

User Manual

LEVO compact-easy LCEV



Please read these User Instructions carefully before operating your wheelchair! Failure to follow these instructions can result in serious personal injury and/or damage to the wheelchair! This is a type-approved medical device. Alterations to the construction or electronics will void the warranty and the product liability.

In case of difficulty please contact:

Manufacturer

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IMPORTANT!

Contact your dealer, distributor or LEVO AG if you have a visual impairment.

LEVO strongly recommends that wheelchair users

a) fully acquaint themselves with the instructions for their device

b) always have access to 3rd-party assistance in case of emergency.

1. General Information for Stand-up Wheelchairs

Dear **LEVO** Customer

We would like to thank you for putting your trust in **LEVO AG**.

As well as performing all the functions of a sitting wheelchair, the **LEVO** enables you to stand up on your own. **LEVO** manufactures only wheelchairs with stand-up option.

Please read this manual carefully before using your **LEVO**. It contains important information necessary for the successful operation of your wheelchair.

It is possible that achieving the standing position may load the body in a way that it is perhaps not used to. Therefore, it is **necessary to consult with your doctor or physical therapist to confirm that there are no contraindications such as contractures, orthostatic hypotension, osteoporosis or other conditions present.**

In the case of strong or sudden spasms, cramps or similar conditions, it is necessary that the user is allowed to stand only under the supervision of an accompanying attendant or caregiver.

As a **LEVO** customer, you have the opportunity to make a valuable contribution with the on-going future development of our products. Your suggestions are always appreciated. This will insure that **LEVO** continues to offer the most functional products available and provides for the widest possible range of needs.

Yours faithfully,

LEVO AG

EU SRN: CH-MF-000008751

The EU Authorized Representative for the MDR (EU) 2017/745 is:
be-on-Market GmbH, Lilienstrasse 33, D-91244 Reichenschwand.

2. User Profile - LEVO LCEV

You intend to be mobile and need a compact, manoeuvrable wheelchair with integrated electric stand-up function to give you optimal support in any situation at work or in your leisure time. The **LEVO LCEV** can accept a maximum weight of 120 kg.

The **LCEV** combines all the major advantages of a manual driven wheelchair with the convenience of safe standing using a fingertip-operated toggle switch. The user-friendly stand-up mechanism, which is supplemented for adults with gas spring support, will take you comfortably to all seat angles and standing positions up to 86°.

The **LCEV** can additionally be equipped with a hand controller which can be operated by an accompanying person.

The **LCEV** is intended to improve health, lifestyle and to ensure maximum mobility.

Regarding visual and cognitive skills, the physician, therapist or dealer must decide whether the **LEVO LCEV** is suitable for the user in terms of personal safety and depending on the intended environment and use. All stand-up wheelchairs need to be professionally fitted.

The following characteristics distinguish the LEVO LCEV:

- Optimal biomechanics in all sitting and standing positions up to 86°
- Continuous rising in all positions between sitting and standing
- Manual stand-up unit operation on the armrest or by remote control
- Absolutely safe standing thanks to 6 contact points on the ground
- Medical and therapeutic benefits by regularly standing (as agreed with your specialist)
- Excellent handling characteristics in indoor and outdoor use
- Individual upper / lower leg length, foot position and backrest height
- Seat widths: 350–500 mm
- Seat depth: 290–540 mm
- User weight max.: 120 kg

LEVO LCEV Standard Configuration

- Manual driven wheelchair, electric seat and standing function
- Seat and backrest upholstery
- Flip-up, height and angle adjustable armrests
- Armrest tube with integrated rocker switch / battery-controller / charger
- Folding Backrest
- Standard colours: platinum, red, yellow, blue or black
- Two-piece flip-up footrest
- Rear wheels with pneumatic tires / pump
- Chest straps, side guards and knee support incl. wedge
- Seat cushion

Please ask your specialist retailer for detailed advice or contact your national representative or LEVO AG.



Sections marked with this sign should be read with particular attention as they concern safety instructions or warnings to prevent injury to persons or to avoid damage to the product.

3. EC Declaration of Conformity



EC Declaration of Conformity



As manufacturer of the **LEVO** range of stand-up wheelchairs, the company

LEVO AG
Anglikerstrasse 20
CH-5610 Wohlen
Switzerland

EU SRN: CH-MF-000008751

declares under its sole responsibility that the Stand-up Wheelchair models

LEVO LCEV
LEVO LCEV Kid
LEVO LCEV Junior

Basic UDI-DI (GMN) 07613045 71
Basic UDI-DI (GMN) 07613045 41
Basic UDI-DI (GMN) 07613045 51

Product Class I

conform to all of the general provisions of MDR Medical Device Regulation (EU) 2017/745. The EN 12183 certification is in an update process.

This Declaration of Conformity includes all accessories and options of the **LEVO LCEV** and **LEVO LCEV Kid/Junior** and is according to Annex IV of MDR (EU) 2017/745.

The **LEVO LCEV** and **LEVO LCEV Kid/Junior** conform to 2011/65/EU and are tested according to EN 12183:2014.

The EU Authorized Representative for the MDR (EU) 2017/745 is:
be-on-Market GmbH, Lilienstrasse 33, D-91244 Reichenschwand.

2021-06-30 - **LEVO AG**

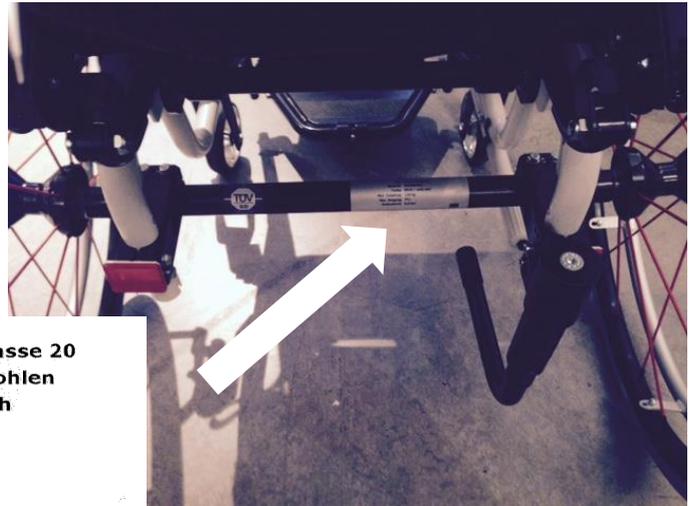
Daniel T. Johnson
CEO

Heinz Bögli
COO

4. Product Identification – Product Label

A unique serial number plate is attached to the wheelchair rear axle for identification purposes.

