame width	frame height	backrest height	seat angle
A	B	C	D	E
500	300	400	15-45cm	6,8,10,12,13°
525	320	420		
550	340	430		
575	360	440		
600	380	450		
625	400	460		
650	420	470		
675	440	480		
700	460	500		



*Description of construction*

GTM 1 and GTM HAMMER wheelchairs consist of aluminium frame, seat, upholstery adjustable backrest, 2 rear wheels and 2 casters.

Technical specification:

frame	Aluminium, rigid
seat height	400 – 500 mm
backrest height	150 – 450 mm
frame length	500 – 700 mm
seat width	300 – 460 mm
rear wheels inclination angle	3°
weight without wheels and sideguards	5,3 kg
size of rear wheels	24x1”
push handles	Steel, folding
anti-tip device	Steel, folding
size of the casters	3” or 4”
maximal weight of the user	120 kg

SAFE HANDLING OF GTM 1

This information is applicable to all manual wheelchairs. It should be read by both occupants and carers with all other information supplied before anyone attempts to use the chair. This manual points out the most common procedures and techniques involved in the safe operation and maintenance of the wheelchair. It is important to practice and master these safe techniques until you are comfortable in maneuvering around the frequently encountered architectural barriers. Use this information only as a “basic” guide. The techniques that are discussed on the following pages have been used successfully by many. Individual wheelchair users often develop skills to deal with daily living activities that may differ from those described in this manual. GTM Mobil Technology recognizes and encourages each individual to try what works best for him/her in overcoming architectural obstacles that they may encounter, however, all warnings and cautions given in this manual must be followed. Techniques in this manual are a starting point for the new wheelchair user and assistant with “safety” as the most important consideration for all.



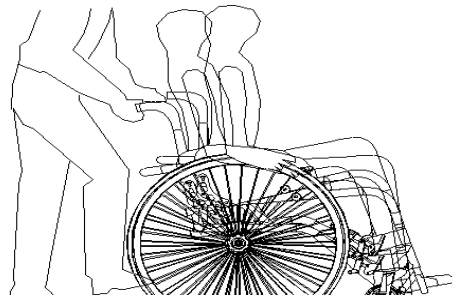


Stability and Balance

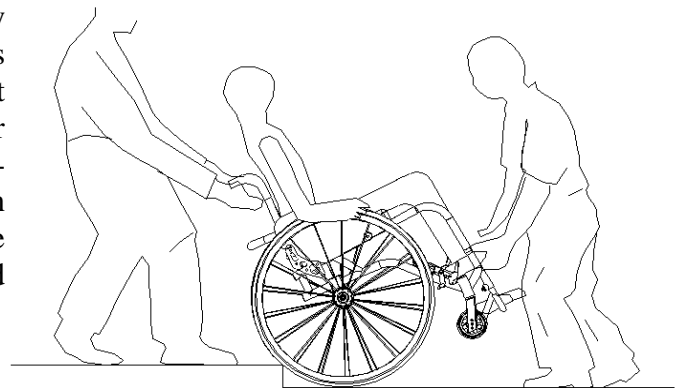
To assure stability and proper operation of your wheelchair, you must at all times maintain proper balance. Your wheelchair has been designed to remain upright and stable during normal daily activities as long as you do not move beyond the center of gravity.

Curbs

The assistant should stand on the sidewalk and turn the wheelchair so that the rear wheels are against the curb. The wheelchair should be tilted back to the balance point and, in one continuous upward movement, the rear wheels should be pulled up and over the curb. Do not return the front casters to the ground until the wheelchair has been pulled backward far enough for the front casters to clear the edge of the curb.



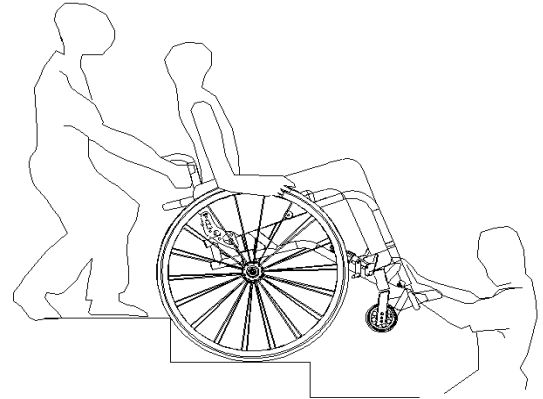
Unless the assistant has exceptional upper body strength, it is recommended that two (2) assistants perform this operation. The second assistant should be positioned at the front of the wheelchair lifting upward on a non-removable (non-detachable) part of the wheelchair frame when lifting the wheelchair and stabilizing the wheelchair when the wheelchair is being lowered to the ground.





