# **LEVO** *active-easy LAE*

# INSTRUCTION- and SERVICE MANUAL

**Please read the Instruction Manual carefully before attempting to use your wheelchair.**
**The Service Manual is provided for the use of Agents and Authorized Technicians.**
**Alterations in constructional and technical manner or to the electronic require the written authorisation of LEVO AG, otherwise no warranty or product liability will be accepted.**

**In case of difficulty contact**:

Manufacturer:

LEVO AG
Anglikerstrasse 20
CH-5610 Wohlen
Tel:+41 (0)56 618 44 11
Fax:+41 (0)56 618 44 10
Internet: http://www.levo.ch

Agent:

CE

Dear Customer,

We would like to thank you for putting your trust in LEVO stand-up wheelchairs.

The LEVO stand-up wheelchair is a unique aid for use by those facing difficulties walking and standing up. As well as performing all the functions of an active wheelchair, the LEVO enables you to stand up on your own.

**Please read these operating instructions carefully before using your LEVO. They contain important information necessary for successful operation of the wheelchair.**

Whether you use your LEVO as a stand-up aid at work in everyday life, or to help with standing exercises, it guarantees you optimum independence, mobility and health.

As a LEVO customer, you have a valuable contribution to make to the on-going further development of our products. We put great store by your suggestions, which ensure that LEVO still offers the most comprehensive service available and provides for the widest possible range of needs.

Yours faithfully,

LEVO AG

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# Seating and Standing Assessment

Seat depth: correct

Knee support attachment
screw even with center of knee

Seat depth: too long

Knee support attachment
screw beyond center of knee

Seat depth: too short

Knee support attachment
screw short of center of knee

Ankle/Knee/Hip joint straight

Knee joint hyper extended

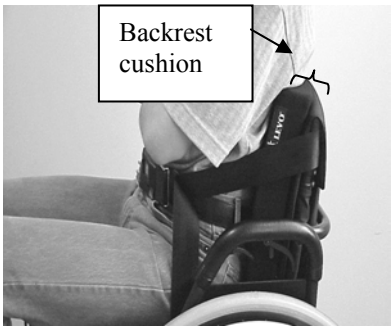
Incomplete knee extension

Correct position

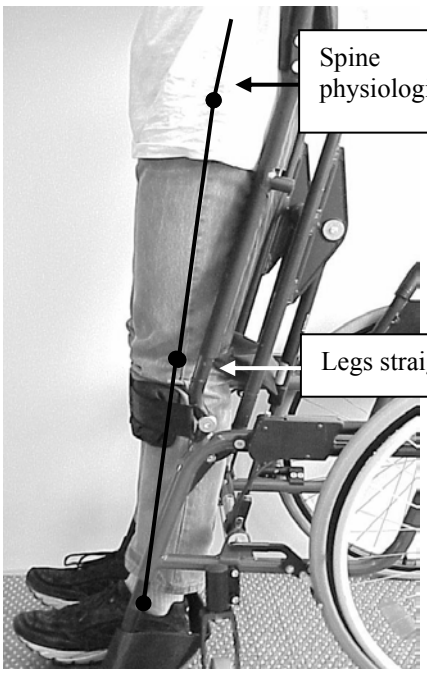
Seat cushion too high

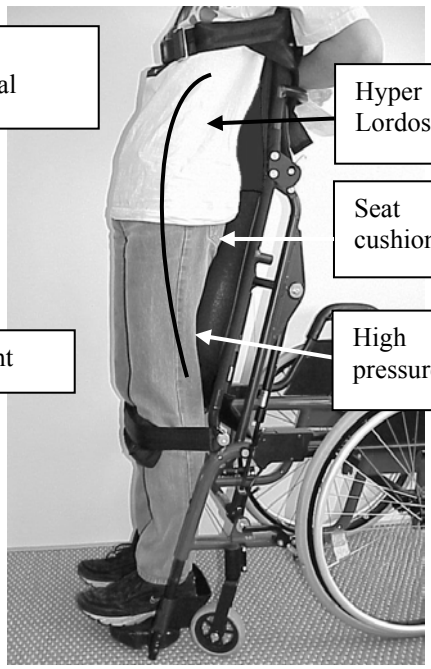

Cushion for pressure relief in seated position

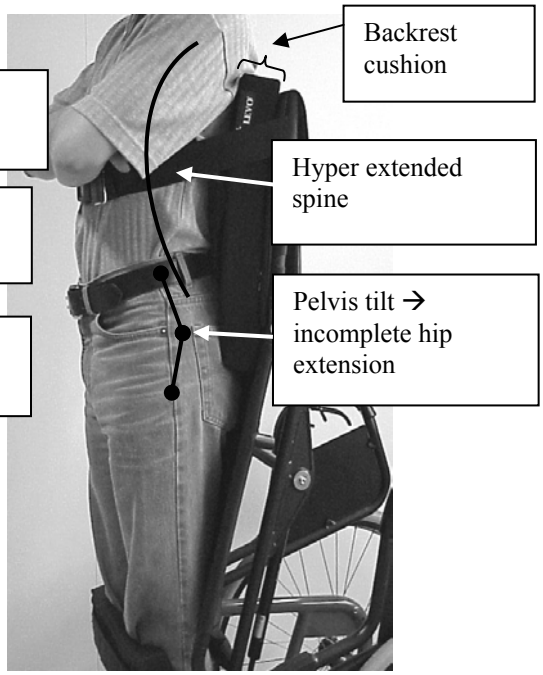
Back too deep/thick




Backrest cushion or solid back for more comfort or stability



# Declaration of Conformity

As manufacturer of the LEVO Stand-up wheelchair, the company

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declares in all responsibility that the product hereby mentioned (see following list) corresponds with the valid direction of the EC instructions for medical products determined 14th June, 1993 (93/42/EWG).

Moreover we declare valid the correspondence of this products with following norms / nominal documents:

**ISO 7176-1**
**ISO 7176-3**
**ISO 7176-8**
**ISO 7176-15**
**ISO 7176-16**
**EN 12183**
**UNI 14971**

| **Type of stand-up wheelchairs:** | |
|---|---|
| **LEVO** *active-easy LAE* | S/M/L/XL |

Wohlen, July 1, 2004 Dr. Kurt H. Fischer Thomas Räber

# **LEVO** *active-easy LAE*

# INSTRUCTIONMANUAL

**Please read this Instruction Manual carefully before you start to use your wheelchair**

## 1. Important points to note before operating the LEVO *active-easy LAE*

Before using the LEVO active-easy, either study the instruction manual yourself or have your LEVO dealer explain the instructions to you.

Standing up stresses your body in ways you may not be used to. Therefore we recommend you consult your doctor or physical therapist before using the LEVO active-easy.