The device is absolutely identified by the serial number and the extended barcode GS1-128.



LEVO dt
THE EXPERTS IN STANDING

LEVO AG Anglikerstrasse 20
Switzerland CH-5610 Wohlen
office@levo.ch www.levo.ch

Type LCEV/L-XL/50/57
Serial No. 715895 2014
Color platinum
Maximum load Max. user 120kg
Max. gradient Max. save slope 11°
Tyre pressure 6 - 7.5 bar



(01)761304503912(21)715895 2014

The following is an example of the **LEVO** serial number plate or sticker:

Identification	Example	Intent / Meaning	Visual aid
Type	LCEV/L-XL/50/57	Model LCEV/L-XL/50/57	
Serial No.	715895 2014	Serial No. 715895 Year of Production 2014	
Color	platinum	Color Platin	
Max. Load	Max. user 120kg	max. User Weight 120kg	
Max. gradient	Max. save slope 11°	max. save slope, unmoved, direction downhill 11°	
Tyre pressure	6 - 7.5bar	Recommended pressure range of pneumatic tires min. 6.0 bar - 7.5bar	

Please note that the chair identification is also shown on the warranty card. This card is delivered to your dealer and they should store it for you. Please ask for a copy and refer to your Serial Number for any communication when referring to your wheelchair.

5. Warranty

Your **LEVO** product carries a warranty of two years on all material and manufacturing defects of mechanical parts.

Batteries are excluded from the warranty.

Any signs of improper use or lack of maintenance will void any warranty.

Any structural or technical changes on the chair are prohibited and will void all warranty or product liability claims.

Please notify your dealer and **LEVO** of any warranty claim or possible issues with your chair.

LEVO contact information can be found on the first page of this manual.

6. Meaning of symbols



Please read these instructions carefully before using your wheelchair. Failure to do so can result in serious injury and/or damage to the wheelchair.



Symbol of a wheelchair which is not used as a seat in a motor vehicle or to transport in a motor vehicle. Please contact your retailer about available equipment.



Symbol of a wheelchair which is equipped and certified as a seat in a motor vehicle or for transportation in a motor vehicle.



Symbol signalling a danger of trapping body parts during operation. Please take particular care of the areas between armrest and seat unit and around the pivots of the armrest and the standing mechanism when changing the seat position to avoid injury! This also applies to any other people around the wheelchair.



The wheelchair should not be lifted by the armrests.



The wheelchair conforms to current EU medical device regulations, directives and legislation and carries the CE mark.

7. Important Safety Information before use



The stand-up wheelchair **LEVO compact-easy LCEV** allows manual driving with an integrated, battery-powered stand-up actuator. The stand-up actuator is operated by pushing a rocker switch or by operating an optional manual joystick controller, either by the user or by an accompanying person. The seat moves to any position between completely seated, as with any ordinary wheelchair, and standing up to 86°.

Moving to a standing position may load the body in a way that the body is perhaps not used to. Therefore, before using a stand-up wheelchair, consult your doctor or physical therapist to make sure that no contraindications such as strong contractures or osteoporosis are present. Without a prescription by your doctor or physical therapist, there are risks of injury. All user and medical instructions must be strictly followed.

In the case of strong or sudden spasms, cramps or similar, the user should stand under the supervision of an accompanying person.

Regarding visual and cognitive skills, the physician, therapist or dealer must decide whether the **LEVO LCEV** is suitable for the user in terms of personal safety and depending on the intended environment and use.

Please take care to avoid trapping yourself or other persons in the mechanism during elevation or descent. Especially take care of the sections between the seat and the mainframe to avoid any kind of injury.

The **LEVO LCEV** must be driven to level and solid ground before elevating the user to a standing position (Caution: risk of tipping over!).

The brakes of the **LEVO LCEV** must be activated before elevating to a standing position (Caution: risk of tipping over!).

The standing function should not be operated without a person seated in the **LEVO LCEV** (risk of accident!).

It is absolutely essential to mount the knee support and the chest strap correctly before you use the stand-up function! You should never go into standing without these safety restraints securely in place (risk of accident)!

The restraints must be worn over clothing to prevent any skin irritations.

The **LEVO LCEV** should not be lifted by the armrests. The armrests are designed for high, downward load, but not for upward, tensile loading.

Driving the wheelchair must always be in the completely seated position so that the load can be distributed to the frame. Otherwise there are risks of damage to the seating system.

Please avoid any abnormal and unforeseen loads like torques or shear forces. Additional load at the armrests or backrest, fixing for transport without the dedicated equipment etc. should be strictly avoided! The wheelchair could be damaged causing injury to the user or other persons.

For amendments and adjustments to the mechanics or to the electronics and for maintenance work, please contact your dealer.

For safety reasons, adjustments to the stand-up mechanism and functionally-related parts must only be performed by trained personnel.



Standing wheelchairs require professional adjustment to safely and comfortably be used in the standing position.

All available standard sizes guarantee the passage of escape routes marked as wheelchair accessible, as wheelchair seats or connecting routes in public transport. Please take note of and ask about escape routes. Size-dependent adjustments are therefore strictly forbidden, as these may put these features at risk.

All adjustments outside the standard configurations which convert wheelchair characteristics are strictly forbidden as this can cause risk of serious injury.

Be aware that the surface temperatures can increase when exposed to external sources of heat (e.g. sunlight).

Please avoid exposing the wheelchair to extreme heat. Please also note that, if exposed to high humidity or salt, the wheelchair should be cleaned and dried frequently.

The resistance to ignition of materials and assemblies are as follows:

- Plastic parts according to UL 94-V0
- Upholstery according to EN 1021-2

Please note that strong electromagnetic fields can cause interference with the control or operation of the standing-actuator function.

Please note that all product safety information can be obtained on our website, from your dealer and in the user manuals which will be available at your retailer. In case of product recalls you will be informed by your retailer, as the **LEVO** products are sold exclusively through retailers.

Owners or users of **LEVO** products that have acquired a second-hand **LEVO** product from a source other than a recognised retailer must contact **LEVO** and/or a **LEVO LCEV** representative to ensure correct fitting and to perform necessary safety checks. Adjustments to the mechanism must be performed only by trained personnel.