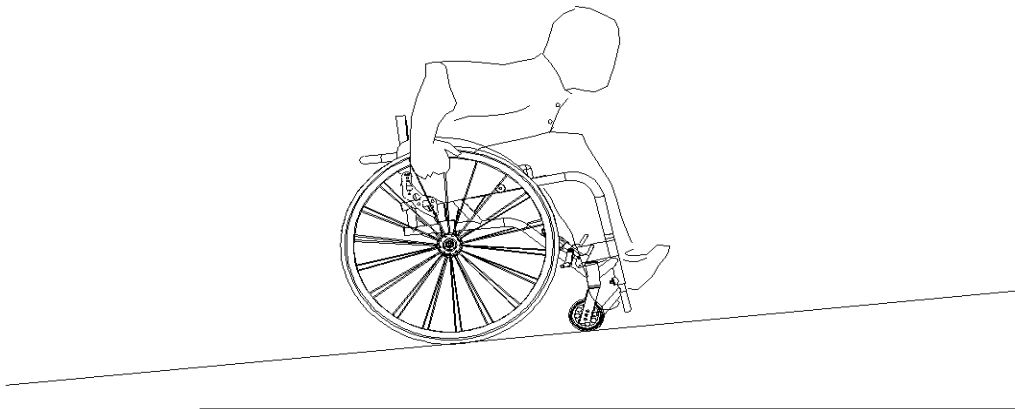
Stairways

After the wheelchair has been tilted back to the balance point (the user of the wheelchair should lean a little backwards to allow maintaining the balance position), one assistant (in the rear) backs the wheelchair up against the first step, while securely grasping a non-removable (non-detachable) part of the wheelchair leverage. The second assistant, with a firm hold on a non-detachable part of the framework, lifts the wheelchair up and over the stair and steadies it as the first assistant places one foot on the next stair and repeats procedure.



Slopes

It is recommended to lean forward and push the wheels with short movements to reach the slope. While pushing the wheels forward you can straighten your body, but not to the vertical position.

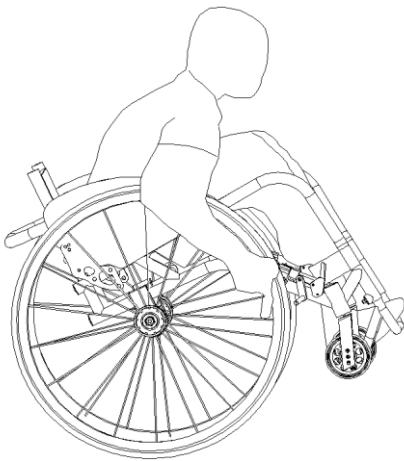




Tipping

Ability to maintain tipping position allows for efficient maneuvering around frequently encountered architectural barriers (e.g. curbs etc.). To learn tipping position the assistant is required. He should stand in the back of the wheelchair with the hand near a non-removable part and be ready to catch the wheelchair in any case of losing the balance.

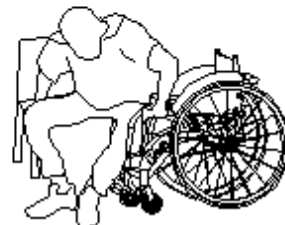
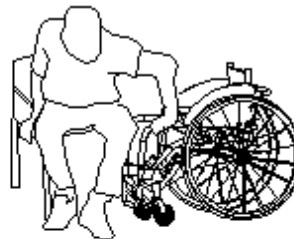
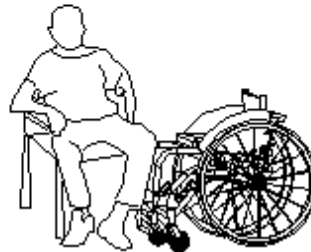
While maintaining a deep tipping position it is recommended to lean forward – the upper body should be parallel to the seat.





Transferring To and From Other Seats

Position the wheelchair as close as possible to the side of the seat to which you are transferring. Remove the armrest if installed. Engage wheel locks. Move your body as much forward as you can, put the feet on the ground, grasp the chair with one hand and the frame of the wheelchair with the second one. Push the frame and shift body weight into seat with transfer.