The LEVO active-easy should only be brought into the stand-up position on firm, level ground (risk of tipping over).

The LEVO active-easy should only be brought into the stand-up position with the brakes on.
The stand-up mechanism should only be operated when the LEVO active-easy is occupied (risk of accident).

Before standing up it is absolutely vital that the knee support and chest strap are fitted correctly (see section C.4.). You should under no circumstances attempt to stand up without these safety restraints securely in place (risk of accident).

In the case of strong or sudden spasms, cramps or similar the user should only stand up under supervision of a carer.

Adjustments to the stand-up mechanism and its connected parts are to be carried out by qualified technicians (risk of accidents).

Should you require adjustments and alterations to the mechanics of the wheelchair, or any maintenance work, please contact your LEVO dealer.

## 2. Warranty

Your LEVO product is guaranteed from the date of purchase for two years covering all material and manufacturing defects of mechanical parts.
LEVO AG will not repair or replace free of charge any part or parts found to be defective due to abuse, misuse or lack of maintenance.

Warranty claims should be directed to:

- In Switzerland = LEVO AG
- Other Countries = To your local agent

Addresses and telephone numbers are given on the front page.

## 3. Sitting / Driving

In the LEVO active-easy you will enjoy all the handling qualities and comfort of an active wheelchair. This section will tell you how to adapt the LEVO active-easy to suit your particular needs. Before attempting adjustments yourself, please consult your LEVO dealer.

### 3.1. The rear wheels

High pressure tires are fitted as standard on the LEVO active-easy. The diameter of the wheels depends on the height of the seat. Thanks to the quick-release axles, the rear wheels can be easily removed and set back in place (see photo left).

### 3.2. Seat inclination

The standard pre-set angle of inclination is 5° to the rear. By altering the height of the axle adapter it is possible to re-set this angle to anything between 0° (horizontal) and 8° to the rear (see photo above right). 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!**

### 3.3. Position of the rear wheels

By re-setting the axle adapter either further forward or further back, you are able to increase or decrease respectively your LEVO active-easy's tendency to tip over (see photo). To avoid accidents (tipping over) we recommend the fitting of anti-tip rollers (see accessories). **Please consult your LEVO dealer!**

## 3.4. Position of the front castors

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!**

## 3.5. Backrest angle

The standard pre-set angle between backrest and seat is 90°. It is possible to re-set this angle either 5° further forward or 5° further back. **Please consult your LEVO dealer!**

## 3.6. The footrest

The height of the footrest is adjustable (see left photo) and should be altered in line with your body proportions to guarantee the best standing position possible. Footrest adjustment should also take account of your choice of seat cushion. **Please consult your LEVO dealer!**

The angle of the footrest can similarly be adjusted by plus/minus 5° (see right photo).

## 3.7. 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!**

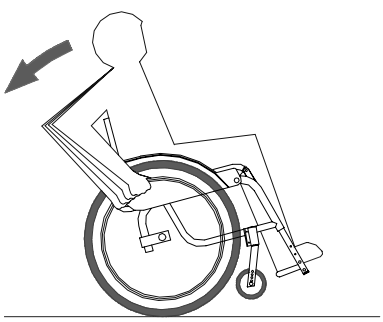
3.8. The seat cushion

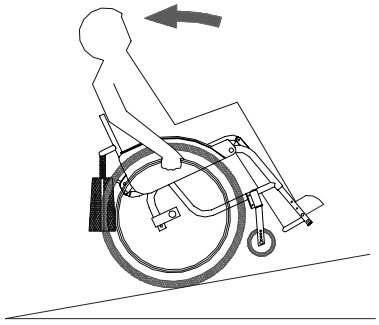
There is a choice of various different seat cushions, governed by your individual needs. The velcro fasteners fitted to the surface of your seat should allow you to attach the majority of seat cushions securely. The velcro fasteners prevent the cushion from slipping out of place even when you are standing 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!**

## 4. General tips on handling a wheelchair

4.1. Pushing off - how to avoid tipping over

Bear in mind that when pushing on the handring to start the wheelchair moving, the front castors will loose traction due to acceleration. Depending on weight distribution, this may cause the castors to lift off the ground and the wheelchair to tip over backwards (see diagram, left).

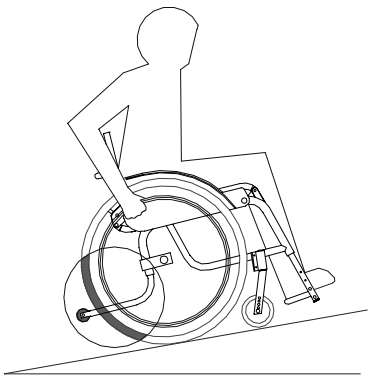




This above situation may be made more critical by using different rear wheel positions to achieve greater seat inclination, by fixing the rear wheel further forward, or by using a cushion to sit higher up.

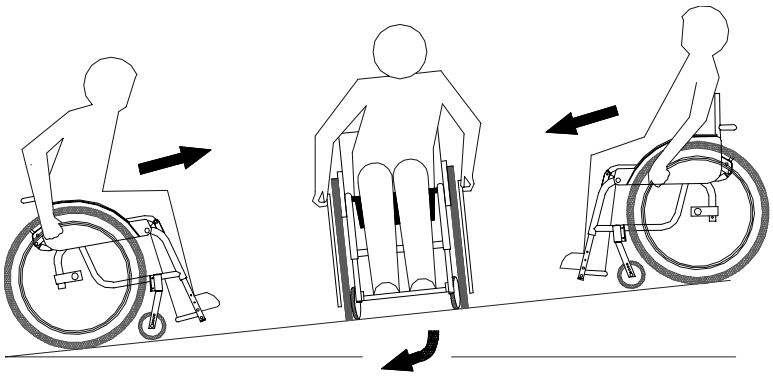
Similarly, when braking to halt backward movement the castors will again lose downforce, giving rise to backward tilting and the risk of tipping over.

It should also be noted that any luggage taken along (see diagram, above right) will alter the center of gravity of your wheelchair and may have an adverse effect on its stability.
As an additional safety measure, it may be advisable to fit anti-tip rollers (see diagram).



## 4.2. Gradients

When turning on a gradient, bear in mind you will have to sit square on to the slope before finally swiveling around to face straight downhill. In this side-on position there is a risk of slipping sideways down the slope. Either you or your accompanying person should take this risk into account and steer accordingly to compensate. Always make it a rule to sit leaning into the hill, however steep the gradient and whichever the intended direction of travel (see diagram).



