LIFTKAR MTK

MTK 190 / MTK 310-B



INSTRUCTION MANUAL

English

SANO makes life easier.

INTRODUCTION **3**

1 MODEL RANGE / SPECIFICATIONS **3**

2 TECHNICAL FEATURES / SAFETY MEASURES **4**

3 STARTING OPERATION **5**

3.1 System of GOING DOWNSTAIRS 6

3.2 System of GOING UPSTAIRS 6

4 AUTOMATIC BRAKE **7**

5 OPERATING INSTRUCTIONS **9**

6 GROUPS OF ACCESSORIES **10**

6.1 Accessories I 10

6.2 Accessories II 12

7 TROUBLESHOOTING GUIDE AND REMEDIES **13**

8 MAINTENANCE **14**

8.1 Directions for using the batteries 14

9 DISPOSAL **15**

10 LIABILITY / PATENTS **15**

11 CE DECLARATION OF CONFORMITY **16**

NOTES **17**

CONTACT **20**

INTRODUCTION

This brochure makes you familiar with the handling of LIFTKAR.

It is for your own benefit, to read this operating manual very carefully. You are avoiding transport damages and after a short time of exercising you will be able to use this transport device with all its advantages.

In order to update you about product news as well as technical changes (e.g. options, accessories) we ask you to register your product online.

https://www.sano-stairclimbers.com/product-registration

1 MODEL RANGE / SPECIFICATIONS

1.1 MODEL RANGE

LIFTKAR MTK 190

LIFTKAR MTK 310-B



1.2 SPECIFICATIONS

	MTK	190	310
Nominal weight	kg	190	310
Capacity max.	kg	230	340
Max. motor power	Watt	450	450
Speed of climbing	steps/min	16-18	8-9
Capacity carrying nom. weight	steps	170	60
Own weight without battery	kg	30	35

2 TECHNICAL FEATURES / SAFETY MEASURES

2.1 TECHNICAL FEATURES

- universal for stairs and level ground because of its standard pneumatic tyres
- 24 Volt quick-change battery unit
- motor unit with electromagnetic brake and high-power gearbox
- 450 W drive unit with electromagnetic brakes
- electronic power switch with integrated overload protection (This is re-switching on automatically)
- crank drive with sliding clutch against mechanical overload
- model MTK 310 standard with automatic brake on the main wheels
- the support wheels are permanently braked
- easily balanced because of the wide possible angle of inclination
- small turning radius (important on narrow stair landings)
- also well-functioning on (roomy) winding stairs

2.2 SAFETY MEASURES

1. Start exercising with a low-weight load only. As soon as you are perfectly handling the system of LIFTKAR, you can increase the weight up to full load.
2. Keep out of the danger area beneath the cargo.
3. The load has to be fastened at the frame of LIFTKAR by the strap bar.
4. Lifting the load on level ground (that means without steps) only by switching direction UP (see picture A, chapter 4). Till maximum height is reached! Descending by switch direction DOWN (see picture A, chapter 4).Do not descend by switching direction UP: that means: After having reached the maximum height the switch direction UP must not be used further, as undesirable accelerations could occur.
5. For maintenance work and repairing you must remove the battery unit.
6. Wear only working clothes and shoes in due order to avoid injuries and accidents caused by stumbling over or being caught.

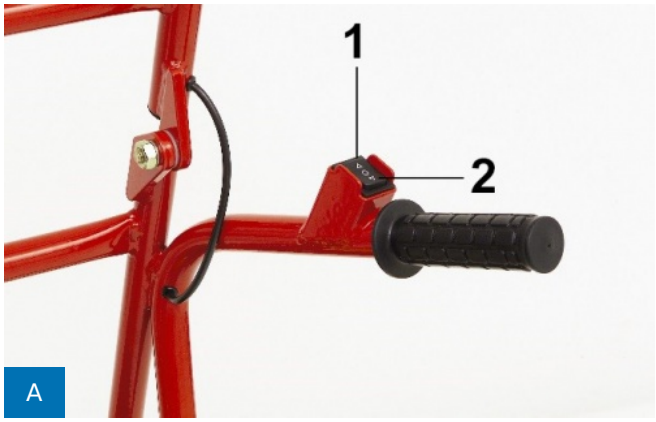
3 STARTING OPERATION

Put the charged battery unit in its place and insert the plug.
The yellow control LED at the cover of the motor unit is lightning.

The crank drive system is switched on by pressing the tumbler switch at the upper or lower handhold (see picture A).

Always pull out the plug after use!