*Safety inspection*

Immediately after receiving the wheelchair check if:

1. The quick-releases of rear wheels block correctly.
2. The backrest locks down in two positions.
3. Caster forks rotate without resistance.
4. Rear wheels can be removed without resistance.
5. All ordered parts have been delivered.
6. Wheelchair dimensioning is according to order specification

In case of any inaccuracies please contact with the dealer.

Manual

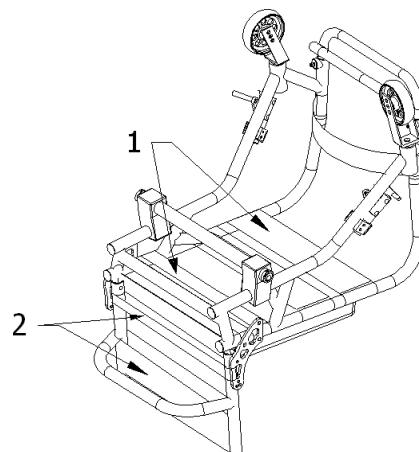
Parts regulation

The proper adjustment of all parts to individual needs of the user is very important. To make the proper adjustment the following order of activities should be followed:

1. Regulation of seat upholstery tension.
2. Regulation of backrest upholstery tension.
3. Footrest height regulation.
4. Calf strap depth regulation.
5. Regulation of center of gravity position.
6. Brakes regulation.

1. Regulation of seat upholstery tension

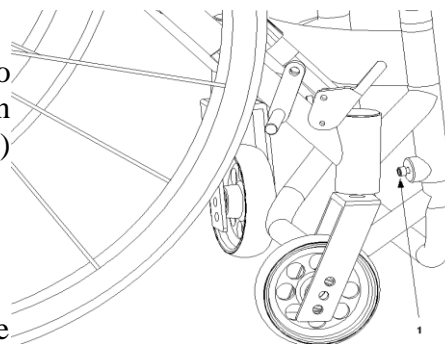
Adjust the proper tension and depth of the seat with quickly joined belts.





2. Regulation of backrest upholstery tension.

The straps can be adjusted at various levels of tension to accommodate individual end-users. Adjust the proper tension and angle of backrest with two main (upper and lower) quickly joined belts.



3. Footrest height regulation

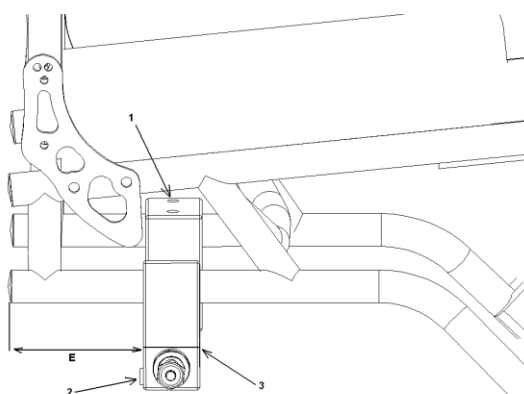
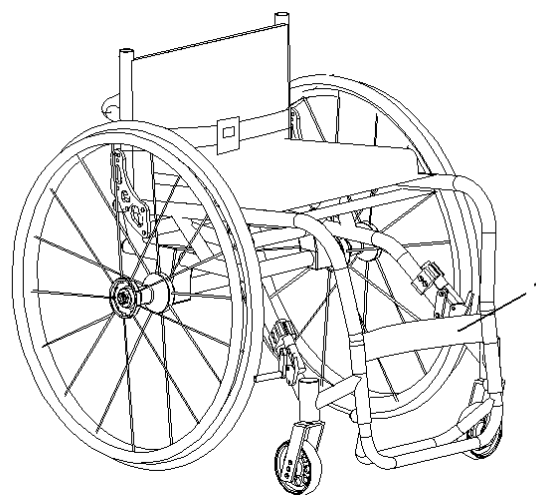
Before adjusting the footrest two screws W5 which block the footrest in the frame need to be loosen. Adjust clamp on raised footrest to the desired height. Securely tighten the two screws.

4. Calf strap depth regulation

Depends on the length of lower limbs, possibilities of flexion and individual needs.