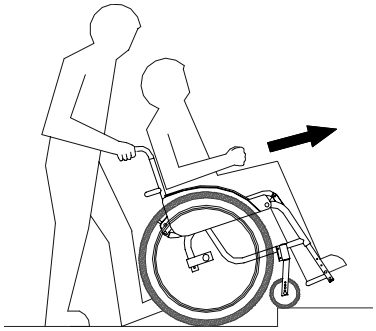
As a safety precaution, always ask an able-bodied person to accompany you when manoeuvrring down a slope. Bear in mind that slowing the wheelchair with the handrings generates a great deal of heat between hands and handring and can lead to burns on the hands. Therefore proceed cautiously when braking by hand and, most importantly, when travelling downhill, never go faster then walking pace. Leaning back into the hill improves stability and increases rear wheel downforce, thus also improving braking efficiency.

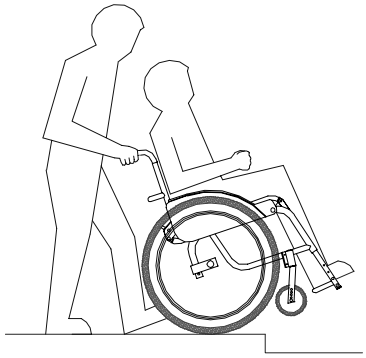
## 4.3. Negotiating obstacles

Any obstacle, such as a kerb 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 negotiate an obstacle, ask an able-bodied person for assistance.

Should you wish to negotiate such an obstacle with the help of an able-bodied person, the latter should not, as a rule, attempt to lift the LEVO active-easy completely clear of the steps. Rather he should ensure that the rear wheels stay in contact with the steps at all times.

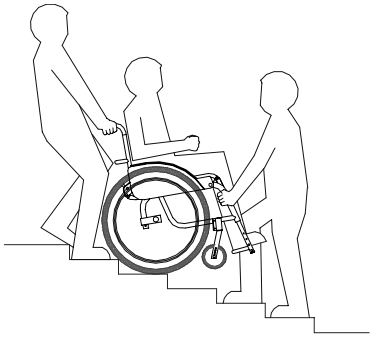
To surmount an obstacle (e.g. driving up over the kerb from the street), first tilt the wheelchair just enough to lift the front castors up onto the edge of the obstacle. Push on until the large wheels are resting against the lip of the obstacle, then lift them up and onto it by taking hold of either the backrest or the rear axle (see diagram, left).

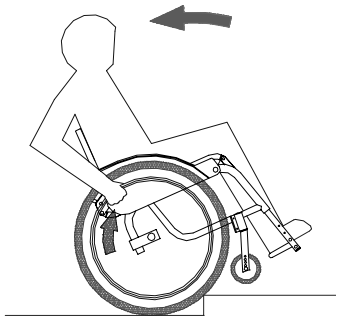




To descend down over an obstacle (e.g. driving down from the kerb into the street), first tilt the wheelchair up onto the rear wheels, then push on and let the wheelchair down over the edge of the obstacle on two wheels (see diagram, above right).

Should you have to be carried over three steps or more, request the assistance of at least two able-bodied persons. Those assisting should only take hold of solid parts of the frame. They should under no circumstances take hold of any moving parts, such as the rear wheels or front castors (see diagram, left).





Proceed with great caution should you wish to overcome an obstacle alone. You should be aware of the tendency of the wheelchair to tip over backwards if, as the rear wheels contact the edge of the obstacle, you attempt to surmount it by pushing down harder on the handring (see diagram, above right).

**Never drive your wheelchair onto an escalator.**

## 4.4. Braking with the pressure brakes

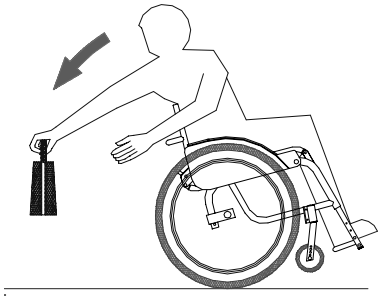
When using the wheelchair in situations where increased stability is particularly important, always remember to apply the brakes (see diagram). This applies, for example, when standing up, sliding over into your wheelchair or when you want to transfer from the wheelchair into another seat. For safety reasons, it is particularly important to note that, when transferring, even if the rear wheels are locked by the brakes, the wheelchair can easily slip sideways if it is not carrying a load.

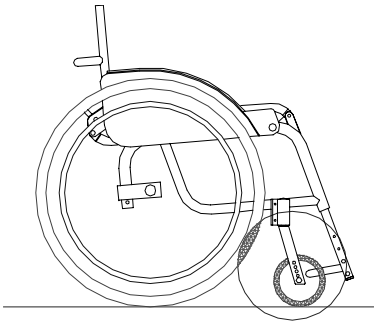
Keep in mind that insufficient tire pressure or heavily worn tire tread has a detrimental effect on braking efficiency.

After driving through a puddle, keep in mind that wet tires reduce braking efficiency as water on the surface of the tires acts as a lubricant.

## 4.5. Picking up objects from the wheelchair

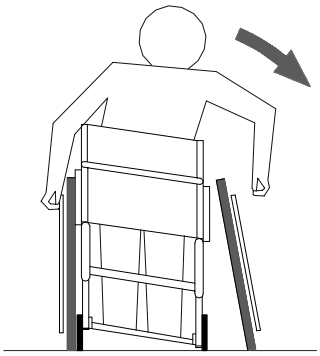
Always remember that picking up objects from the wheelchair will alter your center of gravity and effect stability. This can cause the wheelchair to tip over, either backwards (see diagram, left), sideways or forwards. In the latter case, to decrease the likelihood of tipping forwards, enlarge the wheelbase by pointing the castors as if the wheelchair were moving backwards (see diagram, right). It is also advisable to draw as near as possible to the object before attempting to pick it up.





## 4.6. Detachable components

You will be pleased to know that your wheelchair is designed to be fully collapsable and is built with several detachable components to guarantee the lowest possible packing volume and weight. Certain movements involved in folding down the backrest are, by their very nature, potentially harmful. Please take care not to trap any clothing or parts of the body in the joints of the wheelchair as your are folding down the backrest. You should only resume your seat in the wheelchair once it has been fully unfolded and reassembled with all detachable components (e.g. rear wheels and castors) once again securely fixed in place. Always make sure beyond any doubt that the rear wheels have been securely reattached, and cannot work loose while the wheelchair is moving (see diagram).



### 4.7. Transport in a motor vehicle

When transporting the wheelchair in a motor vehicle make sure that the wheelchair is so secured as to prevent it sliding about or tipping over. Use should be made of licensed fastening systems which secure the wheelchair's rear axle and at the front the lower frame tubes from below.
It is not permitted to transport the wheelchair in a motor vehicle when somebody is still sitting in the wheelchair.