If the plug socket remains inserted more than 24 hours, there is a risk of discharging too much and the batteries could be permanently damaged.



1: Down - 2: Up

3.1 SYSTEM OF GOING DOWNSTAIRS

(Pictures in order 1 to 6)

Moving to a safe distance from the step margin - (4-10 cm distance wheel shaft to step margin) then STOP! Actuate the switch (arrow forward).

The crank drive system with the small support wheels moves forward and reaches over to the next step below. As soon as LIFTKAR is lifting, the permanently braked support wheels pull the hand truck forward over the step margin and LIFTKAR is descending under controlled balance.













IMPORTANT

1. Moving to 4 - 10 cm to the step margin and STOP!
2. As soon as LIFTKAR is lifting, let it go. Do not pull back too strongly!
3. On winding stairs: LIFTKAR has to be turned a bit on each step so that both wheels are stopped at the same distance from the step margin.

GENERAL REMARK

Always try to find the balance.
As soon as you have this under control you will see, how easy it is to work with LIFTKAR.

3.2 SYSTEM OF GOING UPSTAIRS

(Pictures of chapter 4.1 in order 6 to 1)

Pull back to the step margin of the next step above. By actuating the switch (arrow backward) the crank drive with the support wheels is extending backward and is lifting LIFTKAR to the next step above.

1. Always pull back to the step margin. On winding stairs both wheels have to be pulled back to the step margin on each step. After short exercising the switch could be pressed permanently making it possible to work permanently and quickly.
2. Minimum tire pressure 2.5 bar.

4 AUTOMATIC BRAKE

For the LIFTKAR model MTK 310 the automatic brake on the main wheels is part of the standard equipment.
For the model MTK 190 this brake is available as additional accessory.
It can be built in afterwards.

There are 3 positions of the brake:

1. Free-wheel brake (backward free-wheel / forward braked) for going upstairs safely.
2. Neutral position for driving on level ground.
3. Automatic brake at the step margin for going downstairs safely.

Switching on the free-wheel brake from the neutral position:



Push by foot



... or by hand

IMPORTANT
Minimum tyre pressure 2.5 bar because of ground clearance.

Switching on the step margin-brake from the neutral position:



Push up the handle



LIFTKAR braked at the step margin

IMPORTANT

1. When the step margin-brake is switched on, do not make strong turnings on level ground or on stair landings.
   On rough ground or at grated stairs there could occur damage to the plastic running wheels of the brake.
2. If you pull LIFTKAR back too much when going downstairs, it is possible that the step margin brake will continuously brake on stairs with low steps.
   To release the brake you have to put LIFTKAR in a more upright position.

From step margin-brake back to neutral position:



Push the back wheel of the brake forward



Turning further by foot or hand to neutral position.

(Then the middle wheel of the 3 brake wheels is stopped by a cam on the frame- when turning the brake anti- clockwise.)

From the free-wheel brake back to neutral position:



Switching the brake back to neutral position by foot or by hand.

IMPORTANT

If you want to go upstairs with the brake switched on, the brake has to be switched on before you pull the LIFTKAR to the first step margin. If you pull the wheels to the step margin first and then switch on the brake it may occur that the brakes spring back to neutral position.

Note:
If there is too little ground clearance for the foot, then lift LIFTKAR a bit by the lifting system.

5 OPERATING INSTRUCTIONS



For high loads such as drink dispensers



For low loads such as washing machines



For easier lifting of heavy loads put the shaft of the supporting wheels backward. Then push the foot on it!



Stop position at the stair

IMPORTANT

When going down with inclined frame, please note: You are still standing on the stair landing, holding the upper handholds. The lifting system is strongly inclined backwards. On higher steps this may cause that the supporting wheels do not touch the next step below immediately. Therefore LIFTKAR cannot be lifted from the upper step to the next step below. Then the supporting wheels are partially already moving backwards. So the cargo is not lifted completely. The handtruck could move downwards uncontrolled to the next step below. When starting to go downstairs it is therefore important to hold the handtruck as upright as possible and keep the balance. This situation should definitely be exercised on the spot.

The point of balance can be changed by inclining the frame. Please take care that the working angle of the lifting system is changed as well when inclining the frame. This makes the maximum step height lower. This is also important when you are already on the stair landing and the handtruck still has to go up the last step.