5. Regulation of center of gravity position

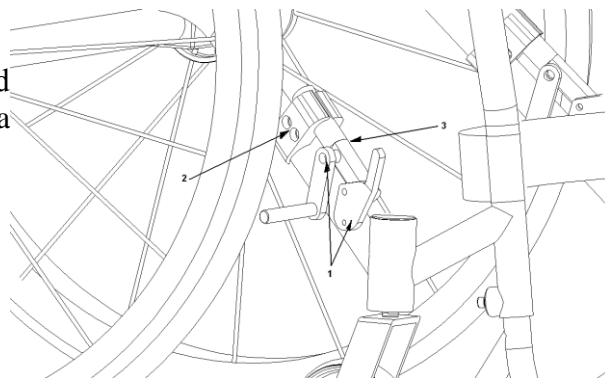
To change the location of main axle in respect to the center of gravity the screws in clamps need to be loosen. Then the proper distance could be established (E). The distance should be equal in both sides of the wheelchair. If there are any problems with changing the location of axle, the screws in „2” need to be loosen and then the main axle can be adjusted. After finishing the adjustment all screws need to be tighten. Shifting the axle to the right causes the casters to raise easier (tipping). The user needs less effort to move and maneuver with the wheelchair. But this type of adjustment increases the possibility of tip over and could lead to injuries of the body, particularly to less experienced users. It is recommended to adjust the proper location of the center of gravity to the individual skills and experiences.





6. Brakes regulation

Before adjusting the brakes two screws („2”) need to be loosen. The brake should be established in a position that properly blocks the wheel.



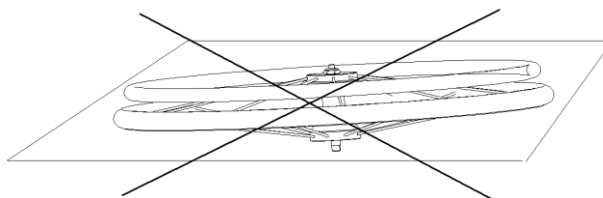
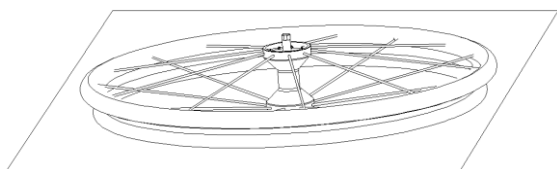
Servicing the wheelchair

Wheelchair maintenance kit:

- W4 / W5 Hex key
- 10 mm / 13 mm Box wrench (in the attached tool kit)
- WD-40 Spray lubricant
- Tyre lever

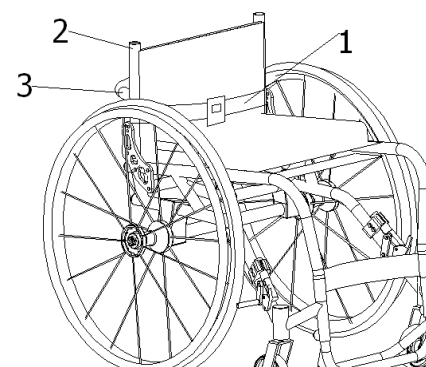
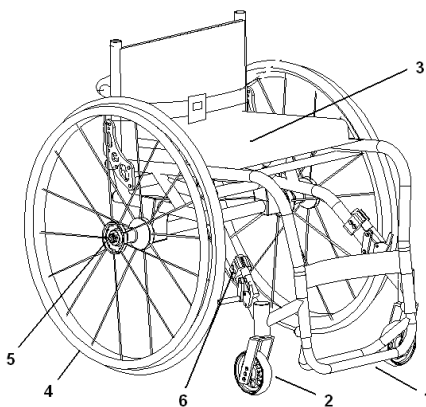
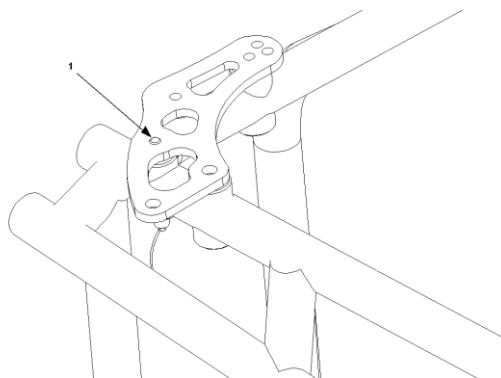
Parts easy to change by the user:

- footrest
- casters
- upholstery
- rear wheels
- quick-releases of rear wheels
- brakes
- sideguards
- push handles
- anti-tip devices