## 5. The brakes (wheel locks)

The brakes lock the rear wheels fast and your LEVO active-easy is secure against unintended movement.

By pushing both brake levers forwards as far as they will go, you should be able to lock the brakes.
The efficiency of the brakes is dependent on tire pressure and profile, which should be checked regularly (see section 12. Maintenance).
**Caution:** wet tires or surfaces also have a detrimental effect on brake efficiency.
When altering the position of the wheel axle, be sure to re-adjust the brakes too.

### 5.1. 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.

Relax the brake as far as it will go.

Loosen the cylindrical screw on the brake mounting (see photo, left).

Adjust the position of the brake and the mounting to leave a gap of approximately 10 mm between brake shoe and tire, then screw the cylindrical screw tight again (see photo, above right).

Test the strength of the brake.
Should you need to tighten up the brakes, set the brake shoe closer to the tire. To relax brake tension, leave a larger gap between shoe and tire.

## 6. Standing

Your LEVO active-easy isn't just an active wheelchair. It is also a standing aid which enables you to stand up simply and quickly, right there, when and where you need to.

General tips
Standing up stresses your body in ways you may not be used to. For this reason, **please consult your doctor or physical therapist before using the LEVO active-easy** to make sure you do not suffer from any conditions (e.g. strong contractures or osteoporosis) which make standing potentially harmful.
The LEVO active-easy may only be brought into the standing position on firm, level ground (risk of tipping over).

Before standing up, apply both brakes on the LEVO active-easy.
Please beware of parts of the wheelchair where one might conceivably trap or catch parts of the body when standing up, in the space between the side panel and the seat as well as in the pivot of the side panel. Be sure to protect yourself and accompanying persons from possible injury.

## 7. The knee support and chest strap

**The most important safety features of the LEVO active-easy are the knee support and the chest strap. It is absolutely essential that these be correctly in place before you attempt to stand up (risk of accident).**

### 7.1. The 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 photo left).

Center 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 (see photo above right).

7.2. The chest strap

The chest strap holds the upper body in place.
Check that the chest strap is secure on the backrest (velcro fastening).
Close the catch on the chest strap and pull it to (not too tight, see photo).

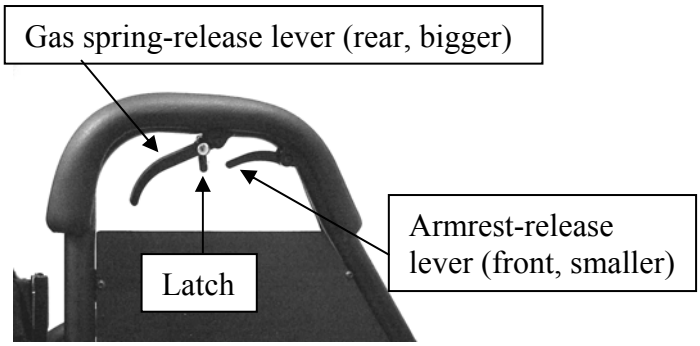
To release the chest strap, simply press the red button in the center of the catch.
To slacken, hold the catch at a right angle to the strap and pull.
Once the knee support and chest strap are fitted correctly you are ready to stand up.

## 8. Standing up

The two armrests on either side of the seat serve not only as armrests, but also as a part of the stand-up mechanism.

There are four release levers. The bigger ones in the rear of the armrest are the gas spring-release levers (marked with Symbol 1). They release the gas springs which assist you as you raise yourself up by pushing down lightly on the side panels.

The two smaller ones more in the front of the armrest are the armrest-release levers (marked with Symbol 2). By using these levers the armrests can be brought higher up or lowered.





Symbol 1


Symbol 2

8.1. To release the springs, you should first push forward the little latch to be found on the gas spring-release levers, then pull the release levers themselves (see photo left).

8.2. Having raised yourself up as far as your arms will allow, let go of the gas spring-release levers to lock the gas springs once more in place (see photo above right).

By using the two armrest-release levers found further toward the front of the armrests, you can bring the armrests up to the appropriate height.

8.3. Pull the two armrest-release levers, then lift the two armrests. Let go of the armrest-release levers and pull the two armrests up until they click in (see photo left).

8.4. Repeats points 8.1. - 8.3. (see photo above right) until you are standing fully upright. The leg supports should be in contact with the ground.

## 9. Sitting down

9.1. To unlock the gas springs again, first push forward the little latch to be found on gas spring-release levers, then pull the release levers themselves (see photo 8.1.). Continue to hold down the release-levers as you use the armrests to pull yourself downwards.

9.2. Let go of the gas spring-release levers and, making use of the armrest-release levers, lower the armrests (see photo 8.3.) into their intermediate position.

9.3. Repeat steps 9.1. and 9.2. until you are once again able to resume your seat.
**Attention:** Lower yourself **slowly** to the lowest seated position! Risk of tipping over!

## 10. The gas springs

The gas springs are specially adjusted to hold your weight in the balance. With minimal arm work, i.e. pushing lightly on the armrests, you can stand yourself up. Similarly, by pulling lightly you can sit yourself back down in your seat, equally effortlessly.
There is a range of spring strengths to suit the body weight of different wheelchair users.

**The gas springs may be adjusted by no other than a qualified technician! Please consult your LEVO dealer!**

**Caution: do not bend or stretch the cables leading from the armrests to the gas springs as this may unintentionally trigger the stand-up mechanism (risk of accident)!**

## 11. Storage

11.1. Folding down the backrest

Your LEVO active-easy is equipped with a collapsable backrest which allows you to cut down significantly on the space required to store the wheelchair away.

Push up the two folding clasps and at the same time push the seatback forwards (see photo).


You may wish to fit a chord to connect the wheelchair's two folding clasps. If you have fitted a chord, pull it toward the rear and upwards while pressing the backrest lightly forwards.

## 12. The quick-release axles

The quick-release axles enable you speedily to remove and re-mount the rear wheels of your LEVO active-easy, 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 such a way that it neither falls over nor rolls away after removing the wheel.

12.1. Depress the release button in the center of the wheel, then pull off or re-mount the wheel (see section 3.1., The rear wheels).

12.2. Having mounted the wheel, push and pull it several times to ensure the quick-release axle has definitely locked in.

## 13. The castors

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

## 14. Maintenance

To keep your LEVO active-easy in good condition, it is advisable to adhere to the following guidelines and to carry out maintenance work on a regular basis, as detailed below.

A life-long lubricant is applied to your LEVO active-easy dispensing with the need for later restorative lubrication and oiling.

When cleaning your LEVO active-easy, use a dry or slightly moistened cloth to wipe the wheelchair down. For stubborn or oily stains, apply a mild detergent to the cloth. Do not hose down your LEVO active-easy with water (risk of rusting).