Please note that the product life under normal functional use and care is around 7 to 10 years. If the wheelchair is used not according the instructions or is subject to extreme or difficult conditions, the life may be shortened.



8. Seating adjustments

All **LEVO** wheelchairs are custom made and come fully assembled. Minor adjustments concerning the axles and the seat support may only be conducted by your local specialist dealer. The same applies to other general adjustments as for example the tilt angle of the chair.

Any sort of alterations on the wheelchair as well as disregarding the weight limits are strictly prohibited. Incorrect adjustments can lead to major injuries. Contact your **LEVO** dealer regarding any adjustment.

8.1. Rear wheels

The **LEVO LCEV** wheel chair is equipped with low rolling resistance tires. The seat height settings define the settings for the wheel diameter. The quick release axle enables the user to dismount and remount the rear wheels easily.



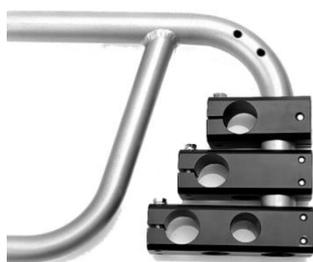
8.2. Seat inclination

The standard pre-set angle of inclination is approx. 5° to the rear. By altering the height of the axle holder it is possible to re-set the backrest angle between 2° and 8° to the rear. To ensure these alterations do not compromise safety in the standing position, the front wheel forks must be adjusted appropriately. These adjustments should only be carried out in consultation with your **LEVO** dealer!



8.3. Position of the rear wheels

By re-setting the axle holder either further forwards or further backwards, you are able to increase or decrease your **LEVO** tendency to tip over. To avoid accidents (tipping over) we recommend the fitting of anti-tip wheels. Please consult your **LEVO** dealer!



8.4. Position of the front wheels

The correct positioning of the front castors depends on the height of the rear wheels and is crucial in ensuring a safe standing position. Please consult your **LEVO** dealer!

8.5. Backrest inclination

The back is set as standard at a right angle to the seat surface. The backrest cannot be adjusted in angle.

8.6. Armrests



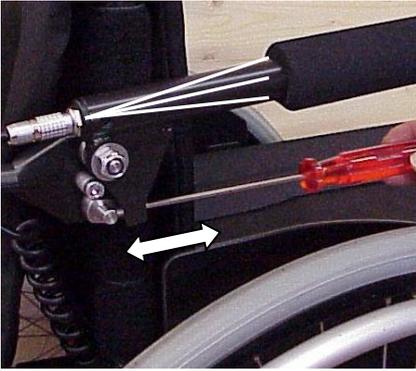
Adjust the height of the armrest moving the backrest connector together with the armrest joints along the backrest tubes up or down (see photo left).



The height of the armrests is fully adjustable.

Take off the backrest upholstery. Take off the velcro straps above the armrest joints to adjust the armrests higher, or the ones below the armrest joints to adjust the armrests lower.

Loosen the cylindrical screw on either side of the armrest joints (see photo left).



To raise the front end of the armrest screw the threaded pin clockwise further into the armrest joint (see photo).

To lower the front end of the armrest screw the threaded pin anti-clockwise out of the armrest joint (see photo).

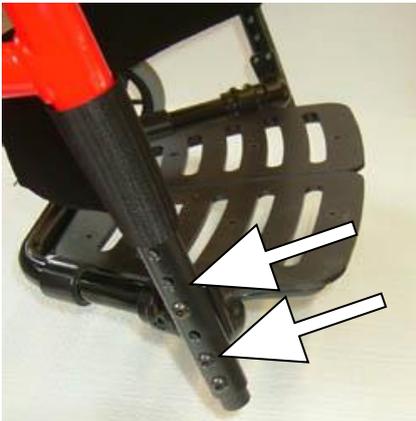


8.7. Footrest

The height of the footrest is important for a good sitting position as well as for the standing position. The footrest is set according to the details given in the original order form and can be adjusted within the limits of those settings.

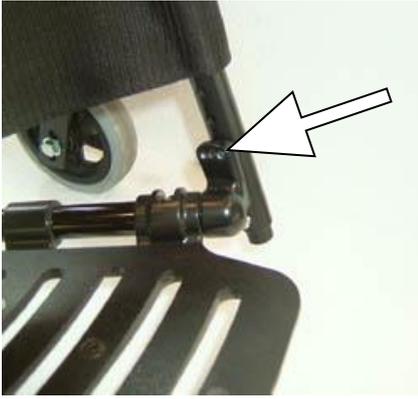
Contact your LEVO dealer regarding any adjustments.

There is a choice of 5 different heights for mounting the footrest.



- The 5 different positions of height to which the footrest can be adjusted.
- Unscrew the four oval head screws at the outer side of the footrest using a 4mm hex key and set the footrest either higher up or lower down.

There are three possible footrest angle variations:



- Foot angle 100°
- Foot angle 90° (Standard)
- Foot angle 80°
- Release the four screws at the out side of the footrest using a 4mm hex key and remove the upper ones. Set the footrest at the required angle and tighten the screws.

The footrest angle is set as standard at 14° to the floor. With the footrest in the lowest possible setting, an angle of 4° is the only practicable variation as the footrest otherwise touches the ground before the leg supports which reduces the standing stability!

With the second lowest setting the only variations are 4° and 14°, for the same reasons.

For all higher footrest settings there are three angle variations possible.

Caution: Check the standing stability after adjustment to avoid tipping forwards.



8.8. The calf/heel strap



The purpose of the calf/heel strap is to prevent the legs and/or feet slipping backwards. It is fitted behind the heels or higher (see photo). By making use of the Velcro fastening it is possible to alter the length of the strap and thus to ensure the ideal position for the feet on the footrest. Ideal positioning of the feet is vital in ensuring a good standing position. Please consult your **LEVO** dealer!

8.9. Seat cushion

There is a choice of various different seat cushions, governed by your individual needs. The Velcro fasteners fitted to the surface of your seat should allow you to attach the majority of seat cushions securely. The Velcro fasteners prevent the cushion from slipping out of place even when you are standing up. The height of the footrest should be adjusted to take into account the height of a given seat cushion. Please consult your **LEVO** dealer!