**Every month it is necessary to:**

- Clean the space between the fork and the caster as to prevent the bearings damage. While cleaning this space the caster should be removed. Preserve parts made of metal. This type of servicing should be done at least once a month, depending on the soil.
- Clean and oil quick-releases of rear wheels. While putting the wheel on the ground it should be leaned on the pushrim, in other case the quick releases could be soiled. Oil should be applied once a week.
- Inspect the condition of removable parts of the wheelchair. Loose screws need to be tighten. In case of intensive exploitation of the wheelchair check up should be done once a month.
- Inspect the tires pressure. The recommended pressure is between 4,5-7 bar (atm) and should be equal in both wheels.
- Oil the backrest blocking pivot ('1'). Remove rear wheels and put the wheelchair on one side. Pull the backrest cord to hide the pivot nr 1 and put a few drops of oil to the blocking pivot sleeve. Activity should be repeated once a month (in both mechanisms).
- Clean the brakes by wiping them with a wet duster. Oil the brakes screw pivots. Activity should be repeated once a month.

**Seat positioning strap**

The seat positioning strap, if necessary, should be installed under the transverse tube of a backrest (3) and swathed

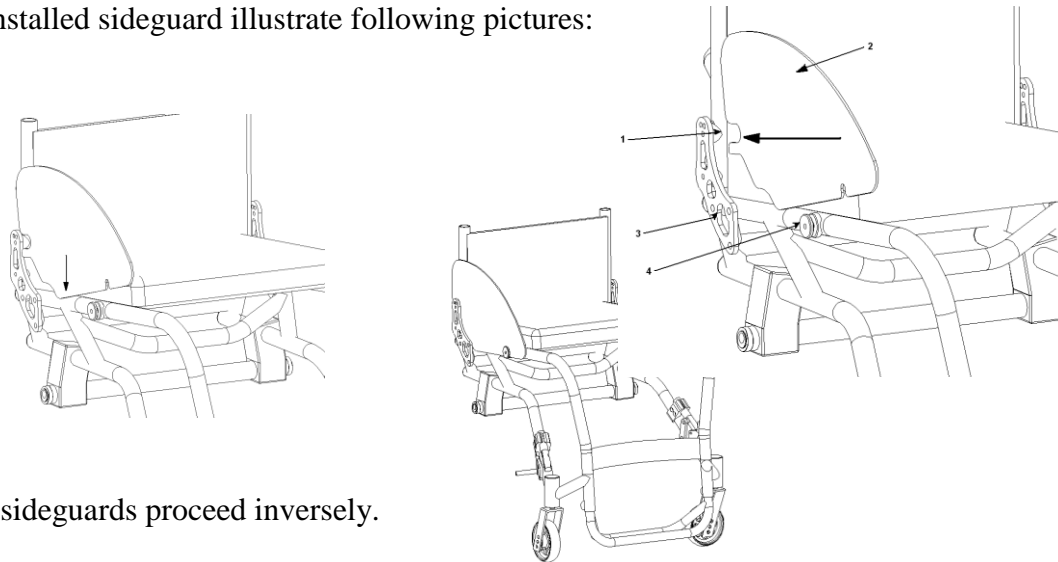




Sideguards

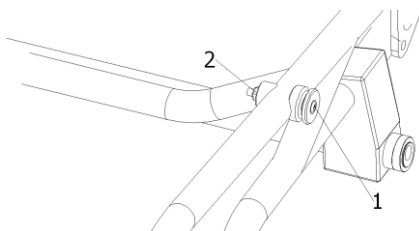
Push the undercut of a sideguard on the part that fixes the backrest, between backrest tube and ferrule of backrest mechanism (3). Then push the sideguards into the fixing sideguards part (4).

Correctly installed sideguard illustrate following pictures:



To remove sideguards proceed inversely.

Fixing part of the sideguard regulation

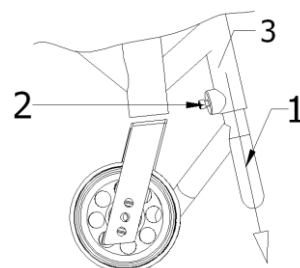


Fixing part of the sideguard regulation consists in increasing or decreasing the holdfast. If the sideguards fall out during movement, loosen the screw nut nr 2, tighten the screw to increase the holdfast and then tighten the nut.