According to frequency of use, check tire pressure between once a week and once a month. If necessary, pump up the tires in line with manufacturer's recommendations (see section 16. „Technical Data).

Check the state of the tread on the tires every one to six months. If a tire is heavily or unevenly worn, it should be replaced. **Please consult your LEVO dealer!**

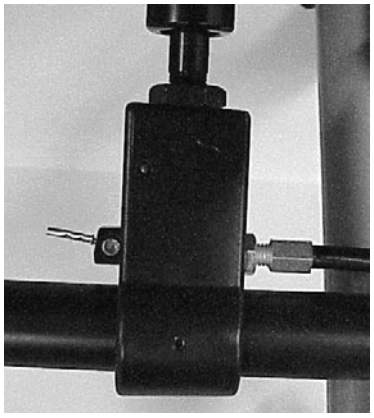
Every one to six months, check that the brakes still work cleanly. Having applied the brakes, the wheels should stop turning completely. If the brakes are ineffective, they should be tightened up (see section 5.1. Adjusting the brakes). **Please consult your LEVO dealer!**

14.1. For the first month, check cable tension on the gas spring-release once a week. You should re-adjust cable tension either weekly or monthly, depending on how often you use the stand-up facility.

14.2. Check that the gas springs lock and release correctly when you press the release as part of the stand-up procedure.

If the gas springs are sluggish on release, have them adjusted by a qualified technician. He will have to loosen the counter nut and turn the adjustment screw one turn to the left (anti-clockwise), (see photo, over).

If the gas springs are not locking properly, have them adjusted by a qualified technician. He will have to loosen the counter nut and turn the adjustment screw one turn to the right (clockwise), (see photo).



Repeat 14.2. until the gas springs lock correctly.

**Please consult your LEVO dealer when adjusting cable tension!**

We recommend you have your dealer service the LEVO active-easy on an annual basis.

## 15. Disposal

At the end of its service life the wheelchair should be returned to your LEVO dealer for proper disposal.

# **LEVO** *active-easy LAE*

# SERVICE-MANUAL

**This service manual is designed for use by your LEVO dealer and authorized service technicians.**

**Please carefully read these instructions before carrying out maintenance work on your wheelchair**.

**This service manual must be read in connection with the instruction manual.**

**Alterations in constructional and technical manner or to the electronic require the written authorisation of LEVO AG, otherwise no warranty or product liability will be accepted.**

## 1. Introduction

Your **LEVO** *active-easy* is maintenance-free dispensing the user with the need for further maintenance work except for cleaning the wheelchair on a regular basis.

Due to its complex design, the wheelchair should be checked for safety at least once a year by your LEVO dealer or authorized technician.

This service manual has been designed for use by your LEVO dealer or authorized technician. It contains all information required to carry out safety checks and repair works on your **LEVO** *active-easy*. It will ensure that your wheelchair is a reliable, safe and helpful means of transport.

Always read and apply this service manual in connection with the instruction manual.

## 2. Accident prevention & safety

Accidents can happen. Be aware of possible dangers when carrying out tests or works on your wheelchair. You should take suitable preventive measures to ensure your own safety and that of other persons.

## 3. Adjustments – general instructions

Depending on the ability of the user's friends and relatives, they may carry out some of the adjustment works themselves. This manual will tell you how to proceed. However, when delivered, your wheelchair should be adjusted to your personal needs by your LEVO dealer or authorized technician.

## 4. Repairs – general instructions

Service and repair works on the **LEVO** *active-easy* should only be carried out by a LEVO dealer or authorized technician.

- Repairs: For advice in all repairs in Switzerland contact LEVO AG if in Switzerland. For all other countries contact your local LEVO agent. Addresses are given at the front of this instruction and service manual.
- Major repairs: For all major repairs e.g. bent or damaged frame always replace complete components. Never try to repair damaged steelwork or components.
- Replacement parts: Factory replacement components should be used in all repairs, these are available from LEVO AG. To order parts see the parts list drawings at the end of this manual.

**Caution: check that the LEVO active-easy is not in the sitting position before carrying out any maintenance or repair work on the wheelchair's stand-up mechanism! Risk of accident! Follow the instructions given in the relevant sections of the service manual!**

## 5. Tools & torques

The following tools are required to carry out maintenance work:

| *Allen key* |
|---|
| 3mm |
| 4 mm |
| 5 mm |
| 6 mm |
| 8 mm |
| $^{3}/_{16}$ " |

| Spanner |
|---|
| 10 mm |
| 13 mm |
| 17 mm |
| 27 mm |

| Cross blade screwdriver |
|---|
| Flat blade screwdriver |
| Soft headed hammer |
| Torque wrench: 0 - 50 Nm |

| Screw size | *Torque in Nm* |
|---|---|
| M4 | 3 |
| M5 | 6 |
| M6 | 10 |
| M8 | 25 |
| M10 | 50 |

## 6. Important notes

- Do not reuse Nyloc nuts. Always replace with a new Nyloc nut.
- Always use thread locking compound.
- Always use recommended components and parts available from LEVO AG.
- Do not modify or repair the frame.
- LEVO AG is responsible for any repairs on gas springs, motors and electronic parts.

## 7. Recommended safety checks

Please note that the following safety checks should be carried out **at least on an annual basis.** Have them carried out only by your LEVO dealer or an authorized technician. If a defect occurs, immediately discontinue using the wheelchair until the defect is remedied.

1. Fold down the backrest and reset. Having put the backrest back in place, check that the clasp latches correctly. Rectify possible defects.
2. Check the frame for possible defects. Replace defective parts if in need of repair.
3. Check seat and backrest covers for possible wear and replace, if necessary.
4. Check the condition of straps, belts and catches and replace, if necessary.
5. Check that nuts, screws, joints and plastic parts are securely tightened as well as for proper condition. Rectify possible defects.
6. Check that push handles and handle covers fit tightly. Rectify possible defects.
7. Check brakes for adequate braking efficiency. Rectify possible defects.
8. Check that front castors and rear wheels run smoothly and are securely fastened. Check tire pressure and the tread of the tire of rear wheels.
9. Check the stand-up mechanism and its proper operation. Rectify possible defects.
10. For the first month, check cable tension on the gas spring-release once a week. You should re-adjust cable tension either weekly or monthly, depending on how often you use the stand-up facility.
11. Check that the gas springs lock and release correctly when you depress the lift activator as part of the stand-up procedure.