8.10. Backrest and Seat Upholstery



The backrest upholstery can be adjusted using the Velcro fasteners. The backrest can be tightened (for a more upright seated posture) or relaxed (for more back support).

The seat upholstery can be similarly tightened or released by use of Velcro fasteners and should be as tight as possible. Depending on the height of the cushioning, it may be necessary to loosen the upholstery to be able to lower the cushioning down between the two seat supports.

Depending of the seat depth, you may need to add or remove one or more Velcro straps. When adjusting the seat depth please ensure that the flap of the backrest upholstery covers the seat by a minimum of 12 cm.

8.11. Chest Belt

The chest belt is fixed by Velcro to the backrest upholstery and is adjustable in the height.

9. Adjustments for sitting and standing position

Adjustments for sitting and standing position must be carried out by your local LEVO dealer. If you should feel uncomfortable in any of the above- or below-mentioned positions, please do not hesitate to contact your local LEVO dealer.

Seat depth: correct



Knee support attachment
Screw aligned with the
center of the knees

Seat depth: too long



Knee support attachment
screw beyond the centre of
the knees

Seat depth: too short



Knee support attachment
screw behind the centre of
the knees



Ankle/knee/hip joint
straight



Knee joint overstretched



Incomplete stretching of
the knee

Correct seating position



Seat cushion too high

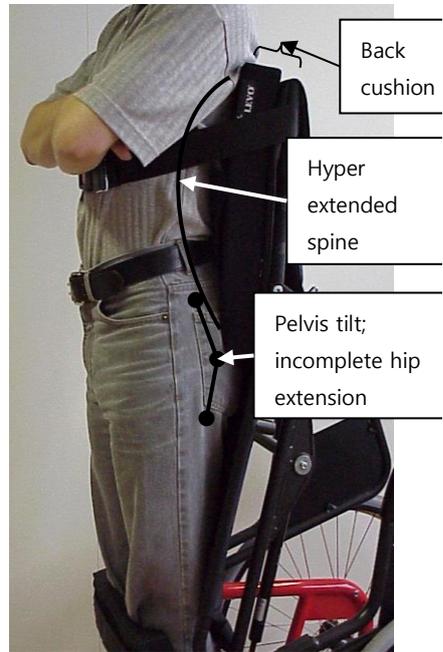
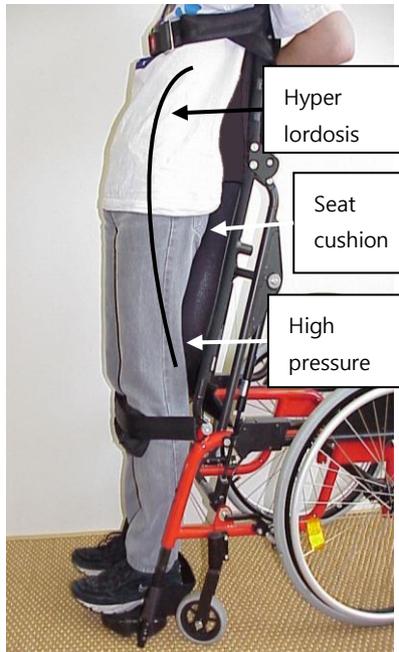


Cushion for pressure relief in seated position

Back adjustment too low



Backrest cushion or solid back for more comfort or stability





10. Safety Information for Standing

It is possible that achieving the standing position may load the body in a way that it is perhaps not used to. Therefore, it is necessary to consult with your doctor or physical therapist to confirm that there are no contraindications such as contractures, orthostatic hypotension, osteoporosis or other conditions present.

In the case of strong or sudden spasms, cramps or similar situations, it is necessary that the user is allowed to stand only under the supervision of an accompanying attendant or caregiver.

Regarding visual and cognitive capability the physician, therapist or dealer must decide whether the **LEVO LCEV** can be used by the user depending on its environment and in terms of personal safety.

There are many moving components on the chair that interact and change positions as the chair cycles from sit to stand. Please take care to avoid any pinching or squeezing of the client or attendant.

To insure standing stability and avoid risk, the **LEVO LCEV** must be located on flat and level surfaces with the brakes engaged. Be certain to check for objects which would prevent the legrests from reaching the ground simultaneously preventing solid contact.

Damage may occur if the standing system is operated without a person in the chair. The chair is engineered so that the client's weight acts as an assist to the electric lift actuator and gas struts as the chair returns to the seated position.

It is imperative that before attempting to stand, that the knee support and the chest strap are properly positioned to restrain the client and are secured to the wheelchair.

The restraints must be worn over clothing to prevent any skin irritations.

While it is a rare occurrence, please note that if the wheelchair is exposed to electromagnetic fields, it can cause interference with the control or operation of the standing actuator function of the **LCEV**. These electromagnetic fields could include: store entryways; power lines; MRI machines; computers; Wi-Fi/WLAN networks, Bluetooth devices; cell phones; and house energy smart meters.



11. Brakes

The brakes lock the rear wheels to secure the **LEVO LCEV** against unintended movement.

By pushing both brake levers forwards you should be able to lock the brakes immediately.

The efficiency of the brakes is dependent on tyre pressure and profile, which should be checked regularly.

Caution: Wet tyres or surfaces also have a detrimental effect on brake efficiency.

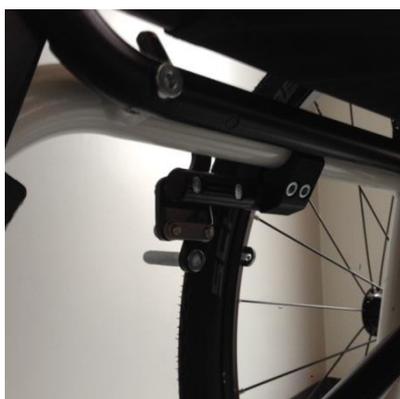
Be sure to re-adjust the brakes when altering the position of the wheel axle.

11.1. Adjusting the brakes

The wheelchair should be unoccupied when dismantling the brakes. Secure the wheelchair in such a way as to prevent it moving when the brakes are removed.

Release the brake as much as possible.

Release the cylinder screw on the brake itself (see figure on the left).



Adjust the position of the brake and leave a gap of approx. 15mm between the brake shaft and the tyre, then tighten the cylinder screw (see figure on the right).

Test if the brakes function correctly afterwards.