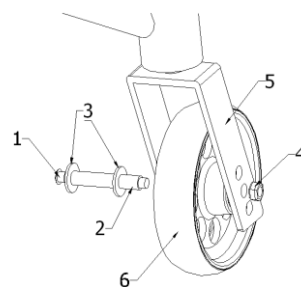


*Assembly and disassembly of easy to exchange parts***1.1 Footrest**

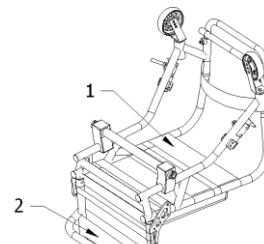
To disassembly the footrest (1) loosen screws (2) and move the footrest forward in direction of frame seating tubes nr 3.
To assemble the footrest proceed in the reverse order.

**1.2 Disassembly of the casters**

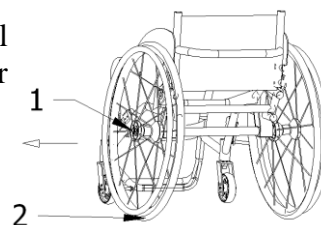
Loosen nut nr 4, remove screw '1' and sleeve '3', pull caster with washer (between the inner part of a fork '5' and a caster '6' on a sleeve '3') from the fork '5'. To assemble the casters proceed in the reverse order.

**1.3 Disassembly of the upholstery**

Undo the quickly joined belts of seat (1) and backrest (2) and remove the upholstery from the frame of a wheelchair. After assembling the upholstery make sure that the belts are joined correctly.

**1.4 Disassembly of rear wheels**

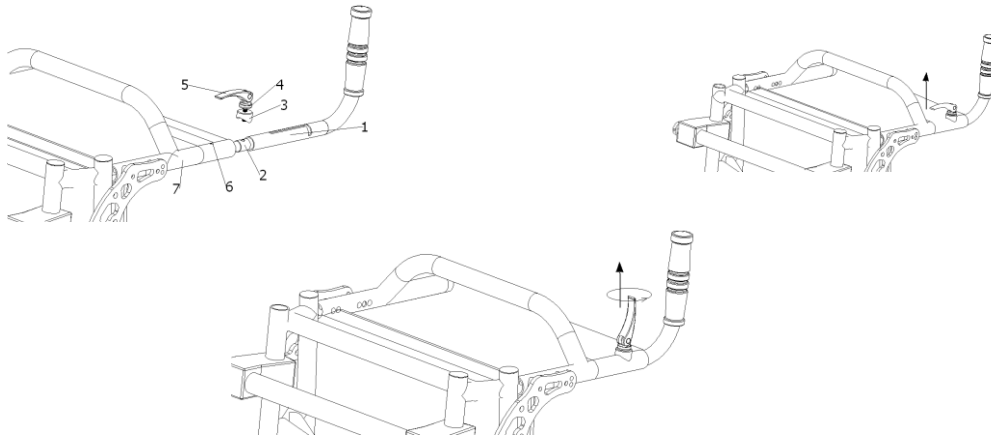
Press the button '1' of the quick release axle and remove the wheel from the frame while still pressing the button. To assemble the rear wheels proceed in the reverse order.





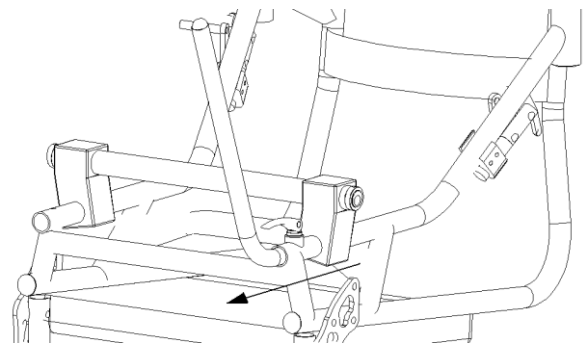
1.5 Disassembly of push handles

Rise the quick release lever as illustrated in picture below and rotating it to the left screw it of the clamp roller (2). Remove the push handle with the clamp roller (1) from the vertical tube of the backrest (7). Attention: after screwing of the quick release lever the clamp roller moves loosely in the handle. To assembly the push handles put clamp roller (2) in the handle (1) and push the handle into the vertical tube of the backrest (7). The threaded gap of a clamp roller and the gap in a backrest have to face. Join the quick release liver '5' with parts nr '3' and '4' and screw them into the clamp roller in the push handle '1'. Attention: to be able to fold the push handles to the inner side assembly the push handles directly as illustrated in picture below.