## 8. Adjustments

### 8.1. The backrest and seat upholstery

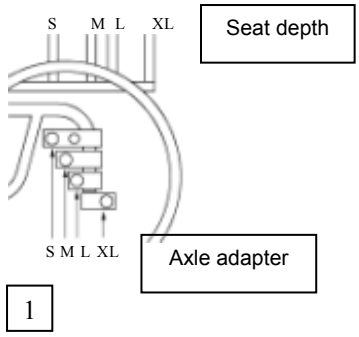
The surface flexibility of the backrest upholstery can be adjusted using the velcro fasteners. The backrest can be tightened (for a more upright seated posture) or relaxed (for more back support).

The seat upholstery can be similarly tightened or relaxed by use of velcro fasteners. As a rule it should be as taut as possible. Depending on the height of the cushioning in question, it may be necessary to loosen upholstery surface tension to be able to sink the cushioning down between the two seat supports.

The chest trap is fixed to the backrest upholstery by use of velcro fasteners. It can therefor be adjusted in height.

### 8.2. Rear wheel position

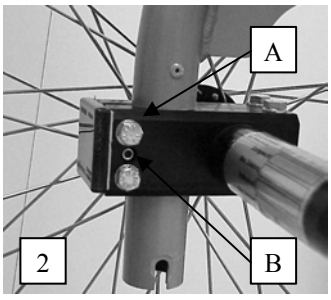
The axle adapter mounted as standard on your **LEVO** *active-easy* depends on the seat depth.



1

- Seat depth S: axle adapter S mounted.
- Seat depth M: axle adapter M mounted.
- Seat depth L: axle adapter L mounted in forward direction.
- Seat depth XL: axle adapter L mounted in rearward direction. See also illustration 1.
- Seat height 48 cm (22” wheels) and 51 cm (24” wheels): axle adapter mounted at 45 mm from lower end of frame tube. Seat height 54 cm (24” wheels): 20 mm, seat height 57 cm (26” wheels): 30 mm.

To adjust the seat inclination the axle adapter is adjusted in height:



2

- Unscrew both inside hexagonal screws (A) using a 10 mm spanner and tighten the threaded pin (B) using a 3 mm Allen key (see photo 2). The latter opens up the clamps on the axle adapter.
- Adjust the axle adapter to the desired height, unscrew the threaded pin and tighten the two inner hexagonal screws again.

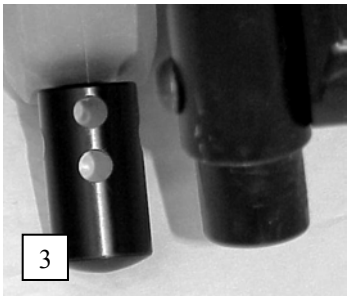
**Caution:** When adjusting the height of the axle adapter, be sure to adjust the castor height and angle accordingly (see section 8.3.). In case of large scale adjustments it may even be necessary to replace the leg supports.

**Having made the adjustments, it is absolutely vital to ensure that, when standing up, the leg supports still rest on the ground as this is crucial to standing ability (risk of accident!)!**

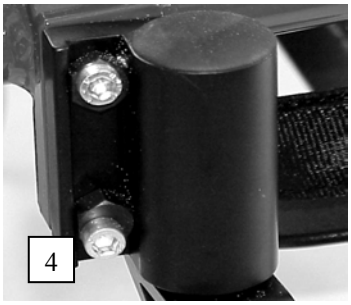
## 8.3. The castor axle

Having made adjustments to the rear axle, be sure to adjust the castor height and angle accordingly. When carrying out these adjustments, it is important to bear the following points in mind:

- The castor axle should stand at a right angle to the ground.
- The castor should always remain in contact with the ground.
- In the uppermost standing position, the leg supports must be resting on the ground.



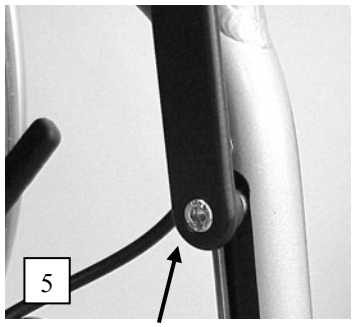

- Bring the **LEVO** *active-easy* into the standing position.
- Unscrew and remove the cylindrical screws using a 4 mm Allen key, then set the plastic leg plug either higher or lower so that the leg supports are standing on the ground. You may have to turn the leg plug by 90°. (se photo 3).




- Unscrew the two cylindrical screws using a 5 mm Allen key and turn the eccentric disc until the axle is sitting vertically (see photo 4). You may have to turn only one of the two eccentric discs. Screw the cylindrical screws tight.

## 8.4. The leg supports

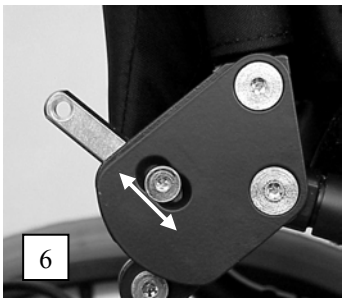
The leg supports should be replaced when the seat height of the wheelchair has been so greatly adjusted that they no longer reach the ground or reach the ground too soon in the uppermost standing position.




- Remove the rear wheels (see Instruction Manual, section B.1.)
- Remove the footrest (see section 8.6.).
- Loosen the cylindrical screws on both inner sides of the leg supports and remove them together with the spacer bushing (see photo 5). Then pull the leg supports out of the frame.
- Replace the leg supports and reassemble in reverse order.

## 8.5. Backrest angle

The backrest sits at an angle of 90° to the seat as standard but can be adjusted in either direction by 5°. This adjusting mechanism is not stepless.


6

- Remove the rear wheels, then remove the skirt guards (see Instruction Manual, section 3.1.).
- Unscrew the countersunk screw on the outer joint using a 4 mm Allen key, remove the screw and the bushing (see photo 6) before adjusting to the desired position and tightening up the countersunk screw.

**Attention:** Having adjusted the backrest angle, check that the clasp of the folding mechanism latches correctly!

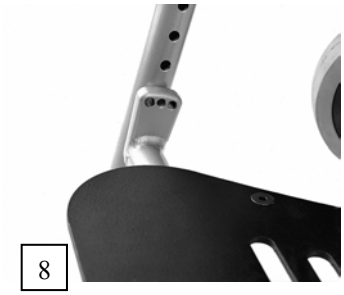
## 8.6. The footrest

The height of the footrest is not only important for a good sitting position but even more so for the standing position. On delivery you will find the footrest at the second lowest position, if not ordered specifically.


7

- There is a choice of 5 different heights for mounting the footrest.
- Unscrew the four oval head screws on both outer edges of the footrest using a 4 mm Allen key and set the footrest either higher up or lower down (see photo 7).

There are three possible footrest angle variations:


8

- 4° to the horizontal
- 14° to the horizontal (standard)
- 24° to the horizontal
- Unscrew the four oval head screws on both outer edges of the footrest using a 4 mm Allen key and remove the upper ones. Setthe footrest at the desired angle and retighten the screws (see photo 8).

