

## **Model series**

**Lipo Smart**

**Smart Wild**

**Smart Dynamic**



# **Additional operating instructions**

## **R&E Stricker Reha-Entwicklungen GmbH**

This supplementary instruction manual for the Lipo Smart and Smart Wild series supplements the general instruction manual

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## **Notice to reader**

For reasons of readability, the masculine form has been chosen in these operating instructions; nevertheless, the information refers to members of all genders.

Misprints, errors and price or product changes reserved. Product changes include, but are not limited to, changes resulting from further development of mechanics, software or legal requirements.

Stand: 15. Mai 2023

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# 1 Declaration of Conformity



The device complies with the current standards and guidelines of the EU. We certify this in the EC declaration of conformity. If required, we will be happy to send you the corresponding declaration of conformity. Our power assist devices have been tested by means of an electromagnetic compatibility test (EMC).

In the event of a change not agreed with R&E Stricker Reha-Entwicklungen GmbH, this declaration shall lose its validity. We confirm that our products (electric traction devices and hand-operated wheelchair traction devices - Stricker Handbikes) comply with the essential requirements according to the new Regulation (EU) 2017/745 (MDR) or the Medical Devices Act. The documentation of the manufacture is available at the company 3. The company R & E Stricker Reha-Entwicklungen GmbH bears the sole responsibility for issuing the declaration of conformity.

## DECLARATION OF CONFORMITY (CE, MDR)

You can find it on our website at: <https://www.stricker-handbikes.de/en/about-us/certificates>

### 1.1 Legal regulations

Stricker manual and hybrid handbikes comply with the following technical standards:

- ▶ ISO 7176-8 Requirements and test methods for static, impact and fatigue strengths.

The device complies with the current standards and guidelines of the EU. We certify this in the EC declaration of conformity. If required, we will be happy to send you the corresponding declaration of conformity. Our power assist devices have been tested by means of an electromagnetic compatibility test (EMC). Introductory notes

## WARNING

Before operating the handcycle or power assist device, please read these operating instructions and all other supplied operating instructions carefully and observe them.

## WARNING

Visually impaired persons or persons with cognitive impairments must have the information material and operating instructions read aloud by assistants. Corresponding documents are available on our website [www.stricker-handbikes.de](http://www.stricker-handbikes.de) on the Internet. Videos and photos are also available there.

## SCOPE OF DELIVERY

Traction device or handbike, at least 1 lithium-ion e-bike battery with at least 1 charger (for traction device or hybrid handbike and depending on equipment), manual, quality certificate, position clamps, 6mm Allen key, for adjustable handlebar 5mm Allen key, rear lights for wheelchair, delivery bill, possibly accessories (such as weights), Possibly you will receive the battery in an extra package from another service provider as this is dangerous goods. TÜV documents for registration you will receive separately by mail.

## DEALER NOTICE

It is imperative that you hand over these operating instructions to each customer when handing over the handbike and expressly draw the customer's attention to the safety and danger instructions.

Never deliver a handbike without operating instructions!

### NOTE ON THE GENERAL INSTRUCTIONS FOR USE

This is the supplementary instruction manual for Lipo Smart series handbikes. It supplements the general instructions for use for the City, Ultra, Sport, Neodrives and Lipo Smart model series. It is essential that you read both operating instructions before using the handbike.

## 2 Product Description & Intended Use

The handbike is coupled to a manual wheelchair as an electrically assisted manual traction aid. This allows the rider to be supported in his mobility. The aim is to extend the range of action by enabling longer distances to be covered more easily and independently. Coupling the handbike creates a three-wheeled vehicle with three relatively large wheels. The handbike therefore improves driving characteristics on uneven surfaces. Obstacles can also be overcome more easily. Driving downhill and on slopes becomes safer due to the additional braking systems. The handbike can be independently coupled to and released from the wheelchair by the rider. The wheelchair as such is not changed and its characteristics remain completely unchanged.

### 2.1 Identification and symbols



Fig. 1: Serial number label: The data shown here is for demonstration purposes only. For technical data of your handcycle or power assist, please refer to the appendix



Information about the manufacturer

	Year of manufacture
	Maximum gradient that can be climbed
	Maximum weight of the rider (user weight)
	The combination of handbike or traction device with wheelchair must not be used as a seat in a motor vehicle
	Observe warnings from the manual
	Read the manual
	The device is a medical device
	The device is CE compliant
	Lithium-ion battery included
	Recycle lithium-ion battery separately
	Do not dispose of battery in household waste

### 2.2 Indication and contraindication

#### 2.2.1 Indications

For people with neuromuscular diseases such as cerebral palsy, muscular dystrophy; for people with restricted movements such as paraplegia (paraplegia, tetraplegia), spasticity, amputations, coordination difficulties, difficulty walking, etc.

#### 2.2.2 Contraindications

Not suitable for people with visual impairment, epilepsy, severe hand and arm coordination disorder, or cognitive impairment.

### 3 Safety and driving instructions for accident prevention

#### WARNING

These instructions are for your own safety. Please read them carefully before using the handbike and follow the instructions! Failure to observe the instructions for use could result in damage to the product as well as serious personal injury. We accept no liability for damage resulting from failure to observe the operating instructions.

#### NOTE

Observe all safety and hazard information and instructions, both in this and in all other operating instructions supplied.

### 3.1 Safety instructions for battery and charger

#### WARNING

Before performing any repair, cleaning or maintenance tasks on the handbike, switch off the electrical components and remove the batteries from the handbike.

The batteries supplied are used exclusively to operate the drive systems of the handbike. Do not connect any other systems to the battery. Any use beyond this requires the written approval of the manufacturer. All information is state of the art at the time of printing. Cases of misuse include:

- Use of the battery contrary to the description and instructions in the user manual.
- Use of the battery in excess of the technical performance limits
- Technical modification of the battery
- Modification of the battery software
- Use of the battery to supply other systems

We accept no liability for damage in the event of misuse.

#### HEALTH INFORMATION

In case of contact with leaking gases, supply fresh air. In case of body contact with battery fluids, rinse the affected body part with plenty of water. In case of contact with mucous membranes or discomfort, consult a physician.

#### 3.1.1 Operation

Make sure that the batteries are firmly seated in the holders provided and lock the batteries. This applies especially if you have previously removed the batteries from the power assist device for charging.

Observe the battery temperature on the display during extreme uphill travel. The temperature must not exceed 45 °C. To prevent overheating, take an operating break to relieve the batteries.

Only operate the battery in ambient temperatures between -20 °C and 50 °C. Operation outside the temperature range shortens the service life of the battery and poses a risk of ignition.

Do not subject the battery to shocks. If the battery has been dropped or has taken a knock, the battery must be checked by the manufacturer. Contact your dealer or the manufacturer for return and repair/disposal procedures. This also applies to otherwise damaged or defective batteries. Never continue to use a damaged or defective battery. Do not open the battery yourself.

Keep the battery dry and clean. Protect the battery against the ingress of moisture or foreign particles. Do not connect the battery's contacts to metallic or other conductive objects. Keep the battery away from small metallic objects such as screws, coins, paper clips, keys or similar to avoid a short circuit. Clean dirty contacts with a dry, clean cloth only. Do not immerse the battery in water.