1.6 Anti-tip device

Disassembly of anti-tip device is similar to push handles disassembly. Rise the quick release lever as illustrated in picture below and rotating it to the left screw if of the clamp roller (2). Attention: after screwing of the quick release lever the clamp roller moves loosely in the anti-tip. Remove the anti-tip device from the frame of the wheelchair (4). To assembly anti-tip device put the clamp roller into the anti-tip (1), push it into the wheelchair frame (4). The threaded gap of a clamp roller and the gap in a frame have to face. Join the quick release liver '3' with parts nr '5' and '3' and screw them into the clamp roller in the anti-tip (1). Attention: to be able to fold the anti-tip devices to the inner side assembly the anti-tip directly as illustrated in the picture.





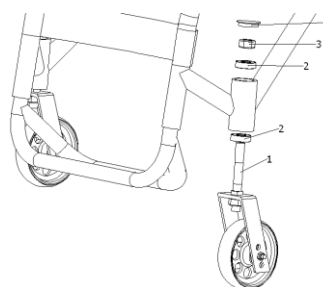
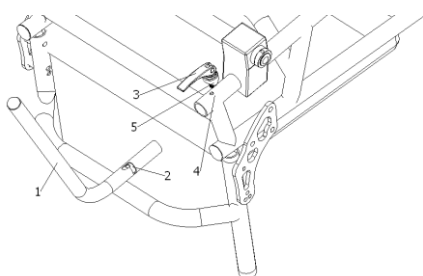
Anti-tip device setting

To set the installed anti-tip device arm into the working position, unlock the quick-release lock, similar to that for handle locking, and rotate the guard outwards until it can be pushed towards the chair frame, and then push it inward. Close the quick-release lock and check if the arms do not tend to fold in the inward wheelchair direction.

To fold inwards the anti-tip safeguard from its opened position, unlock the quick-release lock, and slightly pull out the anti-tip guard from the lower tube of the frame until it can be rotated and folded towards the inner part of the chair. Close the quick-release lock.

Bearings exchange (self-service not recommended)

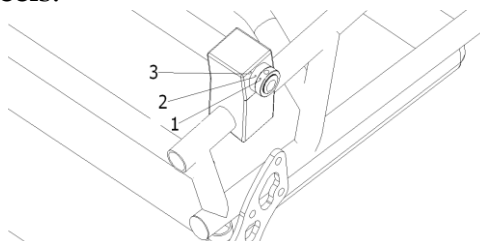
To exchange front forks bearings remove the protective guard '4' and screw off the nut '3' while holding the fork. Remove the axle of a fork (1) in a direction showed in the picture. Fix the upper bearing '2' and then the lower bearing. To assembly of the bearings fix the lower bearing first. Put the axle '1' with the fork and the caster through bearings '2' and screw nut '3'. The fork has to rotate with a resistance. Loosen nut every 1/16 rotation to find the moment in which the fork rotate without resistance but there is no slackness. Put the protective guard '4' in place.





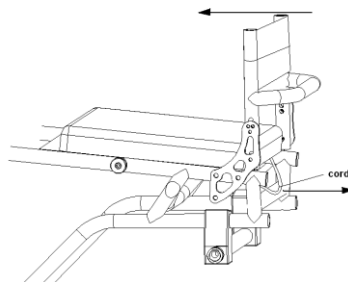
Main axle of rear wheels adjustment

The proper assembling of the main beam consists in placing aligning the marks on parts '1', '2' and '3', on both sides of a beam. The marks are factory made, in order to keep the proper geometry of rear wheels.

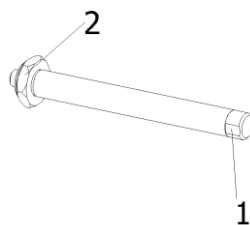


Folding the backrest

To fold the backrest, pull up on the back release cord and push the back canes forward toward the front of the wheelchair. Release the cord to lock down the backrest. Remove the cushion before folding the backrest. To unfold the backrest, pull on the back release cord and pull the backrest towards the rear of the wheelchair until it locks into place.