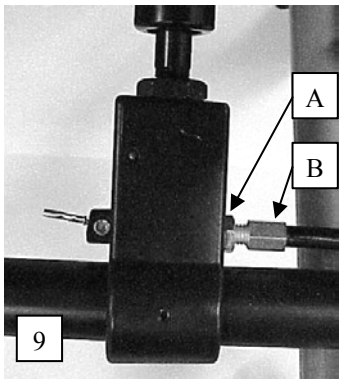
The footrest angle is set as standard at 14° to the horizontal. With the footrest in the lowest possible setting, an angle of 4° is the only practicable variation as the footrest otherwise touches the ground before the leg supports (hence no standing stability!).

With the second lowest setting the only potential variations are 4° and 14°, for the same reasons. For all higher footrest settings there is a choice of all three angle variations.

8.7. Adjusting the gas spring release

It is important to check that the gas springs respond to the gas spring release lever and lock and release correctly as part of the standing up.

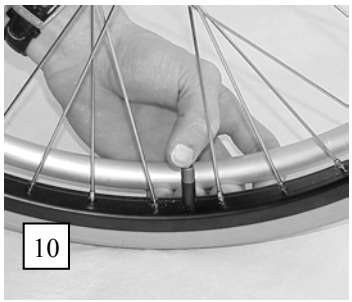
**Caution: When checking the gas spring release, the gas springs should be extended, i.e. the wheelchair should be in a standing position! Risk of accident!**

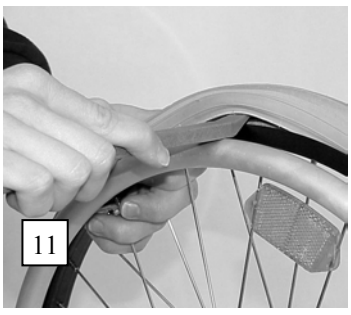



- If the gas springs are sluggish on release, the cable tension is not tight enough. Loosen the counter nut (A) using a 10 mm Allen key and turn the adjustment screw (B) one turn to the left using a 8 mm spanner (anti-clockwise).
- If the gas springs are not locking properly, the cable tension is too tight. Loosen the counter nut (A) and turn the adjustment screw (B) one turn to the right (clockwise).
- Repeat until the gas springs lock correctly.
- See also section 9.5., Important check.

## 9. Repairs

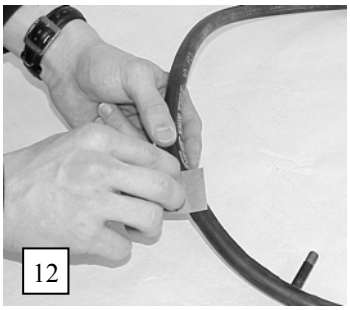
9.1. Replacing tire/inner tube of rear wheels

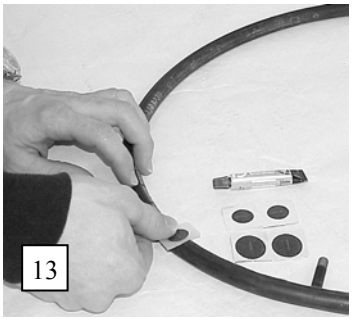



- Remove the wheel and open the valve before pressing down on it to let out the air (see photo 10).
- Using a bicycle tire wedge, ease both sides of the tire over the wheel rim and pull the inner tube out of the tire (see photo 11).
- Replace the inner tube by forcing one side of the tire back over the wheel rim, pump up the tire a little, ease the valve through into the hole and lay the inner tube along inside of the tire. Once the whole tube is snug inside the tire, force the other side of the tire back over the wheel rim (starting on the side opposite the valve).
- Check lest the inner tube be caught between tire and rim before pumping it up in line with the manufacturer's recommended tire pressure (see Technical Data, section 12).

## 9.2. Repairing the inner tube

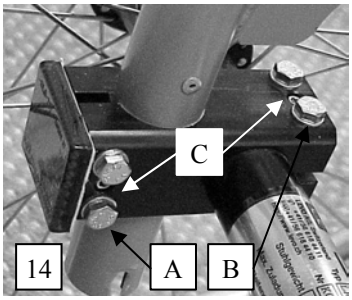



- Remove inner tube and tire following the steps described under 9.1.
- Repair the hole using a bicycle puncture repair kit and follow the manufacturer's instructions (clean the area around the hole and roughen the tube surface (see photo 12) before applying the vulcanized solution. Allow to dry, then firmly attach the rubber patch (see photo 13). Again, first allow to dry, then pump up the tube to check that the patch is airtight).
- Replace the inner tube. Once the whole tube is snug inside the tire, force the tire back over the wheel rim (starting on the side opposite the valve).
- Check lest the inner tube be caught between tire and rim before pumping it up in line with the manufacturer's recommended tire pressure (see Technical Data, section 12).

## 9.3. Replacing the axle adapter

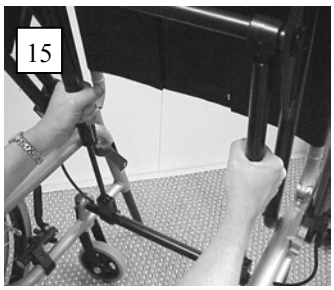
There are a variety of axle adapters available by use of which the wheel axle can be set further forward or further back to increase or decrease respectively the tendency of the wheelchair to tip over, see section 8.2..



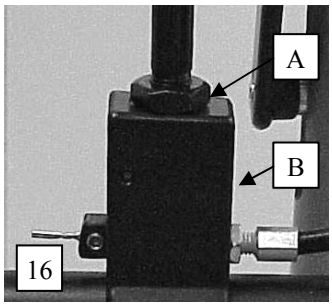

- Loosen the inside (A) and top (B, on the right hand side, but bottom on the left) hexagonal screws using a 10 mm spanner, then tighten both threaded pins (C) using a 3 mm Allen key (see photo 14).
- Slide the axle adapter off the tubular frame and the axle itself and replace it.
- Set the new axle adapter to the desired height, loosen the two threaded pins and screw the two hexagonal screws tight.

## 9.4. Replacing the gas springs

Should you have to replace the gas springs, for example, to boost or reduce their resistance, ensure first that they are not extended (too long, i.e. the wheelchair should be in half seated or **almost** upright position, but not in the fully upright standing position). It is important that the gas springs are the same length.