If you want to increase the brake force, position the brake shaft closer to the tyre. To decrease the force, leave a larger gap between the brake shoe and the tyre.



12. Knee support and chest strap

The most important safety features are the knee support and the chest strap. It is essential to secure yourself every time you would like to change from sitting into standing position. Caution: Carry out each step carefully before moving yourself into the upright position to avoid injury.

12.1. Knee support

The knee support holds the knees in an extended posture and prevents you slipping out of the wheelchair while standing up.

Attach the two eyes of the knee support to the double-head screws on either side of the wheelchair (see figure on the left below).



Centre the knee support in front of each knee using the Velcro fasteners, then pull it until it is sitting firmly in place, just below (not right on) the knee cap and not too tight (figure above right).

12.2. Chest strap



The chest strap holds the upper body in place. Make sure that the strap is securely fastened to the backrest.

To release the chest strap simply press the red button in the center of the catch.

Try to avoid wearing the chest strap on bare skin as the material might cause dermal injuries or irritations.



Note: You might need an assistant when adjusting the chest strap. It is difficult to adjust on your own.

Once both the knee support and chest strap are fitted correctly you are ready to stand up.



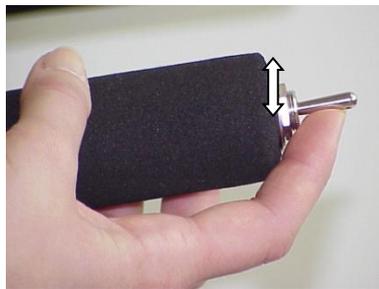
13. Standing up

Depending on the users condition the **LEVO LCEV** could be optional equipped with a remote control, which could be operated by an attendant if needed.

The stand-up mechanism is powered by an electrical actuator system with further assistance provided by two gas springs. The actuator motor is powered by two rechargeable batteries.

The control switch on the armrest enables you to move the stand-up mechanism either up or down.

Remote control (optional): To stand up hold the left-hand button down (figure below right). The seat starts elevating immediately; the moment you release the button the motor shuts off.



The motor shuts off automatically as soon as you reach the uppermost standing position. The leg support will automatically set itself on the ground to provide optimal stability.

Please note that your wheelchair can be exposed to electromagnetic fields that can cause interference with the control or operation of the standing actuator function.

14. Sitting down

To return to the sitting position, hold the control switch down. The moment you reach the lowest sitting position, the motor shuts off automatically.

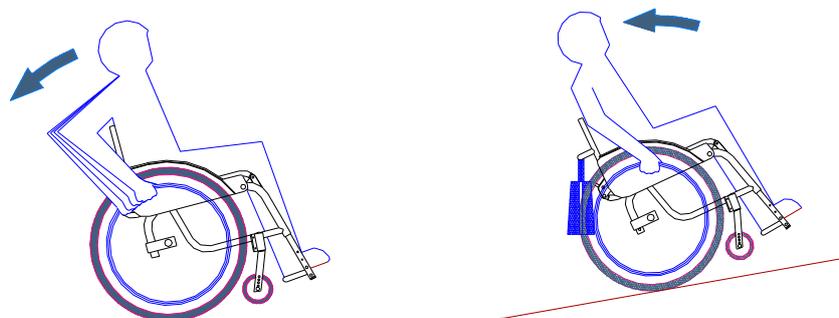
Remote control (optional): To return into sitting position hold the right-hand button down (see figure on the right above). The moment you release the button, the motor shuts off.



15. General Information on Use of a Wheelchair

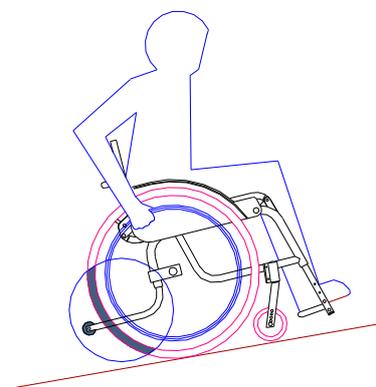
15.1. Driving the wheel chair: How to avoid tipping over

Please note that when starting pushing the wheel chair, the front wheels are going to lose traction due to acceleration. Depending on weight distribution this may cause the wheels to lift off the ground and the wheel chair to tip over backwards.



The situation mentioned above intensifies when using different rear wheel positions to achieve greater seat inclination, by too-vigorously engaging the drive wheel in the forwards direction or by using a cushion for elevated seating.

Please note that the weight of personal belongings (e.g. bags) can have a major effect on the centre of gravity of your wheel chair which may lead to increased instability.

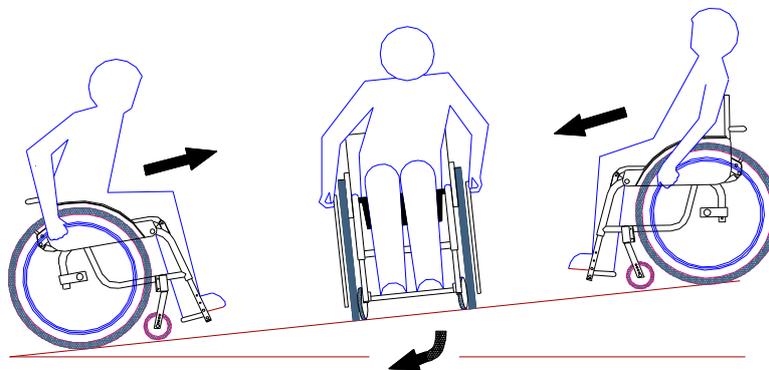


For more security while driving the installation of an anti-tip mechanism is strongly advised.

15.2. Gradients



Bear in mind that, when turning around on a steep hill, you will pass through a crosswise position first before the turn is completed. Whilst in the crosswise position, there is a risk of slipping sideways down the hill. Both you and any assisting person should be aware of this risk and counter steer accordingly.