Regulation of the rear wheels quick releases slackness

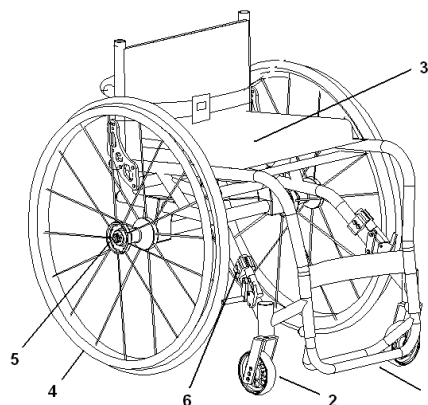


The quick release axle of rear wheel can be regulated by a nut '2'. After assembly the wheel in the main frame regulate the slackness with the nut no '2'. If the slackness is too large or the quick release axle does not block properly it is necessary to lengthen or shorten the axle. Screw or screw off nut no '2'. After installing the rear wheel, the quick release mechanism should block firmly, with a minimal slackness of the wheel.



*Identification of removable parts of the wheelchair*

- footrest (P/N 1)
- casters (P/N 2)
- upholstery (P/N 3)
- rear wheels (P/N 4)
- quick releases of rear wheels (P/N 5)
- brakes (point 6. - *brakes regulation*, P/N 1)
- sideguards (*sideguards*, P/N 2)
- push handles (1.4. *pushhandles*, P/N 1)
- anti-tip devices (1.6. *Anti-tip device*)

*Identification of parts serviced by Producer only*

- casters and rear wheels bearings exchange
- parts of the backrest folding mechanism exchange/repairation
- parts of the main axle exchange/repairation

Sending the wheelchair for servicing

Contact your Distributor.

User-caused defects

- front fork bearings slackness
- rear wheel bearings slackness
- rear wheel spokes tension
- upholstery damage
- casters damage
- brakes damage
- tires damage
- backrest lock down mechanism damage
- footrest damage
- defective centering of rear wheels
- quick releases of rear wheels damage
- push handles and anti-tips lock down mechanism damage




Spare parts specification

Part Name	Part Number
Caster 26 mm	00-001
Caster axle, steel 45	00-002
Caster sleeve	00-003
Caster sleeve washer, dia. 17x 8 mm, 1,5 mm	00-004
Caster hex screw W5x55, stainless	00-005
Caster self-retaining nut M6, for hex screw (00-005)	00-006
Caster axle self-retaining nut M12	00-007
Protective cup for M12 nut (00-007)	00-008
Protective cup for bearing sleeve	00-009
Ball bearing, double-side protected with rubber 60012RS	00-010
Caster fork, aluminium	00-011
Caster 32 mm	00-012
Caster led	00-013
Footrest type „U”	01-001
Footrest type „V”	01-002
Hex screw W5x15, footrest locking (01-001 or 01-002) stainless	01-003
Sideguard assembly kit with internal clip	02-001
Sideguard	02-002
Sideguard assembly spring	02-003
Seat upholstery with self-locking straps	06-001
Backrest upholstery strap with self-locking straps	06-002
Backrest upholstery attached to the main backrest strap	06-003
Safety strap for rear shift leg protection	06-004
Seat cushion, standard	06-005
Accessory safety belt	06-006
Rear wheel SPORTS 24x1”	07-001
Rear wheel STANDARD 24x1”	07-002
Rear wheel 24x1” with coated manual drive	07-003
Rear wheel 22x1”	07-004
Manual wheel drive, titanium	07-005
Quick-release axle R12x98 mm, stainless with cap	07-006
Bearing for rear wheel 60012RS	07-007
Manual wheel drive, stainless	07-008
Manual wheel drive, coated	07-009
SPORTS wheel 26x1”	07-010
Quick-release axle R12x98 mm, stainless for STANDARD wheels	07-011
Quick-release axle for 22” wheel	07-012
Manual wheel drive, aluminium	07-013
Handle	08-001
Rubber grip for handle	08-002
Fast-clamp for handle	08-003
Lock roller for handle	08-004
Anti-tip safeguard	09-001
Safeguard plug	09-002
Fast-clamp for safeguard	09-003
Lock sleeve for safeguard	09-004
Sports brake LEFT	13-006
Sports brake RIGHT	13-007
Brake clamp	13-008
Standard brake LEFT	13-009
Standard Brake RIGHT	13-010
Box wrench, M6 (10)	10-001
Hex key, W5	10-002
Hex key, W4	10-003





Cleaning & disinfection

The frame of the wheelchair should be cleaned with a wiper dampen with water and mild detergent solution. Lacquered surfaces should be maintained with car washing liquids. Upholstery should be cleaned with water and detergent solution (40 degrees) and wash out with water.