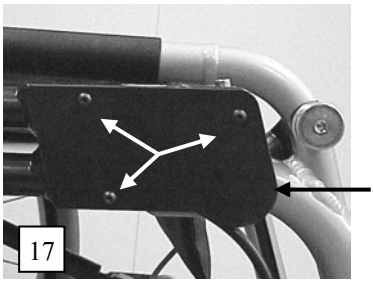

- Unscrew the gas springs on both sides simultaneously turning them to the right (clockwise) to remove them from the rear gas spring holders (see photo 15).



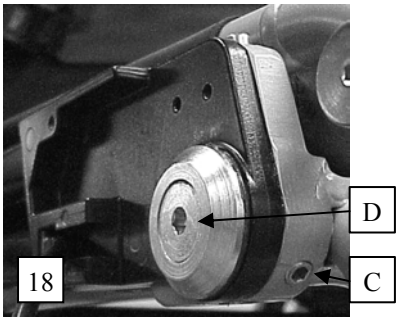

- Unscrew the counter nut (A) on the front of the spring using a 17 mm spanner and unscrew the spring to remove it from the front gas spring holder (B) (see photo 16).
- The new gas springs should have the same length, but not be fully extended. Mount in reverse order.

## 9.5. Replacing the gas spring release cable

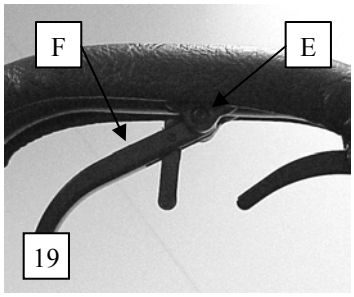
**Caution:** When replacing one or both gas spring release cables, the gas springs should be extended, i.e. the wheelchair should be in a standing position! Risk of accident!



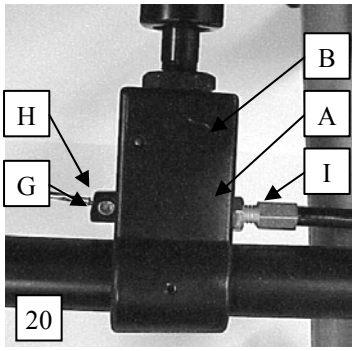

- Remove the small cover by unscrewing the three countersunk screws using a 2.5 mm Allen key.



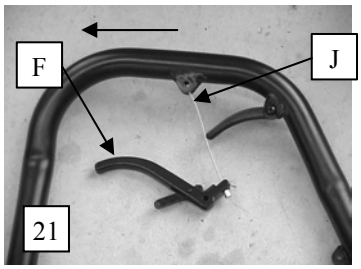

- Loosen and remove the threaded pin (C) and the countersunk screw (D) using a 4 mm and 6 mm Allen key (see photo 18). Take off the complete armrest.




- Loosen and remove the screw (E) on the gas spring release lever (F) using a 3 mm Allen key (see photo 19).Take the gas spring release lever off the armrest and pull the cable out.




- Loosen the threaded pin (G) on the trigger lever (H) in the front gas spring holder (B) using a 3 mm Allen key and pull the cable out. Remove the cable coating as well as the adjustment screw (I) and the counter nut (A) using a 8 mm and 10 mm spanner (see photo 20).




- Mounting the new cable:
  Insert the new gas spring release cable (J) through the release lever (F) and into the armrest towards the rear and down in direction of the arrow (see photo 21).
- Insert the release lever (F) into the armrest: **Attention:** the other cable, the one of the armrest release mechanism, must run lateral of the gas spring release lever! It must not run above the gas spring release lever!
- Mount the armrest in reverse order. Don't tighten the counter sunk screw (D) too much, so that the armrest can be moved easily up and down.
- Insert the cable again through the cable coating and the adjustment screw (I), then into the gas spring holder (B). The adjustment screw should have a distance of approx. 3 mm to the counter nut (A).
- Pull the cable out of the trigger lever (H) thus far that the trigger lever may till be moved easily. It should stick out of the gas spring holder (B) by approx. 5 mm. Then fix the cable tension by tightening the threaded pin (G).
- Re-mount the small cover using the three oval head screws (see photo 17).

**Important check**: when moving the visible part of the cable/cable coating the gas spring release mechanism should not be activated!

- If the gas springs don't release sufficiently, the trigger lever (H) is not being pulled far enough into the gas spring holder (B) when the gas spring release lever (F) is pressed. The cable tension is too sluggish. It must be adjusted, see section 8.7..
- If the gas springs don't lock sufficiently, the trigger lever (H) sits too deep in the gas spring holder (B). The cable tension is too tight. It must be adjusted, see section 8.7..

## 10. Testing the wheelchair

**After having carried repairs on a wheelchair, you should always check all functions for correct operation before returning the wheelchair to your customer. The wheelchair should only be returned after all defects have been rectified.**

## 11. Cleaning

Before you return the wheelchair to your customer, make sure that the wheelchair is clean and dry:

- Remove dirt with a damp cloth and wipe dry.
- In the case of stubborn dirt use a mild detergent and warm water for cleaning.
- Never apply furniture polish, spirit or solvents to clean the wheelchair.

## 12. Technical Data

### Measurements

| Model | M | | | | L | | | | XL | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| Seat width | 38 | 40 | 42 | 45 | 38 | 40 | 42 | 45 | 38 | 40 | 42 | 45 |
| Total width | 58 | 60 | 62 | 65 | 58 | 60 | 62 | 65 | 58 | 60 | 62 | 65 |
| Total length | 85 | | | | 93 | | | | 100 | | | |
| Total height (with backrest) | 77 | | | | 80 | | | | 79 | | | |
| Back upholst. height | 31 | | | | 31 | | | | 31 | | | |
| Seat upholst. height front | 48 | | | | 51 / 54 | | | | 54 / 57 | | | |
| Seat upholst. height rear | 45 | | | | 47 / 50 | | | | 49 / 52 | | | |
| Seat upholst. depth | 38 | | | | 43 | | | | 52 | | | |
| Footrest - seat | 35 - 42 | | | | 38 - 45 / 41 - 48 | | | | 41 - 48 / 44 - 52 | | | |
| Weight without wheels | 12.5 | | | | 13.5 | | | | 14.5 | | | |
| Total weight | 18 | | | | 19 | | | | 20 | | | |

All measurements in cm and kg. Variations due to model-specific adjustments possible.

Tires:
Rear wheels: High pressure tires, 22”/24”/26”
Tire pressure (rear): 7.5 bar

Front castor: airless tires, 5”/6”

Gas springs: 2 blocking gas springs
LAE/M: 500 N
LAE/L: 600 N
LAE/XL: 700 N

Operating temperature range: +5° - +40°
Storage temperature range: -40° - +60°

Clearance: max. 6 cm
Max. height of obstacle: max. 2 cm

Max. permissible gradient/
Cross-fall: max. 3°

Max. weight
incl. body & load: max. 120 kg