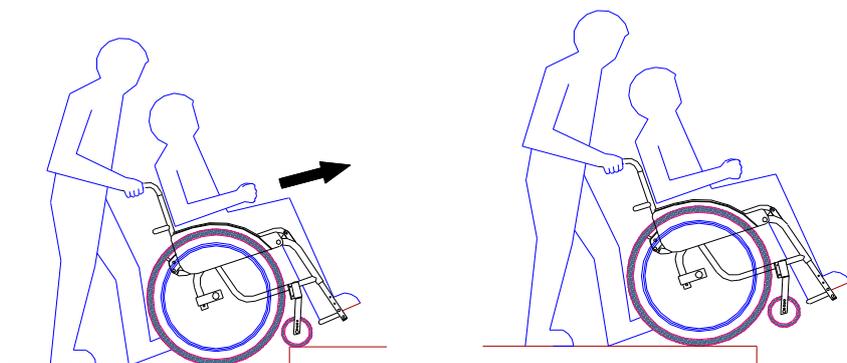
As a safety precaution, always ask a person to accompany you when manoeuvring down a slope. Bear in mind that slowing the wheelchair using the hand rims generates a great deal of heat between hands and the hand rim itself and can lead to burns on the palms of the hands. Therefore proceed cautiously when braking manually and, most importantly, when travelling downhill, never go faster than walking pace. Leaning backward improves stability and increases rear wheel downforce, thus also improving braking efficiency.

15.3. Climbing obstacles

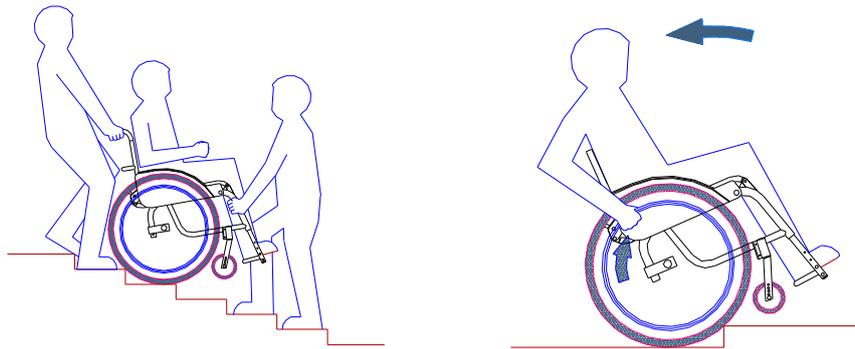
Any obstacle, such as a curb or threshold, should be viewed as a potential source of danger. This is due, in part, to the very short wheelbase of the wheelchair. To climb an obstacle, ask an accompanying person for assistance.

Should you wish to negotiate such an obstacle with the help of an accompanying person they should not attempt to lift the wheelchair completely. It is important that they make sure that the rear wheels stay in contact with the floor all the time.

To overcome an obstacle (e.g. driving over a curb), first tilt the wheelchair just enough to lift the front wheels. Slowly lower the front wheels onto the obstacle and then push the wheel chair on until the large wheels are resting against the edge of the obstacle. Finally move the chair onto or over the obstacle.



To descend a major obstacle (e.g. to go down stairs), always use an assistant! The assistant should first tilt the wheelchair until the front wheels are off ground slightly, then move the chair forwards slowly.



Should you have to be carried over certain obstacles, please make sure to request the assistance of at least two persons. It is of great importance to inform the assistants that the wheelchair should be lifted by the solid parts only.

CAUTION:

- **Disregarding these instructions is to risk a major accident or injury!**



Keep in mind that handling any sort of obstacles on your own can be very demanding. You should be aware of the tendency of the wheelchair to tip over backwards when attempting to overcome an obstacle. Do not hesitate to ask for help at any time.



CAUTION!

Do not attempt to use the wheelchair on an escalator!

15.4. Activating the Brakes

When using the wheelchair in situations where increased stability is particularly important, the brakes must be activated. This is especially important when standing up, transferring into your wheelchair or when you want to transfer yourself from the wheelchair into another seat. For safety reasons, it is particularly important to note that even though the wheelchair may be locked securely it can still slip away sideways.

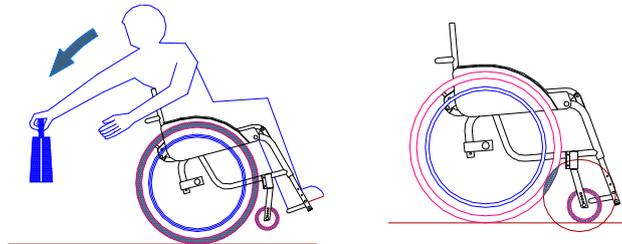
Keep in mind that insufficient tyre pressure or heavily worn out tyre treads have a detrimental effect on braking efficiency.

After driving through a puddle keep in mind that wet tyres reduce braking efficiency.

15.5. Picking up objects



Always remember that picking up objects will alter the centre of gravity which will affect the stability of the chair. This can cause the wheelchair to tip over, either backwards (see figure on the left), sideways or forwards. In the latter case, enlarge the wheelbase by positioning the front wheels in the same way they are positioned when driving backwards. It is also advisable to draw as near as possible to the object before attempting to pick it up.



15.6. Transfer sideways

- Drive as close as possible to the object you wish to transfer to.
- Make sure that the brakes of the wheelchair are tightened
- Flip up the footrest of the wheelchair and put your feet on the ground.
- Lift the armrest on the side you are transferring to.
- Transfer yourself in your usual way out of the wheelchair or have yourself transferred out of the wheelchair.
- Lateral transfer is only in the complete sitting position of the wheelchair allowed.

15.7. Detachable components

Please note your wheelchair is designed to detach components to guarantee the lowest possible packing volume and weight. The detachable components are listed as follows:

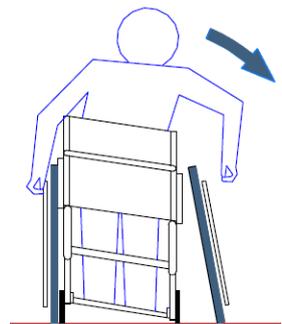
Detachable components	LEVO LCEV Weight reduction	LEVO LCEV Kid & Junior Weight reduction
2 main drive wheels	2x ca. 1.7 kg	2x ca. 1.3 kg
2 front wheels	2x ca. 0.5 kg	2x ca. 0.4 kg
1 footrest or legrest	1x ca. 1.2 kg 1x ca. 1.8 kg	1x ca. 0.7 kg 1x ca. 1.0 kg
1 battery – control unit	1x ca. 2.5 kg	1x ca. 2.5 kg

Please take care not to trap any clothing or parts of the body in the joints of the wheelchair as you are folding the backrest.

You should only occupy the wheelchair once it has been fully reassembled with all detachable components securely fixed in place.