If you notice that the battery is overheating, leaking, smoking, emitting an unusual odour or deforming, stop using the battery immediately and switch it off.

Protect the battery from heat and open fire (radiators, microwaves, ovens, strong sunlight). Exposure to heat can cause ignition and explosion.

Do not open the battery casing. Do not disassemble the battery. Damage to the battery cells or contact with oxygen can cause fire and explosion. Opening the battery will void the warranty.

## FIRE FIGHTING

Do not attempt to extinguish lithium-ion batteries with water or other liquids in the event of a fire. Sand is recommended by battery cell manufacturers as the only extinguishing agent. There is a risk of explosion in the event of a fire.

Extinguish lead-gel batteries with water, foam or CO<sub>2</sub>. Dangerous gases may be formed in a fire involving lead-gel batteries. Do not breathe in the gases under any circumstances.

### 3.1.2 Charging process

#### WARNING

Do not leave the battery unattended during the charging process.

Only charge the battery at temperatures between 0 and 40 °C. A charging process outside the temperature range is automatically aborted by the battery. To optimize the service life, charge the battery at temperatures of 10-30 °C.

Charge the battery in a sufficiently ventilated, dry and dust-free environment. Ensure sufficient air circulation during the charging process.

Do not charge the battery near flammable substances (solids, liquids, gases).

Protect the battery from moisture during the charging process. Do not charge the battery in rooms where water could condense on the battery or the charger. Only use the charger when it is completely dry. If condensation has formed, allow the charger to dry completely before charging.

Only use the charger supplied to charge the battery. Using any other charger may cause malfunction, damage, defect, ignition or explosion. Do not charge the battery with a defective charger. Replace a defective charger immediately.

Do not use a charger that has been knocked or dropped. Do not open or repair the charger yourself.

Do not charge damaged batteries.

Avoid unnecessary charging and do not charge the battery for a long time when not in use.

The battery charging process is automatically terminated as soon as the battery is fully charged. You can recognize the end of the charging process by the status light on the charger, which lights up

in red during the charging process and in green in standby mode. After the charging process is complete, first disconnect the charger from the mains socket and then from the battery.

Do not carry the charger by the mains cable or the charging cable. Do not pull on the mains cable to disconnect the charger from the mains socket. Do not subject the cables and plugs to pressure or pinch the parts. There is a risk of electric shock or ignition.

Position the charger so that no one can step on or trip over the cable or charger. Also protect the charger and all related components from other harmful influences or stresses.

### 3.1.3 Storage

Do not store the batteries in places that are exposed to heat for long periods of time (sunlit car boot, garden shed, etc.). The service life of the battery depends, among other things, on the storage conditions.

Only use your car for transport, not for storing or keeping the battery.

For optimum service life, store the battery at 18-23 °C and a maximum humidity of 80 %. Do not expose the battery to moisture (rain, snow, etc.) during storage.

Charge the battery before storage according to the specifications of the respective battery. Check the charge level at least every three months and recharge the battery if necessary. („3.1.3 Storage“)

Ensure that the battery is stored away from damage and unauthorised access.

Store the battery out of the reach of children.

### 3.1.4 Environments with other electrical devices

Please refrain from driving near strong electrical interference fields. These could affect the driving performance characteristics of the product, such as display flickering or reduction of motor power.

The handcycle or traction device may affect electronic magnetic fields from other devices or equipment such as theft barriers in stores.



## 4 Operation

### WARNING

Switch off the battery when coupling or uncoupling from the wheelchair and maneuvering or, alternatively, turn the speed controller on the handlebar to 0 to prevent unintentional driving off when moving the cranks.

### 4.1 Lipo Smart model series

#### 4.1.1 Start driving

### NOTE

Unpacking and installation video can be found on [www.stricker-handbikes.de/installationsupport](http://www.stricker-handbikes.de/installationsupport)

### WARNING

When parking the traction unit, always remove the key for the key switch to prevent unauthorised use of the unit.

Switch on the battery using the main switch on the battery. You will know that the battery is on when the light on the battery is on (**Fig. 2**)

Turn the key switch with the key to the „ON“ position . Remove the key and stow it securely so as not to lose it while driving (**Fig. 3**).



Fig. 2: Battery

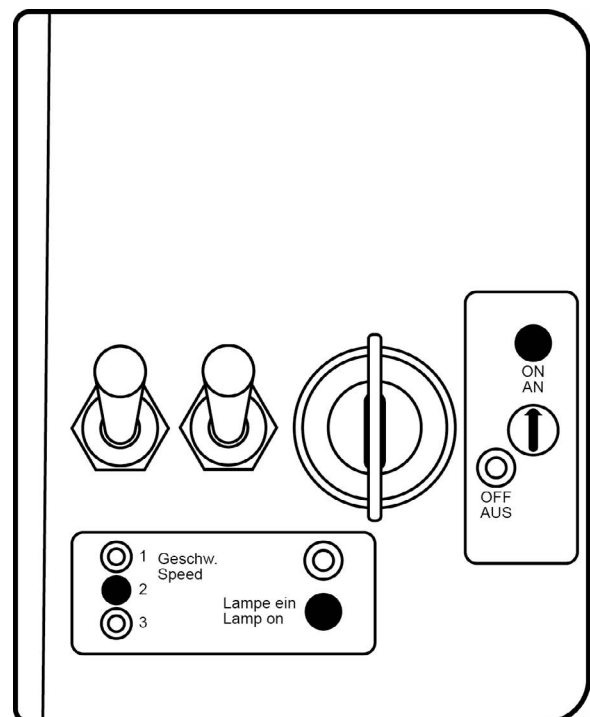


Fig. 3: Lipo Smart control unit „ON“ position



### 4.1.2 Lipo Smart Para

On the left ergo grip you will find the thumb throttle for speed control above the grip surface. Depending on the version, you can use the thumb throttle to drive 6 or 25 km/h without cranking assistance. If you start cranking, the thumb throttle is deactivated. You can now set the speed using the control on the handlebar. The handbike will then travel at the set speed regardless of how hard you crank.

The brake lever on the left ergo handle automatically interrupts the electronics of the drive when actuated. Therefore, you cannot simultaneously operate the left brake lever and accelerate with the thumb throttle. The brake lever also has a locking mechanism. Use this to use the brake as a parking brake.

The brake lever on the right ergo handle has no breaker contact. You can use the right brake lever to start uphill.

Always use both brake levers for braking.

### 4.1.3 Lipo Smart Tetra

You can adjust the speed via the control knob to the chin control.

For easier starting, press the button of the starting aid for one second. The handbike then supports the starting process for two seconds with the preset speed setting.

The Lipo Smart has a coaster brake. Activate it by turning the cranks of the handbike backwards. The exact function of the coaster brake is explained in the general instructions for use in chapter.

If your Lipo Smart Tetra is equipped with thumb throttle in addition to the speed control for chin control, this functions according to „4.1.2 Lipo Smart Para“.