6 GROUPS OF ACCESSORIES

Accessories I - standard
Accessories II - additionally available

6.1 ACCESSORIES I

6.1.1 QUICK-CHANGE BATTERY BU

The quick-change battery unit includes 2 pieces of gel-sealed, maintenance-free lead batteries 7 Ah-12V which are connected in series. Maximum charging current: 2.7 Ampere. Lead batteries are continuously discharging a bit even when they are not used. Therefore it is recommended to recharge the batteries once a month even when they are not used. If the batteries of the battery unit have to be exchanged, it is absolutely necessary to connect „+“and „–“correctly. In case of wrong connection the electronic power switch will be damaged.



6.1.2 BATTERY CHARGER



The battery charger supplied is extremely powerful. An LED display gives a clear indication of charging status. The charge indicator gives you an idea whether the battery pack is fully charged or not. It is worth checking that the battery pack is fully charged before using the Liftkar.

Technical data

- Mains voltage supply (50/60 Hz, 0,7A): 100-240 V AC
- Nominal rating (input): 24 W
- Charging voltage: 24 V DC
- Theoretical charging current: 1,0
- Protection class: IPX4
- Safety approval: UL, cUL, CE

The charge status is displayed as follows by a LED:

- If the LED is lit continuous red the battery pack is being charged.
- If the LED is lit continuous green the battery pack is fully charged. The charger can be left connected to the batteries after full charge (green light), without harming the batteries. The charger uses minimum power in this stand-by mode, (after battery is fully charged), maintains the batteries at full charge and extends battery life. This is accomplished with electronic circuitry that controls and regulates the amount of charging current that is sent from the charger to the battery being charged

SAFETY GUIDELINES

Please note the following:

- Protect against damp
- Only charge in a well ventilated room
- Do not pull the plug out of the socket by its cord
- Do not operate charger with damaged cord or plug - replace immediately!

6.1.3 USE ONLY FOR THE PURPOSE INTENDED

- The charger unit is designed exclusively for charging **lead-acid batteries containing liquid, gel-type and fabric-type electrolyte**
- It is not permissible to charge NiCd or NiMH batteries or primary cells.

6.1.4 FASTENING STRAP WITH RATCHET-DRILL + PLASTIC- COVERED HOOK MODEL SB 3.5 M

For quick, reliable fastening of the load.



6.2 ACCESSORIES II

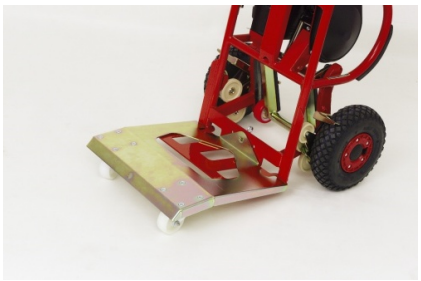
1. **Quick battery charger BC 10-30 VDC**
   It makes the continuous use of LIFTKAR possible by recharging in the truck or van. Even when the motor is not running, the batteries can be charged. The time for one full charge is 4-8hours. This battery charger is specially made for the capacity of the batteries, that means that the required charging current and charging voltage are never exceeded.(Direct charging by 24 Volt electric tension of the truck would reduce the durability enormously because the generator capacity of the truck is too high for these small batteries.)



2. **Shovel attachment with 2 swivel castors model SA**
   It is simply fixed to the shovel and secured by a spring cotter.
   Under the edge at the front there are 2 swivel castors; made from nylon (75x32 mm).The transport of bulky and heavy loads is made much easier. The load remains a bit tilted. On level ground you can go on 4 wheels. The turning on narrow stair landings is easy and safe.

a. shovel-attachment model SA-F: depth = 400 mm
   standard

b. shovel-attachment model SA-LF: depth = 500 mm
   for bulky loads, with the centre of load situated in the front.



7 TROUBLESHOOTING GUIDE AND REMEDIES

ATTENTION

1. LIFTKAR handtruck must only be repaired by trained personnel!
2. The battery unit has to be removed from the handtruck during repair!

Problem	Reason	Remedy
Electronic overload- protection is switching on	Battery is discharged	Change battery unit or wait a few minutes. Then try again to press the switch at the hand hold.
	Overload	Let the handtruck cool down15 to 30 minutes
After inserting the plug in the battery unit the motor does not run and the electro- magnetic brake does not release	The fuse in the battery is burnt through	Check the fuse or try with 2nd battery unit
	The plug socket does not have a good contact	Stecker ersetzen. Change the plug socket. Take care: "+" und "–"have to be placed correctly, otherwise the electronic power switch would be damaged
	The brake does not release, therefore the overload protection is switched on	Check the wires of the brake at the motor.
LIFTKAR does not lift straight	Different tyre pressure	Correct the tyre pressure
When going upstairs the main wheels are descending very narrow to the step margin	Tyre pressure is too low	Correct the tyre pressure

8 MAINTENANCE

In order to guarantee the operability and safety of LIFTKAR, it is recommended to have a check made by trained personnel once a year, if the LIFTKAR is regularly used.