Always make sure that the rear wheels have been securely fixed and cannot get loose while the wheelchair is moving.

Make sure the wheelchair is lifted by gripping the main frame only.



CAUTION:



- Do not lift the chair by gripping the armrests, the backrest or the seating tubes as this might lead to major damage.



16. Transport

16.1. Transport in a motor vehicle - wheelchair only

To transport the wheelchair in a motor vehicle make sure it is secured to prevent sliding or tipping over. Use only a fastening system which secures the wheelchair correctly.

CAUTION:



When transporting the wheelchair in a motor vehicle, be sure to disconnect the connecting lead from the battery unit.

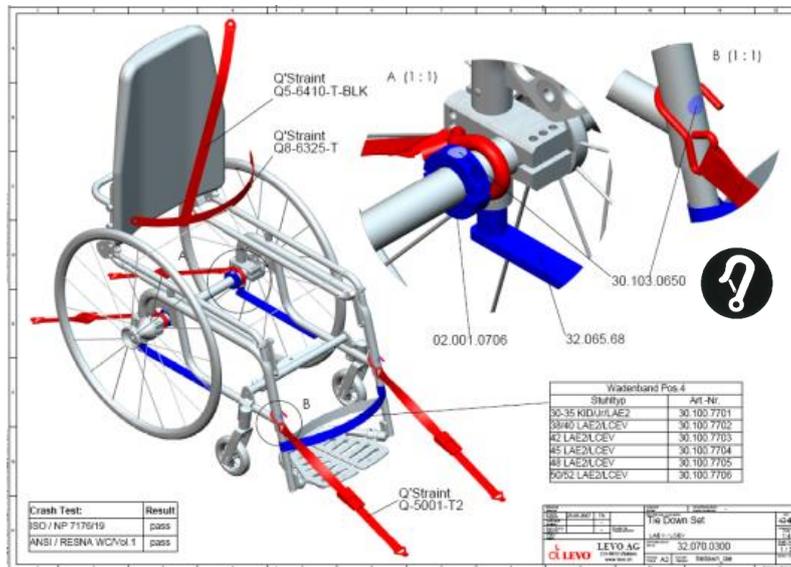
16.2. Transport in a motor vehicle - user in wheelchair

The LEVO LCEV is crash tested according ISO 7176-19:2008.

To transport the user in the wheelchair in a motor vehicle, please assure the following correct equipment is installed and restraints for fixation are ready for use:

- The chair has to be equipped and reinforced with the "Tie down transportation kit # 32.070.050x" that can be ordered at **LEVO AG** through your **LEVO** distributor.
- The chair has to be secured by using solely a restraint system which has been tested and passed the ISO 10542/2 standards.
- The occupant has to be safely secured by using only a restraint system which has been tested and passed the ISO 10542/2 standards.

See the instructions:



16.3. Public transport of the wheelchair - wheelchair only



The **LEVO LCEV** wheelchair can be transported in every kind of public transportation including in airplanes without any restrictions. In airplanes we advise you disconnect the battery: see below.

17. Components

17.1. Batteries

The motor is fed by two rechargeable, maintenance-free lead batteries. With fully loaded batteries you can stand up approximately 100 times. A buzzer sounds to indicate when the batteries are down to 25% of their full charge capacity. On hearing the buzzer, be sure to recharge the batteries immediately.

Note: Make sure that the batteries do not stay completely discharged over a long period of time as this could damage the batteries.

Caution: The stand-up mechanism must not be operated while the batteries are recharging!

17.2. Recharging the batteries



Note: Only use the original battery charger. The use of other chargers may damage the charge cycle.

To recharge the batteries, unplug the control cable from the armrest and plug the charger plug from the charger into the control cable and the charger into the mains (see figure below).

Remote control (optional): To recharge the batteries, plug the charger plug from the charger into the side of the control panel and the charger itself into the mains (see figure on the right below).



Option



Recharging the batteries takes about 6-8 hours.

The batteries should be recharged as often as possible, if possible on a daily basis.

Caution:

- In any situation demanding particular care and attention, e.g. when in transit (in motor vehicles, aircraft, etc.) or when the wheelchair is to be left unattended in the presence of children, be sure to disconnect the control cable and/or motor leads from the battery and electronic unit (Risk of accident!).

- Disconnecting the control cable prevents children or other unauthorized persons tampering with the stand-up mechanism.
- Disconnecting the motor leads cuts the electricity supply to the motor and prevents the stand-up mechanism being activated unintentionally.

17.3. Gas springs

The gas springs are under pressure and may only be adjusted by your LEVO dealer!

The gas springs are specially adjusted to hold your weight in balance.

There is a range of spring strengths to suit the different user weights.

17.4. Quick-release axles



The quick-release axles enable you to remove and re-mount the rear wheels of your **LEVO LCEV** quickly, thus reducing significantly the volume and weight of the wheelchair.

When removing a wheel, the wheelchair must be unoccupied. The wheelchair should be supported in a way that it cannot tip over nor roll away after removing the wheel.

Press the release button in the center of the wheel, then pull off or re-mount the wheel.

Having mounted the wheel, push and pull it several times to ensure the quick-release axle has fully engaged.

17.5. Rear wheels

The rear wheels of the **LEVO LCEV** are equipped with pneumatic tyres or airless tyres. Ask your dealer for suggestions concerning specific adjustments or custom made tyres.

Please make sure to check the tyre pressure regularly. The optimal pressure is 6.0-7.5 bar or 600-750 kPa.

17.6. Front wheels



To remove the front wheels (together with the front forks), press the quick-release axle from underneath, then pull off the forks (see photo).

After reinstalling the front wheels please make sure that they are fitted correctly.



18. Maintenance and Functional check

To keep the **LEVO LCEV** running perfectly and to ensure personal safety and proper operation, please ensure your wheelchair is being serviced by your local **LEVO** dealer at least once a year and observe the following rules:

- **In general** please keep the wheelchair clean, never store it when damp.
- **Charge the batteries daily.** Best is to charge every night to assure the batteries are fully recharged for use during the whole next day. When charging, the LED lights up red and signal in green when the battery is fully charged.
- If the battery power decreases to a threshold low level, an acoustic signal will sound during operation. Please **immediately** go into sitting position and charge the batteries immediately to full power.
- Check the control switch or remote control **every day** to assure the operation moves the actuator without any delay. In case of irregularities, please go into sitting position and notify your dealer.
- Check the tire pressure **every week**. If necessary pump the tires up to 6.0 – 10 bar.
- Check the condition of the main and front wheels **every 2–3 months**. If a tire is heavily or unevenly worn, it should be replaced immediately.
- Check **every week** that the brakes still work reliably. Having applied the brakes, the wheels should stop turning completely. If the brakes are ineffective, they should be tightened and checked by your dealer.
- Check **every week** that the gas-springs support the actuator during elevating, which you will see by the smooth running of the stand-up mechanism up and down.
- If any faults are found, **immediately** inform your dealer before further using of the chair.