### 4.1.4 Starting uphill

If you have stopped on an incline and want to start again, you may roll backwards and not be able to start. To be able to start despite the incline, lean forward to put more weight on the front wheel. Press and hold the left brake lever. Now carefully accelerate at the same time. Reduce the pressure on the brake as you slowly apply more throttle. As soon as you feel that you are moving in the direction of travel, you can release the brake completely.

### 4.1.5 Display of the charge level

You can check the battery charge level at any time using the LED display. To do this, press the button on the top of the battery. The charge level is also shown on the left display.

### 4.1.6 End of ride

Turn the speed control knob on the handlebar to 0 to prevent unintentional driving off when moving the cranks.

Turn the key switch with the key to the „OFF“ position. Remove the key and stow it away safely (Fig. 4).

Turn off the battery with the main switch on the battery. You will know the battery is off when the light on the battery goes out.

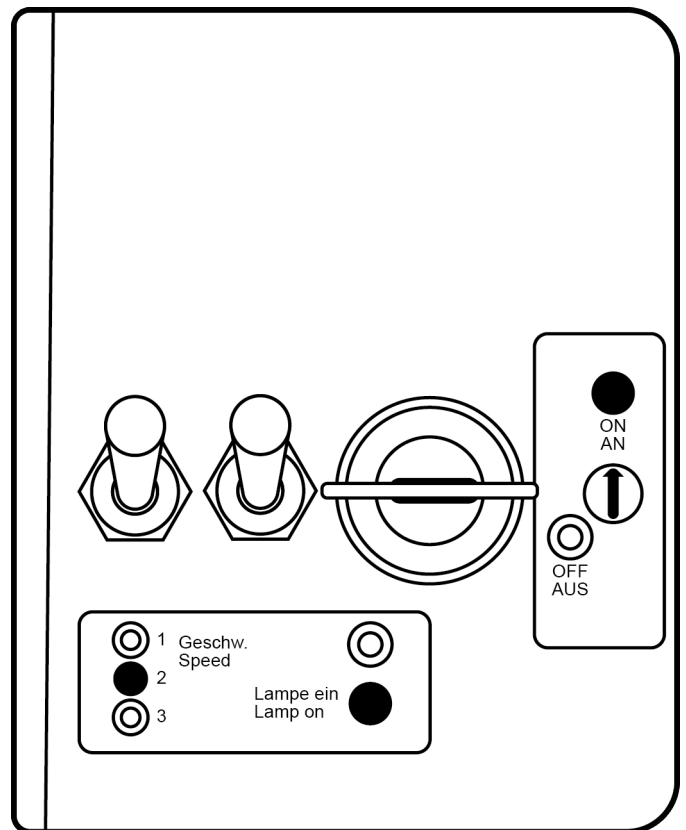


Fig. 4: Lipo Smart control unit position „OFF“

### 4.1.7 Optional equipment: 2 Lipo batteries with 2 change-over switches

This optional equipment for the Lipo Smart gives you a towing unit with two batteries on the fork and a control box with two linked toggle switches. The standard battery holder on top is omitted with this equipment.

You cannot operate the two batteries in parallel. Use the two switches to toggle the batteries and the display. Always switch both switches at the same time. Make sure that both switches are in the same position at all times.

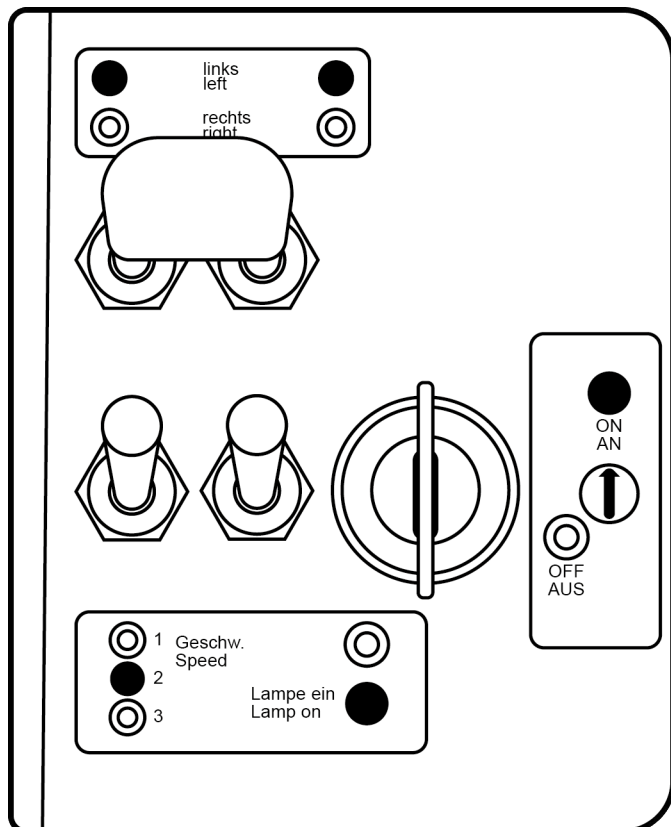


Fig. 5: Battery left switched on

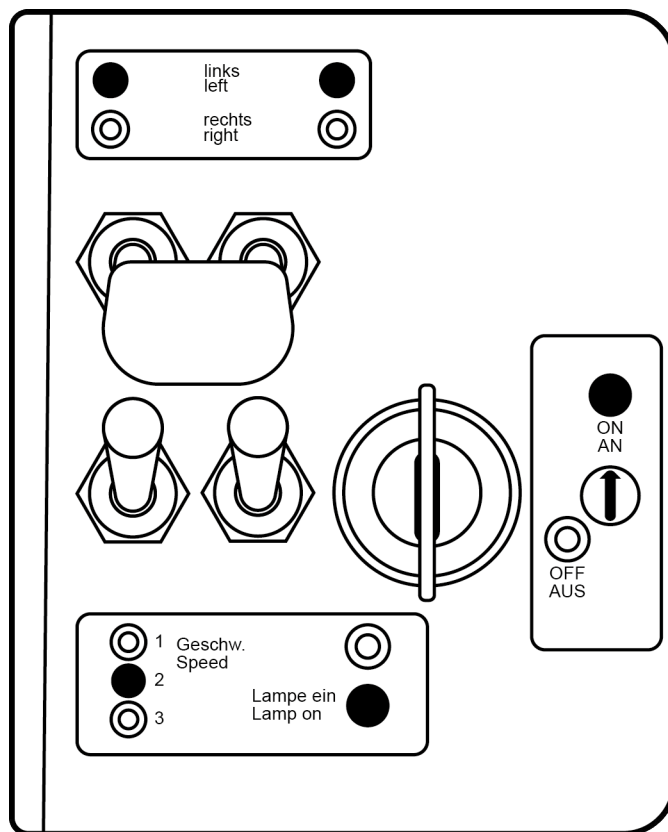


Fig. 6: Battery right switched on

#### 4.1.8 Special equipment: 3 Lipo batteries with 4 switches

With this optional equipment for the Lipo Smart, you receive a towing device with two additional batteries on the fork and a control box with four toggle switches.

You cannot operate the batteries in parallel. With the two left-hand switches you switch the batteries and the display from left to right or vice versa. Use the two right-hand switches to switch the operation from the standard battery to the batteries on the fork or vice versa. Always switch two switches at the same time. Make sure that the left or right switches are switched to the same position at all times.