A. **Lubrication chart**
   1. Rod-end bearing at the crank drive
   2. 2 pieces of main wheels

B. **Chain drive**
   1. Check the tension of the chain.
   2. Lubricate the chain only slightly with chain grease.
   (Do not use oil because the oil could reach the sliding clutch, this would cause a decrease of the torque.)

C. **Check of the coal brush**

D. **Battery check on damages of the covering.**

8.1 DIRECTIONS FOR USING THE BATTERIES

The batteries of the stairclimber are completely closed, maintenance-free gel- sealed lead batteries. 2 units with 12 V each connected in series. Recycling like car batteries.

- For unrestricted functionality, the cell temperature of the battery must always be kept above 0°C. Therefore, we recommend storing the battery between +5°C and +25°C.
- Operating and charging temperature

		lead-gel battery	Stair climber
Operating temperature	°C	-10 ... +40	-10 ... +40
Charging temperature	°C	-10 ... +40	-

NOTE

The battery is lasting very long, if you pay attention to the following:

- Charge the battery unit after each use.
- Use only the original battery chargers. These are charging with the right tension and current Overcharging is not possible with these battery chargers.
- If the stairclimber is not used for a longer time, charge the battery unit at least once a month.
- Never discharge the battery unit completely. In case of a decrease of capacity take a full-charged battery unit for further working. Charge the discharged battery unit immediately.
- The best temperature for charging is room temperature.
- Keep the battery unit dry and cool.

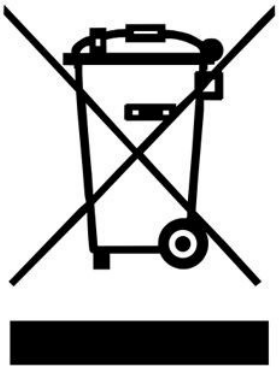
9 DISPOSAL

Liftkar MTK stairclimbers are durable products. At the end of their useful life the stairclimber components and charger should be disposed of properly. Make sure the materials are separated carefully for disposal in line with the material codes relating to each component.

The stairclimber does not contain any hazardous materials and is fully recycling-compatible. The printed circuit boards and the rechargeable battery must be disposed of using a suitable recycling process.

Do not simply dispose of the battery pack in a household dustbin, however. If there are any further questions, please ask your specialist dealer.

Sano can organise professional disposal of the whole stairclimber unit, against payment, if required.



10 LIABILITY / PATENTS

10.1 LIABILITY

SANO Transportgeraete GmbH is not liable as manufacturer for any damage to the LIFTKAR MTK:

- the LIFTKAR MTK is used for a purpose for which it is not intended.
- repairs, installation or other work have been carried out by unauthorised persons.
- the instructions in this manual are not complied with.
- non-Sano components are fitted or linked to the LIFTKAR MTK.
- original components are removed.
- Recommendation for Training
  The manufacturer recommends attending product training conducted by a qualified person. **Liability disclaimer:** Failure to undertake the recommended training absolves the manufacturer of any liability for damages to the device, personal injury, or property damage resulting from improper or incorrect operation.

Please contact us for a list of authorised Sano service centres.

10.2 PATENTS

European patent

11 CE DECLARATION OF CONFORMITY

SANO Transportgeraete GmbH declares that the LIFTKAR MTK stairclimber fully complies with the relevant health and safety specifications laid down in the EU directive for machines 2006/42/EG, appendix IIA. Any changes made to the product without our prior consent render this declaration void.



Jochum Bierma (Ing.), Managing Director

NOTES

CONTACT

SANO Transportgeraete GmbH
Gewerbezeile 15
4040 Linz, Austria

Phone: +43 7239 51010 100
Fax: +43 7239 51010 001

office@sano.at

SANO Deutschland GmbH
Geigelsteinstraße 10
83080 Oberaudorf
Germany

Tel. +49 8033 / 308 96 0
Fax +49 8033 / 308 96 17
info@sano-treppensteiger.de

www.sano-treppensteiger.de

SANO UK Powered Stairclimbers Ltd.
Bristol Court, Betts Avenue
Martlesham Heath
Ipswich, Suffolk / IP5 3RY, England

Tel. +44 1473 / 333 889
Fax +44 1473 / 333 742
info@sano-uk.com

www.sano-uk.com

Subject to updates / LIFTKAR MTK 2022-04