18.1. Functional check

Please make sure that the wheelchair is being maintained at least once a year by your **LEVO** dealer to assure and to guarantee the safe functioning of the chair.

The **LEVO LCEV** is delivered already greased. Additional greasing should only be carried out professionally by your dealer.

For your chair the dealer should provide a service card in which all details of necessary maintaining or repairs are noted.

The following general functional check should be made before and after maintenance:

- Function of the armrest switch or remote control and cabling
- Function of actuator and gas springs.
- Function of the charging unit (green LED light)
- Braking effect when driving uphill (Inclination: 8 degree)
- Braking effect when driving downhill (Inclination: 11 degree)
- Check all screws are securely fastened

19. Cleaning

- In case of soiling the wheelchair can be cleaned with a moist cloth. Wipe it dry well afterwards.
- In case of heavy soiling use a mild detergent and warm water for cleaning.
- Never apply furniture polish, pure spirit or solvents for cleaning.

20. Storage

20.1. Storage in general

The **LEVO LCEV** is equipped with a folding backrest which allows you to reduce significantly the space required to store.

To fold down the backrest, first remove the two skirt guards. To do this, slightly slide back the two skirt guards and pull them up and off.

Two quick release bolts secure the backrest, on either side on the inside of the backrest joint (picture below left). To remove the bolts press the button in the centre of the bolt and pull out of the backrest joint on either side.

Fold down the backrest forward (picture right).



20.2. Storage for more than 4 months

The **LEVO LCEV** is essentially maintenance-free, and the user must only pay attention to keeping it clean. If the wheelchair is stored for more than 4 months or exceeds the recommended maintenance cycle deadlines, it must be checked in accordance with the Maintenance and Functional checking instructions in section 6 before use. Please note that the temperature range of storage is minimum 5 °C to maximum 50 °C.

21. Disposal

- At the end of its service life the wheelchair should be returned to your **LEVO** dealer for proper disposal.
- Used batteries should also be returned to your **LEVO** dealer or to the place where they were purchased.

22. Technical Information

	Min.	Max.
Overall Length (with footplate)	890 mm	1005 mm
Overall Width	550 mm	700 mm
folded Length (without wheels)	900 mm	1020 mm
folded Width (without wheels)	490 mm	740 mm
folded Height (without wheels)	460 mm	540 mm
max. Weight	29 kg	31 kg
Mass of the heaviest part	23.5 kg	25.5 kg
Static stability downhill, sitting position	12°	15°
Static stability uphill, sitting position	4°	11°
Static stability sideways, sitting position	15°	15°
Break effectiveness uphill	--	8°
Break effectiveness downhill	--	11°
Seat plane angle	0°	8°
Effective seat depth	290 mm	540 mm
Effective seat width	350 mm	500 mm
Seat surface height at front edge	480 mm	570 mm
Backrest angle	0°	8°
Backrest height	310 mm	560 mm
Footrest to seat distance	360 mm	560 mm
Leg to seat surface angle	80°	100°
Armrest to seat distance	140 mm	220 mm
Main wheel diameter	560 mm - 22"	660 mm - 26"
Hand rim diameter	470 mm	570 mm
Minimum turning circle	1000 mm	1200 mm
Tyre pressure	6 bar / 600 kPa	7.5bar / 750 kPa
Temperature for use	+5°C	+40°C
Temperature for long term storage	+5°C	+50°C
available wheel dimension: D22x1", D24x1", D26x1"		



23. Trouble shooting

23.1. General operation

	Fault	Rectification
	<ul style="list-style-type: none">Wheelchair does not run in a straight line or all four wheels are not touching the ground	<ul style="list-style-type: none">Pump up or replace the tyres. See Technical Data, section 22.Have a technician check and if need be adjust the rear wheel axle mounting, front fork mounting, etc.
	<ul style="list-style-type: none">Discomfort in seated or standing position	<ul style="list-style-type: none">Have a technician check and if need be adjust the rear wheel axle mounting, front fork mounting, etc.
	<ul style="list-style-type: none">Leg supports don't rest on the ground in the uppermost standing position	<ul style="list-style-type: none">Caution: This is an unsafe situation. Adjusting the rear wheels up on the rear of the frame may correct this situation.Adjustment or modification to the leg support down posts may also be necessary.
	<ul style="list-style-type: none">Wheelchair tips over backwards too easily	<ul style="list-style-type: none">Have a technician check and if need be adjust the rear wheel axle mounting, front fork mounting, etc.Attach anti-tip rollers (see accessories)
	<ul style="list-style-type: none">Brakes don't brake effectively	<ul style="list-style-type: none">Have a technician check the inflation and wear of the rear wheels and adjust the brake mounts as necessary.

23.2. Stand-up mechanism

	Fault	Rectification
	<ul style="list-style-type: none">Mechanism works only very slowly	<ul style="list-style-type: none">Recharge batteriesHave batteries replaced
	<ul style="list-style-type: none">Mechanism does not always function at the same speed, i.e. quicker going up or coming down	<ul style="list-style-type: none">Check that gas spring strength corresponds to user body weight. If need be, have springs replaced
	<ul style="list-style-type: none">Mechanism inoperable (neither up nor down, no perceivable motor noise)	<ul style="list-style-type: none">Connect motor lead with battery and electronic unitConnect control panel with battery and electronic unitRecharge batteriesReplace Batteries - control panel - motor - battery and electronic unit - charger

24. Version Management

Version Nr.	Date	Description	Release
1.0	2020-03-12	Documents separated	JC
1.1	2021-01-27	Updated for (EU) 745/2017	JC
1.2	2021-05-20	MDR Adjustments	HB
1.3	2021-06-30	EU Single Registration Number SRN	H. Bögli