Fig. 7: Battery on top switched on

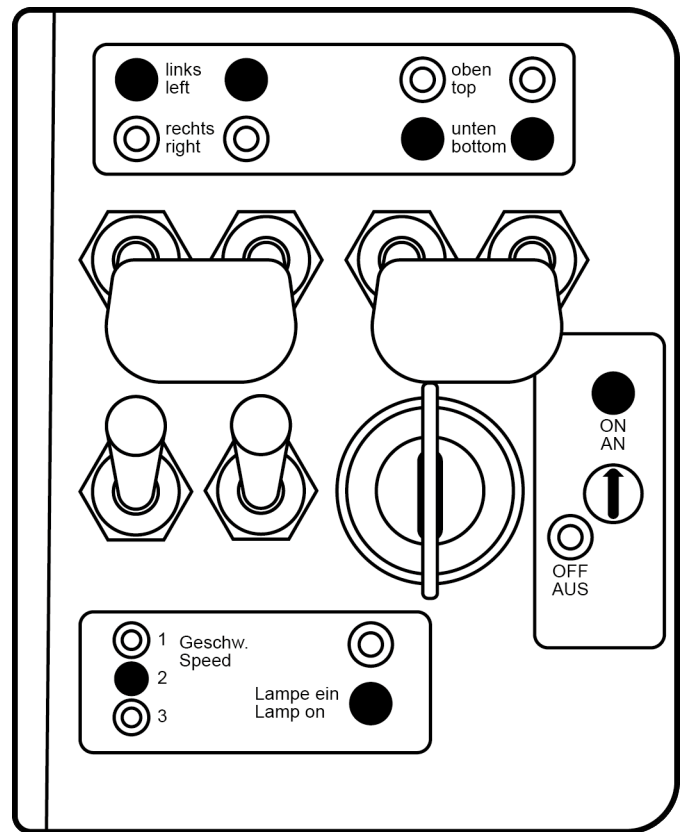
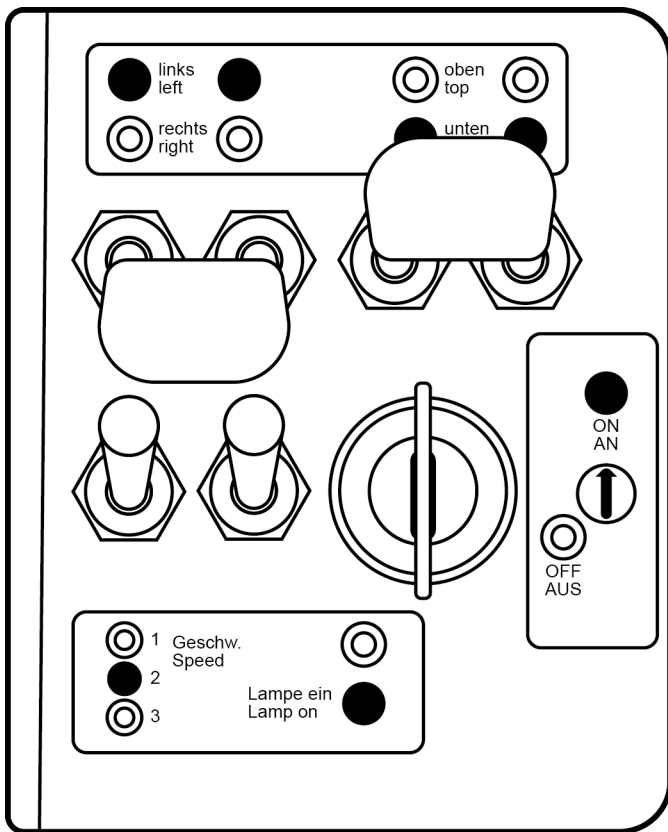


Fig. 8: Battery bottom left switched on

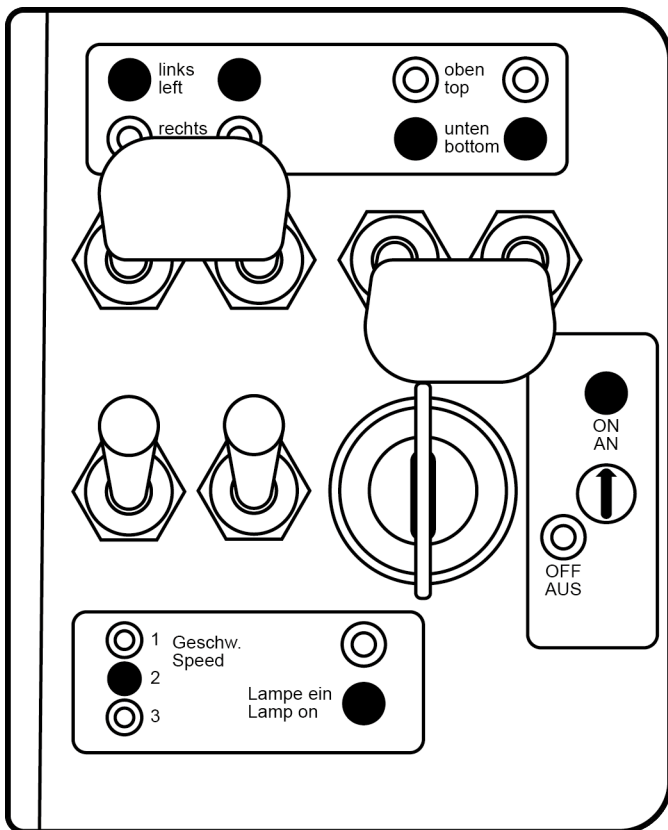


Fig. 9: Battery bottom right switched on

## 4.2 Smart Wild model series

### 4.2.1 Start driving

#### NOTE

Unpacking and installation video can be found on [www.stricker-handbikes.de/installationsupport](http://www.stricker-handbikes.de/installationsupport)

#### WARNING

Always remove the key for the key switch when parking the handcycle to prevent unauthorized use of the unit. Make sure the battery is properly engaged and locked before you begin riding. Remove the key and store it securely to prevent the key from interfering with the chain or opening the lock while riding. You otherwise risk loosening the battery while driving.

Slide the battery onto the holder from above and lock it with the key. You can check the charge level indicator on the battery (Fig. 10).



Fig. 10: Battery charge level indicator

Switch on the battery with the main switch on the battery. Turn the key switch with the key to the „ON“ position. You can remove the key of the control unit only when it is switched off. Close the shutter of the charging port as well as the USB port to prevent dirt and water from getting inside. The USB port is not intended for charging USB devices. Please use the USB port on the display for this purpose (Fig. 11) (Fig. 12).



Fig. 11: Switch on the battery



Fig. 12: Key switch on battery and control

Switch on the control unit on the control panel. The on switch with the on/off symbol is located slightly highlighted in the center of the control unit. You cannot remove the key when the control is switched on. (Fig. 13).

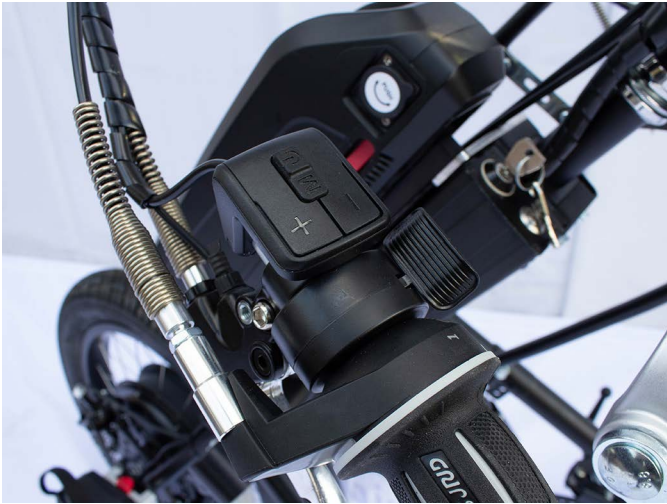


Fig. 13: Control unit on the left handle

Press and hold the on/off switch on the control unit for 3-5 seconds until the Stricker logo appears on the display. The +/- keys on the control unit are used to control the speed levels 1-5. These are shown on the display under the speed indicator. Press the thumb throttle to accelerate (Fig. 13)(Fig. 14).

The push assist can be activated by holding down the „-“ key on the control unit. This causes the handbike to move at a speed of 5km/h as long as the key is held.



Fig. 14: Display on the handle

On the left ergo grip you will find the thumb throttle for speed control above the grip surface. With the thumb throttle you can drive 6 or 25 km/h depending on the version without assistance by cranking. If you start cranking, the thumb throttle is deactivated. You can regulate the support level on the control unit. The handbike will then travel at the set speed regardless of how hard you crank.

The current battery charge level can be read from the upper right corner of the display. The number next to the state of charge describes the battery voltage in volts. (Fig. 14).

A reliable reading of the charge status is not possible while driving. Please stop for this purpose. The following maximum values are given:

State of charge indicator	Residual capacity of the battery
	100 %
	80 %
	60 %
	40 %
	20 %
	0 %

From a state of charge of 20 %, the state of charge indicator of the display changes and signals the minimum state of charge in red.

It is essential to read off the state of charge before starting the journey. If it is in the red range, the journey must not be started or must be ended immediately and the battery connected to the charger. With the first warning level of the state of charge (20 %), a range of at least 5 km is possible. However, this depends strongly on the factors topology, weight of the driver, tire pressure, ground conditions and battery condition.

The pushing aid can be activated by holding down the „-“ key on the control unit. This causes the traction unit to travel at a speed of 5 km/h as long as the key is held down.





Fig. 15: Bike computer reset

You can reset the travel data by simultaneously pressing and holding the +/- buttons on the control unit. This will set the daily mileage and driving time to 0 (Fig. 15).

If your display is equipped with a time, you can set it. Briefly press the M key twice in succession to access the display settings. Select the „Clock“ menu item there. Please note that the display only has a clock in some initially delivered variants.

You can reset the trip data by simultaneously pressing and holding the +/- keys on the control unit. This will set the trip odometer reading and the trip time to



Fig. 16: USB-Port on Display

The USB charging socket on the display can only be used when the system is switched on. To do this, remove the cover (Fig. 16).

#### 4.2.2 Controls light/horn and optional cruise control/reverse gear

To switch on the light on the handbike, press the red button with the light symbol on the left handle. Press the button again to turn the light off. Set the correct angle by tilting the headlight. Press the green button with the horn symbol to activate the horn (Fig. 16, Fig. 18).

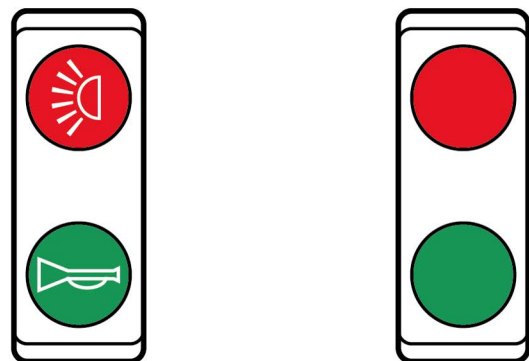


Fig. 17: Left: Light (red) and horn (green); Right: reverse gear (red) and cruise control (green).



Fig. 18: Adjustment of the inclination of the lamp with integrated horn

To activate reverse gear, press the red button on the right handle. Press the button again to disengage reverse gear. The activated reverse gear can be recognized by an acoustic signal (beeping) as well as the red signal on the control unit (reverse drive light) (Fig. 19).





Fig. 19: The reverse light on the control lights up when reverse gear is activated

The cruise control can be activated with the green button. When cruise control is activated, it saves your current driving speed and retains it. Pressing the button again will deactivate the cruise control. Pressing the brake with breaker contact (brake on the right handle) also deactivates the cruise control. Should you use the throttle handle while the cruise control is active, the handbike will not accelerate. If the throttle grip is turned back to the zero position after accelerating, this will deactivate the cruise control.

The optional cruise control can be used in conjunction with the assist levels (1-5) to maintain their respective maximum speed on any incline. To do this, select level 1, for example, and accelerate until the speed limit of the level is reached. If cruise control is now activated, the handbike will maintain the speed, even on inclines.

## WARNING

Use cruise control only when the traffic situation permits. Be ready to deactivate cruise control at any time with the brake with breaker contact.

## CRUISE CONTROL ON SLOPES

The cruise control only maintains the speed when driving on the flat or on inclines. The system does NOT brake on a downhill slope.

## 4.2.3 Recovery brake

### USAGE INSTRUCTIONS

Since the recuperation feeds energy back into the system, some usage instructions must be observed. If you ignore this, you run the risk of reduced battery life and a defect in the battery.

Your product is equipped with a recuperation brake, which feeds energy back into the battery during braking. Recuperation is initiated by pulling the right brake lever. Parallel to the recuperation, 2 disc brakes are available to you (Fig. 20).



Fig. 20: Brake lever with brake contact and initiation of recuperation (interrupter contact is only connected to the right brake lever.)

The brake lever on the left side of the handlebar has no breaker contact. You can use the left brake lever for starting uphill („4.1.4 Starting uphill“).

The recuperation brake may only be used with a completely intact battery. If your battery shows a defect, such as greatly reduced capacity, greatly changed voltage or external deformation, we advise against further use of the battery.

**NOTE ON USE**

If the battery is fully charged, it cannot absorb any regenerated energy. This means that the function of the recuperation brake is not available or only to a very limited extent when the battery is fully charged. The controller may prevent recuperation. It can happen that the recuperation brake is suddenly switched off by the controller while driving (e.g. during braking) because the battery has reached its state of charge limit. This means that you have to provide all of the braking power via the disc brakes and therefore pull the brake levers more strongly. For safety reasons, we recommend that you always carry out a longer and steeper descent with the system switched on and the recuperation brake activated.

If you charge the device before a long and steep downhill descent, the charging process should not be fully completed so that the recuperation brake works during the descent.

features that are not compatible with our system. Please note that your warranty claim will be void if an incompatible battery causes a defect.

**4.2.4 Starting uphill**

If you have stopped on an incline and want to start again, you may roll backwards and not be able to start. To be able to start despite the incline, lean forward to put more weight on the front wheel. Press and hold the left brake lever. Now carefully accelerate at the same time. Reduce the pressure on the brake as you slowly apply more throttle. As soon as you feel that you are moving in the direction of travel you can release the brake completely. Please note that you may have a brake cut-off switch on one of your brake levers. If this brake lever is pulled, no motor power can be called up. Hold the other brake lever and operate the throttle grip or thumb throttle. This also applies to hybrid handbikes. Depending on the equipment, the brake lever with brake contact activates the recuperation brake of the motor.

**4.2.5 Battery change**

Only purchase batteries for your handbike from one of our certified Stricker dealers or directly from the factory. Our batteries might look similar to other e-bike batteries and might also fit on the bracket. Nevertheless, batteries might differ in technical

## 4.3 Model series Smart Dynamic

### 4.3.1 Start driving

#### NOTE

Unpacking and installation video can be found on [www.stricker-handbikes.de/installationsupport](http://www.stricker-handbikes.de/installationsupport)

#### WARNING

Always remove the key for the key switch when parking the handcycle to prevent unauthorized use of the unit. Make sure the battery is properly engaged and locked before you begin riding. Remove the key and store it securely to prevent the key from interfering with the chain or opening the lock while riding. You otherwise risk loosening the battery while driving.

Slide the battery onto the holder from above and lock it with the key. You can check the charge level via the charge level indicator on the battery (Fig. 21).



Fig. 21: Battery charge level indicator

Switch on the battery with the main switch on the battery. Turn the key switch with the key to the „ON“ position. You can remove the key of the control unit only when it is switched off. Close the shutter of the charging port as well as the USB port to prevent dirt and water from getting inside. The USB port is not intended for charging USB devices. Please use the USB port on the display for this purpose (Fig. 23).



Fig. 22: Switch on the battery



Fig. 23: Key switch on battery and control

Press and hold the „M“ switch on the control unit for 3-5 seconds until the Stricker logo appears on the display. The „</>“ keys on the control unit are used to control the support levels 1-5. These are shown on the display below the speed display. Use the left „<“ switch to increase the support level, and the right „>“ to decrease it. To switch off the device, press and hold the „M“ switch again for 1-2 seconds or switch off the system using the key switch on the motor controller. Finally, switch off the battery at the main switch (Fig. 24, Fig. 22).





Fig. 24: Hold on switch „M“ on control unit on left crank handle



Fig. 25: Boot logo appears on the display

### Push assist

The push assist can be activated by holding the right button („>“) of the control unit. This causes the handbike to travel at a speed of 6km/h as long as the key is held down (Fig. 26).

### Thumb throttle

On the left ergo grip you will find the thumb throttle for speed control above the grip surface. With the thumb throttle, you can drive 6-20 km/h without assistance from cranks, depending on the country-specific regulation. You can use the thumb throttle best for starting or maneuvering. But also

to keep low speeds comfortable. With the thumb throttle you can get the full power of the motor to start comfortably e.g. on a hill or at the traffic lights (Fig. 26).



Fig. 26: Thumb throttle and display control unit

### Troque control

The motor assistance is controlled by the rider's power input. A lot of power input at the crank results in a lot of motor support. The support levels on the display divide the basic support of the motor into 5 steps. The maximum speed of the motor can be reached in each assistance level. In assist level 1 a lot of power is needed to reach this. In assist level 5 only very little. The speed of the hybrid handbike can be adjusted with the user's own power or the „PAS mode“ (description follows). Assist levels: „1 - Eco, 2 - Normal, 3 - Tour, 4 - Power, 5 - Boost“ (Fig. 27).



Fig. 27: Display switched on

### PAS mode

Press and hold the thumb throttle while driving to continue driving without applying force. You only have to crank, but do not need to apply any effort. PAS mode can help when the rider's power reserves are exhausted. So in PAS mode, the Smart Dynamic pulls you without using any strength. Torque control is deactivated by this mode. The requirement is a pushed thumb throttle and constant crank movement. You can control the final speed with your thumb on the throttle. In PAS mode, the maximum speed can be reached (Fig. 26).

### Odometer and riding time

With the display on, briefly press the „M“ button to display the „Triptime“. „ODO“ shows the total mileage and cannot be reset. „Trip“ records the mileage from the last reset. To reset this as well as the trip time, press and hold both the „<“ and „>“ buttons, with the display on, for about 1-2 seconds. Then confirm the position „User Settings“ in the menu with the „M“ key. Then the position „Trip Distance and Trip Time Clearance“. Now use „<“ or „>“ to select „YES“ and confirm by pressing and holding the „M“ key. Now the odometer as well as the trip time is reset (Fig. 28).



Fig. 28: Reset odometer and riding time

### More display settings

Via „Unit Settings“ in the settings menu („<“ and „>“ press simultaneously) the unit can be changed from KM/H to MP/H. „Backlight Contrast“ controls the brightness of the display. „Automatic Shutdown Time“ controls the automatic shutdown time of the display in case of inactivity. The default setting is 10 minutes. System settings cannot be changed by the user and are password protected. The speed and power of the hybrid handcycle can only be changed in the motor controller and not via display settings. This is only possible at the factory, through a field service representative or a Stricker distributor.

### USB charging function on the display

Devices such as smartphones can be charged via USB when the display is switched on. Remove the protective cap on the right side of the display. If the USB port is no longer needed, close it again with the cap. The charging function affects the range (Fig. 29).



Fig. 29: USB port on the display

### Battery indicator

The current battery charge level can be read from the upper left corner of the display.

A reliable reading of the charge status is not possible while driving. Please stop for this purpose. The following maximum values are given:

State of charge indicator	Residual capacity of the battery
	100 % - 52 V
	80 % - 49 V
	60 % - 47,5 V
	40 % - 46 V
	20 % - 44,5 V
	0 % - 42 V

From a state of charge of 20 %, the state of charge indicator of the display changes and signals the minimum state of charge in red.

At a battery level of 5%, the system starts to stepwise reduce the maximum motor power. At 0% battery level, there is no longer any motor support. This protects the battery, as high motor currents

are no longer permitted when the charge level is below 5%. This protection mode limits the motor power.

It is essential to read off the state of charge before starting the journey. If it is in the red range, the journey must not be started or must be ended immediately and the battery connected to the charger. With the first warning level of the state of charge (20 %), a range of at least 5 km is possible. However, this depends strongly on the factors topology, weight of the driver, tire pressure, ground conditions and battery condition.

### Motor overheating

The Smart Dynamic is equipped with a geared motor. This also allows slow uphill travel without quickly overheating. The temperature of the motor is constantly measured and allows early regulation before the motor is damaged. The regulation stepwise switches down the power of the engine. In case of high overheating, the engine power can also be completely interrupted. This is highly dependent on weight, topology, speed and own power. If the overheating protection has been activated, stop briefly and allow the system to cool down before resuming the ride.

### 4.3.2 Light and horn controls

To switch on the light on the handbike, press the red button with the light symbol on the left handle. Press the button again to turn the light off. Set the correct angle by tilting the headlight. Press the green button with the horn symbol to activate the horn (Fig. 30, Fig. 31).

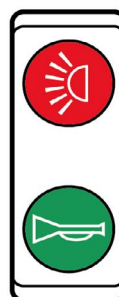


Fig. 30: Left: Light (red) and horn (green)





Fig. 31: Adjustment of the inclination of the lamp with integrated horn

### 4.3.3 Starting uphill

If you have stopped on an incline and want to start again, you may roll backwards and not be able to start. To be able to start despite the incline, lean forward to put more weight on the front wheel. Press and hold the left brake lever. Now carefully accelerate at the same time. Reduce the pressure on the brake as you slowly apply more throttle. As soon as you feel that you are moving in the direction of travel you can release the brake completely. Please note that you may have a brake cut-off switch on one of your brake levers. If this brake lever is pulled, no motor power can be called up. Hold the other brake lever and operate the throttle grip or thumb throttle. This also applies to hybrid handbikes. Depending on the equipment, the brake lever with brake contact activates the recuperation brake of the motor.

### 4.3.4 Battery change

Only purchase batteries for your handbike from one of our certified Stricker dealers or directly from the factory. Our batteries might look similar to other e-bike batteries and might also fit on the bracket. Nevertheless, batteries might differ in technical features that are not compatible with our system. Please note that your warranty claim will be void if an incompatible battery causes a defect.

## 5 Battery and charger

### SAFETY NOTICE

Be sure to read and observe all safety and hazard information („3.1 Safety instructions for battery and charger“).

### WARRANTY NOTICE

Batteries are wearing parts. The warranty period is 24 months.

### DISPOSAL INSTRUCTIONS

Dispose of batteries only at designated disposal points. If you have any questions, please contact a specialist dealer or the manufacturer.

### 5.1 Charging the battery

#### WARNING

Before using the charger, check that the mains voltage matches the connection voltage of the charger. The connection voltage of the charger is indicated on its type plate.

#### SAFETY INFORMATION

Please always remove the battery from the traction device or handbike before charging. To do this, unlock the locking cylinder and detach the battery from the support rail. Charge the battery in a safe environment. Observe the warnings attached to the battery.

We recommend charging the battery after each use of the traction unit. If the battery is completely discharged, recharge it immediately.

Charge the battery before each use. Check the charge level of the battery before each ride. If the battery is completely discharged while driving, further driving is only possible manually via the cranks.

Only switch on the battery for use. Switch the battery off immediately when you switch off the traction unit.

### 5.2 Equipment

As standard, a Lipo Smart is equipped with a maintenance-free lithium-ion battery. Since the battery has no memory effect, you can charge the battery at any charge level without hesitation.

You do not need to fully discharge the battery before charging. The battery has a fuse at a point depending on the production date. New fuses can be obtained from us.

### 5.3 Mounting the battery

The battery is attached to the frame via a bracket and secured by a lock. You can remove the battery from the holder for charging, changing or transport. To do this, turn the key counterclockwise. For 36V batteries: Slide the battery off the bracket on the side of the lock. For 48V batteries: Slide the battery upward off the bracket.

After fixing, lock the lock again by turning the key clockwise. Remove the key and store it safely to prevent the lock from being opened while riding.



Fig. 32: Befestigung 36V Batterie

### 5.4 Storage

Fully charge the battery before storing it for a longer period of time. Make sure that the battery is switched off for storage. Check the charge level every three months and fully recharge the battery if necessary. Also observe the notes in („3.1.3 Storage“).

## 6 Repair, cleaning and maintenance

### MAINTENANCE PROTOCOL

Is available on our website at: <https://stricker-handbikes.de/de/hilfe-und-media/downloads>

Never use cleaning gasoline, thinner, acetone or similar agents for any cleaning processes. Likewise, do not use abrasive or aggressive cleaning agents. Instead, use only commercially available household cleaning agents and disinfectants (isopropanol)..

## 6.1 Wheel change

Before you can remove the wheel of the Lipo Smart, you must disconnect the motor cable at the fork. To do this, you may need to unravel cable ties. Once the motor cable is disconnected, you can remove the wheel. Be sure to reconnect the connector after reinstalling the wheel. Fix the cable again with cable ties.

## 6.2 Pin assignment

- 1 Battery display (4-pin)
- 2 Pedal sensor (3-pole)
- 3 Speed control handle (3-pole)
- 4 Thumb throttle (3-pin)
- 5 Light (4-pole)
- 6 Starting aid (3-pole)

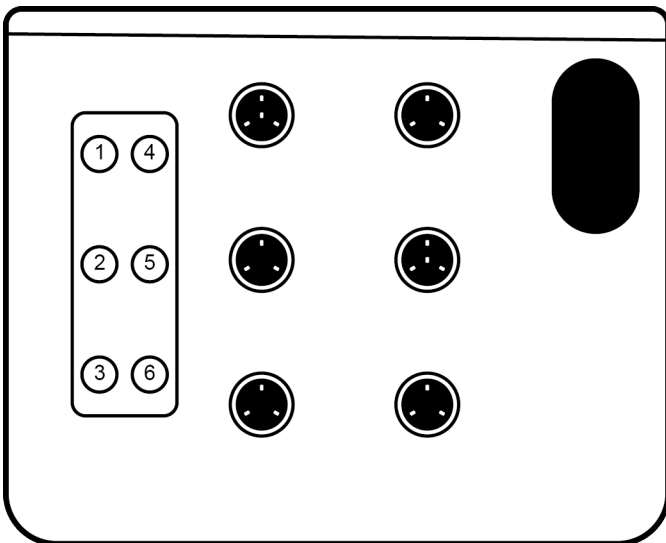


Fig. 33: Pin assignment

## 7 Transport

### NOTE

Special legal regulations apply to the transport and shipping of lithium-ion batteries and must be strictly observed.

The shipping of lithium-ion batteries is strictly regulated. Therefore, take a defective battery personally to your specialist dealer. Contact your specialist dealer beforehand.

The legal transport regulations for taking lithium-ion batteries with you may change annually. Before starting a journey, enquire in good time about the applicable regulations with the airline or shipping company or your tour operator.

Some batteries from R&E Stricker GmbH are suitable for air travel according to IATA guidelines (as of 2020). The energy of these batteries is 300 Wh. The latest guidelines can be found on our website [www.stricker-handbikes.de](http://www.stricker-handbikes.de) or on the IATA website. We recommend that you bring the regulations with you to the airport printed out or digitally on your smartphone or tablet. Be sure to contact your airline when planning your trip. Not every airline follows the IATA guidelines in their transportation regulations. Also, depending on the airline, it may be necessary for you to declare the battery transport when you book your ticket or before you start your trip. Carrying a battery without also carrying a handcycle may be denied by the airline. Check extensively with your airline.

### WARNING

As a general rule, defective batteries must not be taken on a flight.

## 7.1 Transportation in vehicle

Always transport the handbike only when it is disconnected. If necessary, detach the attachment stand from the handbike. Secure all individual parts against slipping. The batteries can be transported in any position, as they are leak-proof batteries.

Only use your car for transport, not for storing or keeping the battery.

## 7.2 Airplane transportation

When transporting your handbike, for example in the trunk of a car, never place it on the side of the gear shift. This could damage the gearshift.

**NOTE**

If you take your handcycle with you on an airplane trip, we recommend wrapping the handcycle with packing foil (similar to cling film). Especially the handlebar and the frame should be well wrapped and thus protected from scratches in the paint and damage to mechanical parts. Alternatively, have the handbike wrapped with stretch film at the airport.

## 8 Reuse

If the Handbike or power assist device was provided to you by your health insurance company and you no longer need it, you should contact your health insurance company or your medical supply dealer. Your traction device can then be easily and economically reused. Before each reuse, maintenance and disinfection of the power assist device must be performed.

Before reuse, carefully wipe and spray disinfect all surfaces of the traction device. Use a liquid alcohol-based disinfectant that is suitable for medical products and equipment. Please observe the manufacturer's instructions for use for the disinfectant you are using.

## 9 Disposal and recycling

Electrical appliances, batteries, accessories and packaging should be recycled in an environmentally friendly manner.

Avoid taping parcel tape to the handcycle, as adhesive residue is difficult to remove.

Dispose of all other components of your handcycle according to the regulations of your region at appropriate collection points or in the household waste (paper, cardboard, plastic packaging).

## 10 Materials used

The following section describes the materials used for the power assist device or handbike, with information on how to dispose of or recycle the device and packaging.

In addition, specific local regulations may apply regarding disposal or recycling; these must be followed when disposing of your power assist

device or handcycle. (This may include cleaning or decontaminating the traction unit or handcycle before disposal).

Aluminum: tubes, covers, rim and handlebars - resistance high, flammability: low

Steel: screws, frame - resistance high, flammability: low

Stainless steel: screws, spokes - resistance high, flammability: low

Plastic: handles, plug, display, charger, housing, rotary gas, thumb gas, rim tape - resistance high, flammability: low

Rubber: tire, hose - resistance high, flammability: low

Packaging: Made of cardboard - resistance medium, flammability: high

Battery: Lithium-ion battery (hazardous material) - resistance high, flammability: low

## 11 Warranty and guarantee

**NOTE**

Do not throw the batteries, chargers and electrical components of your handbike in the household waste. According to the current EU directives, electrical devices and batteries must be collected separately and recycled *in an environmentally friendly manner*.

Complaints due to incomplete or incorrect delivery or recognizable defects must be made in writing immediately, at the latest 8 days after receipt of the goods. Our obligation in the case of justified complaints is limited to replacement delivery or repair by us. In the case of warranty repairs, which have been agreed with us in advance, the rejected parts are to be sent back to us. Modification or repair work carried out by the customer or a third party without our prior consent shall invalidate the warranty obligation.

The information on warranty and guarantee is taken from our general terms and conditions (as at the time of printing). These can be viewed in full at the web address <http://www.stricker-handbikes.de/de/agb>. The warranty period for the handbike is 2 years. The batteries for our Lipo and Neodrives models also have a 2 year warranty. Not covered by the warranty are defects that are due to

## 12 Liability

### NOTE

The information on liability is taken from our general terms and conditions (as at the time of printing). These can be viewed in full at the web address <https://stricker-handbikes.de/en/general-business-terms>.

We shall only be liable for consequential damages or other claims for damages if we, our legal representatives or vicarious agents are guilty of intent or gross negligence insofar as this is in accordance with the statutory provisions.

## Attachment

### A Technical data Lipo Smart

#### Hybrid Handbike

Total weight	from
24,5 kg	
Total weight	from
21,7 kg	
Transport weight*	110 cm
Height	53 cm
Width	55 cm
Length	120 kg
Maximum gradient	15%
Maximum permissible payload	5 %
Maximum permissible cross slope	20 x
175 /47x406	

#### Drive unit

Drive type	Speed
sensor (PAS) on the crank handle	
Drive unit	40 km
Range**	Drive
Wheel hub motor electric	25
km/h	
Speed control	Speed
Rated power	250 W
Operating voltage	36 V

#### Battery

Battery type	Lithium
Ion	
Rated capacity	11.6 Ah
Rated voltage	36 V
Weight	1,9 kg
Charging time	~7 h
Storage temperature range	+5° to
30°	
Discharge temperature range	-20° to
40°	

Capacity display	on
battery and display	

#### Equipment

mechanical disc brake	Service
and parking brake	
mechanical V-brake	Service
brake	
Lighting	Front
light 36V LED	

### B Technical data Smart Wild

#### Hybrid Handbike

Total weight	from 30
kg	
Total weight	from 26
kg	
Transport weight*	110 cm
Height	53 cm
Width	55 cm
Length	120 kg
Maximum gradient	15%
Maximum permissible payload	5 %
Maximum permissible cross slope	20 x
2.25-2.75 moped tires	
16 gears (2 chainrings above, 8 sprockets below)	

#### Drive unit

Drive type	Speed
sensor (PAS) on the crank handle	
Drive unit	50 km
(13 Ah) 65 km (17 Ah)	
Range**	Drive
Speed with pedelec drive	25
km/h	
Speed control thumb throttle	up to 6
km/h	
Rated power	1500 W

#### Battery

Battery type	Lithium
Ion	



Rated capacity or 17 Ah	13 Ah
Rated voltage	48 V
Weight	4 kg
Charging time	~6,5 h
Storage temperature range 30°	+5° to
Discharge temperature range 40°	-20° to
Capacity display battery and display	on

### Equipment

mechanical disc brake and parking brake (optional hydraulic)	service
Recovery brake	
Lighting light 48V LED with horn	front

## C Technical data Smart Dynamic

### Hybrid Handbike

Total weight 28kg	from
Total weight 24kg	from
Height	53 cm
Width	55 cm
Length	120 kg
Maximum gradient	15%
Maximum permissible payload	5 %
Maximum permissible cross slope	20°, 24°
8-speed derailleur, 16-speed with front derailleur	

### Drive unit

Drive type sensor in bottom bracket	Torque
Range**	70km
Speed with pedelec drive km/h	25

Speed control thumb throttle km/h	up to 6
Rated power	250 W

### Battery

Battery type Ion	Lithium
Rated capacity or 17 Ah	13 Ah
Rated voltage	48 V
Weight	4 kg
Charging time	~6,5 h
Storage temperature range 30°	+5° to
Discharge temperature range 40°	-20° to
Capacity display battery and display	on

### Equipment

mechanical disc brake and parking brake (optional hydraulic)	service
Lighting light 48V LED with horn	front

(\* ) The transport weight is the total weight minus the battery and the mounting frame. It is recommended to remove these parts for easier transport.

(\*\* ) The range varies depending on the battery used, as well as the terrain traveled and the prevailing driving conditions. Under optimal riding conditions (for example, a level terrain, freshly charged batteries, ambient temperature of 20 °C, steady ride, etc.), a drive power of 100 watts and a pedaling power of 100 watts, the indicated range can be achieved.

Subject to changes in technology and design due to continuous further developments.

